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Puerto Rico
Science, Technology
& Research Trust

prsciencetrust.org

A LA MANO

15 de noviembre de 2023

A-2023-7585
SENADO DE PUERTO RICO
OFICINA DEL SECRETARIO
15 NOV 2023 AM10:21

Hon. Pedro Pierluisi Urrutia
Gobernador de Puerto Rico

Hon. José L. Dalmau Santiago
Presidente
Senado de Puerto Rico

Hon. Rafael Hernández Montañez
Presidente
Cámara de Representantes de Puerto Rico

Sr. Yamil Rivera Vélez
Secretario
Senado de Puerto Rico

Lcdo. Javier Gómez Cruz
Secretario
Cámara de Representantes de Puerto Rico

Re: Entrega de Informe Anual Año Fiscal 2022-2023
Fideicomiso para Ciencia, Tecnología e Investigación de Puerto Rico

Estimados Honorables Gobernador Pierluisi, Senador Dalmau, Representante Hernández, señor Rivera y licenciado Gómez:

Reciban un cordial saludo de parte del Fideicomiso para Ciencia, Tecnología e Investigación de Puerto Rico ("FCTI").

En conformidad con nuestra encomienda legislativa de presentar un Informe Anual correspondiente al año fiscal 2022-23 al Gobernador y a la Secretaría de ambos cuerpos legislativos, le remitimos el Informe Anual en referencia para su consideración y trámite pertinente. Como parte de este Informe Anual, también hemos incluido nuestro Plan Estratégico.

De necesitar cualquier información adicional relacionada con este documento, puede comunicarse al 787-523-1593.

Atentamente,

Luz A. Crespo Valentín

Luz A. Crespo Valentín
Pincipal Oficial Ejecutiva

P.O. Box 363475
San Juan, PR 00936-3475

Carr. # 21, Bo. Monacillos,
Río Piedras, PR 00927
(Antigua Penitenciaria Estatal)

Tel.: 787-523-1592
Fax: 787-523-1599
info@prsciencetrust.org

ANNUAL **REPORT**
2022-2023



Puerto Rico
Science, Technology
& Research Trust

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Annual Report of the Puerto Rico Science, Technology and Research Trust

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Department of Design, Marketing and Communications

Puerto Rico Science, Technology and Research Trust

Antigua Penitenciaria Estatal, Carr 21 Bo Monacillos, San Juan, 00927, Puerto Rico

PO Box 363475 San Juan, PR 00936-3475

Phone: +1(787) 523-1592

Fax: +1(787) 523-5610

Email: *communications@prsciencetrust.org* and/or *info@prsciencetrust.org*

Website: *https://prsciencetrust.org/*

Designed by:

Department of Design, Marketing and Communications

Puerto Rico Science, Technology and Research Trust at San Juan, Puerto Rico

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The Puerto Rico Science, Technology & Research Trust was established in 2004 under Public Law 214 as an autonomous entity, stimulates innovation, technology commercialization and the creation of high-technology jobs in Puerto Rico's targeted industry sectors such as: Life Sciences, Alternative Energy, Environmental & Agricultural Sciences, Computer Science & Information Technologies, Medical Devices, and Aerospace & Aeronautics, among others.

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OUR STRATEGIC PILLARS

RESEARCH & DEVELOPMENT

RESEARCH GRANTS PROGRAM — FUNDS TO GROW

TTO TECHNOLOGY TRANSFER OFFICE ™

PRSTRT RESEARCH INSTITUTE

Caribbean Center for Rising Seas

CENTER FOR TROPICAL BIODIVERSITY

We create new technology, products, services, systems, or solutions. It is a process supported greatly by science that can generate new discoveries and knowledge to ultimately improve our lives. Our R&D programs have impacted diverse sectors like research, biodiversity, transfer of technology, health, cultural heritage, agriculture, among others. Each program pushes to expand its field providing funding mechanisms, resources, mentorship, or other means to drive innovation.

20 **NEW PATENT APPLICATIONS**
by Technology Transfer Office Program

84 **PATENTS UNDER MANAGEMENT**
by Technology Transfer Office Program

$14M **GRANTS AWARDED**
by Research Grants Program

$43M **RETURN ON INVESTMENT**
(ROI) for grants awarded by Research Grants Program

+28K **SARS- COV-2 SAMPLES**
in Research Institute biorepository

ENTREPRENEURSHIP

Colmena66 Tu Camino Empresarial

Fase 1

parallel18

SBIR/STTR Federal Grants

Entrepreneurship is essential for economic development. It fuels innovation and creates new jobs, industries, and markets. It also has the potential to improve lives, communities, and countries. Our entrepreneurship programs provide a blueprint for how to support businesses in all their stages, stimulate their growth and build economic development.

$1M **GRANTS DISTRIBUTED**
for Parallel18's Generation X

40% **WOMEN FOUNDED**
23 companies at Pre18 Gen 5

2.9K **ENTREPRENEURS**
served by Colmena66 for this fiscal year

365 **INDIVIDUALS**
started Fase1 Lab

PUBLIC HEALTH

Puerto Rico Public Health Trust

PRCCI Puerto Rico Consortium for Clinical Investigation

Puerto Rico Vector Control Unit

Public health attempts to promote and protect the wellbeing of people and their environment. This work is achieved by promoting healthy lifestyles, researching disease and prevention, environmental hazards and attending epidemics of infectious diseases. Our public health programs operate based on evidence to make systematic improvements in the health of the population, increase access to health resources, and reduce inequalities in local communities.

$19M **NEW FUNDING** for PR Vector Control Unit

35 **ACTIVE CLINICAL STUDIES** for PR Consortium for Clinical Investigation

2k **EMERGENCY PLANS DISTRIBUTED** for Puerto Rico Public Health Trust

$2.9M **NEW FUNDING** for Puerto Rico Public Health Trust

FOUNDATION PROGRAMS

STEM EDUCATION & WORKFORCE DEVELOPMENT

Science City

PR RESEARCH & INNOVATION Meet-ups

Innovation is a global force that demands continued adaptation and multisectoral engagement. Through our base programs, we have the capacity to support all strategic areas: research and development, entrepreneurship, and public health. These programs converge in different sectors and ecosystems to build capacity and propel innovation.

69 **ACRES OF LAND** in Science City

$6.9M **CONTRACT AMOUNT** for Forward Center Construction

190 **PERSONS CERTIFIED IN IT, HUMAN SERVICES, AND MANUFACTURING FUNDAMENTALS** by Puerto Rico Ready

Letter to Stakeholders

By Luz A. Crespo, Chief Executive Officer

With immense pride, I present the Puerto Rico Science Technology & Research Trust's Annual Report for fiscal year 2022-2023. This year's report emphasizes our dedication to advancing Puerto Rico's innovation agenda, a vital component of the island's socioeconomic development. I am very proud of our organization's resiliency and the contributions that each one of the Trust's employees made to our four strategic pillars: Research and Development, Entrepreneurship, Public Health, and STEM Education & Workforce Development. These contributions are essential to continue delivering our mission to the Trust's targeted audiences and communities. We are maintaining our strategic focus, improving our innovation capabilities, and restlessly pursuing excellence in our operational execution.

To begin the annual report, I want to highlight the expansion of our physical, scientific, and technological infrastructure. On August 17, 2023, the Puerto Rico Consortium for Clinical Investigation (PRCCI) inaugurated a modern clinical research center that will complement the Puerto Rico clinical research ecosystem and the centers of the consortium network. The new center seeks to position Puerto Rico as a market of excellence not only for pharmaceutical companies and biotechnology companies, but also for clinical research organizations in the United States and globally so they can carry out their clinical research on the island. The PRCCI Clinical Research Center will also have a training and innovation program for Clinical Coordinators and offer certifications for other healthcare professionals. With the support of the Economic Development Administration (EDA), the Trust completed the construction of the Forward Center. This 30,000-square-foot STEM facility will house up to 60 high-tech startups focusing on science, technology, and manufacturing. It will provide space for research and development in these critical industries in a disaster-resistant building. The Clinical Research Center was designed to serve small businesses, entrepreneurs, and non-governmental organizations, providing incubation and acceleration space in several key sectors, including information technology, the aerospace industry, and the development of medical devices, which has experienced recent expansion on the island. The third facility added to Science City this year is the Research Institute Core Laboratories.

THE TRUST IS CREATING A BETTER FUTURE



"This year's report underscores our dedication to advancing Puerto Rico's innovation agenda, a vital component of the island's socioeconomic development."

Luz A. Crespo
Chief Executive Officer

These results represent the strategic guidance of our Board of Trustees, the result-driven orientation of our management, and the synergistic work of our associates, partners, and collaborators across the innovation ecosystem in Puerto Rico. This year, we signed over 250 Memorandum of Understanding (MOUs) for the year.

The Communications and Marketing team has displayed remarkable expertise in communications, marketing, customer relationship management (CRM), and event coordination. Their endeavors have yielded substantial accomplishments, significantly enhancing the organization's brand presence and customer engagement. This year, the Trust enjoyed $3.5 M in non-paid publicity with over 180M prints and 453 media appearances. In social media, the Trust and its programs have about 150K followers and close to 96K Mailchimp recipients.



Puerto Rico
Science, Technology
& Research Trust

MISSION

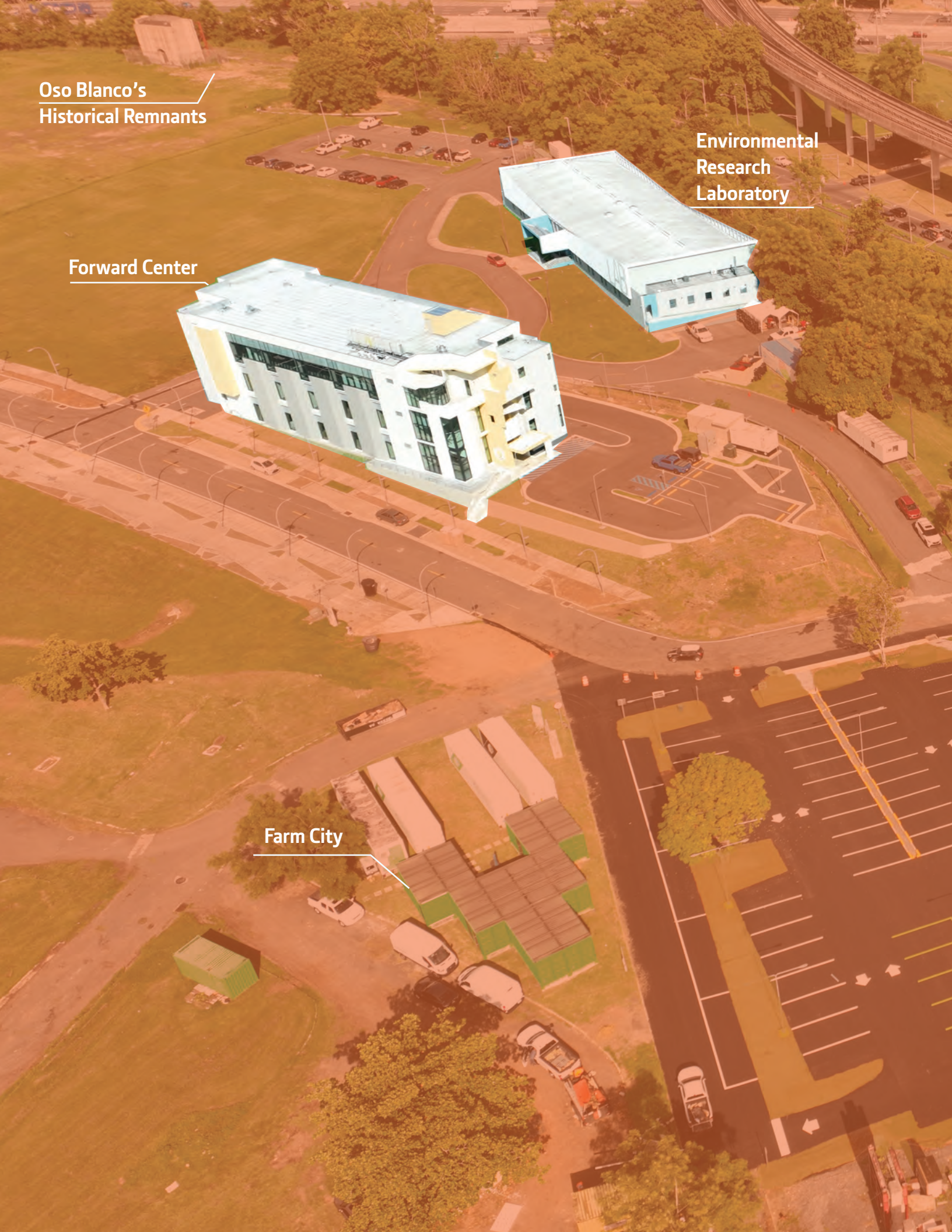
We invest, facilitate, and build capacity to continually advance Puerto Rico's economy and its citizens' well-being through innovation-driven enterprises, science, technology, and public health.

VISION

Puerto Rico is a globally recognized innovation hub.

CORE VALUES

- Integrity
- Be a facilitator
- Desire to Innovate
- Entrepreneur Spirit
- Optimism / Respect
- Collaboration
- Be a Facilitator
- Accountability
- Leadership / Adaptability
- Customer-Centric
- Accomplishments & Results
- Commitment


Oso Blanco's
Historical Remnants
Environmental
Research
Laboratory
Forward Center
Farm City


Innovation Center

RESEARCH PILLAR PROGRAMS

The Research and Development Pillar has achieved significant milestones from July 2022 to June 2023. The programs within the pillar continue to make remarkable contributions to the scientific community through its support for research endeavors, collaboration initiatives, and capacity-building efforts.

During this year, the **Research Grants Program** impacted a total of 43 undergraduate and 20 graduate students benefited from it. The grantees have secured external funding, amassing over $3.45 million in new funding this year. Furthermore, grantees have contributed to the scientific community by publishing their findings in peer-reviewed journals, totaling eight recent publications in diverse fields. The Catalyzer Research Grant Recognition Event showcased a diverse cohort of 10 projects, with 80% of researchers being women. In response to Hurricane Fiona, and through a rigorous evaluation process, 158 individual grants of $500 each were awarded, aiding students in continuing their academic pursuits despite the challenges. The Forward Research Symposium in Nov 2022 gathered leading experts, including Michelle "Shelli" Brunswick, to discuss advancements in various fields. The event facilitated knowledge sharing and networking and recognized outstanding poster presentations, promoting innovation and collaboration. In response to the COVID-19 pandemic, the program initiated the Accelerating COVID-19 Treatment and Drug Development Grant (PRACTD) to support innovative research in combating the virus. Additionally, the Advanced Research Grants call received diverse Letters of Intent, reflecting a strong interest in research and development across various sectors.

The **Technology Transfer Office** (TTO) has been a significant force in facilitating technology transfer since its establishment in 2017 under the Trust's enabling act 214-2004. Operating as a "regional" technology transfer office, the TTO has evaluated around 150 promising discoveries from its partner institutions and maintained a dynamic portfolio of 96 active technologies this year. Notably, 42% of the inventors (76 out of 179) are female, an exceptional diversity achievement compared to the US average of 13% women inventor-patentees. Key metrics reflect an increasing trend in high-quality disclosures, engagements with new inventors, global marketing expansion, and corporate interest. The TTO's collaborations with universities have become more fruitful and productive, and the overall managed portfolio continues to grow.

This year, some of the most notable achievements include:

- Evaluating 27 invention disclosures.
- Managing a portfolio of 96 active technologies.
- Submitting 20 new patent applications.
- Maintaining a total of 84 patents under management.
- Establishing the EnTRUST and XLerator Network initiatives
- Winning a $1 million NSF Engine Development Award.



This year, the **Center for Tropical Biodiversity** (CTB) continued advancing ongoing initiatives while embarking on new projects and collaborations. The CTB focused on science communication, spotlighting the fragile state of Caribbean coral reefs and the sea urchin die-off phenomenon. Collaborating with Ms. Lupe Vázquez's Communications Office, the CTB raised awareness about the significance of sea urchins as reefs. Some noteworthy achievements included:

- Identifying antifungal compounds in *Coquí Llanero* habitat.
- Developing high-end methods for fungal spore identification.
- Exploring Arracacia xanthorrhiza's potential for anti-inflammatory compounds.
- Launching NatPORT for Caribbean natural product data.
- Resubmitting a proposal to DTRA for proteomic-scale screening.
- Presenting CTB's capabilities at the American Society of Pharmacognosy Meeting.

In conclusion, the CTB's impactful research, collaboration, and science communication efforts have furthered biodiversity preservation and scientific discovery, positioning it as a vital contributor to the field.

The **Research Institute** (RI) is a vibrant center for innovative research. Located in the thriving Science City of San Juan, Puerto Rico, the RI is dedicated to advancing groundbreaking basic and applied research on diseases that disproportionately affect the local population. Guided by a philosophy rooted in diversity and collaboration, the RI seeks to accelerate biomedical research and improve human health by fostering a community with varied backgrounds, perspectives, and identities. Some of the RI's notable achievements include:

We are establishing a genomic surveillance initiative in collaboration with the Puerto Rico Department of Health, contributing significantly to the sequencing efforts in Puerto Rico, sequencing over 10,000 SARS-CoV-2 genomes, shedding light on virus evolution. We are expanding COVID-19 diagnostic testing through community engagement in underserved communities, enhancing testing reach and effectiveness. We are participating in the SARS-CoV-2 Serological Sciences (SeroNet) project to study correlates of protection in a Latino-origin population.

The **Caribbean Center for Rising Seas** (CCRS) is advancing the mission to help prepare Puerto Rico and the Caribbean to adapt and thrive in the new era of increasing flood risk from storms, tides, and sea level rise. In 2022, CCRS secured a NASA grant to study environmental justice in a Puerto Rican coastal community affected by Hurricane Fiona. This project spans three phases, involving stakeholder interviews, community collaboration to develop adaptation pathways, and empowering the community with actionable outcomes. CCRS's educational task is to redefine professional knowledge about floods and sea-level rise. For FY 2022-23, the team engaged with over 270 professionals, including designers, regulators, financiers, and over 450 general public participants through 11 presentations. CCRS hosted events and developed materials, including posters and lesson plans, to raise awareness and promote understanding. CCRS achieved an excellent media presence, including newspaper columns and social media sharing. They also produced videos to disseminate knowledge. During the year, they supported four (4) municipalities with specific reports about potential sea level impact in their communities to influence their recovery plans. CCRS delivered three policy papers with recommendations, influenced legislation, and provided input to regulations. The center advocates for science-based policies related to sea-level rise. In summary, CCRS's multifaceted approach encompasses research, education, outreach, funding, policy influence, and practical initiatives to address environmental challenges like sea-level rise and flooding, promoting resilience and sustainability in Puerto Rico.





ENTREPRENEURSHIP PILLAR PROGRAMS:

The entrepreneurship pillar keeps adapting and acting quickly to drive innovation, foster economic growth, and strengthen Puerto Rico's position as an international hub for startups and entrepreneurship in a global landscape. The essence of our entrepreneurial ecosystem is our people and the culture and collaboration that allows them to interact successfully. The Trust's entrepreneurship pillar provides a fast flow of talent, information, and resources to help entrepreneurs find what they need at each growth stage. The pillar also serves the underrepresented entrepreneurs in their goal of creating high-impact businesses.

This year, **Colmena66** achieved significant milestones in its mission to support Puerto Rico's entrepreneurial community, fostering economic growth and inclusivity. Serving 2,933 entrepreneurs, the organization facilitated 3,630 referrals to its Resource Network, delivered 472 counseling hours, and activated essential initiatives. Colmena66's dedication to innovation-driven startups was evident through the launch of Xpand, a program aiding expansion-ready startups with over three years in operation and $250K+ annual revenues, along with co-launching Pulso, which supported entrepreneurs in the northern region. The fifth edition of BEFest (Boricua Entrepreneur Fest) 2023 highlighted Colmena66's commitment, attracting over 1,350+ participants, 120+ expert speakers, and 10+ laboratories. The SourceLink Summit 2023 showcased Colmena66 as an affiliate network host and contributed to securing Puerto Rico as the host for the 2024 Global Entrepreneurship Congress. This year, Colmena66 was awarded the SBA Growth Accelerator Fund Competition 2023. The Status Report of the Entrepreneurial Community in Puerto Rico 2022 reflected the organization's dedication to data-driven decision-making, revealing demographic insights, top challenges, and access-to-capital trends among entrepreneurs. Through dynamic initiatives, impactful events, and commitment to data-driven insights, Colmena66 Puerto Rico's entrepreneurial ecosystem is moving forward, empowering entrepreneurs and catalyzing growth across industries and regions.

Fase1's journey over the past two years has been remarkable, marked by significant achievements and meaningful contributions to the entrepreneurial ecosystem. Our vision of fostering innovation and driving startup success has materialized into tangible results, reinforcing our commitment to catalyzing economic growth and nurturing original business ideas. The successful completion of our inaugural cohort with a flawless 100% retention rate underscores the potency of Fase1's model and its potential to shape a thriving ecosystem. Our community has flourished, embracing Fase1's offerings with unwavering





enthusiasm. Our community expanded by 65%, culminating in over 1,300 individuals aligning themselves with our program's ethos. Fase1 Lab, our online academy, has been instrumental in this growth. With over 300 enrollments and 365 participants completing the first three modules, our commitment to accessible education has borne fruit. Significantly, we have extended our outreach through the Fase1 Tour, engaging with 550 individuals in 18 events spanning 11 municipalities. This approach has enabled us to reach new demographics, further solidifying our commitment to inclusivity and outreach. Fase1 Intensive, our 12-week incubator, witnessed the graduation of all 50 selected startups, validating their market viability and propelling them on their entrepreneurial odyssey. The Fase1 Demo Day showcased exemplary pitches and awarded $10,000 prizes across multiple categories. This event encapsulated the culmination of our first cohort and its transformational journey.

Parallel18 continues to make significant strides in supporting the growth and development of innovative businesses through its various programs - pre18, P18, Xpand, GiveBack, Talent, and Parallel18 Ventures. Over the years, Parallel18 has nurtured startups from Puerto Rico and around the world, fostering entrepreneurship, generating economic impact, and contributing to the expansion of the startup ecosystem.

With five generations spanning five years, **pre18** has received 1,300 applications and selected 53 companies for participation. Over 160 startups have graduated from the program, creating scalable solutions across aggrotech, fintech, and health tech industries. In its fifth cohort, Gen. 5, 23 startups joined the program. These startups hailed from various Puerto Rican towns, with 40% of founders identifying as women. The cohort developed and launched technological solutions, leading to a cumulative valuation of $40,055,000. The revenue generated during the program was $321,000, totaling $749,584 for the year.

Over ten generations, **P18** has received 9,000 applications from 70 countries, with 256 startups graduating. Of these, 112 had Puerto Rican founders, contributing to 44% local representation. Eight startups from Gen. X completed the program, accumulating a valuation of $42.1 million. The global revenue generated was $317,000, while local revenue reached USD 110,500. The cohort raised $961,000 globally and USD 245,000 locally during the program.

In fiscal year 2023, the **Federal Funds Small Business Innovation Research (SBIR&STTR)** Program actively engaged with potential candidates through outreach efforts, resulting in collaboration with Colmena66, Parallel 18, and SBTDC. The outcomes of these efforts for this fiscal year translated into four awarded SBIR contracts, maintaining a streak of non-zero awards for multiple years. These awards contributed a total of $3,155,995 to Puerto Rico's economy. Through matching funds of $600,000 provided by the Trust, the total economic contribution reached $3,755,995. The awards included a first-time Phase I awardee and three entities that have received multiple awards. Among these, two companies secured Phase II awards, including a Fast Track NIH award and a direct-to-Phase II award from NASA. The success in securing these competitive award types reflects the high quality of research and proposals from Puerto Rico.



PUBLIC HEALTH PILLAR PROGRAMS:

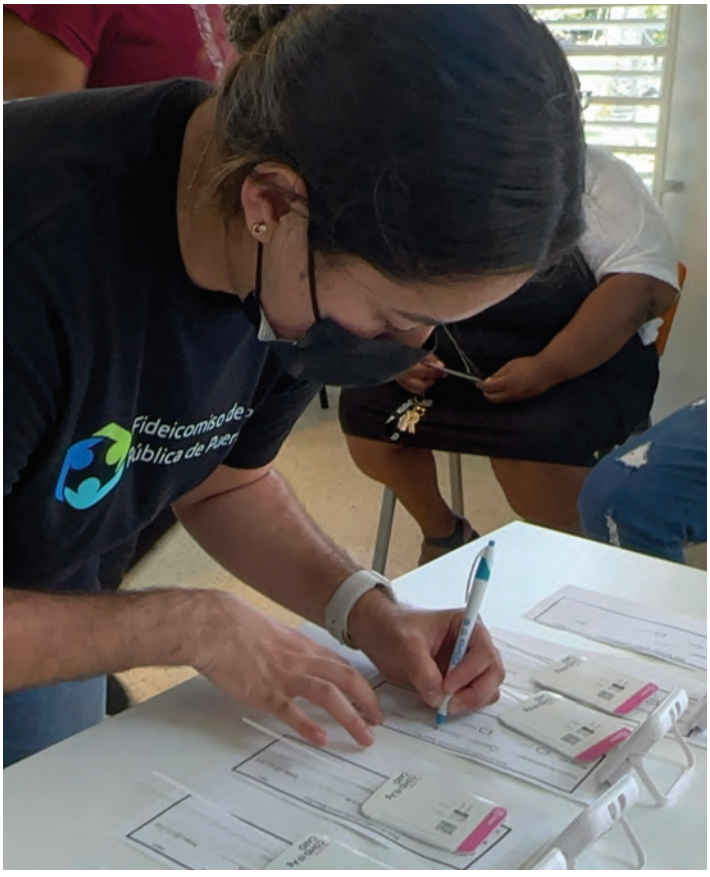
All the initiatives and projects presented in our next section demonstrate the Trust's commitment to engaging communities, addressing social determinants of health, and contributing to building a resilient public health infrastructure. The Trust's work in the Public Health pillar is instrumental in promoting health equity and improving the well-being of Puerto Rico's residents.

In the past year, our **Public Health Institute** (PRPHT) has undergone a remarkable transformation in response to the evolving needs of our community. It secured $2.97 million in funding, initiated six new projects, and expanded our team with 35 dedicated professionals. Our commitment to public health remained unwavering, beginning with continued support for COVID-19 efforts, including distributing 23,000 at-home tests. After the devastating Hurricane Fiona, we sprang into action, collaborating with the Puerto Rico Department of Health (PRDoH) and community-based organizations to provide essential supplies, educational materials, and medical services to 31 communities in PR.

Through our Community Health Workers (CHWs) capacity-building projects, we trained 55 CHWs, reached over 25,000 individuals, and facilitated 1,479 referrals, ensuring our communities received the support they needed. An emergency preparedness plan catering to individuals with chronic diseases and disabilities, addressing the unique needs of underserved communities, was developed and deployed this year. PRPHT telemedicine initiatives expanded access to healthcare through the distribution of equipment, training, and technical assistance to nursing homes and community clinics. We trained 464 individuals, provided 42 training tools, and conducted four ECHO Series, reaching 294 participants, enhancing healthcare in rural and vulnerable communities. In response to growing awareness, a Social Epidemiology Division focusing on equity and social determinants of health was established this year. They have already made strides, developing educational modules and questionnaires, organizing seminars, and training over 250 health professionals.

The **Puerto Rico Vector Control Unit** (PRVCU), a vital component of the Puerto Rico Science, Technology, and Research Trust, has demonstrated exceptional flexibility and agility in its vector management endeavors. PRVCU achieved remarkable success this year, securing $20 million in grant funding and earning national and international recognition. PRVCU was designated as a Tropical Island National Training Center for Vector Management, positioned to elevate vector management capabilities across US territories. Initiating a groundbreaking dengue management project in El Salvador, utilizing non-US-approved techniques, exemplifies the unit's commitment to global vector control expertise.





PRVCU's initiative-taking stance in preparing for a potential dengue outbreak in Puerto Rico underscores its dedication to training vector managers and ensuring adequate resources. Preventing a dengue-3 outbreak in Puerto Rico through strategic interventions highlights PRVCU's effectiveness in safeguarding public health. As an emerging international leader in dengue outbreak control, PRVCU sets a precedent for vector management programs worldwide. Its success positions PRVCU as a model to emulate, and its continued impact is greatly anticipated.

The **Puerto Rico Consortium for Clinical Investigation** (PRCCI) remains steadfast in its mission to enhance clinical research in Puerto Rico and beyond. PRCCI has achieved significant milestones in the past year and made noteworthy progress in various key areas, including the new Clinical Trial Center facilities at Science City. In the clinical research operations, it maintained an average of 35 active studies in diverse therapeutic areas for the year, demonstrating their commitment to advancing healthcare. It participated in 8 scientific events locally and 3 US events that enabled PRCCI to connect with stakeholders and promote clinical research. It certified 41 Clinical Research Coordinators who play a crucial role in executing trials, and PRCCI's investment in certification demonstrates its commitment to excellence. It experienced a 66.7% Webinar Increase for the year, enabling PRCCI to engage with a broader audience and educate on clinical research. It performed five patient advocacy activities and deployed the "For Patients" webpage, fostering understanding, education, and collaboration with patient groups. PRCCI secured a significant All of Us Research Program grant this year, underscoring PRCCI's dedication to innovative research. PRCCI offered a High School Summer Seminar to inspire the next generation of scientists with its educational outreach.

In summary, PRCCI's dedication to enhancing clinical research, expanding its global presence, deploying a state-of-the-art Clinical Trial Center, engaging with patient advocacy groups, educating healthcare professionals, and leveraging digital platforms have collectively positioned it as a driving force in advancing clinical research locally and internationally. With unwavering commitment, PRCCI is poised to continue its remarkable journey toward bringing innovation to the field of clinical research in Puerto Rico.



Clinical Trial Center facilities at Science City

FOUNDATION PROGRAM:

The **STEM Education and Workforce Development Program**'s fifth-year program reflected significant growth and development in our initiatives, advancing the vision to drive Puerto Rico's economic development through science, technology, research, and innovation, solidifying its role as a catalyst for progress. We welcomed new participants to our programs throughout the year, kindled interest in emergent technologies and innovation, and promoted participants to consider future careers. Throughout this year, the program expanded its reach, inspiring many participants to explore emerging technologies, fostering innovation, and encouraging them to consider future careers in STEM.

A significant milestone was completing the Community Development Block Grant-Disaster Relief (CDBG-DR) funded Puerto Rico Ready program, where 190 credentials were awarded to low- and mid-income individuals. The program's adaptability, including a return to in-person activities and improved hybrid and distance learning options, ensured the continuous delivery of high-quality services to the public.

STEM education initiatives, such as STEM Boxed Kit, Exploring Computer Science, STEM en la Montaña, and Tech Summer Experience, continued to ignite curiosity and empower the next generation of scientists and engineers. The workforce development program, Puerto Rico Ready, expanded its mission to enhance lives through technology training and education. The program's commitment to sustainable farming practices and education, as demonstrated by Academia del Cacao, Agroecología para el Futuro, and EcoGather, reflects its dedication to agricultural sustainability and local farmer support.

The **Puerto Rico Research and Innovation Meetups Program**, completing its eighth year, has excelled in fostering outreach and dialogue among a diverse audience, including scientists, researchers, educators, students, business leaders, and public servants. This engagement spans emerging ecosystems critical for advancing scientific, business, and civic activities, promoting citizen well-being and economic development. The program's unwavering commitment to enhancing social capital, shared leadership, collaboration, and innovative business practices within Puerto Rico's emerging ecosystems has yielded excellent results. This year, the program hosted 8 Meetup Events, with 581 Attendees and the collaboration and participation of over 62 Subject Matter Experts. Notably, the program's efforts have supported Puerto Rico's progress in several critical areas: Bio-Economy, Space Economy, Science Communications, Transformational Technologies, and B Corps in Formation. With the Innovation Meetup program, the Trust is committed to addressing critical challenges and fostering collaboration within Puerto Rico's emerging ecosystems.

By staying at the forefront of global trends and supporting the sustainable development of Puerto Rico's research, science, and technology sectors, the Puerto Rico Research and Innovation Meetups Program continues to catalyze positive change and innovation in the region.

In conclusion, our annual report reflects a year of remarkable achievements and resilience in the face of challenges. The dedication of our team and the strength of our partnerships have been instrumental in advancing Puerto Rico's innovation agenda. We remain committed to fostering innovation, research, and technology to drive Puerto Rico's continued growth and success.




COMUNICAR
detrás
SAGRADO




Puerto Rico
Fideico

TRUSTEES

Our Council of Trustees is composed of distinguished professionals who support and oversee our work and provide guidance to ensure that the Trust is managed within its mission and vision



Daniel Colón Ramos

Dr. Colón Ramos is the president of the Scientific Coalition of Puerto Rico. He also serves as an Associate Professor of Cellular Neuroscience at Yale University and is the co-founder of Ciencia Puerto Rico, a non-profit organization that promotes local scientific research and education. His lab at Yale studies the development and function of the nervous system, and their work has been recognized by several awards, including the Sloan Fellowship for "outstanding promise", an award given to recognize the best researchers of the United States and Canada.



Dara Schuster

Shuster is a healthcare executive with extensive clinical and pharmaceutical industry and leadership experience. She is an MD specialized in endocrinology, diabetes & metabolism. She has dedicated her career to improving healthcare delivery, educating medical professionals, execute clinical research and been a senior leader in medical affairs in diabetes for a major pharmaceutical company and research organizations.



Alfredo Casta

Alfredo Casta is the Founder and Chairman of Cascades Technologies, Inc (CTi), which is recognized as one of Inc. 5000 magazine's fastest growing companies for eight years. Mr. Casta combined his technical expertise, management skills and an unrelenting mission focus to accomplish results in the service of the American public. Under the tenants of Think – Build – Measure, CTi delivers IT Governance services, Technical Solutions, Data Management, Agile Development, and IT Organization Analysis including Cyber Security expertise to key cabinet agencies such as NIH, CDC, Labor, GSA, US Army, DHS, Justice, and Financial Regulatory Agencies.



Esther M. Alegria

Alegria has nearly 30 years of biopharmaceutical industry experience. She serves as a Senior Executive Biopharmaceutical Advisor at Catalyst Excel & Advance (EA) lending her expertise to establish and start-up pharmaceutical & biopharmaceutical companies. Prior to this, she held multiple executive roles leading to the success of biopharmaceutical large-scale drug substances, medical devices assembly, finished goods and small molecule manufacturing operations. In 2009, she was named Woman Extraordinaire of the Year by Business NC Magazine for her impact in economic success and forward-thinking strategies. Esther holds a Ph.D. in Chemistry from the University of Hawaii and an Executive Business Management certification from Harvard Business School. She has also served as mentor, advocate and educator throughout her career.



Gualberto Medina

Mr. Medina, an attorney, CPA, and real estate broker, was New Jersey's former Secretary of Commerce. He also served as the co-founder, president, or general counsel for many technology and biotechnology startups. Because of his successful career in government and business sectors, Mr. Medina was named one of Hispanic Business Magazine's 100 Most Influential Hispanics. He has ample experience serving as a Trustee for the Trust.



Edith A. Pérez

Perez is an internationally recognized translational researcher and cancer specialist, Chief Medical Officer of Bolt Therapeutics, Inc., Professor of Medicine at Mayo Clinic, and Director of the Mayo Clinic Breast Cancer Translational Genomics Program. Dr. Perez is known for her strategic vision in designing innovative clinical trials, her passion for patient care, and her strong team leadership. Her experience includes leadership in academic and biopharmaceutical environments, as well as focused philanthropic endeavors.



Ubaldo Córdova

Córdova is a professor in UPRM of chemical engineering, a researcher and the institution's former vice president for Academic Affairs and Research. He holds a bachelor's degree in Chemical Engineering from the University of Puerto Rico (UPRM) and a MS and PhD from California Institute of Technology. His research experience includes the authoring of peer-reviewed articles in Physics Review Letters, Soft Matter, Journal of Fluid Mechanics, Advanced Functional Materials, and Nature Chemistry. In 2011, he was awarded the prestigious NSF CAREER award, and in 2013 as Distinguished Professor in Chemical Engineering.



Frances Santiago-Schwarz

Santiago-Schwarz is Professor of Molecular Medicine at the Donald and Barbara Zucker School of Medicine at Hofstra/Northwell and Professor, Elmezzi Graduate School, Northwell Health. She has contributed to the advancement of human immunology, and as an educator and biomedical scientist, Dr. Santiago-Schwarz has been actively engaged in a variety of mentoring, diversity, and global humanitarian initiatives. Current activity in response to the COVID-19 pandemic includes acquiring insight into the immunopathology of COVID-19, unraveling novel therapeutic opportunities and development of COVID-19 medical-educational alliances with the community.



Manuel Cidre

Cidre is the founder of Los Cidrines, a market leader in the sale, distribution and manufacturing of bakery products in Puerto Rico. He is a graduate of the Pontifical Catholic University of PR, with a bachelor's degree in management, major in finance and marketing. He has held several leadership roles, such as president of the PR Products Association, president of the PR Manufacturing Association, founder and president of the Alliance for Puerto Rico's Development, among other community and philanthropic organizations. Cidre ran for Governor during the Puerto Rican general election, 2016 as an independent candidate. His commitment to Puerto Rico and work has been recognized by multiple communities and professional organizations. His motive in life is returning to God all the blessings he has received by devoting much of his time to organizations seeking to make Puerto Rico a better country.



Enrique A. Volckers Nin

Völckers Nin has a degree in Computer Programming from the University of Puerto Rico Mayagüez Campus, and in Business Administration and Marketing from the University of Puerto Rico Rio Piedras Campus. He has dedicated a large part of his career to the development of new businesses, focused on emerging and massive technologies. He was appointed by Governor Pedro Pierluisi as the Chief Innovation & Information Executive of the Government of Puerto Rico and Executive Director of the Puerto Rico Innovation & Technology Service. He is an Executive Member of the Trust for Science, Technology and Research of Puerto Rico, Commissioner of the Gaming Commission of the Government of Puerto Rico, Executive Member of the MS-ISAC Center for Internet Security, and is the Governor's representative to the National Governors Association on Technology and Broadband issues.

EXECUTIVE TEAM



Eng. Luz A. Crespo Chief Executive Officer (CEO)

Crespo has been the Chief Executive Officer of the Puerto Rico Science, Technology and Research Trust since 2015, leading the organization to outstanding achievements and building the innovation capacity of the country. She was previously appointed as General Manager of Hewlett-Packard Puerto Rico, where she served for 31 years. During her tenure, she successfully leading the HP Computing & Printing and Personal Systems business units. She was also the first woman to become president of the Puerto Rico Manufacturers Association.

Lucy is a key figure in the tech and science industry of Puerto Rico due to her ample experience and contributions to these sectors. She holds a bachelor's degree in Industrial Engineering from the University of Puerto Rico (Mayagüez Campus), is a graduate from the Kellogg's Graduate School of Management of Northwestern University for Executive Development and is a member of the Alpha Pi Mu, the Industrial Engineering Honor Society. She has also served in several advisory roles and received multiple recognitions for her leadership.



Gilberto Márquez Chief Financial Officer (CFO)

In February 2012, Gilberto Márquez joined the Puerto Rico Science, Technology and Research Trust as Advisor and promoted as Chief Financial Officer (CFO) in 2018. Mr. Márquez has over 14 years of experience involved in initiatives related to technology commercialization. Prior to joining the Trust, Mr. Márquez was Director of the Center for Innovation and Technology, a specialty service center of the Puerto Rico Small Business and Technology Development Center hosted by the Inter American University of Puerto Rico. Mr. Márquez has participated as proposal reviewer panelist for the National Science Foundation's Small Business Innovation Research (SBIR) Phase II program. Since March 2009, is a Certified Public Account and holds a master's degree in biotechnology management (MBM) from IE Business School in Madrid, Spain.



Doira Díaz, Esq. General Counsel and Administrator

Since 2018, Doira Díaz advises the Chief Executive Officer, the Board of Trustees and the Trust program directors and managers on applicable regulations, processes and procedures related to the administration, human resources, and general services of the Trust. She is also the Vice President of the Board of Trustees of the Puerto Rico Green Energy Trust, a position she holds ad honorem. Prior to joining the Trust, Doira held various positions at top law firms, covering matters in the areas of real estate, environment, land use and telecommunications with emphasis in real estate development, permitting matters and related disputes at the administrative and judicial levels; she also served as Deputy Advisor to the Governor of Puerto Rico for Energy, Environment, and Infrastructure. She holds a Bachelor of Arts degree from the University of Pennsylvania and a Juris Doctor degree from Fordham University and is also a notary public and a certified mediator.



Inés Álvarez De La Campa Human Resources Director

Álvarez has a track record of analyzing companies and organization needs and executing plans to improve their competitiveness and overall employees' satisfaction. She has dedicated her career to the management of human resources, talent acquisition and administration in companies like Bristol Mayers Squibb and Johnson & Johnson. Álvarez holds a bachelor's in Accounting and a master's degree in Business Administration. She is also certified as a Personnel Administrator and Yellow Belt Certified (BMS OpEx).



Lupe Vázquez Chief Communications & Marketing Officer

Vázquez has served as the organization's Chief Communications Officer since 2015. Prior to that, she served as editor and reporter for more than 30 years at the local newspaper El Nuevo Día. As a journalist, she led the direction of writers, designers and freelancers for the creation of reports on diverse topics such as news, lifestyle, business, education, among many others. Her experience also includes the redesign to improve the reach of print and digital platforms, the conceptualization of new editorial products, brand management, integration of sales strategies and the execution of initiatives to improve revenue and readership models. Lupe holds a Bachelor's degree in Liberal Arts and a Master's degree in Translation from the University of Puerto Rico (Río Piedras Campus). In 2012 she was recognized with the WAN-IFRA award for her leadership in the digital transition of Logon, a newspaper designed for teenagers at El Nuevo Día.



César Piovanetti Chief Information Officer (CIO)

Piovanetti has over 15 years of experience in the geographic information sciences (GIS) field, as GIS and technology consultant in various locations in the United States and Puerto Rico. Throughout his career, he has held various roles in the technology sector integrating cloud software solutions for the public, private and NGO sector. Experienced in designing and deployment of platforms and solutions as a service in the Microsoft Azure Cloud, Office 365 integrations at the enterprise level as well as logistic operations using geolocation technologies. During the last couple of years, as part of the Puerto Rico Science Trust technology team, Mr. Piovanetti has led implementations for federal, local and NGO funded geospatial projects.



Eng. Jerry Meléndez Chief Facilities Management Officer

Meléndez has a bachelor's degree in Civil/Environmental Engineering from the Polytechnic University of Puerto Rico. He completed a master's degree in Project Management from the University of Barcelona, Spain. He has 23 years in the field of planning, projects, operation, and construction management. Eng. Meléndez has 10 years in the Trust managing all the facilities and developing all the projects in City of Science City. In Science City he has worked on the planning, development and construction of the Puerto Rico Environmental Research Laboratory, Laboratory Road, Innovation Center Building and Forward Center Building.



EDUCATION AND CAPACITY BUILDING

MISSION

Our Education and Capacity Building initiatives aim to provide participants instruction, mentorship, and other development opportunities in strategic sectors of science, technology, and entrepreneurship. We strive to give Puerto Ricans the tools they need to be more competitive in science and technology fields or to pursue entrepreneurial initiatives. The Trust supports and funds various events, conferences, educational activities and summits in partnership with several stakeholders who promote entrepreneurship, research, and investment opportunities, to further economic development on the island. Also, through our Sponsorship Policy, we have powered events and activities of R&D, entrepreneurship, and innovation.

MEMORANDA OF UNDERSTANDING SIGNED AND CONCEPTUALIZED ON 2022-2023

The Trust establishes alliances with a diverse range of organizations, educational, private, and non-profit, and the result is a bigger map of stakeholders to reinforce the Trust's mission & vision. These are the more 250 organizations with which the PRSTRT and its programs has officialized alliances during this fiscal year.

- Organizaciones de servicio comunitario
- Corporación de Servicios de Salud Primaria y Desarrollo Socioeconómico El Otora Corporación (COSSAO)
- Casa Juana Colón Apoyo y Orientación a la Mujer
- Surcando la Historia, Inc.
- Migrant Health Center Western Region, Inc.
- Unidos por Arenas Inc.
- Puestos pa' lo Bueno, Inc.
- Fundación Bucarabón, Inc.
- Comité Comunal de Corcovada, Inc.
- Villa Communitaria Crozier, Corp.
- Fe que Transforma, Inc.
- Municipio Autónomo de Coamo
- Municipio Autónomo de Aibonito
- Acueducto Comunidad de Buenos Aires Incorporado
- Naguabo Somos Todos
- Telemedicina +200 hogares de cuidado de personas discapacitadas y envejecientes
- El Departamento de Salud de Puerto Rico
- Recinto de Ciencias Médicas de la Universidad de Puerto Rico
- Universidad Central del Caribe, Inc. (UCC)
- Ciencia Puerto Rico, Inc.
- Abartys Health
- Ministerio de Salud de El Salvador (MINSAL)
- World Mosquito Program (WMP)
- National Center for Emerging and Zoonotic Infectious Diseases, Division of Vector-Borne Diseases (DVBD)
- Centros para el Control y la Prevención de Enfermedades (CDC)
- El Departamento de Salud de Puerto Rico
- Ponce Health Sciences Univeristy
- Pathstone
- Puerto Rico Minority Business Development Agency Business Center
- AARP
- Puerto Rico Blockchain Trade Association
- Banco Popular de Puerto Rico
- Puerto Rico ICON Institute
- Departamento de Desarrollo Económico y Comercio (DDEC)
- Universidad de Puerto Rico
- Universidad Central del Caribe
- University of Kentucky Research Foundation
- XLerate Health LLC
- Universidad de Querétaro, México

Who We Sponsored

The Trust invested $247,632.23 in science, technology, research & entrepreneurship training initiatives, including the following 22 organizations:

- Sistema Universitario Ana G. Méndez
- Code Puerto Rico LLC
- PR Information Technology Cluster
- Colegio de Arquitectos y Arquitectos Paisajistas de Puerto Rico
- Puerto Rico Section of the American Chemistry Association
- Convention Sports & Entertainment Group
- Next Level Innovation LLC
- Enactus Puerto Rico
- Transforma Corportion
- Women Business Inc.
- INDUNIV Industry University Research Center
- Universidad Central del Caribe
- Puerto Rico Blockchain Association
- Ecoexploratorio, Inc
- Borinkengineers
- SME (Asoc.Ejecutivos de Ventas y Mercadeo)
- Fundacion Sila M. Calderon, INC.
- Universidad del Sagrado Corazon
- National Women's Collaborative
- Trivium Studios LLC
- Puerto Rico Creativo LLC
- Corporación de P.R. para la Difusión Pública

Who Are Our Sponsors

On the contrary, the following organizations are allies of our organization with sponsorships and support for various events and programs within our strategic pillars. Partnerships are part of our growth and strengthen the relationships of the ecosystems we facilitate. These 25 organizations have sponsored some of our events:

- AP&G Company
- Clarke International
- Central Live Sciences
- Superior Angran
- Candace Royals
- Triple S
- Grupo Ferré Rangel
- Master Card
- Banco Popular
- American Chemical
- Oriental Bank
- Sistema Universitario Ana G. Méndez
- Municipio de Coamo
- Ferraiuoli LLC
- NUC University
- AeroNet
- T-Mobile
- Rones de Puerto Rico
- Bacardí
- Ferraiuoli
- Strain App
- GoPanza
- Plaza Provision
- Co.co.Haus
- Don Rifa

Who We Sponsored

UNIVERSIDAD ANA G. MÉNDEZ UAGM

UCC

Next Level Innovation

SAGRADO Universidad del Sagrado Corazón

CODE PR

PRBTA Puerto Rico Blockchain Trade Association

enactus Puerto Rico

NWC NATIONAL WOMEN'S COLLABORATIVE

PUERTO RICO IT CLUSTER

ECOEXploratorio MUSEO DE CIENCIAS DE PUERTO RICO

Transforma Corporation

Borinkengineers

COLEGIO DE ARQUITECTOS Y ARQUITECTOS PAISAJISTAS DE PUERTO RICO

PR CREATIVO

WOMEN IN BUSINESS

SME

ACS Local Section Puerto Rico

INDUNIV INDUSTRY UNIVERSITY RESEARCH CENTER, INC.

centro PARA PUERTO RICO Fundación Sila M. Calderón

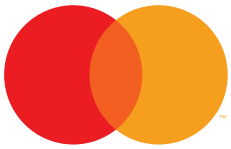
CORPORACIÓN DE PUERTO RICO PARA LA DIFUSIÓN PÚBLICA

CONVENTION SPORTS & ENTERTAINMENT FACILITIES CONFERENCE

Who Are Our Sponsors



Candace Royals










































Puerto Rico
Science, Technology
& Research Trust

RESEARCH

ANNUAL **REPORT** | **2022-2023**



RESEARCH GRANTS PROGRAM

FUNDS TO GROW





WHAT WE DO

As part of the Puerto Rico Science, Technology, and Research Trust, the Research Grants Program is a structured, systematic, open, and competitive funding mechanism to support the development of science and technology research projects in Puerto Rico. The mission of the Research Grants Program is to provide proof-of-concept funding and incentives to advance locally developed R&D projects to become more competitive for federal and private funding and/or commercialization.

The Research Grants Program represents a critical source of competitive financial support for fundamental research and commercialization activities that build the knowledge economy, fuel innovation, and empowers Puerto Rican scientists and entrepreneurs.



HOW WE DO IT

Our approach is characterized by competitive mechanisms and rigorous peer review. Through this process, proposals are evaluated by subject matter experts to assess their quality, feasibility, and potential impact. By employing such a system, we ensure that resources are allocated to projects with the highest scientific merit, fostering transparency and encouraging excellence and innovation. Additionally, we are committed to fostering initiatives that promote collaboration within the scientific ecosystem of Puerto Rico. By creating platforms, networks, and opportunities for researchers, we aim to enhance knowledge sharing, interdisciplinary collaborations, and the overall advancement of scientific research in Puerto Rico.



WHO WE CONNECT WITH

The Research Grants Program takes a “Researchers First” approach, striving to create an environment that empowers and supports researchers in Puerto Rico in their scientific endeavors. In addition, we engage subject matter experts from around the world who play a vital role in evaluating their proposals and providing valuable insights. By harnessing their expertise, we ensure a rigorous and comprehensive assessment process. The program also extends its support to research administrators, acknowledging their vital role in facilitating the smooth management of scientific projects. By assisting them, we contribute to advancing the overall landscape of scientific research, enabling impactful discoveries, and fostering innovation.

PROGRAM IMPACT NUMBERS

RESEARCH GRANTS PROGRAM
FUNDS TO GROW

134
Grantees to Date

471
Students Impacted

144
Peer-reviewed publications

$14,659,087
Grants Awarded

39
Patents

60
Patent Applications

$43,330,319
Return of Investment

8
Founded Companies

443
Abstracts & Presentaions

447
BEACON Users

STRATEGIC SECTORS:

- Aerospace
- Agriculture
- Biotechnology and Natural Sciences
- Clean Technologies and/or Renewable Energy
- Electronics
- Clinical Trials
- Enviromental Sciences
- Medical Devices
- Conservations Sciences

CURRENT GRANTEES (ALL)

From July 2022 until June 2023, the grantees reported the following achievements:

The Research Grants Program has awarded more than **134 research grants** through its competitive initiatives for a total investment of **$14.7 million** with a return of investment of **over $43.3 million.**

Platform BEACON, which provides a better understanding of Puerto Rico's research ecosystem, has garnered a user base of **447 individuals** from **31 distinct institutions.**

158

Students Supported with our Boost Research Initiative

265

Attendees to our Forward Research Symposium

EXECUTIVE SUMMARY

The funding initiatives of the Research Grants Program were developed to directly support basic research, applied research and product development through both competitive and non-competitive mechanisms. Our funding mechanisms include:

ADVANCED RESEARCH GRANTS (ARG)

ADVANCED RESEARCH GRANTS PROGRAM

Solicited proposal mechanism that provides funding to advance locally developed science and technology projects to a point where these will be able to be further developed through alternate sources of funding and/or commercialized. Up to $150K

CATALYZER RESEARCH GRANTS (CRG)

CATALYZER RESEARCH GRANTS PROGRAM

Enhances the competitiveness of local researchers by providing critical bridge funding to help them (1) obtain reproducible and robust preliminary results, (2) address any recommendations from previous grant reviewers to improve their R&D proposals and (3) secure reagents, laboratory materials, collaborations, or additional technical training necessary for the proposed goals. Up to $70K

1-TO-1 MATCHING FUNDS FOR PHASE I & II SBIR/STTR PROPOSALS

SBIR/STTR Federal Grants

Promotes and increase commercialization of research. Match up to $100,000 for Phase I and up to $200,00 for Phase

CDTI GRANT

Puerto Rico y España
Subvención para proyectos colaborativos en innovación tecnológica

Allows the selection and financing of R&D projects in effective collaboration between a Puerto Rican entity (Research Center, University or Company) and a Spanish company. Awards up to $75,000/year.

Presently there are no other peer-reviewed funding mechanisms available to researchers in Puerto Rico that encompasses opportunities for junior, mid-level and senior researchers representing a broad range of disciplines. The Research Grants Program has awarded more than 134 research grants through its competitive initiatives for a total investment of $14.7 million with a return of investment of over $43.3 million.

In November 2022, we organized the Forward Research Symposium. The event brought together over 265 attendees, including students and researchers. The symposium was held in-person for the first time in two years and served as a platform to highlight the success of our grantees' projects.

"BY LEVERAGING OUR RESOURCES, EXPERTISE, AND COLLABORATIVE SPIRIT, WE STRIVE TO CREATE AN ENVIRONMENT THAT NURTURES EXCELLENCE, FOSTERS COLLABORATION, AND ACCELERATES PROGRESS IN THE SCIENTIFIC COMMUNITY."

In September 2022, we recognized the new grantees of the Catalyzer Research Grant. For the first time 80% in this cohort were women scientists. This milestone underscores our commitment to promoting diversity and inclusion in the scientific community, as we believe that diverse perspectives drive innovation and excellence.

Following Hurricane Fiona in September 2022, we offered support to affected students in partnership with Ciencia PR, the American Association for the Advancement of Science-Caribbean Division and the American Chemical Society-Puerto Rico Chapter. Through our Boost Research Initiative, we were able to provide aid to 158 students, representing a total of $79,000.

Recognizing the importance of efficient research administration, we provided several training and networking opportunities under our initiative AGILE, which offers resources to help nonprofit organizations and institutions of higher education maximize funding opportunities and execute compliance requirements. Also, our centralized platform BEACON, which provides a better understanding of Puerto Rico's research ecosystem, has garnered a user base of 447 individuals from 31 distinct institutions.

In May 2023, we launched a call for the Advanced Research Grants program. Currently, we are in the process of evaluating the received Letters of Intent. This rigorous evaluation ensures that we allocate our resources to projects that hold the greatest promise for scientific advancement.

THIS YEAR ACHIEVEMENTS FOR THE RESEARCH

CURRENT GRANTEES

From July 2022 until June 2023, the grantees reported the following achievements:

STUDENTS IMPACTED

23 undergraduate students

(for a total of 152 since funds were awarded)

20 graduate students

(for a total of 119 since funds were awarded)

EXTERNAL FUNDING

Since July 2022, the total amount of external funding secured that the active grantees reported is $3,456,219 for a total of $12,458,108 (since funds were awarded). It is important to note that obtaining preliminary data and securing additional funding is a lengthy process. Several grantees are awaiting responses from federal agencies to which they have submitted proposals.

THESIS AND DISSERTATIONS

As a result of the funding provided by the Research Grants Program, three (3) undergraduate thesis, four (5) MS thesis, and five (5) PhD dissertations were completed. Also, one (1) MS thesis, and three (2) PhD dissertations are in progress.

PUBLICATIONS

Since July 2022, our active grantees were successful in publishing their findings in peer reviewed journals:

ARG – 4 new peer-reviewed publications
(for a total of 40 publications since funds were awarded)

CRG – 4 new peer-reviewed
(for a total of 25 publications since funds were awarded)

CATALYZER RESEARCH
GRANTS PROGRAM



CATALYZER GRANTS CALL PEER REVIEW PROCESS

On September 2, 2022, we presented a new cohort of grantees during our Catalyzer Research Grant Recognition Event. In the previous report, we detailed the selection process undertaken for this year's group of grantees. These 10 projects received a total award of 700k. The recognition event became an inspiring platform where the grantees took center stage presenting their funded projects.

It is important to point out, that 80% of the researchers in this cohort were women.

BOOST RESEARCH INITIATIVE

Following Hurricane Fiona in September 2022, we joined forces with the Caribbean Division of the American Association for the Advancement of Science (AAAS Caribbean Division), the Puerto Rico Chapter of the American Chemical Society (ACS Puerto Rico), the Society for the Advancement of Chicano/Hispanic and Native Americans in Science (SACNAS), and Ciencia Puerto Rico to launch the Post-Fiona: Relief Fund for Science Students.

The call was open until November 1, 2022, and college students in Puerto Rico affected by Hurricane Fiona's passage had the opportunity to apply for help to receive individual grants of $500.

During the call, **232 applications** were received. Through a committee of more than twenty evaluators, **158 individual grants of $500 were awarded for $79K.** These funds were awarded to STEM graduate and undergraduate students.

The students who benefited shared testimonials about how they used the funds obtained:

"The funds helped me greatly with college and other expenses. I was able to cover the rest of what was due from this past semester, cover expenses when traveling from town to town, and cover part of the university expenses for the coming semester. Eternally grateful"

Undergraduate student,
Pontificia Universidad Católica de Puerto Rico, Ponce.

"These funds have been used to recover the investment in some purchases that I kept in the refrigerator and that were damaged due to lack of electricity, I also bought some portable batteries for phone and tablet, since the place where I live suffers from power outage, I hired an Internet service from my phone (Hotspot) to solve the fall of the wired network in the area, I bought some lamps, I also plan to invest in some repairs that my room suffered because of the strong winds, especially the screens in the windows."

Graduate student,
University of Puerto Rico, Río Piedras campus

FORWARD RESEARCH SYMPOSIUM

With the mission of promoting innovation in science and technology, on November 3rd, 2022, the Forward Research Symposium was held at the Fairmont San Juan Hotel. For the first time in two years, it was held in-person. This is one of our most important events as it is where we present the work and progress of our grantees as well as the impact of the Research Grants Program.

The symposium featured discussions with leading speakers, including Michelle "Shelli" Brunswick, Chief Operating Officer of the Space Foundation, a leader in the global space ecosystem, and congressional liaison for the U.S. Air Force. Brunswick was joined by more than 25 renowned speakers and panelists, some from prominent institutions such as Columbia University and Howard Hughes Medical Institute, and grantees of the Research Grants Program. The group of local and international speakers shared their knowledge in life sciences, technology, health, agriculture, aerospace, entrepreneurship, and many more.

265	25	90
Attendees	Speakers	Posters





The event, in addition to providing opportunities to connect with resources and network with peers, also provided space for local scientists and students to present their advances and discoveries through a poster session, which showcased an impressive array of 90 projects presented by talented students and researchers. We awarded the top three posters in distinct categories: Scientific and Technical Merit, Global Impact, and Local Impact, each receiving a cash prize of $1,000. Mitel also sponsored a special prize, further encouraging innovative research.

AGILE - ACCESS TO THE GRANTSMANSHIP INVESTMENT LEADING TO EXCELLENCE

This initiative provides tools and resources to help nonprofit organizations and institutions of higher education maximize funding opportunities and execute compliance requirements. These initiatives are expected to increase the agility of the application process, improve project execution, and strengthen the capacity to secure future funding.

CANDID-FOUNDATION DIRECTORY ONLINE

AGILE's goal, through Candid, is to provide nonprofit organizations, higher education institutions, grant managers, research administrators, and other members of the community the access and assistance needed to effectively navigate the Foundation Directory Online (FDO) database of financial, contact and grant information, among others. As part of the FDO's Funding Information Network, the Research Grants Program's AGILE Initiative will provide access to Candid resources to the community:



Access to the Grantsmanship Investment Leading to Excellence

Access from the Trust

The Trust will be providing at least (24) hours per week of public access to Candid resources by appointment and during office hours. The platform can have up to (80) simultaneous users when they log in with the access provided. The use is restricted to the Trust facilities.

Access outside the Trust

Limited access (demos) can be provided for training outside the Trust facilities to support organizations that need and request it.

WORKSHOPS: "THE 8 STEPS TO SUCCESSFUL FUNDRAISING" & "DATABASE WORKSHOP: FUNDING OPPORTUNITIES"

On August 31, 2022, AGILE offered a presentation to Mentes Puertorriqueñas en Acción (MPA) focused on providing training a group of 14 interns who are part of the program "Programa de Apoderamiento y Retención de Agentes de Cambio (PARACa)". The workshop provided statistics on the donor ecosystem in the United States and discussed the most common situations and strategies in the development and implementation of a capital raising plan for a nonprofit organization. Finally, strategies for presentation, persuasion and donor cultivation in the short, medium and long term were discussed.

On January 27, 2023, AGILE welcomed back the participants of the PARAca Internship. The event served as the launching of the "Candid" services of the Foundation Directory Online with two workshopss: "Database: Funding Opportunities" and "Introduction to Foundation Directory Online". The first workshop presented an overview of all the funding sources available to eligible organizations in Puerto Rico. The second workshop served to explain in detail the tools and how to navigate the platform to research and identify organization profiles from the Candid Foundation Directory Online.

COFFEE & GRANTS: "FIRST GRANT MANAGERS AND RESEARCH ADMINISTRATORS NETWORKING EVENT" 2022

On November 17, 2022, the Research Grants Program held its first "Coffee & Grants" event. It served as a meeting and networking point for grant managers and research administrators. The event sought to provide a space for representatives and experts from different sectors within nonprofit organizations, government and higher education institutions, who work daily facing the challenges of grants management, to share ideas and alternatives on the current situation in Puerto Rico in relation to these challenges, alternatives to create alliances and best practices to replicate in the country. Among the speakers were Dr. Gloria Bonilla-Santiago from the Center for Community Leadership at Rutgers University, Mr. Roger Iglesias, Director of the Office of Federal Funds, attached to the Office of Management and Budget of Puerto Rico (OMB), Mr. Eric Morales, MBA representing the National Council of University Research Administrators, Dr. Adi Martínez from the University of Puerto Rico's Law Resiliency Center, and Dr. Marcos López from the PRSTRT Research Institute.





AGILE & ALLGRANTS: "IMPROVING YOUR GRANT MANAGEMENT COMPLIANCE SKILLS: COMMON ERRORS AND CASE STUDIES"

On March 30, 2023, the AGILE initiative held the workshop "Improving your grant management compliance skills: common errors and case studies" provided by the grant development and compliance firm "AllGrants". The training focused on improving the grant management compliance skills of teams from participating organizations and presenting them with relevant case studies to discuss experiences and alternatives. Ten organizations were selected and two team members from each participated, for a total of 20 grantees to the training. Each selected team consisted of the fiscal or financial agent and its grant manager.

As part of the grant provided, up to 3 hours of technical assistance was offered by AllGrants to the teams and at least one hour was encouraged to be paired by the participating organization to encourage their commitment to the initiative.

BEACON

BEACON is a centralized platform that better understands Puerto Rico's research ecosystem. It allows researchers to create and update their profiles and allows potential collaborators and the public to search for them. Every day, BEACON searches online bibliographic databases automatically to find new publications and output data for each researcher and allows automatic claiming to reduce the number of times users' need to confirm them.

Our goal through this platform is to increase collaborations between public and private Academic Institutions, researchers, companies, and/or potential investors. Currently, the platform has **447 users from 31 institutions** in Puerto Rico.

In January 2023, we launched a pilot with the University of Puerto Rico at Mayaguez to integrate their researchers' profiles (221) into BEACON. Our outreach efforts will focus on profile completeness, starting with this group.

PR-ACTD

The rapid spread of the Covid-19 pandemic has presented an urgent need for effective treatments and drug development to combat this global health crisis. The Accelerating Covid-19 Treatment and Drug Development Grant (PRACTD) was initiated in response to this pressing challenge. The program is administered by the Coronavirus Relief Fund Disbursement Oversight Committee (Committee) in conjunction with the Puerto Rico Department of Economic Development and Commerce (PR-DEDC), and the Puerto Rico Fiscal Agency and Financial Advisory Authority (AAFAF).

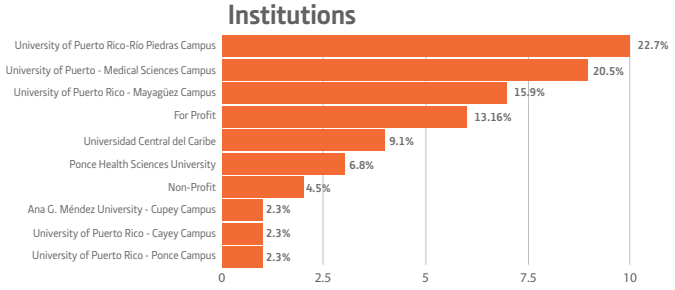
The Research Grant Program is the project manager of this grant proposal cycle. On March 31, 2023, an informative session was conducted to introduce the PRACTD project, outlining its objectives and requirements. Following this, the Request for Proposals (RFP) was officially opened the same day as the info session, inviting researchers and institutions to submit their proposals. The deadline for the full proposal submission was May 3rd and we coordinated the review of the submitted proposals.

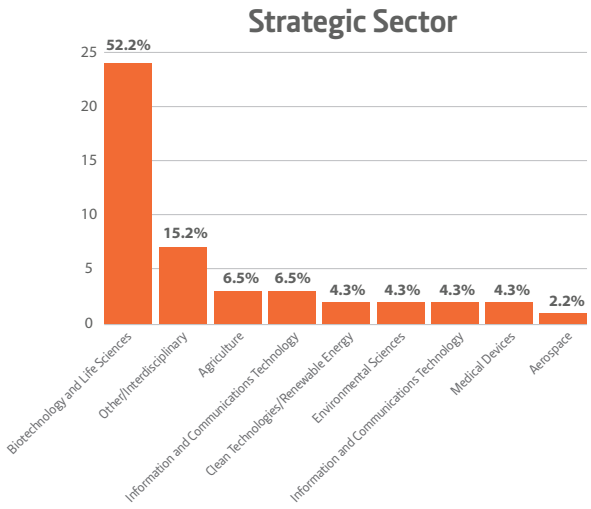
Award recommendations were made based on the advice of an External Peer Review Committee (EPRC). Final grant funding approval, however, is bestowed upon the PR-DEDC.

ADVANCED GRANTS CALL PEER REVIEW PROCESS

The mission of the Puerto Rico Science Technology and Research Trust (the Trust) is to invest, facilitate and build capacity to continually advance Puerto Rico's economy and its citizens' well-being through innovation-driven enterprises, science and technology and its industrial base. According to this mission, the Trust launched in May 2023 a Requests for Proposals (RFP) for the Advanced Research Grants. The goal of peer review is to assess the scientific merit of Trust grant applications in a fair, independent, expert-driven, and free from inappropriate influences, so the Trust can fund the most promising research or development work.

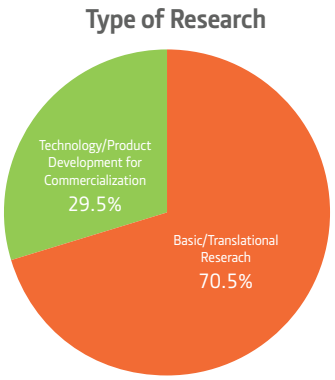
The Research Grants Program received **44 Letters of Intent** for the Advanced Research Grant. Of the LOIs received, **36 were from Academic Institutions**, **6 from For Profit Organizations and 2 from Non-Profits.**





There is a great diversity of applications as can be seen in the Strategic Sectors. Also, 30% of the LOIs received are for projects related to Technology & Product Development for Commercialization.

**This call is currently in the Letter of Intent (LOI) Review Phase and results will be shared in the next report.*



OTHER INITIATIVES

The Research Grants Program also assists other Trust programs and initiatives with their Request for Proposals (RFPs) by creating their application and review portals through Zengine, a managing platform from the WizeHive company. This platform allows us to manage the grants cycle in a centralized way. It is a robust tool that gives access to a customizable dashboard that shows research trends, demographics, and reports.

ENTRUST: DE-RISKING EARLY-STAGE TECHNOLOGIES

EnTRUST was established in 2021 as a Life Science "Lab to Market" bootcamp offered by the Trust's Technology Transfer Office in conjunction with Columbia University's Irving Institute for Clinical and Translational Research. Each year a 12-week course exposes academic researchers to key aspects of drug development, design, and commercialization. In cooperation with the Trust's Research Grants Program, research teams compete for pilot funding awards to de-risk their technologies. In 2023, EnTRUST supported seven research teams, consisting of twelve researchers, from four universities. External experts reviewed final proposals and team pitches which resulted in five teams receiving awards of $75k each, totaling $375k.

ACT 60

The Research Grants Program oversees processing and evaluating the applications of the Act 60 tax incentives. The purpose is to foster research and development activity conducted at local universities in Puerto Rico, allowing qualified Principal Investigators or a Co-Principal Investigator to seek tax exemptions for salaries earned from eligible R&D research grants. The main objective of this incentive is to attract and retain competitive researchers to strengthen Puerto Rico's performance in science and technology and the Island's position in the knowledge economy.

At the time of this report, for fiscal year 2022, a total of 95 incentive applications have been received. If approved, this will represent over 3.5 million in tax incentives for researchers. For fiscal year 2022, 48.4% of the Act 60 tax incentive applicants are female researchers and 51.6% male.

ACT 60 institution	ACT 60 applications	Incentive requested
AGMU - Carolina	3	$51,580.00
AGMU - Cupey	3	$30,547.90
PHSU - PRI	13	$552,518.93
UCC	2	$18,982.89
UPR - M	39	$851,261.00
UPR - MSC	22	$674,247.46
UPR - CCC	13	$1,361,447.00
Total	**95**	**$3,540,585.18**

WHAT'S NEXT

EMPOWERING THE SCIENTIFIC COMMUNITY: CUTTING-EDGE RESEARCH GRANTS PROGRAM SPARKS INNOVATION AND FUELS BREAKTHROUGH DISCOVERIES

In its unwavering commitment to advancing the frontiers of science, the program envisions a future built upon relentless support for the scientific community. A pivotal event on the horizon is the eagerly anticipated Forward Research and Innovation Summit: Space Edition, slated to take place on November 30th, 2023. This extraordinary gathering aims to bring together visionary minds from across the globe, fostering collaborative efforts and sparking groundbreaking ideas that propel space exploration to new heights.

Embracing the spirit of AGILE, the program vows to continuously cater to the needs of grants managers and administrators, empowering them through cutting-edge trainings that equip them with the latest tools and knowledge to streamline processes so that they can continue to support the non-profit institutions and universities in which they work.

Also, the program is determined to elevate its renowned BEACON platform to even greater heights, providing scientists with an intuitive and resourceful hub to foster seamless cooperation and information sharing.

In recognition of the mounting demands on its endeavors, the program intends to fortify its workforce by enlisting a dedicated resource, enabling greater efficacy and impact across all projects undertaken.

In a momentous stride towards innovation, the program is poised to introduce the coveted Advanced Research Grants - Space Edition, dedicated to catalyzing groundbreaking research in the unique environment of microgravity, fueling ingenuity and expanding the boundaries of human knowledge.

Ever mindful of its responsibility to perpetuate its initiatives, the program remains resolute in its mission to identify new funding sources, securing the long-term sustenance of its transformative endeavors. Through these ambitious and strategic future plans, the program remains steadfast in its pursuit of scientific excellence and endeavors to leave an indelible mark on the scientific landscape for generations to come.

DIRECTOR POV



Andreica Maldonado

Research Grants Program Director

As the Research Grants Program head, I take immense pride in leading the sole peer review mechanism that empowers groundbreaking science and technology research projects. Our mission is clear: to foster a robust knowledge economy on our island and make a lasting impact on the local scientific community. Despite running with a lean team, we excel in managing multiple projects, ensuring each receives the attention it deserves. By meticulously selecting and funding innovative ventures, we ignite the creativity sparks that drive progress. As we continue to support visionary researchers, our program becomes a catalyst for transformative discoveries, fueling the engine of knowledge and advancement.

MEET THE TEAM



Grace M. Rendón Febles

Research Grants Program Specialist





TTO TECHNOLOGY TRANSFER OFFICE ™



TECHNOLOGY TRANSFER OFFICE

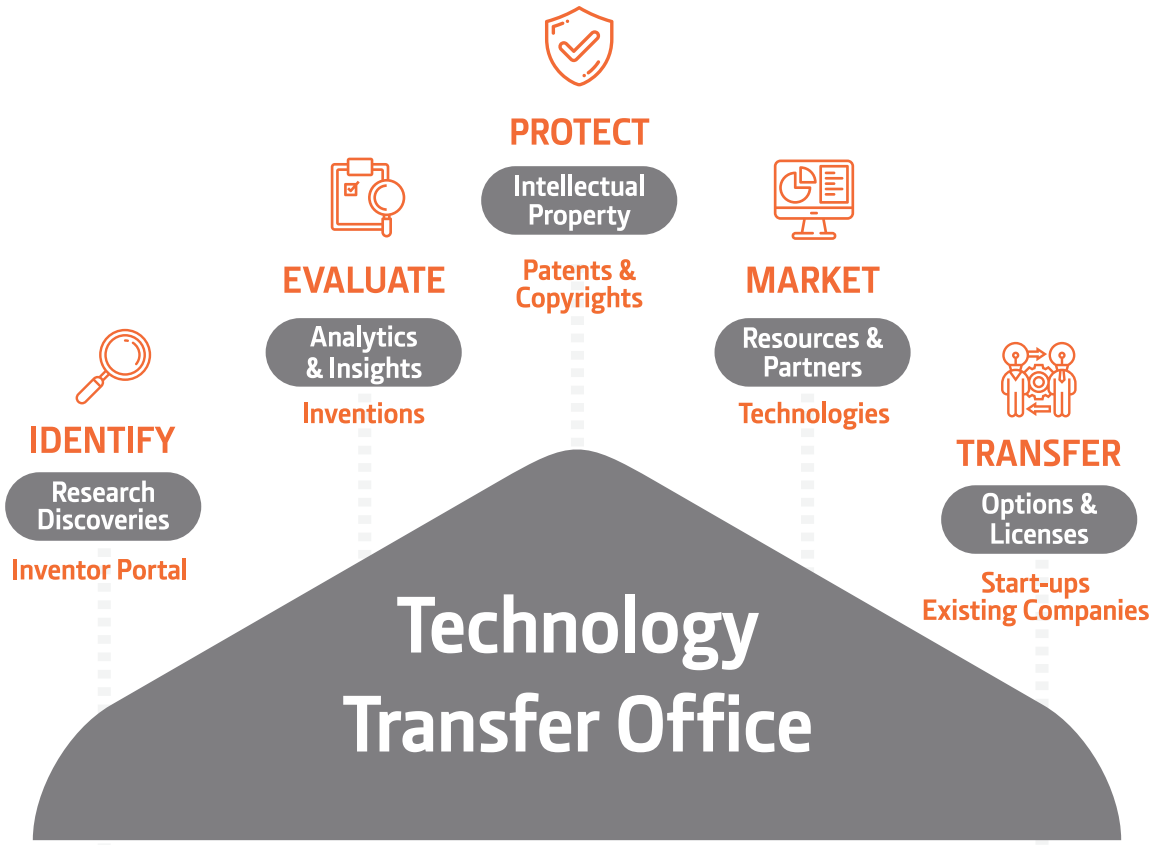
WHAT WE DO

The TTO's mission is to identify, evaluate, protect, market, and transfer the most promising research discoveries from Puerto Rico's universities, institutions, and research institutes to the private sector for commercialization and to benefit the public. Our vision is to implement shared risk/shared reward partnerships that deliver best-in-class technology transfer services in order to identify and increase innovation opportunities for Puerto Rico's scientists and researchers, thereby improving Puerto Rico's overall innovation ranking.

HOW WE DO IT

The process begins with the TTO Inventor Portal and identification ("disclosure") by the inventor(s) which includes the stage of development, public disclosures, grants that supported the invention, plans to publish/present, and any companies that might have interest. Evaluation ("screening") includes technical review, development stage, patentability analysis, and market potential. Then TTO provides recommendations to the inventor(s) and university partner. In many cases, TTO files a patent application ("protect") using law firms with expertise in the invention's scientific field. TTO's digital marketing platform, IN-PART, connects our technologies to over 6,000 global R&D companies. Finally, TTO uses best practices to negotiate with potential partners and model agreements used by technology transfer offices around the world.





WHO WE CONNECT WITH

The TTO connects science to business by delivering technology transfer services to five university partners, representing 17 campuses, including four medical schools. These are the University of Puerto Rico campuses, Ana G. Mendez University campuses, Ponce Health Sciences University/Ponce Research Institute, San Juan Bautista School of Medicine, and Universidad Central del Caribe. Among these there are about 450 PIs/Co-PIs conducting sponsored research and the most recent official report (FY2021) showed $123 million in R&D expenditures. Our portfolio of active technologies consists of inventions and intellectual property from our university partners and mirrors the R&D activities of their scientists and researchers.

EXECUTIVE SUMMARY

The TTO was formally established in 2017 by amendment to the Trust's foundational law 214-2004, and as a "regional" technology transfer office. Since then, the TTO has formally evaluated about 150 promising discoveries from its partner institutions of higher education and researchers. This year, the TTO maintained a current active portfolio of 96 technologies, evaluated 27 new invention disclosures and delivered 22 Screening Reports. Diversity in inventorship is exceptional, 42% of our inventors (76 of 179 total) are female, compared to the U.S. average of 13% of women inventor-patentees. Our performance metrics show a continued increase in quality disclosures, engagements with new inventors, increased global marketing penetration, and interest from companies. Each year our overall managed portfolio grows, and our partnerships with universities becomes more productive.

Research discoveries are typically early-stage, require de-risking resources, investment in quality intellectual property protection, targeted marketing in a global economy, regulatory support, and best-of-class agreements. The TTO's standard operating processes are designed to identify, evaluate, protect, market, and license technologies to existing companies and/or new start-ups created to develop the technology. De-risking technology is challenging. It requires inventors willing to spend time learning about accelerating their research towards the market as well as targeted resources and investment. To that end we continued our EnTRUST program for a third year, through our partnership with Columbia University, to accelerate life science discoveries. In addition, our XLerator Network entered a fifth year, with new funding to develop and deliver entrepreneurial learning opportunities for biomedical researchers, early-stage de-risking funding, and mentorship networks.

PORTFOLIO BY FIELD

7% Engineering
21% Physical Sciences
72% Life Sciences

This year we also led an effort to respond to the National Science Foundation's new NSF Engines program which intends to support long term strategies to boost innovation, support ecosystem development, and invest in important areas of national interest. We were successful in winning a $1 million award for "Advancing Biopharmaceutical Technologies and Manufacturing Practices", which spans the ecosystem from discovery-to-product, and we believe will provide new opportunities to engage with Puerto Rico's biopharma manufacturing companies and their innovation challenges.

"CONNECTING Science to Business"

IMPACT METRICS

27	New Invention Disclosures
96	Active Technologies
20	New Patent Applications
84	Patents Under Management
9	New Agreements
15	Active Licenses

Active Portfolio Status: 96 Technologies

9%	POC/Validation
23%	IP Protection
19%	Screening and Assessment
13%	Licenced
36%	Marketing

Inventor Gender

58%	Male
42%	Female

Inventor Profiles: 179 total

New Invention Disclosures by Field

7%	Environmental Technology
4%	Energy
30%	Healthcare/Medical Device
59%	Therapeutic/Drug Delivery

New Invention Disclosures: 27

New Patent Applications

40%	PCT
35%	Provisional
25%	Non-provisional

New Patent Applications: 20

Patent Portfolio Under Management

18%	Foreign
21%	PCT
31%	Provisional
30%	Non-Provisional

Total Patent Portfolio Under Management: 84

Patent Expenditures since FY17

2017	$22,282.07
2018	$33,148.05
2019	$125,901.90
2020	$208,467.45
2021	$67,451.78
2022	$184,837.18
2023	$295,352.58

Expenditures (USD) per fiscal year

INITIATIVES

XLERATOR NETWORK: ACCELERATING LIFE SCIENCE DISCOVERIES

The Southeast XLerator Network ("XLerator Network") was established in 2018 with a $3.5 million grant from the NIH and consists of a consortium of over 25 universities across the Southeast IDeA region. The Trust, through the TTO serves as the Lead for Puerto Rico. Each year it offers resources for biomedical researchers interested in bringing promising technologies from the lab to the marketplace. These include SBIR readiness and coaching, proof-of-concept funding, subject matter experts, and Executives-On-Roster®. In 2023, the NIH

provided an additional $3.25 million over a two-year period for I-RED (IDeA Regional Entrepreneurship Development) to offer a suite of experience-based entrepreneurship educational products and tools to build university based biomedical researchers' and students' entrepreneurial skills needed to translate scientific discoveries and innovative technologies into commercial products and shorten the time it takes to get these technologies from bench to market.

ENTRUST: DE-RISKING EARLY-STAGE TECHNOLOGIES

EnTRUST was established in 2021 as a Life Science "Lab to Market" bootcamp offered in conjunction with Columbia University's Irving Institute for Clinical and Translational Research. Each year a 12-week course exposes academic researchers to key aspects of drug development, design, and commercialization. In cooperation with the Trust's Grant Program, research teams compete for pilot funding awards to de-risk their technologies. In 2023, EnTRUST supported seven research teams, consisting of twelve researchers, from four universities. External experts reviewed final proposals and team pitches which resulted in five teams receiving awards of $75k each, totaling $375k.

5 projects awarded $375k

9 teams

17 researchers

4 universities

NSF Engine Development Award: $1 million

NSF ENGINE DEVELOPMENT AWARD: BIOPHARMA ECOSYSTEM BUILDING

The National Science Foundation (NSF) granted the Trust a $1 million award (NSF Award Number 2305699) for a Type-1 two-year effort "Advancing Biopharmaceutical Technologies and Manufacturing Practices". TTO's Executive Director serves as the PI. The program aims to boost the U.S. innovation capacity by investing in promising areas of national interest across the country. The effort intends to leverage and cultivate emerging technologies to tackle large-scale societal and economic challenges. A major challenge currently facing the U.S. is currently the supply chain ecosystem needed to deliver essential medicines and new products to address seasonal and unforeseen health crises. Discovery and scaling must progress together to meet these challenges. Puerto Rico has building blocks and key collaborators to quickly revamp the global supply chain for medicines to make it more stable, reliable and demand based as part of a sustainable National Security strategy.

WHAT'S NEXT

"INCREASE PORTFOLIO AND MANAGE GROWTH"

TTO's technology management platform provides a secure Inventor Portal for invention disclosures. In FY2024, this will be modified to allow key partner contacts to submit disclosures on behalf of their inventors, thereby increasing on-campus engagements with researchers as well as quantity and quality of new disclosures. Each year the TTO provides paid internships to train science and engineering students/graduates in the invention evaluation process. In FY2024, the TTO will support up to three new interns to receive training and mentoring to assist in the growing portfolio. Technology transfer requires a variety of skills including an understanding of scientific fields, intellectual property, de-risking early-stage technology, marketing, licensing, and managing technology portfolios throughout their lifecycle. In FY2024, TTO will add capability to manage more complex operations and TTO programs, EnTRUST and XLerator Network, to promote participation and engagement with new resources and to mentor our funded project teams as they de-risk early-stage discoveries.

MEET OUR TEAM



David L. Gulley, PhD, RTTP, CLP
Executive Director



Carlos Báez, PhD, MBA, RTTP, CLP
Senior Technology Manager



Josiah Hernández, MS
Technology Manager



Alba L. Marrero, MS, Candidate RTTP
Analyst



Kiara Rosario, BS
Intern

DIRECTOR'S POV

Research discoveries drive technology transfer and the types of research are critical to our efforts. Puerto Rico's universities have continued to advance their research program, with the last official figure of $123 million in research expenditures (FY2021) of which $85.5 million (70%) was from federal sources and $76.7 million (62.2%) was in the life sciences. As federal agencies increase funding levels, new programs are emerging that support translational research, and life sciences present the challenges of de-risking, long-term investment, and regulatory requirements. Our XLerator Network and EnTRUST programs are critical in ensuring we can move promising life science discoveries from the lab to the market.







Caribbean Center
for Rising Seas

CARIBBEAN CENTER FOR RISING SEAS

WHAT WE DO

We help prepare Puerto Rico and the Caribbean to adapt and thrive in the new era of increasing flood risk from storms, tides, and sea level rise. This program will further establish Puerto Rico's leadership and stature as a center of excellence and innovation. The comparable safety and wellbeing afforded by Puerto Rico's topographic elevation and geologic attributes will become a reference point for other small island nations. The CCRS will become a research and education instrument through which capacity might be developed, thereby facilitating and unlocking competitiveness for coastal regions in the coming decades.

HOW WE DO IT

The Caribbean Center for Rising Seas ("CCRS") works to develop the knowledge and best practices so that buildings and infrastructure are designed and constructed to be resilient to traditional hurricanes, as well as accelerating sea-level rise this century resulting from climate change. While myriad efforts address many of the important challenges of climate change, the center focuses on the critical issue of sea level rise, an unstoppable effect of this crisis. This is an issue that will have a historically unprecedented impact generations into the future. The plan is for Puerto Rico to become a model for an adaptation approach in the Caribbean region and elsewhere.

WHO WE CONNECT WITH

The center works closely with professionals tasked with the stewardship, administration, or design of the natural and built environment such as engineers, architects, planners, and attorneys. They are key stakeholders in the decision-making process aimed at achieving sustainable practices within a legal framework of building codes and regulations' compliance. Other stakeholders we reach out to include community leaders, elected officials, business leaders, educators, and scientists. To this end, we have a diverse set of leaders in our advisory committee which includes a chair each for the Architects' and the Engineers' Guilds.



EXECUTIVE SUMMARY

We face a great challenge. Science observations and findings need to be applied urgently in shore-based human settlements, infrastructure, and economic assets such as farmland and tourist destinations if we are to prepare with sufficient anticipation to sea level rise. Public investments need to be channeled according to science-based criteria that adequately address the future needs of society. We need to convey the sense of urgency since, once these changes start making themselves more evident, we will have less space and time to maneuver, and adaptation will be more expensive. The challenge is to make Puerto Rico and the Caribbean as future ready as possible and make them a model of resilience and adaptation for the world.

We need to close the gap between research and knowledge application in the built environment. In order to do this, we need to establish meaningful conversations around topics such as margins of safety, structural redundance, building envelope performance, shoreline settlement functionality… that respond to the reality of a warming planet with a changing climate and ultimately, rising seas. We need to give professionals tools and guidelines that will enable better discernment at the moments key design decisions are made. There are agencies, enterprises, and professionals dealing with flooding that have not thought through Sea Level Rise and too many of the current solutions to flooding will come up short.

One of those conversations we have embarked on is with a flood-threatened community in southern Puerto Rico. We secured a grant in collaboration with the Global Resilience Institute at Northeastern University and have been gathering

insightful data about the challenges faced by residents. The project, titled Leveraging Earth Observation Data to Support Environmental Justice: A Puerto Rico Coastal Community Case Study, is slated to finish in October of 2023.

In keeping with our engagement with key actors involved with the design, management, or stewardship of the natural and built environment, numerous meetings have been conducted with representatives of the architects', engineers', and surveyors' guilds. In November, we led an event to discuss flood maps with the engineers and surveyors and in June, the CCRS team prepared and delivered a refresher presentation at the Annual Convention of the Colegio de Arquitectos y Arquitectos Paisajistas de Puerto Rico.

We have also provided the general public with presentations in a variety of forums to connect the dots between mainstream knowledge and culture and the most recent scientific knowledge. We are committed to keeping the interested population updated and aware of relevant aspects to foster a culture of climate literacy. These presentations are being complemented with educational material in a variety of formats like posters, videos, and short messages on social media.

As part of our responsibility to support Puerto Rico's policy for Research and Development, we have actively written or made contributions vía position papers, advocating through our relationships with the Coastal Flood Resilience Project, the Rising Seas Institute, and the Global Resilience Institute. At the request of the Puerto Rico's legislature, we have provided insight for amendments to existing legislation, and current and anticipated bills. We hope some of these proposals find their way to key stakeholders tasked with updating building codes, zoning, and land use regulations.

This year closed with a wonderous trip to Greenland. At the invitation of the Rising Seas Institute, we had the opportunity to witness first hand the melting glaciers, the calving of the ice sheets, and the resulting icebergs slowly drifting away and contributing to sea level rise in real time. This is the landscape of the 21st century and the reason we must prepare for the future. We need to rethink where we live and adapt.

Let's build together a safer future today.

3 Newspaper Columns

11 Presentations Delivered

479 Attendees at Presentations

230 Professionals Reached

4 Municipalities have sought information from us

3 Policy Position Papers

1/3 Ratio of Grants Obtained to Grants Pursued

1 Expedition to Iceland & Greenland

1,960 Social Media Interactions

ACHIEVEMENTS FOR 2022-23

RESEARCH AGENDA

Our program is focused within the Research Pillar of the Trust. As such, we frame our activities considering research and development leading to innovation. We are researching how to implement policy and finding ways to connect with decision makers to change priorities. While we conduct specific studies, each of our other agendas is imbued with real world considerations.

A project with a Coastal Community

In July of 2022, we received notice of a grant proposal's acceptance. We had submitted for NASA ROSES 2021 A.49 with the Global Resilience Institute at Northeastern University titled Leveraging Earth Observation Data to Support Environmental Justice: A Puerto Rico Coastal Community Case Study 21-EEJ21-0043 in March. Hurricane Fiona's impact caused a delay and the project officially started in January of 2023. It consists of three phases: 1: Interviews with local adaptation stakeholders to better understand the environmental justice landscape of the community and their experience with NASA data. We have focused on finding out how NASA Earth Observation (EO) data could aid communities to address their environmental justice challenges. 2: A collaborative session to engage in co-learning with the community to develop adaptation pathways, identify barriers to adaptation, and to establish a method in which community members prefer to be engaged by outside agencies/ organizations while investigating what the community feels are its most pressing EJ concerns. And 3: Reporting and project wrap-up that gives the community agency over the outcomes. This will inform actionable steps that both the community and NASA can take to leverage NASA EO data to address environmental justice concerns and to articulate the process through which a typical community would like to be engaged.

EDUCATIONAL AGENDA

Our key educational task is redefining professional knowledge and understanding about the different kinds of floods, their hazards, and sea level rise. To do this, we engage with key actors involved with the design, management, or stewardship of the natural and built environment, in three major groups: Designers and Builders, Regulators, and Financiers. We have devised three levels of engagement to build awareness, understand different aspects of the challenge and start co-developing pathways to adaptation. A full cycle has been completed with local architects. We also maintain parallel efforts to educate stakeholders in the general public such as teachers, community leaders, and business leaders.

Educational Events



In November, we led an event to discuss flood maps with the engineers' and surveyors' guild titled *Una mirada hacia el calentamiento global desde los mapas de inundaciones*. (A glance at global warming from the point of view of flood maps.) Guest panelists included Hydraulic Engineer José Rodríguez, Surveyor Ruth Trujillo, Planner Félix Aponte, and Environmental Engineer Hanna Rodríguez. It was attended by 67 professionals and received press coverage in four main media outlets. In June, the CCRS team prepared and delivered a refresher presentation\ at the Annual Convention of the Colegio de Arquitectos y Arquitectos Paisajistas de Puerto Rico. We took these opportunities to refine our message and provide continuity to our past efforts such as last year's Annual Architects' and Landscape Architects' Convention. We have also provided general presentations, especially in regional shopping centers at the invitation of EcoExploratorio to connect the dots between mainstream knowledge and culture and the most recent scientific knowledge.

Educational Materials

A series of posters have been planned to deliver our message. The first of these is about to go to print. It describes the five flood factors and the five most relevant consequences of sea level rise. Together with other materials in development, these will stand alone or provide a basis for lesson plans that will ease curricular development on this topic.

OUTREACH AGENDA

Throughout the year we have been building alliances and relationships. Among these we expect to sign two memorandums of understanding. We have also attended various key events and networked with participants to synergize and collaborate, such as the Puerto Rico Climate Change



Council Summit, the Microsoft Sustainability Roundtable, the Summit for a Fair Recovery, Mega Civil Friday, the Puerto Rico Engineers' and Surveyors' Expo Convención, the Offshore Aquaculture and Wave Energy in Puerto Rico Workshop, the DnA Design+Architecture AIA Hawaii Creating Spaces to Belong Conference, the STAR-TIDES 16th Annual Capability Demonstration at George Mason University, the Puerto Rico Planning Week, the Puerto Rico Heritage Month, and the FEMA and Puerto Rico Planning Board meetings to discuss flood insurance rate maps, and various design juries.

We have also provided support and leveraged various initiatives at the Trust sharing our expertise about Global Warming and Climate Change. Specifically, we have made contributions to the Science Communications Meetup, the PRCCI 2023 Summer Seminar, and the hosting of visitors with research, education, and policy agendas.

Media

We wrote and published three mainstream media newspaper columns. The first, on the intersection between Sea Level Rise and Erosion was titled *El Baile Milenario entre la Costa y el Nivel del Mar.* The second was titled *44 municipios costeros que cambiarán para siempre* to encourage smart urban planning, occupying safe areas while flood maps are revised in the long term. The third was titled *Celebremos el Día de la Tierra hablando del agua* on occasion of Earth Day to encourage long-term thinking to adapt to sea level rise.

We have also shared on social media key articles and events concerning sea level rise, especially our learnings from the melting glaciers in Greenland as part of the Fact-Finding Expedition organized by the Rising Seas Institute. A series of videos and other audiovisual material were created and are being shared on various outlets.

FUNDING AGENDA

While funding for the program is fundamentally provided by the Trust, we are actively seeking additional sources via grants, collaborative agreements, and donations. As a nonprofit organization; we understand the challenges of securing funding to both increase our staff and carry out projects. We are interested in considering collaborations that can derive mutual benefit, we are excited about facilitating initiatives that benefit from some support on our part such as research projects, but also, we are eager to invest in pilot, demonstrative projects that can generate excitement and opportunities to advance our knowledge about how to build greater resilience and adaptation to current and future flood threats.

Grant funding inroads

This past year we have successfully supplemented our budget with a grant from NASA that covers the equivalent of 10% of our expenses and initiatives and the entirety of the related project. At present; we are exploring opportunities, based on lessons learned, to reiterate this kind of supplement. We have learned much from our proposals delivered to the Ports Authority, the Puerto Rico Sea Grant College Program, NASA, NSF, and NOAA.

While we strive to secure significant funding for long term program sustainability, we are also looking for ways to amplify and leverage our available resources and efforts. To this end, we have submitted letters of support for the Puerto Rico Building Resilient Infrastructure and Communities (BRIC) Readiness Initiative pursued by the Central Office for Recovery, Reconstruction, and Reslience (COR 3), a NASA scientist's research on Application of Commercial Smallsat Data to Enhance Flood Resilience in Support of Underserved Communities in Puerto Rico, and Fordham University's application for the Flourishing in Community grant.

POLICY AND LEGISLATION AGENDA

A key challenge is taking science from academic forums to practical, decision-making instances like new or updated legislation/codes/regulations. We see in our work at the CCRS

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EL NUEVO DÍA
elnuevodia.com

SÁBADO
6 de agosto de 2022

El baile milenario entre la costa y el nivel del mar



Fernando E. Pabón Rico
Arquitecto y Gerente del Centro Caribeño de Aumento del Nivel del Mar, Fideicomiso para Ciencia, Tecnología e Investigación

En estos días se ha colado repetidamente entre los titulares de noticias el tema de la erosión. La erosión no es otra cosa que el desgaste de la superficie terrestre por agentes externos, como el agua o el viento y es algo que siempre ha ocurrido y siempre ocurrirá. Sin embargo, el cambio climático y el aumento del nivel del mar agravan e intensifican sus efectos. Cuando la erosión tiene consecuencias concretas y visibles en espacios en donde viven personas, como es el caso de Ocean Park, entonces movemos nuestra atención y nuestra preocupación a este tipo de fenómeno.

No podemos ignorar que la costa es un espacio dinámico en donde ocurre la erosión rutinariamente, con o sin tormentas, marejadas o aumento en el nivel del mar. Mientras continúe derritiéndose el hielo de los glaciares y de las capas de hielo sobre tierra, la línea de la costa inevitablemente avanzará tierra adentro. Esto tiene efectos como la inundación de áreas bajas que han sido ya, de por sí, reducidas en extensión por la erosión.

Por milenios el nivel del mar ha fluctuado. Sin embargo, esta dinámica no ha sido experimentada por la humanidad al grado de impacto de huracanes, marejadas, inundaciones y hasta tsunamis. Estos acontecimientos naturales e históricos funcionan como oportunidades aleccionadoras que nos inspiran y obligan a tomar decisiones pensando en el futuro, pero basándonos en experiencias pasadas. Aunque hasta ahora sus efectos hayan sido prácticamente imperceptibles, en términos prácticos, el nivel del mar viene aumentando hace décadas, está acelerando y cada vez se hará sentir más. Marcando el compás va la erosión.

Esta es nuestra oportunidad para construir un mejor futuro, verdaderamente resiliente. Es un gran momento para emprender un diálogo que nos permita tomar decisiones inteligentes para el futuro. Si algo hemos aprendido, no repitamos decisiones desinformadas. No podemos limitarnos a mitigar los retos temporeros que conocemos. Esto solo nos lleva a diluir esfuerzos, a resultados insatisfactorios y aún peor, a nuevas y mayores deudas con obras que solo perderán valor con el tiempo (si logran sostenerse). Es hora de construir soluciones a largo plazo, con esfuerzos e inversiones que puedan tener largas vidas y se sostengan ante retos como los que hemos tenido hasta ahora y los que sabemos que vendrán.

Los científicos y profesionales del diseño y la construcción saben hace mucho que las herramientas disponibles como rompeolas, muros, gaviones y espigones suelen causar más problemas y agravar los riesgos de erosión existentes. La infraestructura verde y las combinaciones con la infraestructura construida parecen solo atrasar por un tiempo lo inevitable. No hay una solución sencilla para el problema natural y rutinario de la erosión. Sabiendo que la erosión y los factores que la agravan están empeorando, ¿cómo construiremos para mayor seguridad, tranquilidad y sostenibilidad? La invitación directa es al diálogo. No debemos propiciar la histeria colectiva, sino la concientización y el entendimiento colectivo del tema. Discutamos alternativas realistas, oportunidades y próximos pasos eficaces.

Entre otras cosas, para eso se ha establecido nuestra organización creada por el Fideicomiso para Ciencia, Tecnología e Investigación de Puerto Rico en afiliación al Rising Seas Institute. Somos un centro de investigación y referencia sobre el aumento en el nivel del mar que busca poner en diálogo la ciencia con la formulación de política pública y los cambios culturales y climáticos a corto, mediano y largo plazos. Buscamos facilitar conversaciones alrededor de la economía, la sociedad, la reglamentación y el medioambiente que resulten en la inteligencia necesaria para tomar decisiones sabias.

¿Qué hacemos primero? Reconocer las amenazas combinadas de erosión continua, eventos extremos y aumento en el nivel del mar y aceptar que los edificios y la infraestructura deben construirse, como mínimo, en lugares más altos y tierra adentro. Esto sería un paso firme para la preservación de las inversiones que tanto valor (económico, emocional...) tienen para usuarios, propietarios, custodios, entes financieros y la comunidad.

Construyamos mejor, construyamos en lugares más elevados, construyamos un futuro seguro hoy. Tengamos la flexibilidad y la visión para anticipar los retos, y oportunidades asegurándonos de que lo que construyamos hoy sea factible y viable mañana.

A esta columna contribuyeron ideas Giuliana González, Paulina Seguinot, Gilberto Guevara, Lupe Vázquez y John Englander.

OPINIÓN/53
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MIÉRCOLES
23 de noviembre de 2022

44 municipios costeros que cambiarán para siempre



Fernando E. Pabón Rico
Arquitecto y Gerente del Centro Caribeño de Aumento del Nivel del Mar, Fideicomiso para Ciencia, Tecnología e Investigación

Nuestros centros urbanos históricos ofrecen ventajas insuperables y decisivas ante el futuro. No es casualidad ni capricho que se establecieron allí. Uno de los factores decisivos suele haber sido la seguridad que provee cada lugar ante las amenazas de las inundaciones por su elevación sobre el entorno. Sus suelos firmes y con buen drenaje garantizan su funcionamiento a pesar de las inclemencias del tiempo y hoy día, el aumento del nivel del mar. También proveen otras ventajas: hay de todo y todo está cerca, incluidas las oportunidades laborales. Viabilizan la formación de una masa crítica de pobladores, esencial para todo lo opcional. Son el espacio organizador de la vida colectiva, de las iniciativas empresariales, y reúnen los símbolos de nuestras aspiraciones. Dan forma al punto de encuentro entre minimizar los riesgos y maximizar los sueños.

Esa forma urbana es la consecuencia de política pública establecida por nuestros ancestros hace más de cinco siglos. En aquel tiempo no tenían mapas de inundaciones, métodos efectivos para pronósticos meteorológicos y mucho menos tecnología sofisticada de aviones y satélites para vigilar y documentar el paso de fenómenos atmosféricos. Tampoco había seguros contra inundaciones que compensaran sus pérdidas. Empleaban el sentido común, las experiencias del pasado y la observación cuidadosa del paisaje antes de tomar decisiones importantes. Precisamente por esas limitaciones era fundamental ser eficientes y no exceder la capacidad de la población, la geografía y la naturaleza de proveer para las necesidades de la comunidad. No había espacio para el desperdicio ni el riesgo.

Entonces, heredamos 78 centros urbanos que generalmente no son inundables, aunque se formen algunos charcos luego de llover. Si algún área se inunda suele ubicar en el borde, resultar de algún desagüe obstruido o ser el producto de haber edificado sobre el curso y entorno de alguna quebrada o humedal. En general, y fortaleciendo aquellos expuestos a inundaciones temporeras, los centros urbanos son los espacios en que podremos confiar ante el aumento del nivel del mar para minimizar pérdidas de vida y patrimonio, impulsar la sostenibilidad, revitalizar la economía y relocalizar actividades, viviendas y empresas fuera de lugares vulnerables. Esa experiencia ya la vivimos. Aprendamos de las notorias y múltiples mudanzas de San Germán y la de Caparra a San Juan, que entre muchos otros centros urbanos, tienen la distinción de haber estado entre los proyectos piloto que se desarrollaron antes de proclamarse en conjunto las Leyes de Indias. Muchas lecciones aprendidas en Puerto Rico se implementaron en las futuras fundaciones de innumerables pueblos más en las Américas.

Recientemente, hemos olvidado aquellos principios rectores de seguridad e incrementado nuestra vulnerabilidad innecesariamente mediante el desparrame suburbano. A la vez, hemos desatendido los centros urbanos, los espacios de los que mayor beneficio podemos matemáticamente obtener. La crisis que vive Puerto Rico no es sorprendente. Tampoco deberá sorprendernos el futuro. Las lluvias tierra adentro cada vez provocan mayores volúmenes de agua cuenca abajo que con el aumento en el nivel del mar encontrarán poco espacio para drenar. Esto se traducirá en inundaciones para áreas llanas costeras, experiencias que principalmente podrán evitarse por mayor tiempo en los 44 centros urbanos de los municipios costeros. Debemos encauzar nuestras estrategias e inversiones futuras a proyectos en lugares seguros que no queden permanentemente inundados con el aumento en el nivel del mar.

Por lo tanto, rehabilitar y repoblar los centros urbanos tradicionales es un buen punto de partida hacia el futuro que demostraría planificación inteligente mientras se revisan los mapas de inundación a largo plazo. Con los fondos de recuperación otorgados a Puerto Rico existe la posibilidad de encaminar la seguridad y prosperidad tan ansiada por nuestra gente. Hay una oportunidad para verdaderamente desarrollar la economía y salvaguardar el bienestar social, así como el medioambiente, adaptándonos y construyendo la resiliencia que exigen el calentamiento global y el aumento en el nivel del mar. Esta es la misión del Centro Caribeño de Aumento del Nivel del Mar. Puerto Rico puede volver a ser un líder y punto de referencia global sobre la forma urbana ideal con el resultado de una vida en solidaridad con los demás.

A esta columna contribuyeron ideas María Méndez, Gilberto Guevara, Lupe Vázquez y John Englander. Puede encontrar más información sobre su municipio en https://coast.noaa.gov/slr/

> "Rehabilitar y repoblar los centros urbanos tradicionales es un buen punto de partida hacia el futuro que demostraría planificación inteligente mientras se revisan los mapas de inundación a largo plazo"

Celebremos el Día de la Tierra hablando del agua

PUNTO DE VISTA



Fernando E. Pabón Rico
Director Centro Caribeño de Aumento del Nivel del Mar

Cerca del 71% del planeta Tierra está cubierto de agua. Al igual que pensamos en nuestros cuerpos cuando nos enfermamos, pensamos en el planeta cuando tenemos síntomas de que algo anda mal. Solemos preocuparnos por el cambio climático y el aumento del nivel del mar solo en temporada de huracanes y marejadas. Concentrarnos en atender lo urgente quita de nuestros radares lo importante. Priorizar la visión a largo plazo para prepararnos para las inundaciones permanentes que traerá el calentamiento global es la diferencia entre el éxito y fracaso.

El Informe de Riesgos Globales 2023 del Foro Económico Mundial indica que en 10 años tendremos aún menos opciones para adaptarnos a los retos del calentamiento global y mitigarlos. Tendremos los mismos problemas de hoy, pero con menos tiempo y probabilidades de construir condiciones que nos permitan funcionar como sociedad. Si ya tenemos estos síntomas y este diagnóstico, podemos cambiar la prognosis.

La mayoría de nuestro paisaje construido se realizó en apenas 30 años. Esto coincidió con un crecimiento económico nunca antes experimentado, por lo que la mayoría de nuestros edificios e infraestructura no cumplen con los códigos de construcción actuales (mucho menos con exigencias futuras). No podemos tomar decisiones permanentes basadas en situaciones temporeras como reacciones a emergencias y entradas de fondos federales. Tomemos decisiones sostenibles.

Necesitamos transformar radicalmente el paisaje. Tracemos un plan para trasladar paulatinamente comunidades y actividades económicas a sitios más altos y tierra adentro para que puedan sobrevivir al aumento del nivel del mar. Necesitamos crear y desarrollar comunidades resistentes a inundaciones pensando en más de 100 años a futuro.

Para alcanzar metas como contar con 100% de energía renovable, resiliencia ante fenómenos naturales, seguridad alimentaria y una población saludable, capacitada, empoderada y sin necesidades, es imprescindible redistribuir los recursos hacia prioridades colectivas de gran escala. Nuestra prioridad no pueden ser solo los puertorriqueños del presente, sino los del mañana. Puerto Rico tiene que estar listo para recibir de vuelta a la diáspora, de estados como la Florida, y que tendrá que reubicarse por el aumento en el nivel del mar.

La construcción será la herramienta catalítica para reestablecer la economía. Necesitamos: una fuerza trabajadora capacitada, un entramado jurídico robusto de códigos de construcción y reglamentos de zonificación que no requieran cambios significativos en 30 años, incentivos claros para desmantelar infraestructuras que serán obsoletas por su proximidad al mar, invertir en renovar el sector industrial para reutilizar y reciclar escombros producidos, y revitalizar centros urbanos alejados del peligro de inundaciones. Hagamos espacio para humedales y ecosistemas costeros que apoyen la biodiversidad. El gobierno facilitará mediante proyectos de vivienda, comercio, industria e infraestructura pre-aprobados para esto. Solo así lograremos estar plenamente coordinados con la planificación a largo plazo.

Nuestros cuerpos, el país y el planeta se manifiestan a través de síntomas y señales. Para tener un futuro como el que soñamos, atendamos los pronósticos de lo que científicamente está por pasar. Tomemos decisiones sostenibles para que el futuro no solo sea posible, sino viable.

A esta columna contribuyeron ideas: María Méndez, Gilberto Guevara, Lupe Vázquez y John Englander.





an opportunity to catalyze innovation in public policy as a side effect of our advocacy for adapting legislation to consider and incorporate planning and budgeting for sea level rise. In other words, we see the CCRS/PRSTRT engagement in policy work as research and a vehicle to advance social, educational, governance/security/scientific innovation and wellbeing. It just so happens that we are focused on sea level rise, the question of how to get people to adapt, and believe adaptation to it might only happen if the incentives/necessary conditions exist in the legal/policy framework.

Coastal Law Forum

In November, we delivered a set of recommendations to the Chamber of Representatives as part of the Coastal Law Forum mainly encouraging long-term thinking be taken into consideration.



Senate Infrastructure Bill 665

Our efforts to explain the relevance of considering sea level rise in proposed policies have had surprising twists. While this bill was vetoed by the Governor, key provisions found their way to an emergency declaration about coastal erosion and vulnerability that he signed shortly afterwards. These mention the need to "…develop a plan to locate new infrastructure projects, which are not dependent on or for the enjoyment of the sea, outside the coastal zone… Additionally… for existing infrastructure projects, not dependent on or for the enjoyment of the sea, deteriorated, and requiring replacement or reconstruction, the feasibility of the planned and orderly relocation of these outside the coastal zone must be evaluated."

Joint Regulation

In January, we prepared and delivered our input to the Planning Board on the new proposed Joint Regulation for the Evaluation and Award of Permits Related to Development, Land Use, and Business Operations, collaborating along the way with the Colegio de Arquitectos y Arquitectos Paisajistas de Puerto Rico with commentary focused on adaptation measures for sea level rise.

PRACTICAL AGENDA

To start seeing changes in urban development practices, we submit that updates to building codes, zoning, and land use regulations must happen. Therefore, we have met with diverse stakeholders presenting our case about building resiliency and catalyzing adaptation, receiving their input, and discussing our common points of view. We take these opportunities to deliver our message: Future flooding from coastal storms, heavy rainfall, extreme tides, and accelerating sea level rise, require that we plan and build for better resiliency. These stakeholders range from municipal officers, leaders of other non-profit organizations, academics, and the private business sector. Hence, we are seeing requests to collaborate and leave our imprint in various forums and efforts.

A dashboard

A great amount of information already exists and is publicly available, but it has not been subject to analysis and display. By collaborating with the PRSTRT information technology department we have developed a dashboard to better understand the impacts of various stages of sea level rise in Puerto Rico, including land area to be flooded, structures to be affected, and the variety of these circumstances around the archipelago.

A case study

We requested proposals and selected to commission a study specializing in economic impacts of flooding and sea level rise for all 44 coastal municipalities of Puerto Rico: A first phase Risk / Vulnerability Assessment and a second phase Mitigation Assessment Pilot. This is directly aligned with our strategic goal of publishing a cost-benefit analysis of potential pilot projects for safer housing during our second year.

Requests for information

Various municipalities, including Arecibo, Toa Alta, Toa Baja, and Vega Baja, have requested information from the Trust in order to better craft their Municipal Recovery Plans. To do this, we have relied on the dashboard to generate useful information that informs these reports. We have seized on this opportunity to help inform their local regulations and encourage adaptation to sea level rise.



WHAT'S NEXT?

Building resiliency and advancing adaptation.

- Advance Key Performance Indicators, specifically outreach to target professionals and stakeholders through talks and symposia.
- Celebrate an innovative building design competition.
- Create and distribute educational materials.
- Continue and finish research project in Salinas with the Global Resilience Institute.
- Insert rising sea levels as key criterion in existing and proposed land use and building regulations.
- Obtain additional funding to Increase our Staff to advance each strategic agenda.



DIRECTOR'S POV

Leading this program involves a mixture of urgency and patience, keeping a big-picture, long-term view, and crafting a vision for a major cultural and mindset shift. Staff members need about 2 or 3 months after joining our team to acclimatize to some of the profound implications of the little understood challenge of adapting to sea level rise. After personally visiting Greenland, nonetheless, the stark reality of the scale and sublimeness of the melting glaciers, constantly producing countless icebergs and therefore rising sea levels as a product of global warming, has refocused the relevance of our mission. Let's build together a safer future today.





MEET OUR TEAM



John Englander
Executive Advisor



Fernando Pabón Rico, AIA, CAAPPR
Program Director



Gilberto Guevara Velázquez, MBA
Strategic Advisor & Senior Manager



María Méndez Guijarro
Urban & Regional Planning Specialist



Carlos Gómez Borges
Engineering Specialist



Francisco V. Aquino Serrano, Esq.
Policy & Legislation Manager



CENTER FOR TROPICAL
BIODIVERSITY



CENTER FOR TROPICAL BIODIVERSITY

WHAT WE DO

The Center for Tropical Biodiversity (CTB) was established in 2015 to guide the efforts of conservation and exploration of Puerto Rico's unique geography for benefits that can be scientific, societal or economic. Within the purview of the Center are the development of **searchable collections** of biological specimens, the **conservation** of biodiversity resources and the **commercialization** of biodiversity-derived products.

Over the last century, Puerto Rico has enjoyed a rich tradition of scientific research centered on its unique natural environment. There have been numerous projects aimed at observing and cataloging Puerto Rico's rich biodiversity with the goal of understanding how organisms interact with their surroundings. Lacking through the years has been a local policy to guide and coordinate these efforts, which were often driven by the curiosity of individual researchers in our many universities

HOW WE DO IT

The CTB has become an important facilitator for high-impact research in the areas of **biodiversity** and **natural products**. We make contact with the appropriate stakeholders to (i) enable their biodiversity research by ensuring access to high-end equipment, (ii) communicate important issues related to the preservation of critical ecosystems for biodiversity , (iii) facilitate the public availability of data pertaining to biodiversity and natural products and (ii) promote that biodiversity researchers fully benefit from other PRSTRT programs, such as PRCCI and the TTO.

WHO WE CONNECT WITH

Biodiversity research involves stakeholders at many levels: community organizations, environmental protection groups, scientific researchers, universities, commercial partners, government agencies and the media. The CTB has successfully connected several of these stakeholders for fruitful collaborations: (a) we have engaged with **university researchers** and placed them in contact with **entrepreneurs** and **innovators**, (b) we have engaged the **media** for the communication of important issues concerning the conservation of biodiversity, (c) we have established links with the **business development** sector to ensure that Puerto Rico is promoted as a potential source of biodiversity-derived products.

EXECUTIVE SUMMARY

During the previous year, the Center for Tropical Biodiversity continued developing a number of on-going initiatives, while also starting some new exciting projects and collaborations.

On the science communication front, we have been actively involved in raising awareness about the delicate conditions of the coral reefs in the Caribbean. For the past decades, coral reefs have registered a substantial loss of biomass and biodiversity. Some of the bleaching that is observed is partly due to an overabundance of algae and marine protists, whose populations have been kept in check by sea urchins and other marine invertebrates. In early 2022, there were reports of a massive sea urchin die-off in the Caribbean, which could have major implications for efforts to restore the coral reef. The CTB has been involved in the communication of this phenomenon, as well as raising awareness about the importance of sea urchins as the cleaners of the reef, and we have done this in collaboration with the Trust Communication Officer. We also participated in the Festival del Apio festivities together with the research group from Interamerican University in Barranquitas, to share the results from a collaborative project involving the apio plant itself and its traditional uses. We also participated in a symposium on science communication held at Universidad del Sagrado Corazón for students of journalism.



This past year also saw the continuation of on-going research initiatives. For instance, we have followed up on the story of the Coquí Llanero and have further developed the project in collaboration with Dr. Rafael Maldonado of UPR Ponce.

During the last funding period, there have been significant discovery on the presence of antifungal compound violacein in the samples collected from Toa Baja, Puerto Rico. A proposal has been submitted by Dr. Maldonado to the NSF ($500,000 total budget) to further enable the discovery of antifungal compounds in these wetland samples. Another project that we have followed up on is the microbes associated with the mangrove termite in collaboration with Dr. Matías Cafaro of UPR Mayagüez, we have re-analyzed the samples and subjected them to a state-of-the-art Social Molecular Networking platform, resulting in the discovery of new compounds.

Some of the new research projects and collaborations include the analysis of the Puerto Rican apio tuber, whose leaves have been used traditionally for the relief of inflammation and malaise. This work is in collaboration with Dr. Alok Arun of Interamerican University in Barranquitas, who has sequenced the complete transcriptome of the apio plant and detected an overexpression of genes linked to the production of antioxidants in the leaves of apio. We have extracted the compounds from the leaves and subjected the extract to molecular networking resulting in the discovery of 15 chemical compounds in the leaves linked with protective activities. We have also begun a new collaboration with Dr. Benjamín Bolaños, an expert in the detection of fungal spores and their role in respiratory ailments. We have begun work to develop the MALDI-ToF mass spectrometry platform for the identification of spores, in order to detect the presence of toxic spores in closed spaces and air conditioning systems. The CTB has also established a collaboration with agrotech start-up Scientia Naturam LLC for the development of cultivation methods for a number of medicinal plants capable of producing compounds that have been historically and traditionally used for the treatment and prevention of certain types of cancer. Our involvement with the company relates to the benchmarking of new analytical methods for the detection of active ingredients in live plant tissue.

Another area that CTB has developed is the availability of biodiversity data on public and searchable databases. Toward this end we have created and released the Natural Product Online Repository (NatPORT), in collaboration with the Office of Chief Technology Officer of the PRSTRT, Mr. César Piovanetti. NatPORT has been made available to specific research groups in Jamaica, Dominican Republic, Puerto Rico and Panamá for the submission of unique chemical structures and a total of 118 fully characterized compounds have been deposited in the databases.

Finally, a pre-proposal was submitted to the Defense Threat Reduction Agency (DTRA) for the development of a proteomic-scale screening platform for locally sourced natural product extracts. The main objective is to identify the human protein targets for toxic and deleterious natural products. The total budget of the proposal is $2,991,860 based on a three-year initial commitment with an additional two-year extension.

EXECUTIVE SUMMARY NUMBERS

15

New chemical compounds found in the Puerto Rican apio leaves

118

Chemical structures deposited in NatPORT database

38 billion

Number of individual sea urchins that have died since massive die-offs have been documented

ACHIEVEMENTS FOR 2022-23

As the CTB strives to bridge biological diversity with economic development, we report several areas of impact during the past year:

1) A new NSF proposal for the discovery of antifungals from the habitat of Eleutherodactylus juanariveroi (Coquí Llanero). Previous work from the CTB centered on the habitat of autochthonous amphibian Eleutherodactylus juanariveroi or the Coquí Llanero. The CTB has been following up on the microbial populations associated with this species, because there has been good evidence that some biologically active compounds may result from these microbes. We have now shifted our work to **the search of novel anti-fungal compounds** in this species, and the reason is that fungal infections in humans have increased both in frequency, virulence and severity, highlighting the need to discover new anti-fungals.

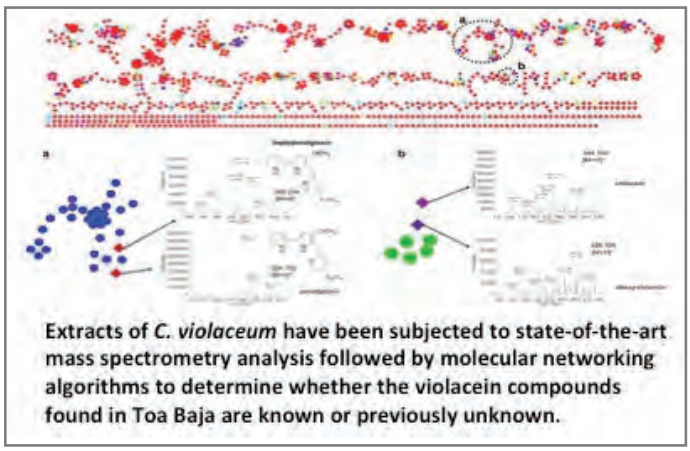
The Coquí Llanero and and its habitat are a great location for the discovery of antifungals since the species has been in contact with a killer fungus Batrachochytrium dendrobatidis, or Bd, which has killed off an incredible number of frogs in Australia, Europe, and the Americas. Scientists have warned of an impending mass extinction of amphibians and a recently published article in The Atlantic states that "the arrival of this chytrid fungus can herald nothing short of catastrophe".



Multiple expeditions to the Toa Baja wetlands have yielded several isolates of the bacteria *Chromobacterium violaceum*, the natural producer of potent anti-fungal violacein. The CTB facilities have cultivated these bacteria with the purpose of completely characterizing compounds related to violacein, which is named after its bright purple or violet color. Use the QR code to access the "Coquí Llanero" video produced by PRSTRT.

The Bd "killer fungus" has been detected in the Toa Baja wetlands, where the Coquí Llanero lives but the Coquí Llanero seems to be immune by an unknown mechanism of tolerance. One hypothesis is that microorganisms that coexist with the Coquí Llanero, produce potent anti-fungal compounds, generating a protective environment.

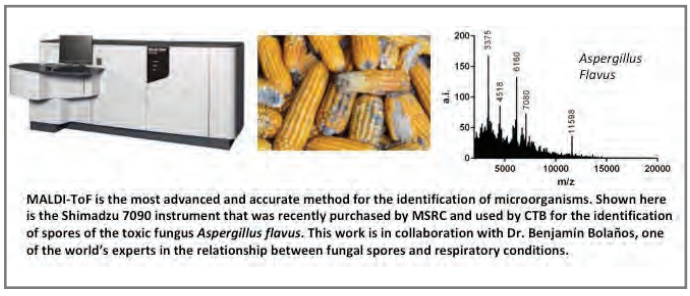
To test this hypothesis, the CTB has been analyzing samples collected from the efforts of herpetologist Neftalí Ríos, microbiologist Ileana Rodríguez, and biochemist Rafael Maldonado to try to detect the production of anti-fungals. A **research proposal was recently submitted to the NSF** by Dr. Rafael Maldonado of UPR Ponce in collaboration with Dr. Luis Prieto of the CTB, for the identification of compounds with antifungal activity using the state-of-the-art molecular networking platform, a Big Data solution for the large-scale comparison and search of mass spectrometry data. We are awaiting the results from the evaluation of this proposal.



Extracts of *C. violaceum* have been subjected to state-of-the-art mass spectrometry analysis followed by molecular networking algorithms to determine whether the violacein compounds found in Toa Baja are known or previously unknown.

2) Development of high-end methods for the identification of fungal spores.

Puerto Rico has the highest lifetime prevalence of **asthma** in all of the US and its territories. Asthma disproportionately affects Puerto Rican children, especially those living below the poverty level. As a tropical location, Puerto Rico residents are very much exposed to outdoor aeroallergens like **fungal spores** and pollen, both established asthma triggers.



MALDI-ToF is the most advanced and accurate method for the identification of microorganisms. Shown here is the Shimadzu 7090 instrument that was recently purchased by MSRC and used by CTB for the identification of spores of the toxic fungus *Aspergillus flavus*. This work is in collaboration with Dr. Benjamín Bolaños, one of the world's experts in the relationship between fungal spores and respiratory conditions.

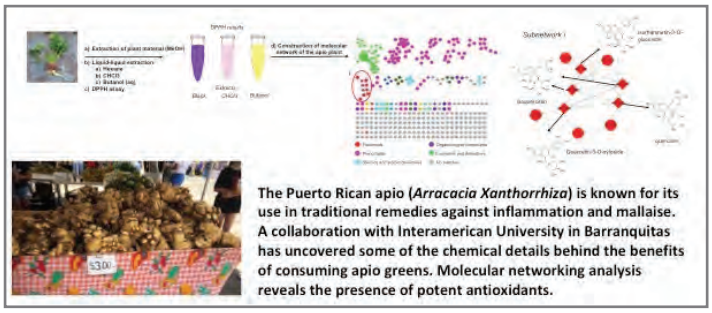
Local microbiologist Dr. Benjamín Bolaños of UPR Medical Sciences is a known and recognized expert in the field of

environmental microbiology, especially on the role of fungal spores in respiratory conditions. The CTB has engaged with Dr. Bolaños for the use of MALDI-ToF mass spectrometry **for the unequivocal identification of fungal spores** from an ongoing study on the presence of filamentous fungi in low-income communities.

Today, the gold standard for the rapid identification of microscopic fungi and molds, is a technique known as Matrix-Assisted Laser Desorption Ionization (MALDI) coupled with time-of-flight detection (ToF). This is the most advanced and accurate platform for the exact identification of fungi down to species, sub-species and strains. The method relies on the exact mass of well-defined protein markers that are unique to each fungal species. Its use has proven highly valuable for the identification of fungal and bacterial pathogens in clinical settings.

The long-term goal of this effort is to establish a facility for the identification of either environmental microbes or hospital-acquired pathogens. The implementation of MALDI-ToF will mean very quick identification turn-around at a fraction of the cost of traditional DNA sequencing, resulting in a faster, cheaper discovery of species likely to produce antibiotics. or antifungals.

3) The innovation potential of "apio criollo" or Arracacia xanthorrhiza.



The Puerto Rican apio (*Arracacia Xanthorrhiza*) is known for its use in traditional remedies against inflammation and mallaise. A collaboration with Interamerican University in Barranquitas has uncovered some of the chemical details behind the benefits of consuming apio greens. Molecular networking analysis reveals the presence of potent antioxidants.

Arracacia xanthorrhiza, known as "apio" in Puerto Rico, is a tuberous plant that is original to the Andean region of South America. The tuber is consumed for its very high nutrient and starch content. In addition to the well-known apio root, the green aerial portion of apio has been used in traditional medicine due to its calming effects and anti-inflammatory properties. A CTB project is currently underway in collaboration with Dr. Alok Arun of the Interamerican University Barranquitas Campus. So far, the work of Arun has found genes in the apio leave that encode the production of polyphenols, a family of compounds with documented health benefits that are also found in green tea and red wine. The CTB has complemented Dr. Arun's work, with a state-of-the-art chemical characterization using mass spectrometry and molecular network. A total of 15 compounds with anti-oxidant properties were found in the leaves of apio, potentially correlating with their anti-inflammatory properties.

This year we also joined the group of Dr. Arun in this year's edition of the Festival del Apio in Barranquitas, PR.

4) A massive sea urchin die-off in the Caribbean.

In early 2022, a different type of pandemic hit the Caribbean. But not one that affects humans. A strange, and as of yet unidentified, marine disease is currently causing a **massive die-off of long spine sea urchins** of the species Diadema antillarum. This species of sea urchin is widely distributed in the western Atlantic Ocean, including the Caribbean Sea. The Diadema sea urchin serves as a filter that feeds on micro and macro algae, thus cleaning the reef to allow the growth of coral. It can be safely said that without sea urchins, it is almost impossible for coral to grow along the reef, thus hampering current human efforts to regrow and propagate corals.



Efforts to reintroduce sea urchin populations are being led by Dr. Stacey Williams of the UPR Marine Sciences Department. Please access to QR code for videos explaining the importance of sea urchins to the coral reef.

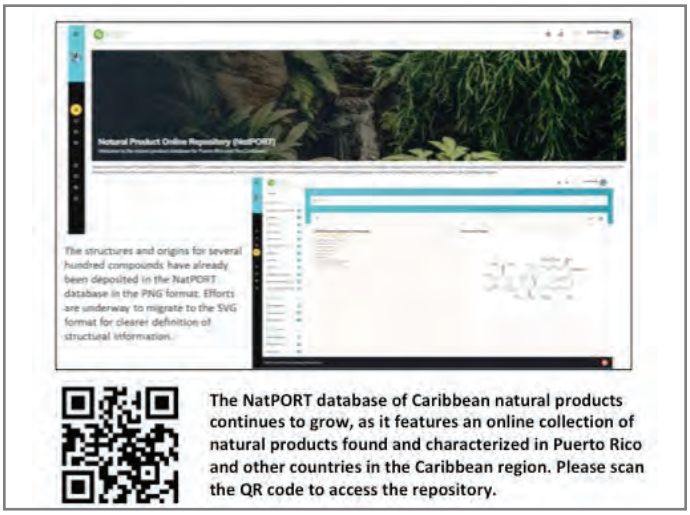
The CTB has engaged with a team of researchers assembled by Sociedad Ambiente Marino, the University of Puerto Rico and the Department of Natural and Environmental Resources aiming to (i) identify any potential disease that is responsible for the large mortality and (ii) re-introduce sea urchins that have been grown in vitro.

In collaboration with Lupe Vázquez, Chief Communications Officer, we wrote published a newspaper article to El Nuevo Día to raise awareness of the current situation of the sea urchin and its vital role for the maintenance of the coral reef. We also generated some YouTube videos describing the efforts to re-populate the reef with laboratory grown sea urchins.

5) The Natural Product Online Repository (NatPORT) goes live.

During this past year, the CTB, in collaboration with the Office of Chief Technology Officer of the PRSTRT, rolled out the first database for natural products sourced from the Caribbean. The Natural Product Online Repository (NatPORT) has been made available to specific research groups in Jamaica, Dominican Republic, Puerto Rico and Panamá for the submission of unique chemical structures. We have received positive responses from all of them along with the commitment to populate this valuable resource. The following investigators have been engaged for this initial roll-out.

Investigator	Institution	Web Info
Dr. Simone Badal McCreath	University of West Indies - Jamaica	https://g.co/kgs/DZaQuCXC
Dr. Alberto Núñez Sellés	Universidad Nacional Pedro Henríquez Ureña - Dominican Republic	https://investigacion.unphu.edu.do/investigadores
Dr. Claudia Ospina	Interamerican University - Bayamón	https://inbre.hpcf.upr.edu/index.php/dr-claudia-ospina
Dr. Marcelino Gutiérrez	Instituto de Investigaciones Científicas y Servicios de Alta Tecnología de Panamá	https://indicasat.org.pa/dr-marcelino-gutierrez



The NatPORT database of Caribbean natural products continues to grow, as it features an online collection of natural products found and characterized in Puerto Rico and other countries in the Caribbean region. Please scan the QR code to access the repository.

A total of 118 fully characterized compounds have been deposited in the database. It must be said that we expected a larger number of structures coming out of our Caribbean partners. However, something that we have learned is that natural products research in most of the Caribbean region takes place using crude and semi-purified extracts, with little or no detailed characterization of the chemical compounds themselves. This presents a challenge for the growth of our database, but also an opportunity as the CTB could be well positioned to collaborate with many of the countries in the region.

6) Re-submission of a proposal to DTRA.

Last year we reported on our intention to submit a pre-proposal to the Department of Defense's Defense Threat Reduction Agency (DTRA). On November 2021, we submitted a pre-proposal to Department of Defense's Defense Threat Reduction Agency (DTRA) titled: Proteomic-scale strategies for the rapid identification of function in natural extracts with a total budget of $2,991,860 over 5 years.

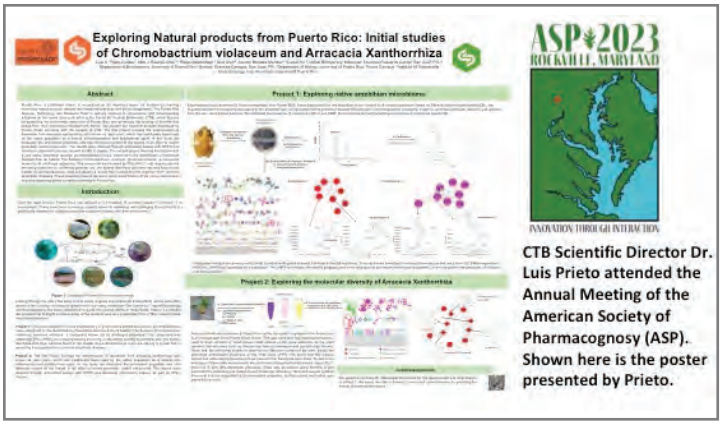
The US Department of Defense is interested in natural products because some of the most toxic and incapacitating compounds known to mankind are natural products: Ricin is a lectin produced in the seeds of the castor oil plant, conotoxins are potent neurotoxins made by marine cone snails and batrachotoxins are powerful neurotoxic alkaloids made by some species of beetles and frogs - not to mention that the

most carcinogenic compound known to man, aflatoxin, is also a natural product made by some fungi.

The results from the original application were inconclusive. However, this year we were invited to re-submit the pre-proposal, which we did in May 2023 and are awaiting the results from the evaluation.

7) The CTB visits the Meeting of the American Society of Pharmacognosy in Rockville, Maryland.

Last year we attended the Annual Meeting of the American Society of Pharmacognosy, which was held on July 23-28 in South Carolina. During the meeting, our Scientific Director, Dr. Luis Prieto Costas, presented the capabilities of the CTB in a poster session. He also presented the capabilities of NatPORT, which users found to be an important resource to catalogue natural products in the Caribbean.



CTB Scientific Director Dr. Luis Prieto attended the Annual Meeting of the American Society of Pharmacognosy (ASP). Shown here is the poster presented by Prieto.

This year, the CTB will present its science during this year's edition of the ASP Meeting to be held in July in Rockville, Maryland. This year's presentation includes the successful implementation of the Social Molecular Networks for the identification of new compounds.

WHAT'S NEXT

1) Develop the MALDI-ToF platform for the identification of novel human pathogens. Biodiversity is not a property exclusive to natural environments. There is **substantial biodiversity in man-made and urban spaces** and understanding this biodiversity could be key to understanding the spread of some microbial diseases. During the course of conversations with key personnel at the Department of Health and at the PR Medical Center (ASEM) Clinical Laboratory, there is an unmet need for the rapid identification of bacteria in clinical and laboratory settings. While most pathogens are easily identified by routine laboratory tests, there are rare but sustained cases of pathogens that are difficult to identify and could cause severe disease or even death.

The MALDI-ToF instrumentation available at the CTB for the identification of environmental samples could be easily re-focused for the identification of hospital-borne pathogens. Discussions are underway with ASEM and DoH personnel about how to best approach the development of methodologies that could be made available for the identification of difficult and potentially deadly pathogens, so as to accelerate the treatment options for patients.

2) Providing assistance to Scientia Naturam LLC in a new SBIR re-submission. As mentioned before, the agrotech company Scientia Naturam LLC made an attempt to secure SBIR funding through the USDA but was ultimately unsuccessful. This year, the CTB will dedicate efforts to help this company put together a competitive package for a new attempt at a Phase I SBIR application.

3) Further engaging with natural products researchers in the Caribbean and Latin America. During the course of promoting the use of NatPORT in other countries in the Caribbean region, we have come to find out that there is a need in the region for high-end instrumentation for the characterization of compounds. Initial efforts will center on making fruitful contacts in the Dominican Republic, where there is a rich natural product scene and great need in terms of availability of cutting edge methodologies.

MEET THE TEAM



Abel Baerga, PhD.
Program Director



Luis Prieto, PhD.
Scientitic Director



Grecia Torres
Student Volunteer

DIRECTOR'S POV

Leading the Center for Tropical Biodiversity has been an enormous privilege with societal impacts beyond the initial vision of the program. Researchers in the biodiversity field are in need for sophisticated methodologies for describing their environments, and we have provided access to high-end instrumentation for chemical analysis of field samples. The CTB's involvement in these project has raised the competitiveness of proposals coming out of Puerto Rico-based institutions. The CTB has also helped start-up companies increase the competitiveness of their SBIR proposals by incorporating high-end methodologies and a truly scientific and research-based outlook. But the most rewarding aspect of the work that we do has been communicating science to general audiences, either in podcasts, YouTube videos or newspaper articles. We have had a chance to collaborate with the best biodiversity researchers and helped them to bring important messages on the importance of conservation and on the beauty of our rich ecosystems.







Video Series: A Massive sea urchin die-off in the Caribbean.



PRSTRT
RESEARCH
INSTITUTE



RESEARCH INSTITUTE

WHAT WE DO

Mission:

The Research Institute (RI), under the auspices of the Puerto Rico Science, Technology, and Research Trust (PRSTRT), is committed to fostering a collaborative and diverse research community. Our mission is to support innovative basic and applied research into the fundamental biological mechanisms underlying diseases that disproportionately impact our population. We focus on developing potential therapies and interventions that can significantly reduce or eliminate health disparities across our archipelago. We encourage investigations into a wide range of diseases associated with significant morbidity and mortality in Puerto Rico, believing that accelerating biomedical research and improving human health requires a diverse community in terms of education, training, background, perspectives, interests, and identity.

Vision:

Our vision at the Research Institute is to serve as a beacon of health innovation and research excellence in Puerto Rico and beyond.

HOW WE DO IT

We aim to ensure that the benefits of all research outcomes are translated to our people, reaching all the way to the patient's bedside. We strive to create a tangible difference in the health and well-being of our community, transforming lives through the power of scientific discovery and its application. We envision a future where health disparities are significantly reduced, and every individual has access to the best possible healthcare solutions informed by cutting-edge research.

WHO WE CONNECT WITH

The Research Institute primarily connects with educational institutions, both public and private, that are involved in scientific and medical research. Our program is designed for researchers, healthcare professionals, and students in Puerto Rico and beyond who are committed to advancing biomedical research and improving health outcomes. We also engage with the healthcare and biotechnology sectors, including hospitals, biopharmaceutical and biomanufacturing companies, and biotech startups. We collaborate with a variety of stakeholders, including government agencies, non-profit organizations, and private sector companies, to facilitate research, drive innovation, and translate scientific discoveries into practical healthcare solutions. Our partnerships span local, national, and international levels, fostering a diverse and dynamic research ecosystem.

EXECUTIVE SUMMARY

The Research Institute, a research organization under the Puerto Rico Science, Technology, and Research Trust, serves as a dynamic hub for innovative research. Situated in the bustling Science City of San Juan, Puerto Rico, the RI was founded in 2022 with the mission of supporting pioneering basic and applied research into diseases that disproportionately affect our population.

Our philosophy is grounded in the belief that the acceleration of biomedical research and the enhancement of human health necessitates a diverse community in terms of education, training, background, perspectives, interests, and identity. We advocate for investigations into a broad spectrum of diseases associated with significant morbidity and mortality in Puerto Rico. Our commitment is to ensure that the benefits of all research outcomes are translated to our people, extending all the way to the patient's bedside. Our focus is on the development of potential therapies and interventions that can significantly reduce or eliminate health disparities across our archipelago.

Our aspiration is to serve as a beacon of basic and applied biomedical innovation and research excellence, not only in Puerto Rico but also beyond. We strive to make a tangible impact on the health and well-being of our community, transforming lives through the power of scientific discovery and its application.

The RI engages with a diverse array of stakeholders, including educational institutions, the healthcare sector, biotechnology industries, and government agencies. Our program is designed for researchers, healthcare professionals, and students both within Puerto Rico and globally who are committed to advancing biomedical research and improving health outcomes. We foster a diverse and dynamic research ecosystem through our collaborations at local, national, and international levels, driving innovation and translating scientific breakthroughs into practical healthcare solutions.

Since its inception, the RI has been dedicated to addressing challenges that affect our population. By establishing a state-of-the-art multimillion-dollar genomic surveillance facility, we have shed light on the path of SARS-CoV-2 evolution in Puerto Rico, using systematic, unbiased approaches to identify circulating variants, thereby supporting the COVID-19 epidemiological surveillance programs safeguarding our community in collaboration with the Puerto Rico Department of Health.

Furthermore, we are probing the roots of COVID-19 immunology, revealing profound biological and immunological insights into how the disease develops in our population via the National Institutes of Health SeroNet and RadXup Initiatives. This knowledge leads to new ways to monitor, diagnose, and treat patients more precisely. By collaborating, innovating, and empowering, we aim to build an inclusive research community that maximizes the potential of our affiliates and supports institutions and programs. We have established strategic collaborations with Yale University, the University of Puerto Rico Medical Sciences Campus, the Caribbean Primate Research Center, and the University of Puerto Rico at Cayey, Center for Interdisciplinary Studies.

This year, we have continued to work with various internal programs from the PRSTRT. We are actively collaborating with the Research and Development pillar members, primarily with the Research Grants Program, the Technology Transfer Office, and the SBIR Program. We collaborate broadly with the Puerto Rico Public Health Trust to prevent and educate about the pandemic, dispel rumors about the virus, and promote vaccination. We also actively collaborate with the Puerto Rico Consortium for Clinical Investigation on various initiatives. We are exploring new opportunities with other programs like the Puerto Rico Vector Control Unit, the Caribbean Center for the Rising Seas, and Parallel 18.

As we evolve, the insertion of programs, grants, and new initiatives has enabled us to increase and maintain our staff to twelve people. The RI Core Labs are being developed on the first floor of the Innovation Building. We will hire new investigators and establish our affiliate program to bring people together to advance the understanding and treatment of disease. Our research ecosystem aims to translate basic and applied biomedical discoveries into profound biological knowledge of the roots of common and rare human diseases affecting our population and to use those insights to develop new diagnostic and therapeutic strategies for patients.

EXECUTIVE SUMMARY NUMBERS

+20 million
More than +20 million in grants from NIH and ARPA

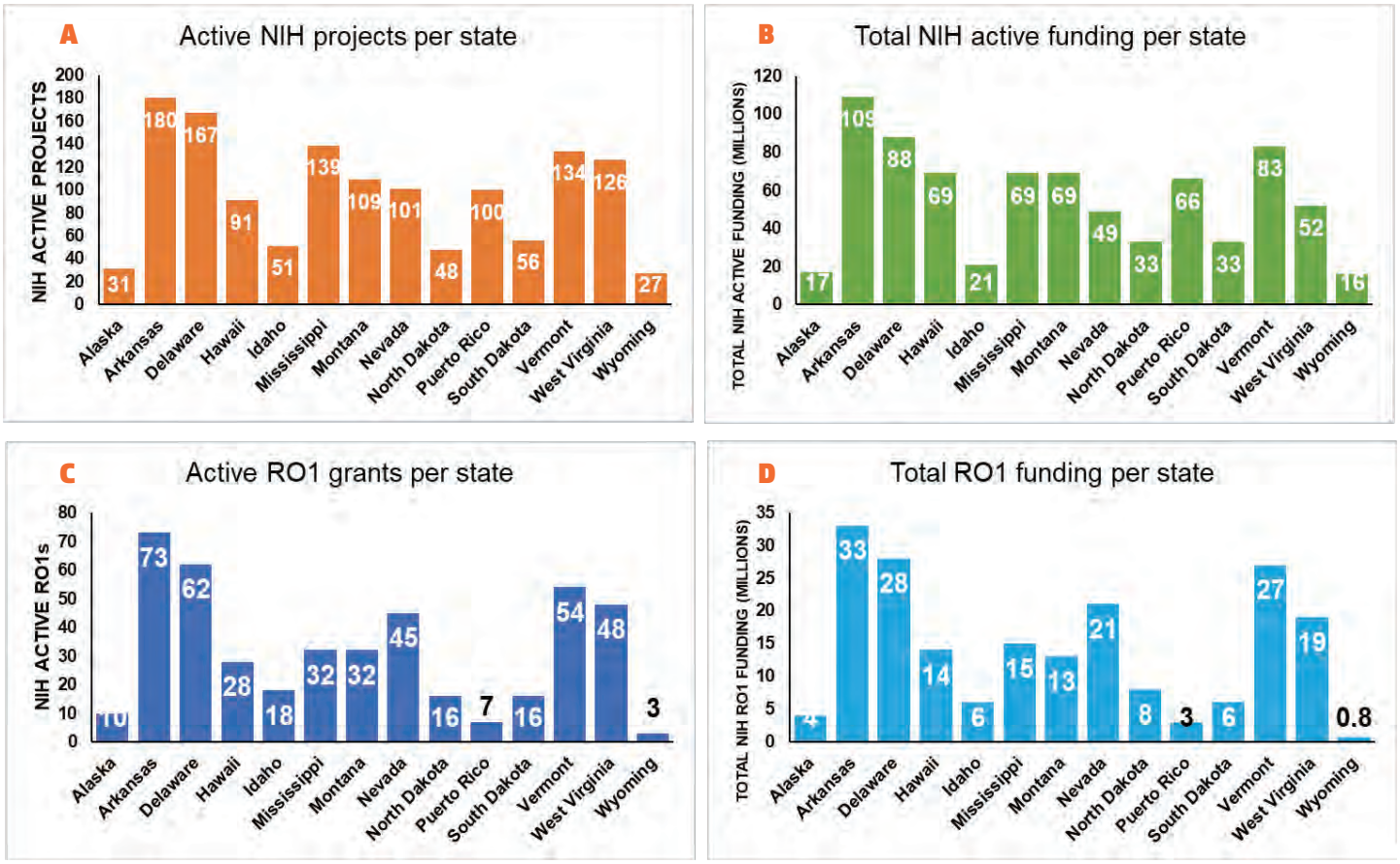
+11K
+11K SARS-CoV-2 genomes completed

+6,500
SARS-CoV-2 mutations of interest detected by ddPCR

+28,000
+28000 SARS-CoV-2 samples in our biorepository

2
NIH Grants funded as PI or Co-PI

+4
Sub-awards facilitated with other higher-ed institutions



NIH active projects and expenditures in some representative IDEA states and Puerto Rico. A) active NIH projects per IDEA states, not including subprojects, B) total NIH active funding per state, C) active investigator-initiated RO1 grants per state, and D) total RO1 grants per state. (Data NIH Reporter accessed 07/17/2023)

Based on active biomedical research expenditures from the NIH, Puerto Rico is among the U.S. states and territories included in the NSF's (formerly Experimental) Program to Stimulate Competitive Research (EPSCoR) and the NIH's Institutional Development Award (IDeA) program. These programs were established decades ago to enhance the competitiveness for research funding of institutions in states with historically low funding levels and low aggregate success rates for grant applications to the NIH. Puerto Rico has been a part of these programs since their inception. As illustrated in **Figure 1**, we can compare the NIH active projects and expenditures in some IDeA states and Puerto Rico. Currently, Puerto Rico has 100 active projects, representing an expenditure of 66 million dollars (Fig. 1B). However, as **Figures 1C and D** show, the total investigator-initiated grants, such as R01, in Puerto Rico are only 7, representing a mere 3 million dollars in expenditures. This means that R01 grants account for only 4.5% of the total funding. This is in stark contrast to a state like West Virginia, where 37% of its NIH funding comes from R01 grants. projects and expenditures in some IDEA states and Puerto Rico. As shown in **Figure 1A**, Puerto Rico currently has 100 that represent an expenditure of 66 million (Fig. 1B). However, as shown in **Figures 1C and D**, the total investigator-initiated grants as R01 in Puerto Rico are only 7, representing only 3 million dollars in expenditures. This means that R01 represents only 4.5% of the total funding. This contrasts with a state like West Virginia, where 37% of its NIH funding is from R01 grants.

Puerto Rico presents a unique environment for basic and applied biomedical sciences, offering an opportunity to advance research and development in health disparities. Our universities, primarily the University of Puerto Rico, have investigators with the education and experience necessary to secure funding. The question then arises: why isn't this happening in Puerto Rico now? While the answer is multifaceted, a primary reason is that the universities in the Puerto Rico lack the necessary ecosystem to provide all the required tools to their researchers.

This presents an opportunity to emulate the successful practices of research institutes at universities like Yale, Harvard, and MIT. First and foremost, the pre-and post-award process needs to be flawless. Moreover, the research enterprise of the institute must work to facilitate the process for investigators,

filling any gaps with well-coordinated collaborative efforts. Herein lies the golden opportunity for the Research Institute to address, for the first time, the health disparities and challenges affecting our population by advancing basic and applied biomedical research.

ACHIEVEMENTS FOR 2022-23

Puerto Rico COVID-19 Variant Surveillance Initiative (PRCVSI, ARPA PRDOH- 2022-DS-0299)

Two years ago, the Research Institute was awarded a $16 M grant to establish the COVID-19 genomic surveillance program for the Puerto Rico Department of Health(PRDOH). This contribution comprises tracing the spread of SARS-CoV-2 geographically over time and confirming that mutations that could influence pathogenicity, transmission, or countermeasures (such as vaccines, therapeutics, and diagnostics) are identified and evaluated promptly.

The PRSTRT was awarded the resources to create and establish the PRCVSI in August 2021. The execution of this proposal started after funds disbursement IN the beginning of September 2021. The process included hiring specialized personnel and substantial investment in staff, equipment, reagents, and bioinformatic infrastructure laboratory capacity. In addition, the initiative required effective collaboration between the reference laboratories in Puerto Rico and the Department of Epidemiology of the PRDOH to ensure that generated data are of good quality and are used meaningfully to save lives.

Since the proposal was awarded and after the minimum capacity was in place for starting the genomic surveillance program locally, we have sequenced +10,400 samples (+100 reports have been submitted), and +6000 samples have been analyzed for mutation analyses by ddPCR (+50 reports have been submitted). Our biorepository currently stores +28,000 COVID-19 samples. The numbers grow daily. Currently, we have the most important whole genome sequencing capacity in Puerto Rico. The PRCVSI has increased Pueto Rico capacity from an average of 8.5 sequences/month in 2020 to an expandable-capable +384 sequences/week. Local sequencing control dramatically optimized TATs from 3.5 to 1.5 weeks (57% reduction). Sequencing failures dropped from 25% to ≤ 5%.

Figure 2 summarizes the relative percentages of lineages reported by the PRCVSI since its inception. This figure summarizes the results from more than 10,000 SARS-CoV-2 sequences from positive samples from Puerto Rico. The program will continue for another year ending on June 30th, 2024. This collaboration is expected to be expanded to account for other infectious disease surveillance like dengue, influenza, zika, and chikungunya in human and wastewater samples with the PRDOH.

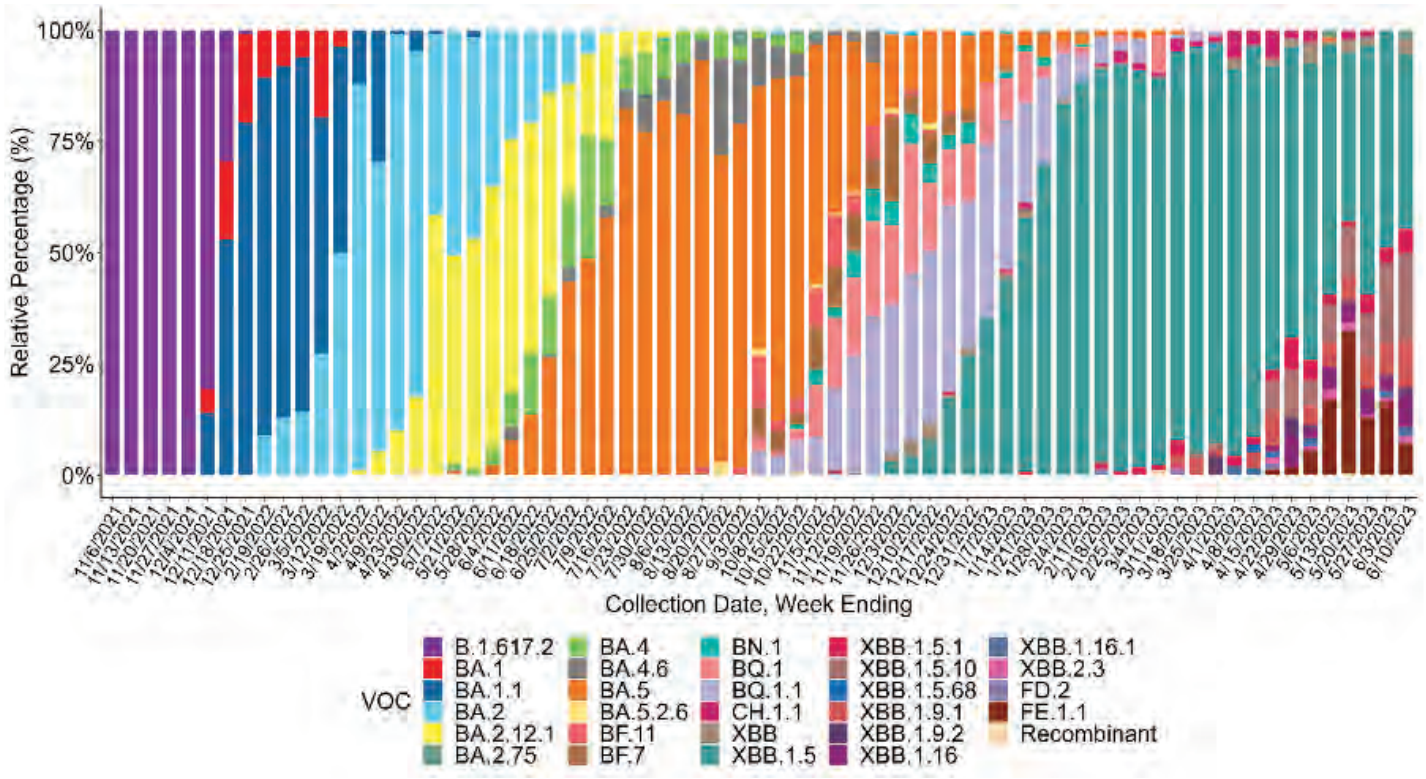


Figure 2 – Relative percentages of SARS-CoV-2 lineages reported by the PRCVSI from November 2021 until June 2023.

The Puerto Rico COVID-19 Variant Surveillance Initiative is currently the fourth jurisdiction in the US and territories, submitting the highest number of COVID-19 sequences in the country. Our efforts, which consistently contribute more than 384 sequences per week, have been highlighted by the SPHERES initiative of the CDC as one of the labs driving the genomic surveillance efforts in the US. We are producing local COVID-19 sequences at a rate similar to nationwide genomic surveillance efforts from Gingko Bioworks and Helix. Both of these labs have been contracted directly by the CDC to perform nationwide sample genomic surveillance. Samples from the PRCVSI are only coming from our locally established efforts.

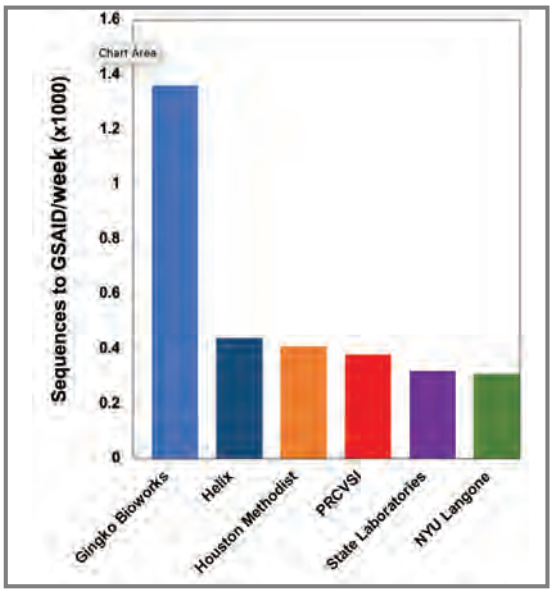


Figure 3 - The PRCVSI (in red) is the fourth jurisdiction in the US and its territories, submitting most of the COVID-19 sequences to GSAID. We are producing sequences at a similar rate to CDC-contracted laboratories like Gingko Bioworks and Helix.

Community-Engaged Research on COVID-19 Testing in the US Territories (NIMHD U54MD010711)

The COVID-19 pandemic underscored the deeply accentuated structural inequalities in the United States. Structural factors such as inadequate access to health care, entrenched racism, and historic prejudice led to an unequal illness and mortality rate among marginalized and underserved communities, especially in the Hispanic and African American populations. While these issues are not novel and have been consistently overlooked in the States, the United States Caribbean territories (Puerto Rico and the United States Virgin Islands) have also been victims of similar structural inequities. However, their unique geographic location and economic conditions further amplify the impact of these inequalities. The inadequate healthcare infrastructure, isolation from mainland resources, and pre-existing socio-economic disparities have put these territories at a higher risk, impacting not just testing capabilities but overall COVID-19 management. Despite facing a higher risk of SARS-CoV-2 infection and death, these vulnerable communities are less often screened for the virus. Current testing strategies have been designed and employed mainly for populations with ample resources. However, the low testing frequencies in certain groups are typically unique to those communities and call for a customized strategy. Understanding these testing barriers is crucial, but converting this understanding into practical action is the key to eliminating these obstacles. Innovative strategies that actively involve the community hold the promise of addressing COVID-19 disparities among these diverse groups.

Recently, The National Institutes of Health (NIH) established a landmark funding initiative, the Rapid Acceleration of Diagnostics-Underserved Populations (RADx-UP) program, to understand the testing barriers in underserved communities and facilitate and increase access and uptake of SARS-CoV-2 testing. Building from the experiences and lessons from the Eastern Caribbean Health Outcomes Research Network (ECHORN), which is the first intergenerational cohort in the region focused on chronic disease outcomes, to establish community-based research to increase access and uptake of testing among underserved populations in Puerto Rico (PR) and the US Virgin Islands (USVI). While in the USVI, we established a strategy to provide access to testing facilitated by several Federally Qualified Health Centers (FQHC); in PR, with roughly a population 30-times higher than in the USVI, access to testing was provided by an FQHC and directly to underserved communities in the municipality of Loíza.

In partnership with Yale University and the Community-engagement Division of the Puerto Rico Public Health Trust, this RADxUP-funded initiative has successfully expanded and improved COVID-19 diagnostic testing in the underserved and underrepresented community of Parcelas Suárez in Loíza, Puerto Rico. This has been achieved by leveraging community-based resources.

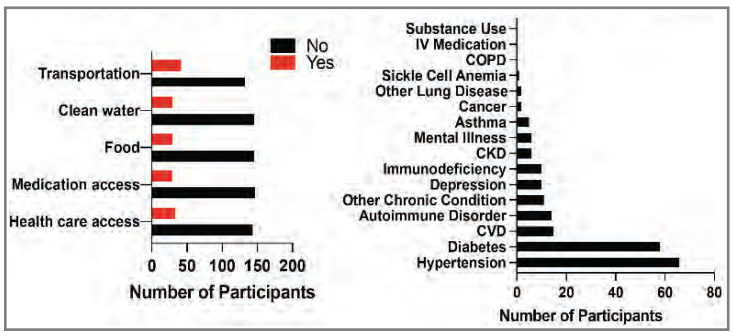


Figure 4 - COVID-19 Related Challenges in Loiza. Participants were asked about pandemic-related challenges they faced and medical conditions at baseline and follow-up surveys.

In this longitudinal study, we have worked closely with community stakeholders to increase COVID-19 testing and provide support for quarantine and isolation. This enhanced diagnostic testing approach has significantly improved testing reach, access, uptake, and effectiveness within this vulnerable beach-front community. **Figure 4** shows the challenges faced by the community participants from the study.

Our recruitment strategy involved engaging with community schools and nursing homes and conducting regular health and educational fairs. As a result, thousands of molecular tests have been made available to study participants, greatly enhancing our ability to monitor and respond to the pandemic within this community. This project, ending on August 2023, has been presented in the RADxUP meeting of NIH and the American Public Health Association.

SARS-CoV-2 correlates of protection in a Latino-origin population (NCI U01CA260541)

This initiative is part of the SARS-CoV-2 Serological Sciences, or SeroNet, project. The rapid spread and circulation of this virus have significantly strained healthcare systems and disrupted society at large. We are implementing this SeroNet project within a population of Latino-African descent to determine the actual seroprevalence of SARS-CoV-2 in Puerto Rico.

The HLA system is a part of the immune system that helps the body recognize and respond to foreign substances. It is highly variable, meaning different individuals can have different HLA types. This variability can influence how effectively an individual's immune system can respond to a viral infection. Also, the HLA system can exert selective pressure on viruses, leading to viral evolution and immune evasion. The variability in KIR genes can also influence the immune response to SARS-CoV-2. Some KIR-HLA combinations might lead to a more robust immune response, while others might lead to a weaker response. In contrast, the SARS-CoV-2 virus has shown the ability to produce variants with significant changes in transmissibility, disease severity, and virulence.

To understand the complexity of the interaction between the HLA system and KIR genes, the resulting immune response, vaccination, the SARS-CoV-2 variants, and the resulting disease severity, we devised a strategy to establish a local private clinical laboratory network to collect and store sequential samples from infected patients from Puerto Rico. The leading private reference clinical laboratories entered the study. Samples from infected individuals have been collected since November 2022, consolidating the Infectious Diseases Repository Biobank (IDRB) of the Research Institute of the Trust. Thousands of samples have been sequenced in a genomic surveillance initiative in collaboration with the PRDOH.

Figure 5 shows the epidemiological curve of the COVID-19 pandemic in Puerto Rico to the date of this report (06/12/2023), the positivity rate is 25.2% (calculated with positive RT-PCR tests) with a seven-day average of cases of ~1000 cases per day. The COVID-19 epidemiology in Puerto Rico has resulted from five big waves of cases from five different variants. As outlined in **Figure 6**, the Omicron BA.2/5.x variant wave of cases has been the one with more accumulated cases (238,463). The Alpha variant wave of cases that impacted Puerto Rico by mid-March 2021 accumulated 32,064 cases. To this date, COVID-19 has been responsible for almost the almost 6,000 deaths that the PRDOH has reported. 82.7% of those deaths are only of people with 60 or more years.

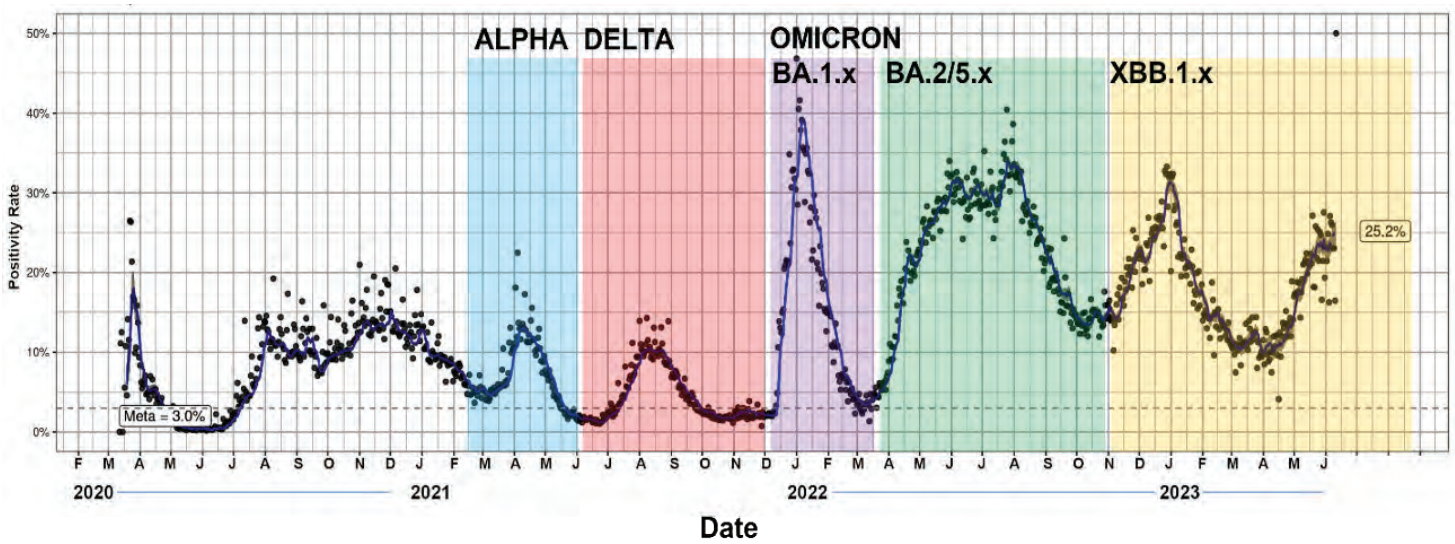


Figure 5 - The five waves of COVID-19 cases in Puerto Rico. These waves were caused by the Alpha, Delta, and the three waves of the Omicron variant lineages BA.1.x, BA.2/5.x, and now XBB.1.x. (Data obtained from https://rconnect.dfci.harvard.edu/covidpr/)

In collaboration with the PRDOH, we established a capacity to establish the Puerto Rico COVID-19 Variant Surveillance Initiative, the Puerto Rico genomic surveillance program. Thanks to this collaboration, we were able to consolidate the Infectious Diseases Repository Biobank (IDRB) of the Research Institute of the Puerto Rico Science, Technology, and Research Trust. Longitudinal analyses are underway to establish the interaction between the HLA system and KIR genes, the resulting immune response, vaccination, SARS-CoV-2 variants, and disease severity. The IDRB started operations in November 2021. A regular daily collection of samples was established in April 2022. To the date of this report, we have collected 27,699 COVID-19-positive samples.

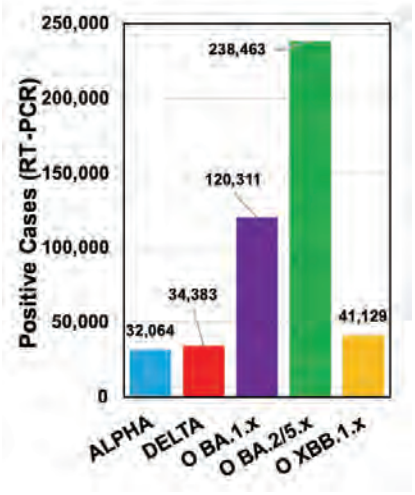


Figure 6 - Cases per COVID-19 variant wave in Puerto Rico. As shown, the number of cases per variant that had affected the Island has been devastating. The Omicron variant wave has been the one with more accumulated cases, cases per day, deaths, and evolution time.

The genomic surveillance epidemiology program in Puerto Rico has collaborated with the US Center for Disease Control Prevention (CDC), the PRDOH, the Ponce Health Sciences University, and the Research Institute of the Trust. To date, in Puerto Rico, according to GISAD, 23,631 sequences have been reported. Our capacity has been responsible for ~44% of the sequences. The impact of our capacity went from an average sequencing rate of about eight sequences per month in 2020 to more than 200 per week in 2022. Currently, we have sequenced almost 100% of the samples of 2023. **Figure 7** panel **A** shows the total sequencing activity per day performed on the Island since September 2020. Our process started on November 30th, 2021. The clinical laboratory samples collection initiative began in April 2022. To date, our initiative has sequenced almost 10,000 samples. Panel **B** shows the proportion of the SARS-CoV-2 variant clades over time. The most devastating variant has been the Omicron variant represented by clades 21K, 21L, 22A, 22B, 22C, 22E, 22F, and 23A.

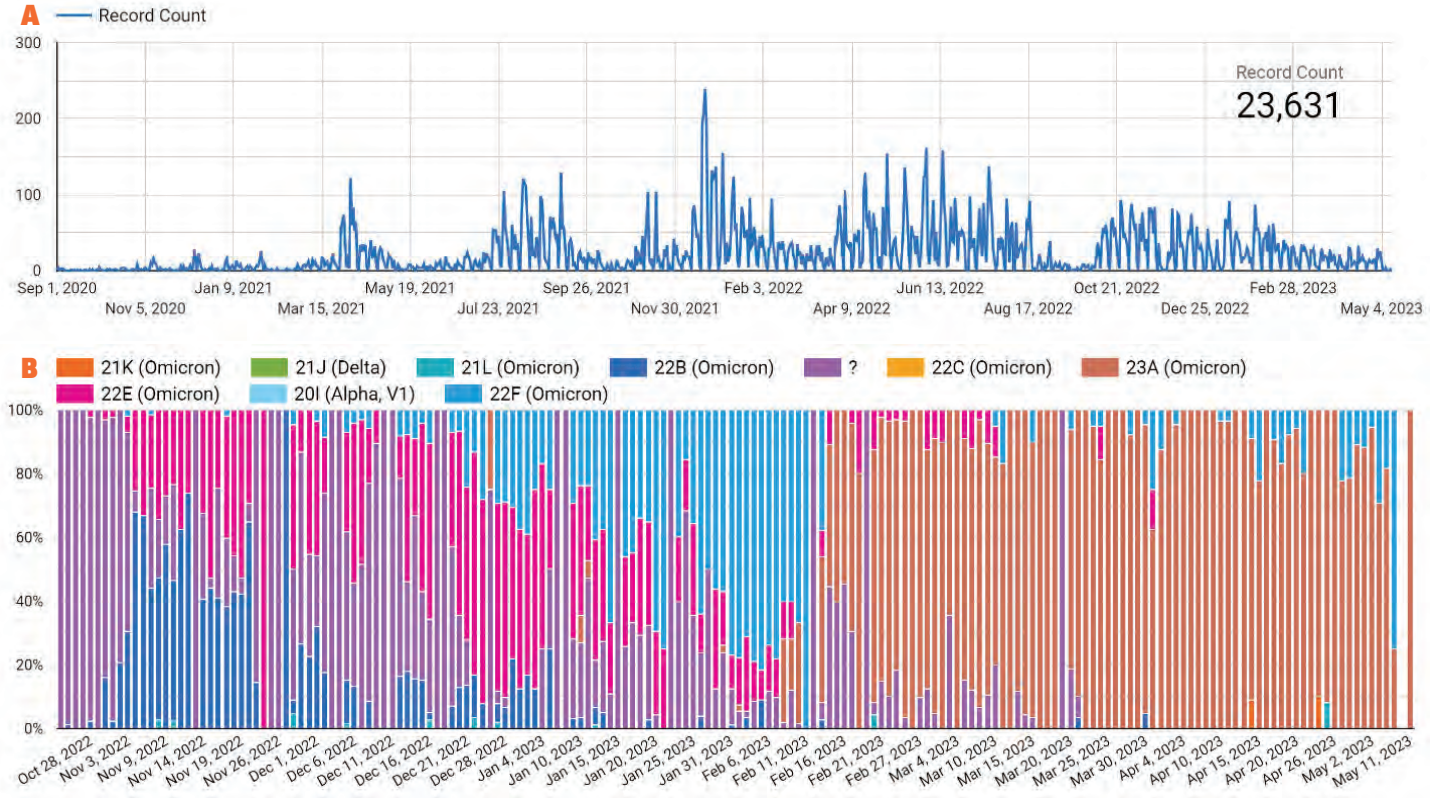


Figure 7 - Genomic surveillance in Puerto Rico. A) establishes the number of sequences per day performed on the Island since September 2020. Our process started on November 30th, 2021. The clinical laboratory samples collection initiative started in April 2022. To date, our initiative has sequenced almost 10,000 samples. B) established the proportion of the SARS-CoV-2 variant clades over time. The most devastating variant has been the Omicron variant represented by clades 21K, 21L, 22A, 22B, 22C, 22E, 22f, and 23A.

All the personnel working on this project participate in weekly meetings in which all the data, current COVID-19 epidemiology, and results are analyzed and discussed. Three post-doctoral fellows, a biorepository manager, laboratory techs, epidemiologists, bioinformaticians, and data managers participate in this group meeting. In addition, we have biweekly meetings with the Department of Epidemiology of the DOH. Every other week post-docs and other key collaborators have a one-on-one meeting with Dr. Marcos López, PI of the project. In addition, this fall, two undergraduate students from the University of Puerto Rico at Humacao, U-RISE program, are joining the research groups. These students will learn hands-on experience in high-throughput next-gen sequencing for COVID-19.

WHAT'S NEXT

Research Institute

This year will be very important for the RI as we will establish the concept of our program. In the following months, we will develop the Strategic Plan for the RI. This plan will establish and provide the environment and priorities.

We will aim to serve as a collaborative ecosystem, bringing together a diverse community of researchers from various disciplines and affiliated institutions. In addition, the RI will support innovative basic and applied research into the fundamental biological mechanisms underlying diseases that disproportionately impact our population. Furthermore, it focuses on therapies or interventions that can significantly reduce or eliminate health disparities across our Archipelago.

The Research Institute encourages investigations into various diseases associated with significant morbidity and mortality in Puerto Rico. Accelerating biomedical research and improving human health requires a diverse community regarding education, training, background, perspectives, interests, and identity. Such diversity fuels our creativity in problem-solving and solution-finding.

At the Research Institute, our goal is to ensure that the benefits of all research outcomes are translated to our people, reaching all the way to the patient's bedside. We strive to make a tangible difference in the health and well-being of our community.

The Research Institute's Core Laboratories: A Hub for Advanced Biomedical Research in Puerto Rico

The Research Institute has established the Core Laboratories, a testament to its dedication to nurturing a diverse and collaborative research environment. These laboratories are not just about advanced technology; they serve as pivotal force amplifiers for the Research Institute, fulfilling various roles that align with the missions of both the Institute and the Trust. One of the primary objectives of these labs is to bolster the Research and Development pillar of the Trust.

Designed with a clear vision, the Core Laboratories are in sync with the Research Institute's goals and, by extension, the overarching mission of the PRSTRT. They play a vital role in several areas: attracting and onboarding new researchers and trainees to the Institute, ensuring the retention of skilled investigators, spearheading the acquisition and upkeep of avant-garde research platforms, and facilitating interactions and partnerships both within the Institute and with other PRSTRT programs. This collaborative spirit also extends to affiliated researchers from both Puerto Rico and the international community.

Spanning an impressive 3,000 square feet, the Core Laboratories are situated on the ground floor of the PRSTRT's Innovation Center in Rio Piedras. This expansive facility has the potential to create 15 to 20 specialized job opportunities in the realm of biomedical research. One of its standout features is its commitment to advancing genomic sequencing in Puerto Rico, integrating both Illumina and Nanopore sequencers. The facility will also introduce the island to its first spectral flow cytometry core, equipped with cutting-edge Cytek systems. Furthermore, the laboratories will house a top-tier molecular biology core dedicated to cell culture studies and infectious disease research. A significant addition to the Core Laboratories is the Biosafety Level 3 (BSL3) facility, which is geared towards in-depth research on infectious agents' biology, pathogenesis studies in living organisms, and pioneering vaccines and antiviral treatments in a preclinical setting.

In addition, we will conceive a Scientific Advisory Board that will help us set the path of the RI. As we grow, we will establish a leadership team. The leadership team will bring together a wealth of knowledge from scientific, academic, and administrative fields. This team guides the partnership in alignment with RI's mission and values. Our distinctive collaborative framework will foster an environment where scientists and administrators can jointly explore innovative concepts. This is key to encouraging collective leadership in potentially transformative initiatives inspired by these ideas.

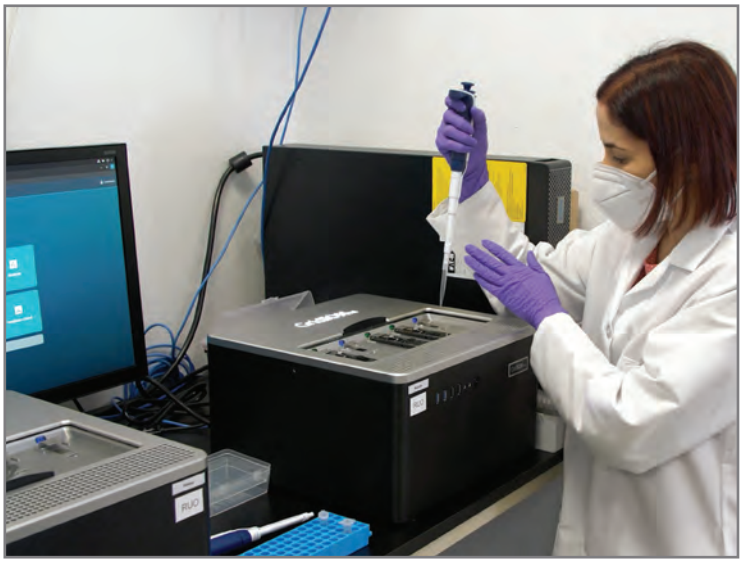
RI Scientists

The RI will recruit scientists from the scientific ecosystem aligned with the mission and vision of the institute. Professional scientists at our institution should hold a pivotal role in driving our scientific endeavors and institutional growth. They are the catalysts for fostering scientific connections within the Research Institute ecosystem and extending beyond it. By bridging various disciplines and research areas, they facilitate the exchange of ideas and promote collaborative research efforts.

These scientists will play a significant role in shaping the scientific priorities of the institution. They should actively participate in key institutional issues and decisions, ensuring that our scientific endeavors align with our mission and contribute to our overall objectives. Their insights and expertise are invaluable in steering our research direction and making strategic decisions impacting our institution's future. Moreover, they should be committed to nurturing the next generation of scientists. Through recruitment, mentoring, and support, they help young scientists to grow and thrive in their respective fields. They will be instrumental in fostering an environment of continual learning and innovation, ensuring the RI ecosystem's ongoing renewal and evolution.

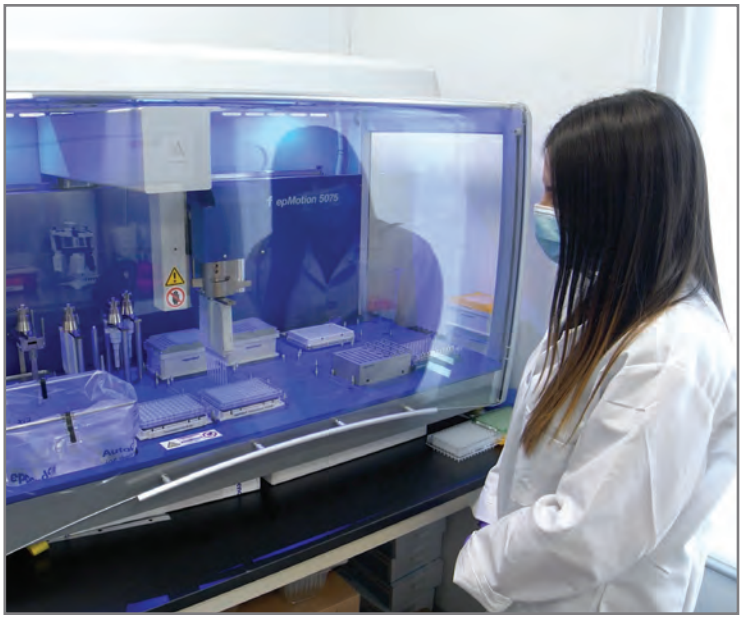
Lastly, these professional scientists will fulfill the essential citizenship and service roles that strengthen the RI ecosystem. They will contribute their time and expertise to various committees and initiatives, helping to build a vibrant, inclusive, and collaborative research environment. Their commitment to service enhances the sense of the ecosystem within the RI and contributes to our collective success.





RI Affiliated Members

Affiliated members of the RI are faculty members or industry scientists from public or private higher education institutions, and health care institutions in Puerto Rico and abroad.



Collaborations with other PRSTRT Programs

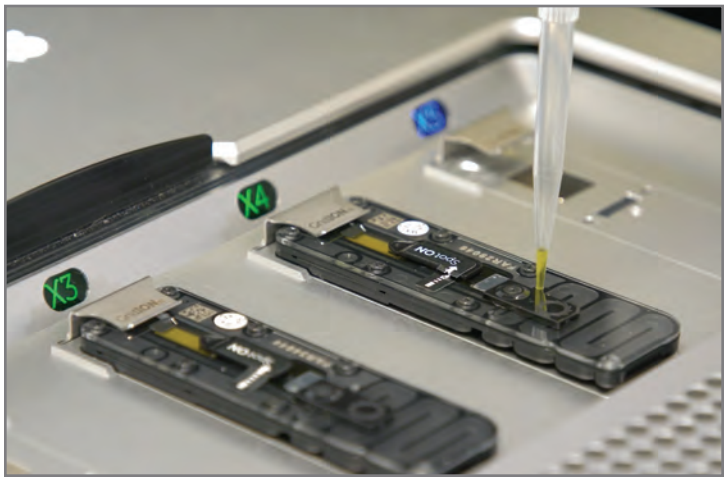
The Research Institute and its scientists and affiliated members will establish a unique scientific ecosystem that will benefit our programs and Puerto Rico. As we have been doing since day one, we will continue collaborating. with other programs from our institution to help advance the Trust's mission and vision.



DIRECTOR'S POV

In my tenure as Director of the Puerto Rico Science, Technology, and Research Trust's Research Institute, this transformative year stands out. Amidst a global pandemic, our team showcased unparalleled resilience and innovation, upholding our mission fervently. The Puerto Rico COVID-19 Variant Surveillance Initiative, a pivotal achievement, symbolizes our unwavering commitment to our community's safety. Securing over $20 million in grants, completing 11,000+ SARS-CoV-2 genomes, and identifying 6,500+ critical mutations, our accomplishments transcend mere statistics, reflecting our ceaseless drive for excellence. Our strategic collaborations with renowned institutions have amplified our research prowess and broadened our horizons. Our endeavors to address health disparities have culminated in tangible benefits for the people of Puerto Rico. This year epitomizes the strength of unity, collaboration, and tenacity. Reflecting on this journey, my heart swells with pride for our team's dedication and our community's unwavering trust. United, we forge ahead, crafting a brighter, healthier tomorrow.







MEET OUR TEAM



Marcos Lopez Casillas, PhD
Director

Dariana Morales Velázquez, MS
Laboratory Manager PRCVSI

Lorraine D. Rodríguez Rivera, PhD
Research Scientist PRCVSI

Ednalise Santiago Cartagena, PhD
Research Scientist PRCVSI

Luis A. Acevedo Márquez, MS
Bioinformatics Scientist PRCVSI

Yrellis Perez Negrón, MBA
Data Manager PRCVSI

Jeriel Carrasquillo Cruz, BS
Laboratory Scientist PRCVSI

Gabriela Morales Vila, BS
Laboratory Scientist PRCVSI

Angelina V. Ruiz Lambides, PhD
Scientific Coordinator,
Caribbean Primate Research Center

Laura E. Álvarez Miranda, BS
Research Assistant, NIH SARSCOV

Teric Brito Arana, BS
Patient Recruitment Assistant, NIH SARSCOV

Amanda M. Castello Vale
Summer Research Intern


Puerto Rico
Science, Technology
& Research Trust

ENTREPRENEURSHIP

ANNUAL **REPORT** | **2022-2023**





Colmena66

Tu Camino Empresarial









COLMENA66

WHAT WE DO

Colmena66 facilitates entrepreneurship by connecting and building the entrepreneurial community. Our vision is that everyone in Puerto Rico can start and grow a successful business. We are an entrepreneurial ecosystem builder and integrator. Colmena66 is the one-stop shop to help entrepreneurs navigate community resources, fostering connections to enable entrepreneurs to reach their goals. We identify and analyze gaps in the entrepreneurial ecosystem and work hand in hand with the Entrepreneurial Resource Network to build the invisible infrastructure that supports entrepreneurs.

HOW WE DO IT

As the main resource hub for entrepreneurs, we provide guidance through our call center, interactive resource directory, action plans, event calendar and educational resources. We help find answers to any business question and connect entrepreneurs with the right resource at the right time so that they can start or grow a successful business.

Colmena66 convenes and builds community among Entrepreneurship Support Organizations (ESOs) in the Resource Network. They can leverage our events, communication channels, and data to amplify their reach and better serve entrepreneurs. ESOs benefit from opportunities to network, educate their staff, and join ecosystem-wide efforts such as **the Resource Network Meetups**, the **Boricua Emprende Fest**, **Tu Camino Empresarial** regional events, the **Status Report of the Entrepreneurial Community in Puerto Rico** and **Levanta tu Negocio** crisis recovery platform.

WHO WE CONNECT WITH

To fulfill our role of entrepreneurial ecosystem builder and integrator, we work with entrepreneurs and connect them with the right ESOs to address their needs. We are the only organization in Puerto Rico that works with all types of businesses, at any stage. The ESOs that make up our Resource Network include non-profit organizations, service providers, academia, government agencies, and others. With this network we have been able to develop system-wide initiatives related to public policy, innovation and R&D, capacity building, disaster recovery, and much more.

EXECUTIVE SUMMARY

In the last year, Colmena66 reached 10,515 searches on its Resource Navigator, delivered 472 counseling hours, and facilitated 3,630 referrals to the Resource Network, serving 2,933 entrepreneurs. Colmena66 continues to rank among the top affiliates in the SourceLink® network, comprised of 80+ members, on key performance indicators, such as network access and counseling hours. Colmena66 also led the launch of Xpand, a program developed in partnership with Parallel18 and funded by Banco Popular, to support innovation-driven startups with over three years in operations, annual revenues of $250K or more, and the basic infrastructure to begin their expansion process. Colmena66 co-launched Pulso, a program led by Foundation for Puerto Rico and funded by the SBA Community Navigator Pilot Program that supports entrepreneurs in the northern region of the island. With the impact of Hurricane Fiona in September, Levanta Tu Negocio PR was reactivated and Colmena66 was able to quickly participate in regional business support brigades to gather disaster data and share its insights with the ecosystem, helping deploy limited resources. Colmena66 also hosted hosted the first in-person edition of the Boricua Entrepreneur Fest (BE Fest) since the start of the pandemic. The BE Fest is Puerto Rico's largest entrepreneurship education event, gathering over 1,200 participants with over 100 speakers and mentors, 50+ educational sessions, networking, 70+ Resource Expo, and more.



To provide entrepreneurs with better tools and easier navigation to access entrepreneurial opportunities, we redesigned and updated our website with the help of **SourceLink®**. We also hosted the SourceLink Summit 2023 in Puerto Rico, gathering over 50 ecosystem builders from across the national network to share best practices, tools and identify common challenges.





We held the first regional event after three years: **Tu Camino Empresarial Tour Oeste** in Mayagüez on June 29th, sponsored by Oriental Bank. Almost 200 entrepreneurs participated and connected with 38 resource partners serving the region at the El Panal Expo.

Continuing our effort to share actionable data with stakeholders and decision-makers in our community, we deployed our 2022 Annual Entrepreneurship Survey and Resource Partner Survey. Compared to 2021, the Annual Entrepreneurship Survey participation increased by 47% and the Resource Partner Survey increased by 27%. By analyzing this data, we provide deeper insight into the topics covered in the 2021 Status Report of Puerto Rico's Entrepreneurial Community and highlight the collective impact the community has had.

We expect to continue highlighting the stories and challenges our community faces and how we have all been working together to drive equitable and inclusive entrepreneur-led economic development.

PULSO
Small Business Support Program
xpand
LEVANTA TU NEGOCIO PR
HURACÁN FIONA
Tu Camino Empresarial
SOURCE LINK®
BE fest 2022
Boricua Emprende Fest



Status Report of Puerto Rico's Entrepreneurial Community

"Working together to drive equitable and inclusive entrepreneur-led economic development."

EXECUTIVE SUMMARY IN NUMBERS

2,933 Entrepreneurs served	**3,630** Referrals	**472** Counseling hours provided
660 Responses to LTN Disaster Recovery Survey	**1,200+** Participants at BE Fest 2022	**555** Responses to Annual Survey

REPORT

Red Colmena66

RESOURCE NETWORK MEETUPS

Trust and action are at the center of successful entrepreneurial ecosystems. We organize periodic meetups with the Resource Network to foster open dialogue, collaboration, and collective action. We held 2 meetups to share resources among partners and continue strengthening relationships within the ecosystem.







In August 2022, we published the Status Report of Puerto Rico's Entrepreneurial Community 2021 and unveiled it at our Resource Network Meetup. This effort helped share actionable entrepreneurial ecosystem data with the network. We also had two reaction panels, one comprised of entrepreneurs, and the other of ESO directors and Local and Federal Government officials.



In January 2023, we held a Resource Network Meetup in the Northern Region. We fostered connections between participating ESOs, had a training session related to existing government incentives for small businesses, and discussed initiatives for 2023 (including Levanta Tu Negocio PR and Boricua Entrepreneur Fest 2023).



In May 2023, we held a Resource Network Meetup together with AARP to discuss opportunities and challenges for Adults 50+ years old.

150+
Network Participants

4.7/5
Satisfaction Rating



In December 2022, the Lunch & Learn was held at the Boricua Entrepreneur Fest plenary session, with a top-notch panel discussing Emerging Technologies, featuring innovative startups and industry experts.

100%
Of participants learned of new ecosystem resources at these events

98%
Would participate in future events

4.7/5
Satisfaction rating

SAN JUAN LUNCH & LEARN

SAN JUAN LUNCH & LEARN

Understanding entrepreneurs' need for connection, especially after the isolation period brought on by the pandemic, we collaborated with the City of San Juan's Office for Economic Development and Tourism to design this educational series based on our entrepreneurship data, comprising capacity building workshops and networking.

In August 2022, we held the second Lunch & Learn event titled "Access to Capital Opportunities" where entrepreneurs learned of existing funding alternatives and the success stories of other entrepreneurs as they navigate the access to capital continuum.



PULSO
Small Business Support Program

PULSO – SBA COMMUNITY NAVIGATOR PILOT PROGRAM (CNPP)
with Foundation for Puerto Rico



Deploying a Hub and Spoke model, Foundation for Puerto Rico partnered with Colmena66, Centro para Emprendedores, INprende, Brands of Americas, and the Latino Economic Development Center to provide small businesses in the northern region of the island that are part of the visitor economy the tools and resources to rebuild, grow and expand through a multi-stage business development path. Together we help businesses identify needs and ecosystem resources, learn about and comply with regulatory requirements, develop or improve their business plan, strengthen their marketing and social media strategies, and prepare them for the access to capital process. This includes workshops, capacity building, mentoring and technical assistance throughout the different stages.



In January, we convened our Resource Network within the northern region to share initiatives for 2023 and collaboration opportunities. The Pulso SBA-CNPP Cohort 3 call for applications was announced and we covered topics such as disaster "precovery" and ecosystem data gathering.



In February we developed the mentoring and workshop event **Dale Un Pulso A Tu Negocio** for entrepreneurs in the northern region. Thanks to our outreach efforts, the event garnered over 200 registrations and 63 in-person participants. Participants had access to 31 expert mentors and learned about the Pulso SBA-CNPP program and other business topics such as tax planning, marketing, e-commerce and business planning.

These are the preliminary collective results of the Pulso program:

1,150 Unique participants trained

100+ Training hours provided

1,000+ Individual counseling hours provided

$565K+ Requested in loan and grant applications

$283K+ Approved in loans and grants

Funded through a grant with the U.S. Small Business Administration (SBA). All opinions, conclusions, and/or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the SBA.



ECOSYSTEM BUILDING LEADERSHIP PROGRAM

Entrepreneurial ecosystem building, supported by the Kauffman Foundation through the EBLP operated by InBIA, is shaping the future of this field. Denisse Rodríguez and Samuel Merced, part of the Collaborative Advisory Group, joined a working session in September 2022 in Indianapolis, fostering connections with ecosystem builders nationwide and exchanging insights on Puerto Rico's ecosystem development.

XPAND

Xpand is a novel program powered by Parallel18 and Colmena66, funded by Banco Popular, to support innovative second-stage startups with more than three years in operation, generating over $250,000 annual revenue, and with the basic infrastructure to begin their expansion process and sustain their growth.

Program Objectives

- Increase participant knowledge in access to capital through investment management, bank financing alternatives and commercial connections.
- Increase participant knowledge in exports through market research resources.
- Provide specialized mentoring and develop a support community.

17 Startups

41% Woman-owned

58% Actively exporting

$1.4M Average annual revenue

$7.5M Solicited investment

LEVANTA TU NEGOCIO PR
HURACÁN FIONA

LEVANTA TU NEGOCIO PR: HURRICANE FIONA



During the emergency caused by Hurricane Fiona in September 2022, we reactivated Puerto Rico's tech platform for small business disaster recovery, Levanta Tu Negocio PR. This multisector collaborative platform is a tool for data gathering and analysis of challenges entrepreneurs faced in the aftermath. Entrepreneurship support organizations, local and federal government, philanthropy, media, academia, and others are able to make data-based decisions to deploy limited resources such as cash grants, disaster loans, technical assistance and other support. We launched two surveys: one for entrepreneurs and and one for support organizations. We created a recovery guide to compile available relief resources for entrepreneurs in one place.

In just 6 weeks, we received 660 responses from individuals in 76 of 78 municipalities to our entrepreneur survey. With this information ,we built two online dashboards updated real-time and shared disaster data in a timely manner with partners deploying relief resources.

- We published 2 dashboards, in English and Spanish, to highlight entrepreneur needs and ecosystem resources.
- We published and constantly updated the Disaster Recovery Guide covering incentives, loans, co-working spaces, technical assistance, among others.
- We participated in 5 Regional Entrepreneurial Support Brigades organized by PR-SBTDC, SBA, and Foundation for Puerto Rico to bring resources to entrepreneurs in affected areas.
- We opened a co-working space in Ponce together with P11 (The City's Office of Economic Development), helping over 40 entrepreneurs.
- We included the BE READY Lab in our Boricua Emprende Fest 2022 agenda for December, adding topics to help businesses be prepared for future crises.

Our findings:

82% Do not have contingency funds

73% Do not have insurance (12% do not have insurance due to high costs)

$13.2K Average loss due to damages

34% Suffered damages to inventory or raw materials

43% Of damages were caused by failures in the electric service

55% Do not have alternative sources of electricity

BORICUA ENTREPRENEUR FEST 2022



The Boricua Entrepreneur Fest 2022 was celebrated on December 6th, 2022. This is Puerto Rico's largest, most inclusive, and accessible annual business education and celebration event. The design and agenda cater to all types of entrepreneurs at every business stage and from all backgrounds within the entrepreneurial community to provide a unique experience focused on connection, community, and growth. Thanks to the efforts of our team, partners and sponsors, the event was of low cost to participants and proved to be a huge success, gathering 1,200 entrepreneurs. Feedback from the community was excellent, with over 90% of participants giving a very positive rating.

The event agenda included:

120+ Expert speakers

59 Education sessions

70+ Resources in the El Panal Expo

Our audience:

1,200+ Participants

61% Were women

42% Had an established business

60% Were 25-44 years old

81% Were first time participants

9/10 Participants would recommend attending a future BE Fest event

95% Expressed being better prepared and educated in entrepreneurship after the event

COLMENA66'S WEBSITE



In April 2023, we launched our new and improved website. After analyzing our platform, we wanted to redesign the website to enhance the user interface and overall user experience, making it easier for entrepreneurs to navigate on desktop and mobile as they access the resources they need. Furthermore, the migration and update of content have ensured that our website remains up-to-date and relevant. With these improvements, we anticipate a substantial increase in website traffic and decrease in bounce rate, resulting in a higher number of entrepreneurs benefiting from our support services and resources. We are confident that these enhancements will greatly facilitate the journey of aspiring and experienced entrepreneurs in finding the assistance and guidance they require to thrive.

SOURCELINK SUMMIT 2023





In April 2023, Colmena66 and the Puerto Rico Science, Technology & Research Trust served as the host for the national SourceLink Summit in San Juan. SourceLink is an affiliate network of over 80 ecosystem building organizations across the United States. This summit focused on sharing best practices, identifying common challenges, networking, and capacity building. Over 50 ecosystem builders were able to meet and learn from veteran ecosystem builders from around the country, including Nathan Ohle (CEO of the International Development Council, Maria Meyers (Assoc. Vice Chancellor and Executive Director of the UMKC Innovation Center), Andy Stoll (Senior Program Officer of Ecosystem Development at the Kauffman Foundation), Melea McRae (Founder and CEO of Crux KC), and Jonathan Ortmans (Founder and President of the Global Entrepreneurship Network). This was a valuable opportunity to learn about national trends and initiatives from leaders in the industry, build relationships with SourceLink affiliate colleagues and solve common problems across the network. We collaborated with Echar Pa' Lante to invite Jonathan Ortmans to the Summit while also leveraging the opportunity to showcase Puerto Rico as a potential host destination of the Global Entrepreneurship Congress (GEC). We are excited to announce that this effort was successful, and Puerto Rico will host the GEC in July 2024, a huge win and opportunity for our entrepreneurship ecosystem.

SBA GROWTH ACCELERATOR FUND COMPETITION 2023

The U.S. Small Business Administration (SBA) offers prize awards for impactful and inclusive approaches to foster thriving, collaborative national innovation support ecosystems to advance research and development (R&D) from ideas to impact. By fostering connections between entrepreneurs, advisors, mentors, partners, philanthropy, corporations, investors, and other shared resources, the 2023 Growth Accelerator Fund Competition (GAFC) catalyzes strategic ecosystem partnerships to build community and organizational capacity for the successful launch, growth, and scale of STEM (Science, Technology, Engineering, and Mathematics)-based entrepreneurs and startups.

Colmena66 and the Puerto Rico Science, Technology & Research Trust were selected as one of 40 winners for Stage One submissions out of 355 applications from across the nation. Our initiative will focus on serving Underserved Hispanic, Latino, Afro-Caribbean, women and Spanish-speaking STEM and R&D researchers and small business communities in Puerto Rico. With the experience we have implementing ecosystem building strategies and the lessons learned through the "Ácercate al Grant (AAG)" (Get Closer to the Grant) Phase 0 pilot program funded with previous GAFC prize funding, we envision a multi-stage program to address challenges we have collectively identified these underserved communities face.

We will leverage partnerships to address challenges related to outreach, entrepreneurial and SBIR/STTR training, connections between researchers and entrepreneurs, expert mentorship, technical assistance, commercialization, and access to capital. These efforts would serve to strengthen the existing R&D pipeline to maximize participants' success and create lasting value.

TU CAMINO EMPRESARIAL TOUR OESTE

TCE Tour are regional events organized as part of the Tu Camino Empresarial initiative by Colmena66, presented by the Puerto Rico Science, Technology, and Research Trust. After a 3-year hiatus due to the pandemic, this event has been reactivated in June 29, 2023, thanks to a sponsorship from Oriental Bank and the Department of Economic Development and Commerce. The event's purpose was to connect entrepreneurs in the West region of Puerto Rico with the resources they need on their entrepreneurial journey. Whether starting a new business or looking to grow an existing one, TCE Tour Oeste offered a unique opportunity to discover and engage with a diverse range of support organizations at the El Panal Expo to address different needs and business stages. The event featured a comprehensive agenda of educational sessions, co-designed with our Resource Partners who are key leaders in the region. We covered topics such as access to capital, emerging trends, marketing, e-commerce, and business incentives.





190+
Participants

38
Resource Partners at El Panal Expo

4.9/5
Satisfaction rating

Connections participants made during the event:

- On average, each participant connected with 5 new entrepreneurial support organizations (ESOs)
- On average, each participant connected with 4 other entrepreneurs

The impact of our Resource Network:

- The impact of our Resource Network
- On average, each ESO served 29 participants during the event.
- On average, each ESO connected with 7 other ESOs during the event.
- 9.8/10 participants would recommend other entrepreneurs participate in future events

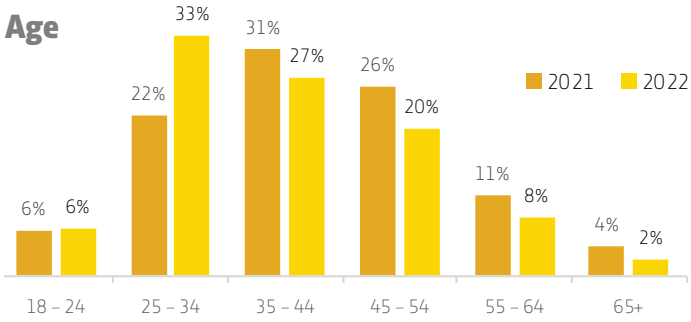


STATUS REPORT OF THE ENTREPRENEURIAL COMMUNITY IN PUERTO RICO 2022

Access to data continues to be a pressing need in Puerto Rico and a priority for Colmena66. We developed and continue to improve our Annual Entrepreneurship Survey to help inform the entrepreneurial community about who is starting businesses, what types of businesses are being formed, the impact these businesses have, and what gaps need to be addressed. In 2022, we broadened our survey sample, reaching 693 responses, of which 555 met our requirement of being an entrepreneur with an established business or actively developing a business idea. This represents an increase in qualified responses of 47% when compared to 2021 (378 responses). This sample was collected between December 2022 and January 2023 through a comprehensive multi-channel campaign through social media, email and text message. Our strategies were also supported by partners that shared the survey with their audiences through newsletters, social media, and other channels.

In this most recent report, you will learn about gaps in the ecosystem, the stories of the entrepreneurs behind Aguas Frescas PR, Learningbp, Insu Health Design and Molcajete Foods, and the collective impact of the Resource Network. You can also learn about the impact and vision of ecosystem ESOs such as UPR i+c, CDVCA's Unlock Capital, and Echar Pa'lante. Read the report at [https://www.colmena66.com/nuestro-impacto/.](https://www.colmena66.com/nuestro-impacto/)

Age



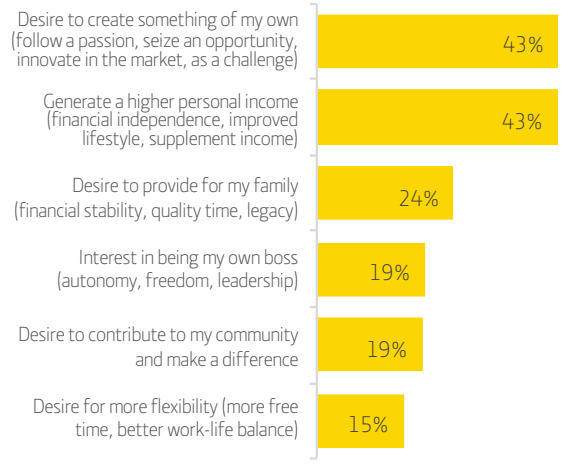
Gender



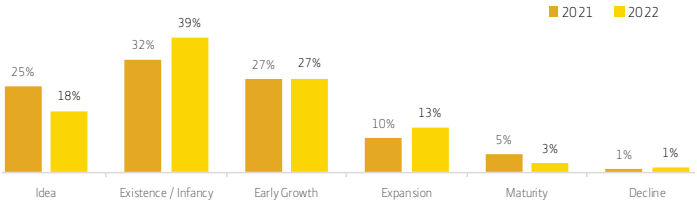
Education



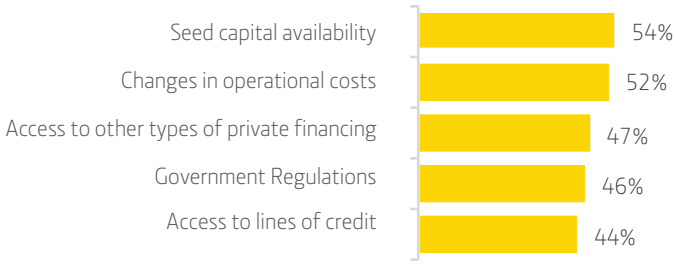
Main motivations for entrepreneurship



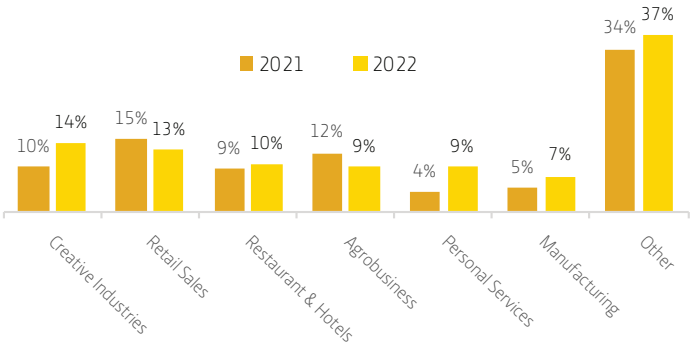
Stages of business development



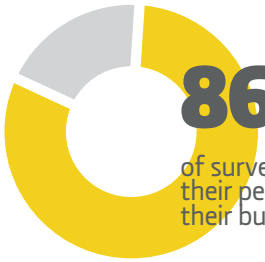
The top 5 reported challenges in 2022



Industries with the highest representation in our sample



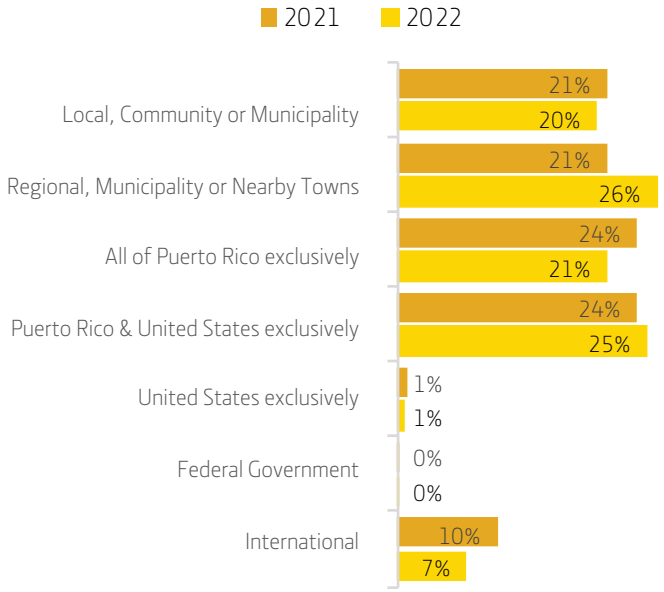
Access to Capital



86%

of surveyed individuals are using their personal savings to finance their businesses.

Reach of businesses currently generating sales



Our services are higlhy recommended

9.4/10

entrepreneurs recommend Colmena66 to anyone wishing to start or grow a business



DIRECTOR'S P.O.V.



Denisse Rodríguez
Executive Director

During the last year, Colmena66 made significant strides in supporting the entrepreneurial community. We served 2,933 entrepreneurs and developed or co-developed key initiatives such as Xpand, Pulso, Boricua Entrepreneur Fest 2022, SourceLink Summit, Tu Camino Empresarial Tour in the western region, and more to continue addressing important gaps. Through our work with entrepreneurs and entrepreneur support organizations since 2016, we have been able to build trust and significant relationships with the community to leverage resources for our continued growth. Starting in 2021, we structured our efforts to focus on increasing our impact on the community and the results are evident.

FUTURE PLANS

What's next?
Empowering entrepreneurs and transforming communities for a thriving Puerto Rico.

At Colmena66, we remain steadfast in our mission to drive equitable and inclusive economic development, fostering a thriving entrepreneurial ecosystem in Puerto Rico.

Our upcoming initiatives include a bigger and better Boricua Entrepreneur Fest 2023, gathering industry experts, mentors, aspiring entrepreneurs and diaspora for networking and knowledge sharing.

We plan to improve the "Tu Camino Empresarial" map by developing a digital tool to enhance user experience and easy access. We plan to host more TCE Tour regional events to connect entrepreneurs with resource partners in their area. Closing out the year we will launch our 2023 Annual Entrepreneurship and Resource Partner Surveys to further our understanding of the ecosystem.

With the lessons learned during Hurricane Fiona, we are taking a more proactive approach to crises and focusing on "precovery". Levanta Tu Negocio will shift a collectively design our crises preparedness and disaster recovery efforts.

MEET THE TEAM



Denisse Rodríguez
Executive Director



Samuel Merced
Program Manager



Natalia Alicea
Senior Marketing Strategist



Gian Ortiz
Business Development Specialist



Nadya Solá
Entrepreneurship Strategist



Nackira Castro
Lead Creative Designer



Paola Maldonado
Entrepreneurship Strategist



Noriana Meléndez
Community and Content Specialist



Bridgette Padilla
Entrepreneurship Strategist



Ibanaliz Santoni
Entrepreneurship Strategist







Fase 1







FASE 1

WHAT WE DO

Fase1 is our incubation program designed specifically for entrepreneurs in the **idea/concept stage**. It has two primary objectives: firstly, to offer accessible education in key concepts, tools, and methodologies of entrepreneurship, and secondly, to guide individuals in successfully transforming their ideas into thriving startups. The name 'Fase1' represents our commitment to providing new entrepreneurs and those with innovative ideas the fundamental knowledge and a structured approach for idea generation, validation, and product development. Fase1 serves as the starting point for any local aspiring to be part of the Puerto Rico business community, enabling them to gradually turn their creative ideas into tangible startups, one step at a time.

HOW WE DO IT

Fase1 is divided into two steps, **Fase1 Lab and Fase1 Intensive**

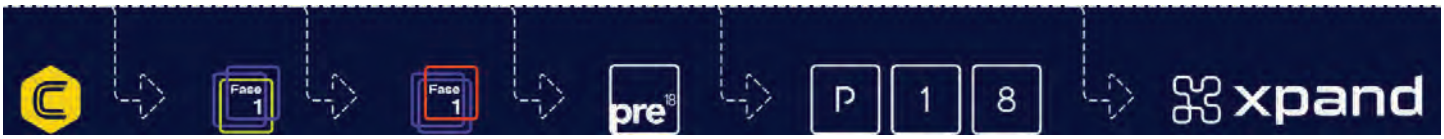
Lab

Intensive

Fase1 Lab is the foundation of our program, offering a comprehensive online academy. It features training modules covering various entrepreneurial topics that are based on current trends and industry needs. Each module consists of a compilation of short videos that include discussions on technical concepts and real-life experiences from "boristartups". This simple yet resourceful educational tool aims to provide new and upcoming entrepreneurs with the knowledge and skills they need to succeed.

Participants who have completed at least the first three modules of Fase1 Lab can apply for Fase1 Intensive. This 12-week incubator program focuses on guiding 50 new ideas each year. It provides a structured and guided curriculum, drawing on both internal and external resources. The main objective of Fase1 Intensive is to enhance the capabilities of new founders and increase the success rate of their business endeavors.

To accommodate participants who may have other commitments, such as full-time employment or studies, and to ensure accessibility for those from different parts of the island, Fase1 Intensive is primarily conducted on Saturdays. Our hybrid format allows for both virtual and in-person participation, providing flexibility for individuals to choose the mode that best suits their needs. Fase1 Intensive is laser-focused on developing minimum viable products and meeting the requirements of pre18.



WHO WE CONNECT WITH

Fase1 was tailor-designed for new and upcoming boricuas emprendedores. That is why both, Fase1 Lab and Fase1 Intensive, are 100% in native-Spanish, for cultural and language accessibility. However, it is made available to everyone in Puerto Rico who wants to generate and develop new innovative ideas with a business mindset and vision.

We welcome new ideas from all sectors, genders, beliefs, and backgrounds. Our incubator seeks to ease the way people connect with and integrate into our unique and seasoned ecosystem of startups, mentors, and resources to contribute to a sustainable economic recovery and to the much-needed reconstruction of our island.
Fase1 is also part of the Small Business Incubators & Accelerators program in collaboration with the Puerto Rico Department of Housing under the Community Development Block Grant for Disaster Recovery (CDBG-DR) funding initiative.

EXECUTIVE SUMMARY

What an exciting year! In the 2021 business year, Fase1 experienced significant growth and success. We launched our incubation program with confidence, but it was only through executing a complete incubation cycle that we truly understood its potential. We are proud to report that we have successfully completed our first cohort with a 100% retention rate, validating the effectiveness of our program.

Over the past year, Fase1 has achieved a series of milestones that highlight our progress and impact. We have seen a 65% increase in enrollment, with over 1,300 individuals signing up for the program. In addition, more than 300 new enrollments were seen in Fase1 Lab, our online academy, with 365 individuals completing the first three modules. These achievements demonstrate the growing interest and engagement in our program, as well as the value we are providing to the community of startups.

However, the true measure of our impact lies in the success of our Fase1 Intensive incubator program. Through this 12-week program, we have supported 50 selected ideas and startups, guiding them towards market viability and prototype development. The highlight of this journey was the Fase1 Demo Day, where our startups showcased their pitches and were awarded $10,000 in prizes in various categories. This event served as the perfect closing of our first cohort. We were thrilled to support these new entrepreneurs in their initial phase of development and witnessed their transformation throughout a three-month period. Many special moments, success stories, and incredible connections and collaborations came out of our first generation of Fase1 Intensive. Many of them became established businesses or continued their development through other programs. After Fase1 Intensive, some of our startups were ready and determined to apply to pre18. Another solid success and validation came with the selection of 8 Fase1 graduates for the pre18 Gen.5, representing 31% of the cohort.

100%	50	8
Fase1 Intensive Gen.1 Retention	Gen. 1 graduates	Grads selected for pre18 Gen.5

Keeping up with our program cycle, in February, we opened our second call for applications for Fase1 Intensive Gen.2, receiving 140 new applications. This time, we decided to expand our outreach campaign to reach new regions on the island and communities to make entrepreneurship available to more people. This year, we started the Fase1 Tour, hosting and participating in 18 events, mostly in-person, and visited 11 municipalities. This approach was very effective in promoting the program benefits and engaging new people while strengthening our relationships with existing partners and new organizations. The Fase1 Tour also helped us connect with low- and moderate-income communities as part of our commitment under the Small Business Incubators and Accelerators (SBIA) program and required by the Community Development Block Grant for Disaster Recovery (CDBG-DR) funding. Additionally, our continued involvement and participation in major industry events like the BE Fest and startup competitions have helped position Fase1 as a distinguished and accessible incubator. I also had the opportunity to join the International Business Innovation Association (InBIA) and complete the

Entrepreneurship Management Certificate to further strengthen our program performance and network.

None of Fase1's achievements would have been possible without the incredible support and collaboration from our partners, both within and outside of our organization. A special shoutout goes to the Colmena66 and Parallel18 teams, who have been essential allies in helping us fill the gaps and respond to the ecosystem's needs through our services.

Reflecting on our metrics and achievements, I am incredibly proud of the Fase1 team, who have worked diligently and inspired many new entrepreneurs to start up their ideas. I look forward to continuing to lead this incredible team and working on new projects to enable even more new and original startups for a better and stronger economy.

20	140	1.3K+
Startups established	Applications Recieved for Gen. 2	Engaged in our Community

365	7	$10K
Started Fase1 Lab	Entrepreneurship Modules	Prize Awards

"Fase1 has exceeded and continues to exceed my expectations. Every time we finish a session, I leave super motivated and full of extremely valuable information."

— Fase1 Intensive Gen.1 graduate (Alexandra Castrillo, Bukea)

THIS YEAR ACHIEVEMENTS FOR FASE1

Fase1 Lab

Online Academy

Our Fase1 community has been consistently growing, as we currently have more than 1,300 people in our community. During our second year, our efforts to offer accessible education to entrepreneurs and incubate new ideas have generated progressive results towards our goals. This past year, 513 people showed interest in the program and registered in Fase1 to join our network of new entrepreneurs. This represents a 65% increase from 2022 to 2023 fiscal year, being a direct result of the team's engagement, a coordinated outreach strategy and a continuous program assessment to be able to respond to people's needs and trends quickly. Our goal to impact rural areas and underrepresented segments can be reflected with the following metrics: Fase1 has reached seventy-five (75) cities and forty-six percent (46%), less than half were from the metropolitan area. In addition, seventy percent (70%) of the registered participants are women.

As part of our community engagement strategy, anyone who is enrolled and active in Fase1 Lab can benefit from the one-on-one assistance offered by our Startup Executive team, participate in training challenges, and get access to events where entrepreneurs can network with peers and other resource organizations, as an interactive way to learn. We also keep a dynamic communication to provide supporting educational materials, event notices, and other opportunities for them. During the last year, our team produced three (3) new modules: Developing Your Website & E-commerce, and Marketing Basics I & II (the last one will be posted soon), totaling seven (7) educational modules in our online academy. We are thrilled to see so many people enjoying our modules. Since last year, 365 have started Fase1 Lab modules for a total of 828, and 45% of them (374) have completed the first three (3) modules.

Fase1 Intensive
Incubator

With a 100% retention rate of our first cohort, we successfully incubated 50 ideas and celebrated Fase1 Intensive's first Demo Day in September 2022. A selective group of five (5) judges, represented by Microsoft Puerto Rico, Parallel18, our Board of Trustees and other collaborators, rated the startups pitches and selected the winners of the five (5) award categories who received different amount of cash grants totaling $10,000, sponsored by the Trust. Also, the judges ranking defined the best 30 startups that were referred to the pre18's evaluation committee based on their pitches and innovative ideas for consideration for the next generation selection. A total of eight (8) Fase1 Intensive Gen. 1 startups were selected to pre18 Gen.5, giving them access to a pre-acceleration program and seed funding.

As we all know, mentoring is an essential part of the entrepreneurial journey and being part of an enriched network of partners and startups that has been built by the Trust and our sister programs have permitted us to reach out to a unique and diverse pool of mentors. We engaged over 50 local and international mentors to provide more than 70 mentoring sessions with the Intensive Gen.1 participants. We are forever grateful to the amazing mentors who have guided, taught, and inspired our group of new entrepreneurs with their passionate work.

Following our program cycle, we launched a second call for our second generation in February 2023 where we received 140 applications. After a thorough multi-step evaluation process that involved an external committee, Fase1 selected fifty (50) new ideas to begin our Intensive incubation program on June 17th.

The Gen.2 participants represent twenty-three (23) municipalities, forty-six percent (46%) are women, and fifty-two percent (52%) are considered low-and-moderate income persons, as defined by the US Housing and Urban Development department (HUD).







WE WENT ON TOUR!



Fase1 believes that entrepreneurship should be available to anyone. This is why we have created an outstanding outreach effort throughout all main regions of Puerto Rico to promote our second call for applications and accessibility to entrepreneurial education. The goal was to present the opportunities and benefits to all demographics while expanding on educational mechanisms about idea generation, validation and marketing, all essential parts of any early-stage business development. In all our Tour visits, our presentations included a more detailed content on entrepreneurial tools and methodologies, and the participation of boristartups from our 1st generation for more interactive sessions. In only 2.5 months Fase1 was able to hold or participate in 18 events and visit 11 municipalities covering main regions of the island: Adjuntas, Mayagüez, Naranjito, Utuado, Vega Baja, Barceloneta, Ponce, Bayamón, San Juan, Caguas, Ceiba. Our targets were low-and-moderate-income persons, high school and college students, women, and anyone interested in entrepreneurship. Throughout our tour we reached more than 550 people in different regions and communities.

The Fase1 Tour was a successful outreach strategy to connect with existing and new collaborators, reach new people through education, increase awareness of our program, and ultimately make entrepreneurship opportunities available to more people.

OUTREACH: CONNECTING THE DOTS

Building and maintaining strong collaborations is like the invisible thread that connects us all and makes everything possible. Being a collaborator is part of our organization's culture and values, and in Fase1 we are active practitioners of it. We have continued working in collaboration with numerous entities, programs, and academia to create an impact in the entrepreneurial ecosystem. Engaging in many outreach activities has given us an opportunity to present and expand the benefits and opportunities offered by our program.

This year we dedicated special attention to universities and students to target the young community of new entrepreneurs. Some key players and engagements in this sector include the University of Puerto Rico, Polytechnic University, Holberton School, Interamerican University and their InterEmprende initiative, and Ana G. Méndez University that has been an ally in many efforts. In addition, the Fase1 team participated in different competition events as judges and mentors to give back to the entrepreneurial ecosystem such as the Enactus World Cup and InterEmprende.

Fase1 also led a series of events to promote the numerous opportunities offered by our program and Puerto Rico's entrepreneurial ecosystem. Just to mention a few, Continuando tu Trayecto Empresarial, an event to help new startups and other programs and organizations to connect. Some of them included Fidecoop, Lendreams, Grupo Guayacán, Startup Popular, Causa Local, Carbono3, among others. Also, Fase1 designed and led the Coffee Talks at the 2022 Boricua Emprende Fest. The Coffee Talks was a hit, presenting a 10-session track where we had experts on trending topics for engaging conversations where the audience took part in them. We hosted some renowned invitees like Borilicious, Bianca Gralau, and experts in many topics such as Chelsea Serrano, Dr. Moraima de Hoyos, among many others.



WHAT'S NEXT

Keeping up with the entrepreneurial community.

Moving into our third year of performance, we see many opportunities to continue nurturing our incubation program and enabling more innovative ideas. We will continue to respond to people's interests and needs to help fill the gaps in the entrepreneurial ecosystem. Therefore, we will develop more content to be added to Fase1 Lab based on internal and external data to maintain our commitment to making entrepreneurship education relevant and available to everyone. We will focus our outreach efforts by further expanding beyond the metropolitan area to reach new people in new communities and increase program participation from a more diverse audience. We will develop new educational initiatives and seek out new resources to continue spreading the word about entrepreneurship, making it understandable and accessible. Our active involvement and participation in different industry events, conferences, and conversations will certainly be essential to continue growing and expanding our program.

Supporting and building internal capabilities is important for our continued growth. We will identify opportunities to expand and strengthen our team's performance, knowledge, and connections within the immense and diverse startup ecosystem.

Also, we will continue working in accordance with the CDBG-DR funding requirements to comply and guarantee the best program outcomes, making the best out of the program funds allocation to positively impact a sustainable economic development for Puerto Rico.





DIRECTOR'S POV



Fase1 achievements are a result of a coordinated team effort, not only internally, but also with our external partners and collaborators. Like in entrepreneurship, we wouldn't be able to accomplish our goals by working alone. First, I am superbly proud of the Fase1 team that have worked every day with dedication and passion to continuously provide our participants with what they need in remarkable ways, making Fase1 stand out in the entrepreneurship incubation sector. Second, working and counting on so many talented people from incredible startups, sister programs, organizations and academia have made this past year not only successful but enjoyable.

MEET THE TEAM



Mariela J. Maldonado Martínez	*Bianca M. Corujo Agosto*	*Bárbara I. Rivera Chinea*	*Amanda Laguerra*
Startup Executive	Operations Manager	Program Director	Startup Executive

"We are a team of four passionate women looking to create impactful results in the entrepreneurial arena for a better Puerto Rico."

— Bárbara I. Rivera Chinea, Fase1 Program Director



parallel18

parallel 18







PARALLEL 18

DESCRIPTION OF THE PROGRAM

Parallel18 is a top-level, performance-driven international innovation hub focused on providing funding, mentorship, business connections, and investment to underrepresented founders around the globe.

The program is part of the Puerto Rico Science, Technology, and Research Trust, a private non-profit organization created with the goal of maximizing Puerto Rico's participation and creation of jobs in the global knowledge economy by promoting investment and financing of science, technology, research and development. The organization manages and hosts over a dozen initiatives that range from grants and technical support to meetups and educational resources for researchers, entrepreneurs, farmers, investors, and other groups.

MISSION & VISION

We are changing the narrative of Puerto Rico's economy by promoting a **diverse business community.** We believe in creating opportunities for entrepreneurs of underrepresented groups in the innovation ecosystem and support their dreams of building a high-impact business with a global reach. Our mission is to support founders' entrepreneurial journey while working to position Puerto Rico as a unique hub for innovative businesses and technological advancement.

We nurture globally-minded startups with strong roots in their local communities and encourage the development of solutions to problems with a global outlook, providing access to exceptional resources tailored to streamline the way to their utmost potential.

We leverage Puerto Rico's advantages as a multinational business hub that offers the structures and protections of U.S. legal frameworks with cultural connections to Latin America and the Caribbean and a bilingual highly-trained workforce.

WE PROVIDE:

- Top-line Training and specialized mentorship (pre18 for 12 weeks ; P18 for 20 weeks).
- A guide to track growth and structure the company for scalability.
- Grant Funding & Investments:
  - -pre18 $25K USD equity-free grant per startup
  - -P18 $60K USD total funding per startup
- Connections with potential customers and partnerships with top companies around the world.
- Access to capital through +600 private allocators, institutions, investment funds and other investors in our network.
- Streamlined access to specialized talent both local and international.
- More than $210K USD in value through our perks program.
- Additional support through the Puerto Rico Science, Technology and Research Trust in areas such as intellectual property; technical assistance to access funding for research, development, and commercialization; matchmaking with top research talent and organizations, among other expert resources

IMPACT METRICS

Our local pre-acceleration program, pre18 is focused on helping innovative and early-stage Puerto Rican startups who are close to launching their businesses or have recently launched, that have the potential to upscale into global markets.

For pre18, during its five years (5) and five (5) generations, we have received more than one thousand three hundred (1,300) applications from Puerto Rican entrepreneurs with developed concepts or prototypes ready to go-to market. These efforts (from Gen.1 to Gen. 5) led to fifty (53) Puerto Rican companies being selected for P18, demonstrating the quality and caliber of the pre18 pipeline that competed to join our international accelerator. At the moment, one hundred sixty one (161) startups have completed the program.

1,300 +
applications from Puerto Rican entrepreneurs

161
graduated startups

53
companies from PR selected for P18

The pre-acceleration program celebrated its fifth cohort (Gen. 5) from January through April 2023. Twenty three (23) startups completed the program in industries such as: agtech, insuretech, fintech, edtech, e-commerce, healthtech, regtech, among others.

Gen. 5 received 223 applications, and for the first time in 5 years, the startups accepted in the program received a $25,000 USD grant, along with entrepreneurial education and mentorship opportunities during 12 weeks. This equates to a 25% increase in equity-free funding compared to our previous generations.

Gen. 5

The Puerto Rico-based companies who participated on this fifth cohort were from the towns of Moca, Luquillo, Ponce, Humacao, Mayagüez, Juana Díaz, Bayamón, Guayama, Morovis, Ponce, Coamo, and San Juan, with 40% of the founders identifying as women and 2% as non-binary. The startups who partook of Gen. 5 developed and launched during the program technological solutions for their different industries.

The startups that completed the program were: Urbital, Mikokos, Quibble, Tuto Edu, Quote Correct, Inmigración Virtual, Berrify, Caribe Drones, UpShip, Jaltea, Meliora Centrum, Health 4 Pets, Zheimer Puzzles, Construye tu Libro, School Management System, dBloks, Oteogo, OneGig, ShopperFix, Prep App, PonFlow, Guarike, and Pop Insured.

Six companies from pre18 Gen. 5 (Caribe Drones, Jaltea, Meliora Centrum, Oteogo, Prep, and PonFlow) previously participated in Fase1 Intensive incubator, our sister program, under the entrepreneurship pillar at the Puerto Rico Science, Technology and Research Trust.

The survey data collected shows that the cumulative valuation of these companies was forty million fifty five thousand thousand dollars ($40,055,000 USD) as reported, while the revenue generated by these local startups during the program was three hundred twenty one thousand dollars ($321,000), which totals a current revenue of seven hundred forty nine thousand and five hundred eighty four dollars ($749,584 USD) for the year. As companies in pre18 are not yet in the market, these numbers show the results of going through the program as it led entrepreneurs to enter the market and generate scalable sales while positioning them in a path of growth.

In terms of investment, the 23 companies that participated in pre18 Gen. 5 raised seven hundred thirty seven thousand dollars ($737,000 USD) locally during the program. Understanding that these companies are at a very-early stage of their business, we recognize the amazing feat of achieving such a high capital raise very early in their businesses.

Nonetheless, an important accomplishment to highlight in terms of Gen. 5 is that these companies had 25 hires (full-time and part-time) during the program, further increasing and impacting economic development in Puerto Rico through job creation.

$40,055,000 USD
Cumulative valuation of pre18 Gen. 5 companies

40% women founders of **23** companies

$737,000 USD
investment raised by Gen. 5

25
hires by pre18's Gen. 5





P 1 8

The parallel18 program structure pursues the mission of positioning Puerto Rico as an **international** hub for innovation and entrepreneurship, while providing local and international startups a global mindset and opportunities to go to market and export internationally.

After seven (7) years, ten (10) completed generations, and one (1) currently in progress of the P18 international acceleration program, parallel18 has received more than nine thousands (9,000) applications from over seventy (70) countries, with two hundred fifty six (256) individual companies having graduated from the program with a very competitive acceptance rate of seven percent (7%). Among these, one hundred twelve (112) have Puerto Rican founders, and one hundred forty four (144) are foreign, yielding a local representation of forty-two percent (44%) from the overall companies that have participated.

GEN.X

Last year, from June through November 2022, we celebrated a special edition of our international acceleration programwith our Gen. X. This cohort consisted of 10 startups that received an equity-free grant of $125,000 USD for their businesses, along with an additional investment of $25,000 USD. The program began on June 28th, 2022. In the previous nine generations, a maximum of 40 startups were selected to receive an equity-free grant of $40,000 USD. Grants distributed for Gen. X were increased by 275% compared to previous generations.

$1M
grants distributed

$125K
for each company

$25,000
of investment via SAFE



Our mission is to keep adapting to any challenge of the industry as fast and as effectively as we possibly can to be able to continue providing the most amazing opportunities for our alumni.

Eight (8) companies successfully finished the program: Abacrop (Puerto Rico), Channel (Puerto Rico), eSponsor (Chile), Figuro (Colombia), Lank (Argentina), Red Atlas (Puerto Rico), RunFalcon (Colombia) and Wihom (Colombia).

The latest survey data informs that the cumulative valuation of these companies as reported was forty-two million one hundred thousand dollars ($42.1M USD). On the other hand, the global revenue generated during the program by P18 Gen. X companies was three hundred seventeen thousand dollars ($317,000 USD), while the local cumulative revenue was one hundred ten thousand five hundred dollars ($110,500 USD).

Also, these eight (8) startups raised nine hundred sixty one thousand dollars ($961,000 USD) globally and two hundred forty five thousand dollars ($245,000 USD) locally during the program.

In terms of cumulative results for P18 from Gen. 1 through Gen. X, our reports show that parallel18 have distributed ten million nine hundred thousand dollars (**$10.9M USD**) in grants and there is a cumulative valuation of one hundred forty four million eight hundred thousand dollars ($144.8M USD)*. Parallel18's reports show that 74.7%* of the companies are still active.

*(Based on Impact Report Survey).

xpand

In our mission to continue supporting the business ecosystem of Puerto Rico, parallel18 led all the initiatives for the second generation of the **post-acceleration program** for local and innovative companies, Xpand Puerto Rico.

Xpand is funded by Banco Popular de Puerto Rico and supports growth-stage businesses to access valuable resources, beyond those provided in the incubation and acceleration phase, furthering its growth and expansion into new markets. From being a business support community its first year, the program transformed into a post-acceleration curriculum that tackles specific needs of Puerto Rican entrepreneurs.

The program seeks to close the gap in available resources during the growth-stage for innovative Puerto Rican startups that are successfully scaling, but face some particular challenges when establishing into new markets and raising capital that can boost their growth.

The Xpand curriculum focuses on raising capital, business networking opportunities, and growth into new markets. The participating startups must be operating for more than 3 years and generate around $250,000 (USD) in annual gross income. Different from our other programs, Xpand focuses on providing technical assistance rather than an education-led curriculum. Understanding that participating businesses are already well-established, the program seeks to fill the gap in terms of access to highly specialized services and niche business challenges.

The second cohort of Xpand graduated nine (9) companies: FDI Clinical Research, Toy Doggie, b.world, Cafe La Finca, YCS, Abartys Health, Don Rifa, Beauty 911, and RedAtlas. All these companies received business education and increased their knowledge in raising capital, investing and alternative financing.

Overall, the nine participating companies of Xpand Gen. 2 generated 39 connections during the program with business mentors, alumni, investors, prospective clients, among others.

Two of the participating companies are actively raising capital for a Series A round and one company is raising for a pre-seed round for a cumulative amount of more than $3.5 M USD. (RedAtlas, Abartys and Beauty 911).

Also, the 9 participating companies were actively involved in the educational aspects of exporting, including marketing strategies, export consulting, among others. YCS Corp is in the process of establishing collaboration to export to Colombia and expand to Mexico. Also, Toy Doggie, launched its e-commerce and started exporting its product to the United States. On the other hand Don Rifa launched its operation in the Dominican Republic in June.

Xpand offered more than 20 hours of mentorship with more than 16 mentor sessions during its 16-week program for the second generation.

9
companies

39
connections during Xpand G2



GiveBack

To foster the interest for innovating in Puerto Rico and to inspire more local entrepreneurs, parallel18 has continued executing its GiveBack Program. With this initiative, parallel18 entrepreneurs, who have significant startup experience and knowledge of different industries and skills, support the local education and startup community during their time in our program. They must offer workshops to students on technology and entrepreneurial development, and provide mentorship support to emerging entrepreneurs at events of the Puerto Rico startup community, as mechanisms of empowerment.

Last fiscal year, both, P18 Gen. X and pre18 Gen. 5 invested ninety four (94) cumulative hours in Giveback hours and impacted 2,911 college students and individuals from local organizations and universities in Puerto Rico.

Among the universities who participated in the program were Interamerican University Ponce and Metro campus, University of Puerto Rico, Polytechnic University of Puerto Rico, Sacred Heart University, Holberton School, Zion Leadership Group, and the non-profit organization Causa Local.

In terms of cumulative results, the GiveBack program has impacted 35,815 individuals in the ten generations of P18 and 5 generations of pre18.

TALENT program

Moreover, last year we revamped and launched our Talent Program and we have great news to share. Our Talent database accepts highly motivated undergrad students, as well as recent graduates and freelancers from all disciplines who seek to contribute their talent to the island's ecosystem. This Talent App is available to all the parallel18 alumni (350+ companies and more than 549 entrepreneurs).

With the fresh look, more organized structure and giving the ability to contact candidates directly through the app, now we are able to accommodate the companies' hiring needs by providing a friendly, easy-to-use talent pool with interested candidates. Last fiscal year we received more than seventy one (71) new profiles to the database. Furthermore, four (4) startups from both programs P18 Gen. X and pre18 Gen. 5 have used the app and thirteen candidates were assessed.

OUR SUB PROGRAMS

parallel18 VENTURES

Parallel18 Ventures continues to strengthen its investment portfolio by investing in promising companies committed to Puerto Rico, constantly supporting our portfolio companies in their growth, and solidifying our resources in regards of ventures to our cohorts and alumni companies.

Our program has invested $3.2M USD in sixty three (63) companies of which four (4) companies have been acquired (Listopro, Booksloth, Husky, and Transparent); three (3) companies have raised a Series A (Boxpower, Outsite, and Wisboo); three (3) companies have continued to raise capital (Vozy, Live Green Co, and Agtools); and 81% of the companies we have invested in are still active.

With the commitment to our portfolio, we deployed follow-on investments in portfolio companies Vozy and Quiena Wealth Management, and through our Matching Fund Gen.9, invested **$175K USD** in Pryze, Rum Ratings, and Deaftwalk.

Furthermore, last year all P18 Gen. X startups received a **$25,000 USD** investment (Abacrop, Channel, eSponsor, Figuro, Lank, Red Atlas, Wihom), plus Puerto Rico's startup Red Atlas received a matching fund investment of **$125,000 USD.**

$3.2M invested in **63** companies

$125K Matching Fund invested in Puerto Rican startup Red Atlas

$25K investment received by Gen. X startups

Additionally, for Gen. X we changed our curriculum to a more immersive experience. This began with one-on-one meetings with all P18 companies at the beginning of the program to define their fundraising strategy and was coupled with weekly venture classes, bi-weekly investor reverse pitches, and the availability of open office hours to discuss all things related to ventures.

All these efforts were finalized with our successful Demo Day with investors visiting the event in person from the United States and a strong presence of local investors and collaborators. Doubling down on this opportunity of visiting investors, we hosted a Venture Summit showcasing parallel18 alumni companies raising capital. This summit, sponsored by Endeavor PR, included eighteen (18) companies pitching and the attendance of thirty (30) companies, twenty (20) investors in person, and twenty three (23) virtually. This event was a great success and resulted in an investment by Rise of the Rest in a local company and parallel18 alumni, Raincoat.

With this same momentum, Ventures added a strong presence in our pre18 cohort by attending all introduction meetings, offering open office hours every week, and hosting an investor mixer with the support of the Puerto Rico Impact Network and Endeavor PR. These efforts were not in vain with four (4) companies from the cohort being in the process of raising capital and one of our introductions leading to a $300k USD investment in pre18 startup, Quibble. Similarly, pre18 Gen. 5 startups Cuvro (previously Pop Insured) was invited to Lowenstein Sandler event Venture Crush FGX to pitch their business.

Nonetheless, we identified that we could lever further our impact in our startup community this year. For this reason, we increased our efforts to engage our current network and expand our reach in the local community.

For our investor network, we hosted two (2) How To Invest in Startups virtual sessions with Angel Investor Orlando Sáez and local ecosystem leaders Evy Collazo from Grupo Guayacán, Alejandra Jiménez from Unlock Capital, and Bettina Maestre from Endeavor PR.

We also collaborated with CDVCA's Unlock Capital program for their event series (7 events in total) supporting ecosystem participants with speaker resources and investor/startup attendance.

We also launched our pilot Investor Education Program, a 6-week curriculum covering nine (9) topics and two (2) investor events: Gen. X Demo Day and a Venture Summit. Twenty-eight (28) individuals participated in the program which showcased eleven (11) speakers and discussed the following topics: Investing 101, PR Ecosystem Landscape, Investor Thesis, Due diligence, Transaction Economics. Online Resources, Term Sheets, Cap Tables and Exit Strategies.

Lastly, we launched our Ventures App which debuted during our Ventures App which debutede during our Venture Summit showcasing 24 open deals of parallel18 alumni companies raising capital.

Ventures App



SUCCESS STORIES

The Live Green Co.

A Chilean food-tech startup that uses technology to address the burning issues of FOOD SECURITY, HEALTH and CLIMATE CHANGE. The Live Green Co. closed a $7 million USD Pre-Series A round to advance its vision of easily developing clean-label foods that do not contain additives, are produced sustainably, are healthily formulated, and can be widely available.

Live Green Co. also partnered up with the multinational food company Sigma, a food-tech startup created to offer alternative food recipe solutions for third parties. Through the new collaboration, the two startups will develop replacements for common food additives.

Raincoat

Raincoat, a Puerto Rico-based startup that develops scalable weather insurance solutions that enable the processing of instant individual claims raised a $4.5 million seed round, led by insurance technology investor Anthemis and investment group SoftBank.

With this investment, Raincoat seeks to expand its services worldwide, providing a solution for the more than three billion people and 120 million businesses at risk of being affected by natural disasters.

UXCAM

Uxcam is the single source of truth for mobile app users providing session recordings to help companies understand customer behavior on their mobile apps. Uxcam raised a $5 million USD Seed round led by Headline, the backer of analytics giants Segment and SEMrush. Participants in the round include Adjacent VC, Blinkist co-founder Tobias Balling & Sebastian Schleicher, Staffbase co-founder Martin Bohringe, ex-CMO of Contentful Chris Schangen, CEO at OwnBackup Sam Gutman, co-founder/CEO of Podimo Morten Strunge.

With this investment, Uxcam is one step closer to making every app experience in the world a positive and effortless experience.

RedAtlas

RED Atlas, a Puerto Rico-based startup, is Latin America's leader in Real Estate data, news, and insight. Using the power of technology, Red Atlas connects real estate professionals to accurate information on properties and property markets helping them to make faster and smarter decisions.

Red Atlas, acquired Finco in addition to closing $1.2 million in its seed round. Finco is a Colombian platform that appraises real estate online, valuing square footage by area or price appreciation over time, with an analytics algorithm developed by its own team. The merger will consolidate Finco's technology allowing clients in Puerto Rico and the United States to have more accurate property valuations and enrich general information.

Agtools

Agtools, a Puerto Rico-based startup, is a worldwide SaaS platform that gathers real-time government and institutional data for over 500 specialty crops and commodities. A platform built for agribusiness operators, this startup helps operators make faster, more informed decisions that help them increase profits and reduce food waste in their supply chain.

In 2022, Agtools successfully secured funding through a Convertible Note, which began in December 2021 and concluded in May 2022, totaling $900,000 .Agtools was also one of Orange Silicon Valley's top 5 finalists on the Decarbonization Challenge! The agrotech solution competed with 100 startups and made it to the top! The Challenge builds on Orange's commitment to reduce Greenhouse Gas (GHG) emissions on three scopes to reach its goal of Net Zero Carbon by 2040. The challenge accelerates the matchmaking process between startups, the Orange Group, and the broader ecosystem of corporations and investors.

Leadsales

Leadsales, a Mexico-based startups and CRM for WhatsApp and Social Networks that allows clients to manage all the leads in funnels. Leadsales raised a $400,000 pre- Seed round led by Ulu Ventures, one of the leading investment firms in Silicon Valley.

With the investment, Leadsales will strengthen the integrations with WhatsApp, Facebook and Instagram as well as growing to 2,000 users facing the next round of seed surveys, planned for 2023. Leadsales offers solutions to their clients in 20 countries of LATAM. Europe and Asia with an average monthly growth of 15%.

Husky

Husky, a startup specializing in international transfers to facilitate payments for Brazilians working abroad was acquired by Nomad, a Fintech company that focuses on simplifying Brazilians' access to a global financial lifestyle. Apart from generating additional revenue, Nomad's acquisition of Husky aims to enhance the brand's value proposition by expanding its business in terms of payments and transfers from any country worldwide.

Husky is currently enjoying a favorable market trend due to the rising demand for Brazilian professionals being hired by foreign companies. Since its establishment in 2016, the company has successfully facilitated international payments totaling R$2.7 billion.

Furthermore, it is on track to reach the R$3 billion milestone within this year, representing a remarkable 300% growth compared to the total volume processed by the remittance facilitator thus far.

Sales Layer

Sales Layer, a startup specialized in digital Product Information Management (PIM) solutions through its cloud-based catalog management system, successfully closed a Series B funding round worth €24 million. PeakSpan Capital, a US-based firm with headquarters in New York and San Mateo, California, joined as the lead investor in Sales Layer, providing a significant boost to the company's expansion in the Anglo-Saxon market and, particularly, in the United States.

In recent years, Sales Layer has established itself as a market leader in over 25 countries, ranking number one among users on platforms like G2. It has also achieved partnerships with Google Manufacturer, Amazon Vendor, BigCommerce, and Mercado Libre.

parallel18 CONNECT

As a program, we aim for the growth of our startups, and a highly effective approach to achieve this is by facilitating connections with prominent local and international corporations through our subprogram parallel18 Connect. By linking all the parallel18 alumni with these companies, we provide them with valuable business opportunities that allow them to establish a strong presence on the island and expand their operations both domestically and internationally. Collaborating with established companies not only enhances the visibility and credibility of our startups but also opens doors to potential partnerships, investments, and market expansion.

Through these connections, startups can leverage the expertise, resources, and market access of these larger enterprises to accelerate their growth trajectory. It also focuses on providing business connections to our startups while at the same helping Puerto Rico's corporate ecosystem innovate.

Parallel18 Connect has two (2) main objectives: match our high impact startups with big local companies and provide our Corporate Partners with the tools to spark innovative practices into their DNA. Our mission is to foster true interactions between corporations and startups. Through series of meetings and events with decision-makers in top companies in Puerto Rico, startups from our programs are introduced to possible business opportunities to begin --or continue-- their journey to scale outside their original markets.

During 2022, parallel18 Connect, launched its "Industry Meetups", the first parallel18 Connect networking event with the purpose of reactivating networking efforts between students, alumni, mentors, corporate partners, investors and the business ecosystem in general.

Parallel18 Industry Meetups, aims to foster meaningful relationships and facilitate mutually beneficial collaborations. These events also serve as platforms where startups can showcase their innovative products, services, or ideas to potential corporate partners who possess the resources, expertise, and market reach to support their growth and success.

One hundred seventy two (172) people participated in these events and 66% of the attendees reported new connections. On the other hand, 100% of the attendees reported they made between one to four connections. Furthermore, 58% of the participants said the networking dynamic facilitates making new connections.





During P18 Gen. X, there were one hundred ten (110) unique interactions, twenty six (26) meetings and three (3) deals were closed. Among these connections we want to highlight the following:

RedAtlas and Banco Popular:

Parallel18 Connect continues to support the startup Red Atlas from P18 Gen. X in mediating an agreement with Banco Popular de Puerto Rico to enhance the development of their platform.

Also, with pre18 Gen. 5, we accomplished seventy three (73) business connections with startups and our corporate partners. We are overseeing and following up on these new relations and meetings and hopefully we will have agreements in the near future.

Among these connections we want to stand out the following:

ShopperFix and MIDA (Cámara de Mercadeo Industria y Distribución de Alimentos):

Parallel18 Connect primed conversations between ShopperFix and MIDA, the leading association for food distributors in Puerto Rico to integrate their end-to-end solutions to their members, mostly supermarkets.

DIRECTOR'S POV



As I reflect on the parallel18 team's tremendous efforts, I take immense pride in the achievements of this year's results. Parallel18's growth as an innovation hub has been remarkable, as it continues surpassing previous estimates and goals. We now look forward to our future plans as we write the chapter of our international expansion, ensuring parallel18's impact both establishes Puerto Rico as a center point of innovation globally, while ensuring the impact travels with no boundaries. Together, we will continue to drive innovation, impact, and empower entrepreneurs, from Puerto Rico to the world.

PARALLEL18 IN THE NEWS

The exposure in local and international media is very important to us since this outreach helps us spread the word on our calls and important announcements and also help us position parallel18 as a top-level, performance-driven international innovation hub that provides support to founders all over the globe.

Last year parallel18 reached a non-paid publicity value of $581,415.65 with a total of 978,844 impressions in local and international media.

Entrepreneur EN ESPAÑOL

Parallel18, el programa que está formando startups resilientes para afrontar las adversidades

Tras un 2022 difícil y retador, el ecosistema de emprendimiento latinoamericano cuenta con varias organizaciones que apuestan por continuar desarrollando el potencial de la región.

22 NEGOCIOS
EL NUEVO DÍA

LUNES



23 empresas del patio se gradúan del programa pre18

Berrify y Pop Insured se alzaron como las favoritas del público en el DemoDay celebrado esta semana

NimB

endi

Puerto Rican startups lead at P18's redesigned Gen. X

Empresas egresadas de Parallel18 han reportado $212.5 millones en ingresos

Este es uno de los resultados informados ayer por la aceleradora, al divulgar su más reciente informe de impacto para el año 2021

FUTURE PLANS

In June 2023 we welcomed Gen. 11!

In May 2023, parallel18 opened calls for the P18 Gen. 11. Nineteen (19) startups were selected from over 275 applications through a rigorous selection process made up of judges and a selection committee of men and women of various nationalities. On this occasion, the companies will receive an economic contribution of $60,000 which will be divided into two parts. The first part will be a $40,000 equity-free grant and the second part will be a $20,000 investment through a Simple Agreement for Future Equity (SAFE).

Ten (10) countries are represented in this cohort. Three (3) of the selected companies are from Puerto Rico and past generations of parallel18's pre-acceleration program, pre18, which demonstrates the maturity and preparation of the companies with a more competitive and aggressive mindset for the market. The program also selected companies from the United States (4), México (5), Colombia (1), Argentina (2), Chile (1), Dominican Republic (1), Brazil (1), Uruguay (1), and Perú (1).

The selected companies offer innovative solutions in industries such as education, FinTech, health and medical devices, e-commerce, real estate and construction, Insurtech, consumer goods, energy and cleantech, productivity software, and enterprise SaaS (software as a service).

The program will begin June 26 and will be in-person. International startups must move to the island for 20 weeks and demonstrate their commitment to the economic development of Puerto Rico.

Parallel18 has established two principal programs (pre18 and P18), with the expectations of continually increasing the quality and impact of the entrepreneurial ecosystem in Puerto Rico. Our focus is to add more depth, to an already globally recognized program, in our offerings to our participants, alumni, and community stakeholders.

Our team keeps adapting and acting quickly to offer more resources, connections and mentors to all startup founders to help them continue to develop and grow. The parallel18 team is still adjusting to the times and finding ways to impact underrepresented entrepreneurs in their goal of creating high-impact businesses.



As the goal is to continue positioning parallel18 and Puerto Rico as a hub for global collaboration and innovation, our value proposition continues to evolve to attract, foster and accelerate startups in Puerto Rico and internationally in a complex panorama. For that matter, we look forward to expanding our efforts in unattended gaps in the ecosystem, developing tools to assist our alumni, provide on-time connections and resources to our community, and deliver a world-class program to parallel18 founders.

We are excited to announce that for the next generation of Xpand, the Puerto Rico Science Technology and Research Trust will provide a $100,000 seed capital investment to outstanding companies participating in the program. This investment will be distributed among up to three participating companies. The third generation of Xpand is expected to start in August 2023.

The parallel18 Ventures team continues to scale these new initiatives and add partner organization to strengthen our resources for our founders. We will continue evolving parallel18 Ventures based on the capital needs of our entrepreneurs, while positioning venture capital as an accessible and validated asset class for potential investors in Puerto Rico.

Parallel18 Ventures is looking forward to being an ecosystem collaborator in both bringing international access to capital for our founders and also having an international presence.



Last, but not least, parallel18 will be launching parallel18: El Podcast, a podcast to inspire, educate and accelerate entrepreneurial minds. The objective is to give a voice to the entrepreneurial ecosystem in Puerto Rico. Stay tuned for the episodes!

MEET OUR TEAM



Héctor Jirau, Ph D

Executive Director



Lissa Barreras

Marketing Manager



Natasha Martínez

Program Manager



Menchu Agüeros

Outreach Manager



Adriana Pérez

Investment Manager



Alexandra Espinal

Business Development Manager



Sylmarie Díaz

Xpand Program Manager



Yessica Fontánez

Startup Executive



Daliana Colón

Startup Executive



Mineiry Ramos

Xpand Startup Representative



Augusto Suárez

Lead Creative Designer



Ana García

Communications Specialist



Gabriela Alicea

Office Coordinator



Alexandra C. Albino

Intern



Austin J. Noelle

Intern



Mario Medina

Intern

COLLABORATORS THIS PAST YEAR

mastercard

AeroNet

POPULAR

Ferraiuoli LLC
Looking Forward

Innovare
Social Innovation Partners

uva!

endeavor

co.co.haus

RUMS of PUERTO RICO
RUM CAPITAL OF THE WORLD

BACARDI

B. Fernández & Hnos.

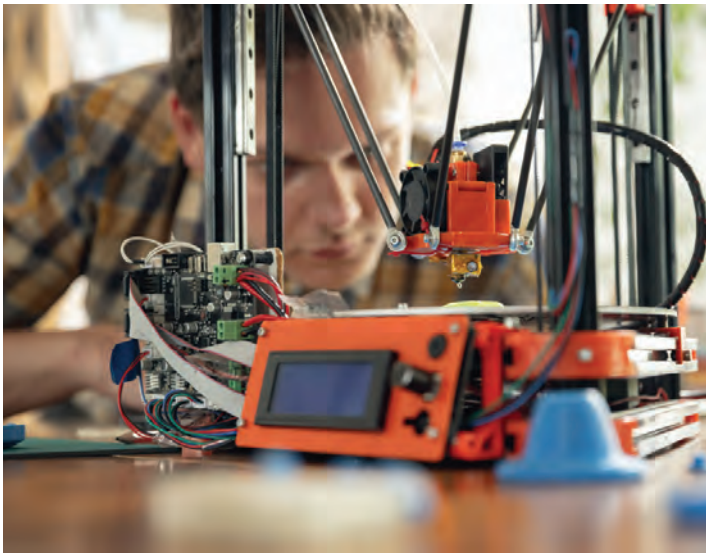
EL ALMACÉN DEL VINO

LA LICORERA
Bebidas, Vinos y Alegría
@LaLicoreraClub





SBIR/STTR Federal Grants







SBIR | STTR FEDERAL GRANTS

MISSION

To support scientific excellence and technological innovation through the investment of Federal research funds in critical American priorities to build a strong national economy.

VISION

Making the Trust's SBIR program an economic engine in the economy of Puerto Rico while becoming a model in the USA by creating and enhancing small businesses while creating high-paying jobs in the technology sector. The retention of locally educated talent.

We support small businesses/researchers/individuals with the development of competitive proposals and contribute to the Puerto Rico economy.

HOW WE DO IT

To support scientific excellence, technological innovation, research and development, and the commercialization of their outcomes the SBIR program provides technical and commercialization expert advice while collaborating with potential candidates for them to better understand the program, the Trust's support, and how to develop a competitive proposal. The competitive proposal development emphasizes, besides putting their innovation in the best light, the education of applying teams on the commercial viability risks associated with new technologies. Participants are also assisted in the submission of competitive proposals to the SBIR program in all agencies

WHO DO WE CONNECT WITH?

The SBIR program is a founding member of the Puerto Rico SBIR Coordinating Committee with members from organizations across Puerto Rico. The SBIR program and several Trust programs (P18, Colmena66, Research Grants Program, Fase 1, TTO) encourage Puerto Rico small businesses, the academic sector professors, researchers, and students to overcome a lack of awareness and trepidation about the SBIR program. Other supporting organizations are SBTDC, SBA, incubators, and DDEC, to name a few.

SUMMARY

In FY23, the SBIR/STTR Program, hereinafter SBIR engaged with candidates it connected with through the program's email address (sbir@prsciencetrust.org), presentations, and the SBIR course on the Trust webpage. The following Trust organizations have provided referrals from their work with their communities: Parallel18, Colmena66, Grants Program, and TTO. The outreach activities were webinars, virtual and in person, by the Program Director, as well as members of the other collaborating organizations. The team is committed to responding to all inquiries within 48 hours.

These activities and collaboration generated 93 potential candidates. The results from these FY23 activities produced four (4) awards, Table 1, shows these awards contributed a total of $3,155,995 to the Puerto Rico economy. The Trust provided matching funds totaling $600,000, increasing the total contribution to the Puerto Rico economy to $3,755,995.

PR-BASED SBIR/STTR AWARDEES	AGENCY	AWARD DATE	MATCHING FUNDS	SBIR/STTR FUNDS	PHASE	TOTAL FUNDS
LifeGene	NIH	7/15/2022	$200,000	$2,000,000	2	$2,200,000
SIL Technologies	NIH	8/23/2022	$100,000	$150,000	1	$250,000
InsuHealth	NSF	9/20/2022	$100,000	$256,000	1	$356,000
Ensemble Consultants	NSF	9/21/2022	$200,000	$749,995	2	$949,995
NUMBER OF AWARDS	**4**		**$600,000**	**$3,155,995**		**$3,755,995**

Table 1. Of the four awards, one was a first-time Phase I awardee, while the other three have received at least three awards. Of the two companies winning Phase II awards, one was Fast Track, one NIH and the other NASA, and the other a direct to-Phase II award. These two award types are very competitive with low success rates showing the quality of the research conducted and the quality of the proposals submitted from Puerto Rico.

The major program achievement is the number of awards, four (4), and continuing at least one award every fiscal year since the Trust assumed leadership of the SBIR program in Puerto Rico. The goal for FY24 is to increase the number of SBIR/STTR awards from four (4) to at least six (6).

FY	#AWARDS	$SIZE AWARDS	MATCHING FUNDS	CONTRIBUTION TO PUERTO RICO ECOMONY
FY16	1	$150,000	$300,000	$450,001
FY17	3	$673,000	$400,000	$1,073,003
FY18	4	$895,549	$400,000	$1,295,553
FY19	5	$2,113,241	$800,000	$2,913,246
FY20	6	$3,466,362	$149,998	$3,616,366
FY21	2	$274,998	$400,000	$675,000
FY22	4	$1,580,165	$200,000	$1,780,169
FY23	4	$3,612,495	$500,000	$4,112,499
	29	**$12,765,810**	**$3,149,998**	**$15,915,837**
AVERAGE	**3.6**	**$1,989,480**	**$393,750**	**$1,989,480**

NEW SUPPORT ORGANIZATIONS

In our efforts to have more access to agency programs and Program Directors, we have added two support organizations, ICFNEXT and DEFENSEWERX

ICFNEXT has contracts with several SBIR-supporting federal agencies. It provides access to Program Directors at NIH-NCI, USDA, and DOD.

DEFENSEWERX is a 501 (c)(3) organization headquartered in Niceville, FL that enables agile innovation for their government partners through innovation hubs across the country. It provides support in developing requests to the DOD for SBIR and projects in the millions of dollars. They cultivate ecosystems that enable the acceleration of innovative solutions to benefit the warfighter and the nation. Their vision is to be a valued partner that creates innovative solutions to provide our nation with a competitive advantage.

WE ACTIVELY PARTICIPATE IN WEBINARS AND EVENTS IN PUERTO RICO AND THE MAINLAND

- SBIR-SBA Office of Innovation and Technology Leadership presentations and webinars, Wyoming SBDC's program, the University of Montana, and others.
- Our SBIR Coordinating Committee led by the Trust meets every three months with members from SBIR participating and interested organizations in Puerto Rico.

THE COMMITTEE WILL CONSIDER:

- Membership for STEM/Business graduate and undergraduate students to support the recruiting of academic candidates.
- Creation of an Advisory Board to help with outreach, partnerships, and program improvements.
- Increase SBIR Puerto Rico awareness through newspaper articles and interviews.
- Reach out to the diaspora to search for innovative technologies and support.
- Work with organizations in the mainland and Latin America to bring their innovations to Puerto Rico.
- Follow up on those that are companies/individuals considered Dormant.

DIRECTOR'S P.O.V.



Juan Figueroa
Program Director

The Trust's programs are a key element in what we have accomplished this and in previous years with their support in sharing information and providing referrals. This collaboration shows the SBIR program as one of the key contributors to the Puerto Rico economy and its well-being.

Developing an SBIR/STTR proposal is a long process of frequent communications, concept refinements, and proposal edits. After contact is made, we start working on the innovations and project concepts, but the time between the initial contact and the last contact can go from a few weeks to several months, sometimes years. This occurs due to issues such as not having a clear enough understanding of the technology innovation, late submissions, and/or missed deadlines. In addition, competitive proposal development for experienced SBIR proposal writers could take up to a couple of weeks while first and second submissions teams could take a month or two depending on the time to respond to the proposal development team edits and suggestions. A reason for the long time between first contact is their time availability while they are conducting company business. Lastly, they conclude SBIR is not a good funding avenue for their company.

To increase the number of SBIR awards the team will enhance working relationships with universities, professional and technology associations, and small businesses to have access to submissions candidates. When possible, we will enter memoranda of understanding (MOU) to provide formality to the relationships.

The first such formalization of relationships towards increasing the number of awards SBIR with the targeted organizations is an MOU signed with the Autonomous University of Queretaro in Mexico. The goal is to bring innovations, companies, and entrepreneurs to Puerto Rico for the main purpose of opening companies in Puerto Rico and applying for SBIRs.

ABOUT THE UNIVERSITY OF QUERETARO

The Autonomous University of Querétaro is a Mexican public university based in the city of Santiago de Querétaro, Querétaro, with campuses around the state. It is the largest and most important university in both the state and the city of Querétaro.

Mexico's Querétaro state has become the new data center hotspot in Latin America and is on the way to becoming the hub for Industry 4.0 in the region. The state harbors the Mexican operations of, among others, Bombardier, VUHL, GE Aviation, and Continental, as well as IBM, Ericsson, Huawei, and Samsung. In a report last year, KPMG named Querétaro the top state for foreign investment in Mexico, whereas S&P Global made it the first state in the country to obtain an investment grade rating. The second MOU of FY23 was with the Larta Institute (Larta).

ABOUT LARTA

Larta's mission is to foster science & technology innovation for a sustainable planet. It is a non-profit organization accelerating entrepreneurship & innovation. Since 1993, they have helped over 6,875 startups translate their ideas into sustainable enterprises – our alumni have raised over $7 billion in funds.

Larta Institute provides access to the Technical and Business Assistance (TABA) program. TABA provides SBIR/STTR Phase I and Phase II applicants additional funding within their applications for technical and business assistance which includes services like intellectual property support, customer discovery, market assessment, and development of business strategies and manufacturing plans. Phase I awardees will receive $6.5K while Phase II awardees will receive $8.5K to cover this service.

Larta and the Trust will conduct a TABA webinar before the end of the CY24 for our community in Puerto Rico on the ways this program will help with the development of commercialization plans and how to take a concept to market. The most significant goal is to hopefully take away the fear of commercialization for those for whom this is an impediment.

PROGRAM TEAM



Juan Figueroa, Ph D

Program Director



Valentina Pirazzi

Project Manager



Puerto Rico
Science, Technology
& Research Trust

PUBLIC HEALTH

ANNUAL **REPORT** | **2022-2023**



Puerto Rico
Public Health Trust

Puerto Rico
Public Health Trust

PROGRAM INTRODUCTION

The Puerto Rico Public Health Trust (PRPHT), a Public Health Institute, has been in service since 2019. Since then, PRPHT has launched over 20 projects and initiatives in public health to promote evidence-based public health practices, increase access to health programs, promote developments that impact health outcomes and reduce inequalities in the communities of Puerto Rico.

Our Mission

To serve as a trusted ally working with public and private partners to identify and execute community led, evidence-based solutions.

Our Vision

To achieve sustainable health in Puerto Rican communities and improve their quality of life through innovation, collaboration and community participation.



HOW WE DO IT

At the PRPHT, our values of collaboration, equity, excellence, inclusion, innovation, integrity, respect and social justice drive our work. These values guide our efforts to ensure we maintain and establish strategic alliances and partnerships to achieve our objectives. We use knowledge, research, technology and data to drive innovative initiatives. Through a strong network of community leaders, we center the needs of our communities to increase health promotion and preparedness. We provide training and education for health professionals and community members and leaders to build capacity in chronic disease management, emergency and climate change preparedness, telehealth, community organizing, behavioral health and social determinants of health.



WHO WE CONNECT WITH

The public health institute was created in collaboration with government agencies, communities, local and international health institutions and academia. We, have developed and implemented comprehensive projects and initiatives with the Puerto Rico Department of Health (PRDoH), non-governmental organizations, federally qualified health centers and community-based organizations. We also provide internships to students from the public health academic institutions in Puerto Rico and the United States. Since 2019, we are a recognized member of the National Network of Public Health Institutes, providing opportunities to collaborate with other sister institutes across the nation. Our main connection is with our communities and their leaders, to identify their resources and needs, and provide the necessary support to increase the health and well-being of Puerto Rico



EXECUTIVE SUMMARY

This past year marked a clear transition from a life full of restrictive safety measures and physical distance, to what we could call "a new normal." As a public health institute, we also transitioned and evolved to address the new needs of a population recovering from the hardest public health emergency of our generation. We continued to grow, securing $2.97 million in additional funding, developing six (6) new projects and hiring 35 new full-time positions and contractors.

In the beginning of this fiscal year, we continued supporting COVID-19 efforts, including the distribution of 23,000 COVID-19 homes tests. After hurricane Fiona, our team responded immediately by distributing educational material, COVID-19 tests, face masks, food, among other necessities, in collaboration with the Puerto Rico Department of Health (PRDoH) and community-based organizations. Our Community Health Workers (CHWs) were vital in the response by connecting people in need to social and medical services. Through our CHW capacity building projects, we have trained 55 CHWs, reached over 25,000 individuals and completed 1,479 referrals to connect community members to social and health services. Furthermore, we developed an inclusive emergency preparedness plan for people living with chronic diseases and disabilities. This project provided the experience of creating tools taking into consideration the needs of diverse communities in our archipelago that are often forgotten.

Our Telemedicine projects have provided telemedicine and tele-conferencing equipment, capacity building trainings and technical assistance, through 377 in-person visits, to 192 nursing homes and 37 community clinics. The team trained 464 individuals and developed 42 training tools to enhance telemedicine and tele-mentoring for improved health outcomes. We also implemented four ECHO Series using the "all teach all learn" approach and have reached over 294 participants in our rural spoke sites to provide specialized training in the management of chronic diseases, diabetes, use of telemedicine and substance abuse disorders to improve care in rural and vulnerable communities.

This year we created a new division on Social Epidemiology to increase awareness and build capacity on equity and social determinants of health. During its first year, the team has already developed one educational module, questionnaires focus on Hispanics health, and have coordinated multiple trainings and seminars reaching over 250 health professionals. They also coordinated a 15-hour virtual course: "Building Power for Health Equity in our Communities" for public health professionals and students as part of a systemic effort to address inequities.

As we end the emergency and recover from the mental and emotional challenges left by the pandemic and multiple natural disasters, we are now moving forward stronger and with a better sense of community. Our plans for this new year include continued support for CHWs initiatives, with a focus on the CHWs coalition to increase recognition of this group of people that continuously care for their communities. We also started a new project that will support public health workforce development and infrastructure in Puerto Rico and the US Virgin Islands. Lastly, we will increase our focus on environmental health and climate change as part of two new projects. One will develop strategies for resilience against drought for 12 community owned and operated small water systems and the second will focus on building resilience against climate change effects on health.

We thank all our collaborators and employees for their support and trust during this year. Particularly, we acknowledge the support of Centers for Disease Control and Prevention (CDC), Medtronic Foundation, US Department of Agriculture (USDA), Human Resources and Services Agency (HRSA), Environmental Protection Agency (EPA), National Network for Public Health Institutes (NNPHI), Fundación Ángel Ramos, Fundación RIMAS, Public Health Management Corporation (PHMC), Puerto Rico Fiscal Agency and Financial Advisory Authority (PRFAFAA), and PRDoH for their economic support and commitment to the people of Puerto Rico and their public health.

"We are committed to improving the quality of life of Puerto Ricans by increasing access to health services, education, innovative technology, and knowledge of what drives health in our communities."

EXECUTIVE SUMMARY NUMBERS

$2.97M
New Funding

832
Outreach and Educational Activities

1,479
Social and Health Referrals

23,000
COVID-19 Tests Distributed

35
New Employees and Contractors

102
Resources Developed

20
Posters and Oral Presentations

2,000
Emergency Plans Distributed

1,479
Educational Materials Distributed



REPORT THIS YEAR'S ACHIEVEMENTS FOR THE PUERTO RICO PUBLIC HEALTH TRUST

COMMUNITY ENGAGEMENT DIVISION

The Community Engagement Division plays a crucial role in facilitating communication, collaboration, and active involvement of the community in public health initiatives. Our work aims to build strong relationships, trust and collaboration between the Public Health Trust and the communities we serve by actively engaging community leaders and members. This collaborative approach strengthens public health initiatives, promotes health equity, creates a sense of ownership, and actively empowers communities to improve their health and well-being.

COVID-19 and Hurricane Fiona

In August and September of 2022, the community engagement group and CHWs distributed over 23,000 COVID-19 at home tests to communities not previously reached by President Biden's at home tests initiative. The tests were provided by the PRDoH and monitored using our internal dashboards to geolocalized the communities reached.

After hurricane Fiona, the community engagement team moved across the affected communities to bring assistance to 31 communities among 11 municipalities. This included the distribution of over 400 solar lamps donated by LuminAID and 100 insulin storage kits from the PRDoH Diabetes Prevention Program, 2,700 COVID-19 home tests, among other first necessity items. In collaboration with the Trust's IT team, the Community engagement team created a dashboard of the community needs. See our newsletter for more details: https://bit.ly/3URWO8X.



Fig. 1. Dashboard of the Hurricane Fiona community needs assessment.

RADx-UP with Yale University

In 2021, in partnership with Yale University, we locally lead the Rapid Acceleration of Diagnostics - Underserved Populations (RADx-UP) project. This entailed a study involving periodic COVID-19 testing, initiatives to increase testing capacity, and a community census in Parcelas Suárez. Throughout the study, we were able to closely examine the COVID-19 effects of various factors on these communities and provide valuable insight into their social determinants of health.

The research concluded on May 31, 2023 and mostly focused on three specific communities in Loíza: La 23, Parcelas Suárez y El Ceiba. Other communities also reached were Miñi Miñi, Jardines de Loíza, and Loíza Gardens Apartments. At the end of the study, we had 221 enrolled participants.

Our participants benefited from constant monitoring of the impacts of COVID-19 during the study. COVID- 19 safety guides (translated into Spanish) and health educational material (newsletters) on chronic health conditions and COVID-19 were provided throughout the communities. The project also provided economic incentives that were instrumental for maintaining participation and retention throughout the study.

A compelling 15-minute documentary titled "Overcoming the COVID-19 Testing Social and Ethical Challenges in Underserved Communities in Loiza, Puerto Rico: a RADxUP Initiative" was produced. The documentary features the dedicated staff of the PRPHT, discussing the significance of the study, as well as community leaders who shared their personal stories about the social and ethical challenges surrounding COVID-19 testing. The film was submitted to APHA Public Health Film Festival to showcase the remarkable community engagement and outreach efforts in Public Health during this project.

¡Ponte al día! funded by PRDoH

In January, we received a grant from the Health Equity Program of the PRDoH to create the ¡Ponte al día! Project. This project uses an intergenerational approach that seeks to increase health literacy and digital literacy among older adults in Naguabo. With this purpose, we recruited young community health promoters (PSCJ, by its Spanish acronym) to support the project. To train the PSCJ, we developed two curricula: 1) Digital Literacy in Older Adults and 2) Health Literacy in the Older Adult Population. We conducted 12 training sessions between April and May.

To promote the project and encourage the recruitment of older adults, we participated in healthfairs, workshops, and community meetings in various communities of Naguabo (Figure 2). For the recruitment process, four data collection and three consent and authorization instruments were created.



Figure 2. Project team promoting the project among participants in community events in Naguabo.



Health Promotion: Literacy on COVID-19 Vaccination and Behavioral Health

This project was created through a grant from PRFAFAA to work with COVID-19 and behavioral health issues in the municipality of Loíza. The project consists of three components: 1) Rumor Tracker project and development of Community Health Ambassadors (CHAs), 2) Project ECHO for teachers and school personnel, 3) complex trauma books for children.

Six CHAs were recruited to collect rumors related to COVID-19 in their communities in Loíza. They also conducted various educational activities, including talks, art activities, and handing out educational materials.

We conducted interactive learning sessions, also referred to as ECHO educational series, for school personnel: Let's talk about COVID-19 and mental health in schools. Experts discussed issues related to self-care, misinformation, long COVID-19, educational strategies after the COVID-19 pandemic, and emotional education, among other relevant topics. We conducted four 90-minute sessions.

We also launched a behavioral health campaign on PRPHT's social media platforms. The campaign revolves around eight sticker designs with mental health phrases developed by the project team (Figure 3). We printed 3,040 stickers to be distributed by the CHAs as part of the project. In collaboration with "Japi Clinic," we recorded short capsules explaining the importance of these phrases and/or the steps to achieve what is expressed on each sticker.



Figure 3. Some of the stickers used for our mental health campaign in social media.



Fundación Rimas

In May, supported by Fundación Rimas, a project to establish youth groups in vulnerable communities was launched in the community of Playita, San Juan, where the Foundation holds its sports clinics. This project seeks to involve youth in community leadership through workshops on participation, photovoice, community data collection, and leadership, integrating sports and arts. We were able to successfully involve and retain the participation of 30 children and adolescents in the project. Their active participation has been instrumental in shaping the activities and providing valuable insights into their needs and aspirations.

From May to June, we organized a series of nine community interventions with the participants. These workshops included topics on community roles, decision-making, managing emotions, Photo-Voice, and photography. Through these community role workshops, we aimed to empower the children and adolescents of the community and enable them to explore their own potential while developing vital life skills.

One of the highlights of the project was the voice photography workshop. This activity allowed the participants to express their perspectives and capture their community through their lens. The photos taken by the children were presented in a community photographic exhibition with reflective narratives that sought out solutions for the overall health of their community (Figure 4).





Figure 4: Collaboration with Fundación Rimas in a baseball clinic (right) and the exhibition "Playita a través de mi ojos" featuring the photos taken by the Playita children (left).

Community Health Workers Capacity Building

In 2019, we were funded by the Medtronic Foundation to strengthen the capacity of Community Health Workers (CHWs) in six municipalities of Puerto Rico. The main objective is to improve health and resiliency of the elderly and individuals with chronic diseases by connecting them to optimal health care and community services. In partnership with four Federally Qualified Health Centers (FQHC) (NeoMed, COSSMA, MedCentro and HealthProMed) and one community-based organization (Taller Salud), 19 CHWs in the six target municipalities (Cataño, Humacao, Juncos, Loiza, Ponce & Villalba) were recruited and trained. They facilitate patients' access and connection with their healthcare teams or social services coordinators at the participating health clinics. Since its inception, the project has reached over 20,000 community members and continuously supported 1,241 patients in the management of their health conditions.

On April 28th, 2023, we launched the Emergency Preparedness Plan (EPP) for people living with chronic conditions to serve as a guide to complete their personal and family emergency plan in detail. This is a unique plan developed to be interactive and inclusive for everyone, particularly for those with functional diversity and medically vulnerable. It was created in collaboration with organizations such as "Movimiento para el Alcance de Vida Independiente" (MAVI) and Advancement in Sign Language Education & Services (ASLES) to ensure access to individuals with disabilities. The plan is adapted to five (5) formats that include: digital, printed, accessible digital document for the benefit of blind people, audio and audiovisual; comprising sign language, English subtitles, and descriptive audio. In addition, an online tool was developed to help CHWs, patients, and the general community to locate the shelter and health center closest to their home (https://saludcomunitaria.prpht.org).

The EPP also has a community and educational component as it is being distributed/presented to participating community members by our CHWs. They were trained in the use and completion of the plan and received 2,000 emergency plans and backpacks to be distributed in their communities.

A short film was developed for the APHA Public Health Film Festival Short Films and submitted on May 31, 2023. The film is titled: "Visibilizing community health workers in clinical health centers and community organizations: The Puerto Rico experience". This features how CHWs accompanied community members to help them adhere to their treatments, connect them with social services, and develop their emergency preparedness plans.

Community Health Worker Project – funded by CDC

Building on the CHW project, funded by Medtronic Foundation, CDC provided resources to continue building capacity for CHWs, particularly after the events of the COVID-19 pandemic. The objective of this project is to provide training and increase participation of CHWs in our communities and reach additional municipalities across the archipelago. In turn, the CHWs provide and strengthen the first line of response to COVID-19, and other future public health emergencies, and contribute to prevent chronic diseases. During this year, we recruited and trained 18 CHWs in 14 municipalities of Puerto Rico (Figure 5).



Figure 5: Map of the municipalities where CHWs have been deployed. Most municipalities have one CHW while the ones with the number two in the black circle represent those with two CHWs.

As part of the efforts to integrate CHWs into health and social services organizations, four contractual agreements were signed with the following entities: Centro Dotal of the University of Puerto Rico-Medical Science Campus (Loíza), Acueducto Buenos Aires (Caguas), Migrant Health, Western Region, and the municipalities of Aibonito and Coamo. We are in the process of signing contracts with four FQHCs that will host CHWs within their facilities. Through these contracts, we expect to hire 12 additional CHWs in the clinical setting. We also signed an agreement with the PRDoH to deploy eight CHWs in their Centers for Diagnosis and Treatment (CDT).

This project also has a goal of contributing to the public policy related to CHWs certification and recognition in Puerto Rico. For that reason, we created the CHW Coalition. This year we hosted three (3) meetings with over 40 participants in each that included representation from chronic disease associations, FQHCs, academia, PRDoH, CHWs, among others (Figure 6).



Figure 6. Participants in the 3rd CHW Coalition Meeting

Despite the low rate of COVID-19 vaccinations throughout the archipelago, during this reporting period, we have coordinated or supported 11 vaccination drives that have resulted in 141 people being vaccinated with the Bivalent.

As part of our efforts to link our communities with health services and address the social determinants of health, our staff has processed 647 referrals. These referrals were mainly related to primary health care and food services. A total of 132 activities were carried out by the CHWs under this project in the last few months. Most of these activities were the distribution of educational materials, workshops, and oral presentations/conferences. Reports show that a total of 3,735 people were reached through these activities (Table 4).

Activities Carried Out by CDC-CHWs and Reach

Activities	Total
Presentations and conferences	25
Distribution of Educational Materials	30
Distribution of food	4
Interview/Surveys	8
Health Fairs	3
Educational venues	17
Workshops	28
House to house visits	7
Others	**10**
Total Activities	**132**
Persons reached	**3,735**

In May, we had the opportunity to award the Community Health Workers Certification to the first group, composed of 18 participants in collaboration with PR Ready. This certification culminated on May 17, 2023. As a result of the certification, most participants presented posters about the projects they wanted to implement in their communities.



ENVIRONMENTAL HEALTH DIVISION

The Environmental Health Division aims to provide environmental research, resources, education, evidence-based training and technical assistance. The purpose is to improve health, develop strategies and help communities to prepare for health impacts from climate change and for the impact of emergencies and disasters in rural and underserved communities.

Telemedicine for Nursing Homes

This initiative aims to provide telemedicine equipment and training to facilitate access to medical services in homes for the elderly to improve their quality and access to healthcare during times of emergencies, disasters, or pandemics. The telemedicine equipment will facilitate communication with the doctor, as well as provide equivalent services and physical examinations that are provided in a face-to-face visit. The project utilizes the TytoCare™ equipment designed to perform a complete medical physical exam in a safe and cost-effective manner which includes TytoCare device, stethoscope adapter, otoscope and tongue depressor, reusable accessories, iPad and stand, headphones, blood pressure equipment and pulse oximeter. This equipment is provided free of charge to homes for the elderly and includes training and technical assistance for staff and doctors on the use of the equipment. We have achieved 192 (Figure 6) of the 200-goal telemedicine equipment to deliver to Nursing Homes around Puerto Rico and provide training in the use and operation of the equipment to the home staff (Figure 7). In the past year we have visited 262 nursing homes to provide "over the shoulder" technical support and training. We use an ARC GIS dashboard to track the location of the equipment and the quality of the training visit. Staff conducting the visit record the purpose of the visit, whether the purpose was achieved, staff trained, photos, and nursing homes staff who attended the visit can fill out a satisfaction survey and provide comments.



Figure 7: Map indicating the location of the 192-telemedicine equipment provided to nursing homes.





Figure 8. Delivery visit of telemedicine equipment and training on its use and operation at Nursing Homes and organizations that care for the elderly and rural clinics.



USDA Telemedicine Distance Learning Grants (TDL)

This project aims to increase access to health services by providing telemedicine equipment and tele-conferencing equipment to rural clinics in Puerto Rico. Supported by a USDA grant we have distributed 37 telemedicine units to rural community clinics around the archipelago (Figure 8) and have provided training on the use of the equipment to health professionals at each participating clinic (Figure 9). This year we identified the need for additional training and resources for the clinics to maximize the use of the equipment. A needs assessment was conducted to determine training needs and four training modules were developed: 1) Data integration for clinics using the Global Med telemedicine platform, 2) Management of Chronic Diseases with Telemedicine, 3) Telemedicine in Rural Areas and 4) Telemedicine and Mental Health.



Figure 9: Map showing the location of the 37-telemedicine equipment provided to rural clinics.

Telemedicine Technology Enabled Learning Project

This tele-mentoring initiative is funded by the Human Resources and Services Administration (HRSA) to provide training and build capacity among primary care physicians on chronic diseases and other key conditions. The project uses the ECHO methodology that includes short lectures and discussion of cases to promote an interactive learning experience where "all teach, all learn". This year the team coordinated and offered four ECHO series: (1) Opioids Addition (five sessions), (2) Management of Chronic Conditions at the Primary Level (11 sessions), (3) Adapting Telemedicine to the Needs of Nursing Homes for the Elderly (six sessions) and (4) Diabetes Mellitus (10 sessions of 20). The first two series were offered in collaboration with Central Caribbean University, the one on telemedicine was developed by our internal team of telemedicine staff and the last one is being offered by Dr. Angel Comulada of ProHealth Clinical Services of Bayamón. A total of 294 participants have attended these sessions to improve community health outcomes.



Figure 10. Educational Series: Adapting Telemedicine to the needs of Nursing Home.

In addition to the ECHO series, a webinar on telemedicine billing was offered in collaboration with the Centers for Medicare & Medicaid Services (CMS) and First Coast Service Option. This event had a participation of 81 physicians and medical administrators.

The team also developed or identified 92 supporting materials to promote evidence-based practice for the ECHO Sessions, on how to use the telemedicine equipment including user guides for nursing homes, clinic staff, and physicians on the use of the TytoCloud telemedicine platform (Figure 10). We also developed a directory of providers of telemedicine services and already have 110 physicians registered.



Figure 11. Telemedicine platform user's guide for physician.

Certificate in Community Leadership in Telemedicine

In collaboration with PR Ready (a project of the STEM and Workforce Development Program), we developed the Certificate in Community Leadership in Telemedicine. The main goal was to develop skills and knowledge in the use and management of emerging technologies in telehealth and telemedicine. The instructional design covered 9 general thematic areas, which included the development of 21 specific courses where the presentation of theoretical concepts was balanced with case presentations, exercises, and group dynamics within the real applied context of telehealth and telemedicine according to the personal and professional interests expressed by the participants. The individual final project was the conceptualization of a business model which included the elaboration of a CANVAS model. Each participant had the opportunity to elaborate a unique idea for a social and/or commercial entrepreneurship to apply within their own communities using telehealth and telemedicine technologies. In the end, the participants had the experience of being at an in-person event to help train the nursing homes in the use of the equipment, and some had the opportunity to visit nursing homes and clinics.

Community- based research on drinking water aqueducts in Puerto Rico

This year we received a grant from the Environmental Protection Agency (EPA) to conduct community-based participatory research on health impacts on water security from climate change in twelve rural non-prasa communities of Puerto Rico. Leslie Maas Cortés is Principal Investigator, with co-Investigators Dr. Graciela Ramírez (Inter Americana University-IAUPR), Dr. Jared Bowden and Dr. Jay Levine (North Carolina State University).

A Non-PRASA aqueduct list was obtained from EPA database, and it was narrowed down from 233 to 80 aqueducts, including just the superficial aqueducts. For each aqueduct, the temperature and precipitation data were collected from the National Oceanic and Atmospheric (NOAA). Of the 80 aqueduct's, 47 leaders have been contacted to get information about the water intake distance and their organization status. This information was organized and verified for quality assurance and then added to a GIS map to visualize the specific locations and the elevation for each aqueduct (Figure 11). This data is expected to be used during the selection process of the 12 participating communities.



As part of the community engagement activities, our team has participated in community visits and educational events and (Figure 12) related to the community aqueducts including the event "Diálogos Femeninos del Agua," to discuss with the challenges of community aqueducts female leaders and another event on aqueducts preparation for the hurricane season.



Figure 12. GIS map of the 80 surface aqueducts in Puerto Rico. The ecozone, elevation, precipitation and temperature data are available for each aqueduct.



Figure 13. Visits to aqueducts in Naranjito and Adjuntas with IAUPR staff (Drs. Melitza Crespo and Graciela Ramírez, and laboratory technician Jaera Dávila) and Dr. Omar Pérez, community engagement consultant.

SOCIAL EPIDEMIOLOGY DIVISION

The purpose of the Social Epidemiology Division is to learn, understand and improve the social conditions in which people are born, grow, work, live and age, which influences public health outcomes. We aim to achieve health equity among the residents of Puerto Rico through education, research, and public policy. The social determinants of health (SDOH, Figure 13), health disparities, and health equity are priorities of the division.

Social determinants of health and social epidemiology interest group

In collaboration with the Community Engagement Division, we planned and designed "Las comunidades y el emprendimiento: la fórmula para el desarrollo económico", a health session that was presented at the BE Fest 2022. Also, a guide on how to address social determinants of health in the workplace was created and presented at the event.

The division developed and conducted a survey to understand the perceptions of the SDOH among the employees of the PRPHT. A total of 87 employees completed the survey and a final report was developed to provide insight on how the topic should be addressed within our organization and will serve as a resource for other organizations interested in creating awareness about the topic.

In collaboration with the NY Federal Reserve Bank, we held a conference on January 12th on "Investing in Health: A New tool to Improve Health Outcomes in Puerto Rico".

The social determinants of health and social epidemiology interest group was designed and established by the division in collaboration with the Community Engagement Division. Considering the importance of the SDOH, and recognizing it as a priority of the PRPHT, we plan to develop initiatives and strategies that aim to understand and address the social and health impacts of vulnerable communities in Puerto Rico at a systemic level.



Figure 14: Social Determinants of Health circle showing its five categories.

Addressing Social Determinants of Health among the Hispanic Populations

This project, supported by a contract with the NNPHI, aims to provide technical assistance to PRDoH on topics related to health equity. For this purpose, we developed several tools to increase capacity in health equity and SDOH.

One of the main accomplishments was the creation of two SDOH screening tools (questionnaires). We created the Questionnaire to address Social Determinants of Health in Hispanic patients (CADESS-P, for its acronym in Spanish). CADESS-P objective is to help health professionals to identify the social determinants of health in a primary healthcare environment. In addition, we created a guide titled: Guide to Address Social Determinants of Health in Hispanic Patients (Figure 14). The guide's objective is to provide information to health professionals on how to provide the questionnaire, why it is important to make SDOH questions, and how to address the SDOH using a nonclinical approach. Also, we created the Questionnaire to Address Social Determinants of Health in Hispanic employees (CADESS, in Spanish). CADESS, objective is to help employers to identify the social determinants of health in their employees.

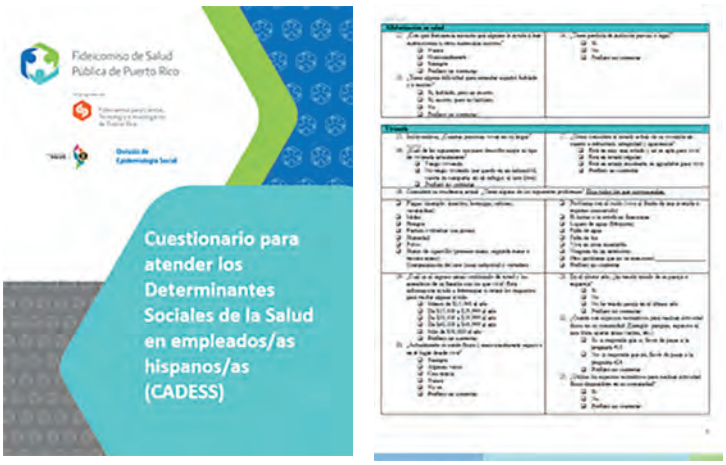


Figure 15. Questionnaire to Address Social Determinants of Health in Hispanic Patients (CADESS-P)

The project also included an educational component on equity and SDOH that included: (1) a webinar, (2) an asynchronous educational module, (3) a short course and (4) a social media campaign. The webinar titled "Healthy Homes, Employment, and Mental Health", focused on how employment and housing can influence mental health. The webinar recording is on the PRPHT YouTube channel: https://www.youtube.com/watch?v=7ziXQ_dXp4c&t=960s. The educational module titled: "Los determinantes sociales de la salud en la población de hispanos: Construyendo equidad en salud" has seven chapters, in Spanish, and includes captions and audio (Figure 15). Lastly, we offered the 15-hour virtual course: Building Power for Health Equity in our Communities, in collaboration with Dr. Jonathan Heller, a Senior Health Equity Fellow at the Population Health Institute at the University of Wisconsin. There was a total of 23 participants that included students from the main public health programs in Puerto Rico and staff from PRDoH and the PRPHT.



Figure 16. Public Health Educator, Jerry Vélez recording Chapter 1 of the SDOH asynchronous module.

The social media campaign consists of 10 educational materials. Six have been created and published at the time of the report, on topics related to minority health, the categories of SDOH and definitions, health equity and the steps to achieve it, and health disparities (Figure 16).



Figure 17: Some of the social media posts published as part of the SDOH and equity campaign.

COVID 19 Patient Registry

The purpose of the registry is to consolidate information from individuals who were infected from SARS-CoV-2 virus into a database. It will be utilized to understand the epidemiology and the impact on equity in the health and the well-being of the population after a SARSCoV-2 infection and Post-Acute COVID-19 Syndrome (PACS) in Puerto Rico. In October 2022, CHWs received training about the Registry, and how to facilitate the questionnaire among people in their communities who do not have Internet access or have low Internet and technology literacy.

José Torrado, a student intern at the Social Epidemiology Division, created promotional materials for the Puerto Rico COVID-19 Registry, including a video, and identified 19 events in which we can promote the registry. In collaboration with the Community Engagement Division, we created a plan to increase participation in the Registry. The plan includes: (1) Long COVID-19 ECHO series during August; (2) Presentation about Long COVID-19 in health fairs, communities, and universities; (3) Promotion of the registry through social media boost; (4) Train the Trainers on Long COVID-19 and how to participate in the Registry.

10-year Healthy Ageing Plan

The Healthy Ageing Plan from the Puerto Rico Department of Health (PRDoH) builds on and responds to global commitments and calls for action. It is based on the global strategy and action plan on aging and health. The Healthy Ageing Program of the PRDoH led efforts to design, create and write the 10-year Healthy Ageing Plan. As part of the effort, they created subcommittees, one of them was the Analysis Subcommittee. Dr. Mariela Alvarado, lead of the division was invited to be part of this committee and she participated in nine meetings of the analysis and one meeting of the writing committees. During the meetings, Dr. Alvarado provided expertise in the interpretation of data presented by the leader of the subcommittee. She also participated as a reviewer of the plan. The plan will be available on August 31, 2023.

Public Health Infrastructure Technical Assistance

We started a new collaboration with PHMC on technical assistance and training requests by sharing resources and expertise, and providing outreach to state and local states departments (Puerto Rico and US Virgin Islands). From April to June 2023, we had five virtual meetings and one in person meeting at the NNPHI Annual Conference. Two meetings were with the PRDoH and US Virgin Islands Department of Health. We are coordinating site visits to both departments during August 2023. Also, we expect to recruit a Project Coordinator and a Training Coordinator.





Marianyoly Ortiz Ortiz, PhD
Executive Director

DIRECTOR'S POV

This year I became the Executive Director of the Puerto Rico Public Health Trust which signifies an important milestone in my professional life. After five years as associate director of the Puerto Rico Vector Control Unit, I learned the importance of promoting health and having the community as the center of our interventions. Now, as leader of the PRPHT, I feel very fortunate to be part of a team that shares that passion for improving the health and quality of life of fellow Puerto Ricans. Our commitment to developing community-centered, evidence-based strategies and initiatives will contribute to putting Puerto Rico at the forefront of public health.

MEET THE TEAM



Dr. Marianyoly Ortiz
Executive Director



Gloria S. Domínguez
Content Specialist



Marynelly Berríos
Telemedicine Technician
Environmental Health



Antonio Cases
Project Manager



Melissa Rivera
Administrative Assistant



Lizmariel Tirado
Project Manager
Environmental Health



Nidiana Núñez
Telemedicine Technician
Environmental Health



Alex Cabrera
Data & Evaluation
Manager



Leslie Maas
Environmental
Health Director



Melanie Rodríguez
Project Manager
Environmental Health



Xiomara Chaparro
Telemedicine Technician
Environmental Health



Sandra L. Otero
Project Supervisor
Community Engagament



Gabriela Algarín
Community
Engagement Director



Karen Andújar
Project Supervisor
Environmental Health



Francelis Sánchez
Telemedicine Technician
Environmental Health



Georliz P. Vega
Project Supervisor
Community Engagament



Mariela Alvarado
Epidemiologist
Social Epidemiology



Nicole M. Marrero
Community Technician
Environmental Health



Julio Acevedo
Telemedicine Technician
Environmental Health



Arnaldo Cruz
Project Supervisor
Community Engagament



Leslie Ortiz
Communications
Manager



Kenia Morales
Telemedicine Technician
Environmental Health

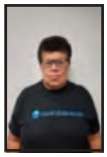


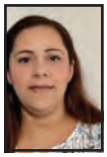
Yarelis Colorado
Training Manager
Community Engagament



María del Mar López
Project Supervisor
Community Engagament


Alexandra M. Rivera
Community Engagement Coordinator


Brunilda Sabater
CHW, Ponce
Community Engagament


Aracelis Cruz
CHW
Community Engagament


Glorimar Caraballo
Contractor, Evaluation


Rachel Millán
Community Engagement Coordinator


Karla C. Ruiz
CHW
Community Engagament


Frances K. Valentín
CHW
Community Engagament


Sara Miller
Contractor, Public Health Advisor


Gabriella Tarrats
Community Outreach
Community Engagament


Karina Quiñones
CHW, Utuado
Community Engagament


Luisa M. Pérez
CHW
Community Engagament

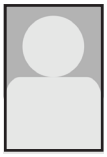

Dennis Vázquez
Contractor, Community Engagament

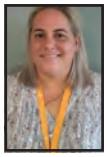

Paola Figarella
Training Coordinator
Community Engagament


Karla S. Justiniano
CHW
Community Engagament

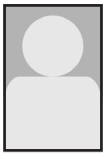

Eileen Medina
CHW
Community Engagament

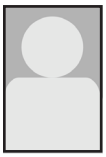

Carmen M. Vélez
Co-Principal Investigator


Noelia M. García
Training Coordinator
Community Engagament


Miriam Matos
CHW, Caguas
Community Engagement

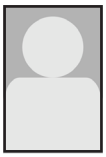

Helena Gifford
CHW, Culebra
Community Engagament

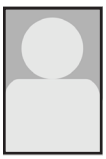

Aurinés Torres
Contractor Public Health Education


Bridgette Troche
CHW Coalition Coordinator
Community Engagament


Tayna Fernández
CHW, Naguabo
Community Engagament

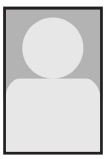

Esther Santiago
Contractor, Telemedicine

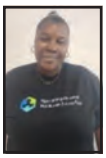

Mabel Crescioni
Contractor - Public Health Advisor


Emmie Román
Data Specialist
Community Engagament


Wilma Rivera
CHW, Añasco
Community Engagament


Zobeida Santiago
Contractor, Telemedicine


Marcos E. Felici
Contractor, Data Specialist


María Carrasquillo
CHW, Loíza
Community Engagament


Zulma Robles
CHW, Utuado
Community Engagament


Omar Pérez
Contractor, Community


Cristal M. Santiago
CHW, Coamo
Community Engagament


Israel Román
CHW, Lajas
Community Engagament


Litz Príncipe
Contractor, Telemedicine


Yaritza Arroyo
CHW, Coamo
Community Engagament


Anaís E. López
CHW, Vieques
Community Engagament


José Cordero
Principal Investigator/ Advisory Board

FUTURE PLANS
WHAT'S NEXT?

LOOKING FORWARD TO A HEALTHIER AND MORE EQUITABLE PUERTO RICO.

During the new fiscal year, we will continue developing strategies to achieve sustainable health equity for our communities. Our goals for this year will be focused on (1) strengthening our collaboration with the Puerto Rico and US Virgin Islands departments of health to support the infrastructure and workforce capacity of our regional health systems, (2) further developing our data and evaluation infrastructure to obtain, collect, and use data to drive our work and create initiatives, (3) increase our reach through social media and develop creative, inclusive and accessible educational materials and campaigns that can overcome the pandemic fatigue and encourage people to continue protecting themselves to reach the better health possible, (4) increase the recognition and certification of CHWs through the recently created CHWs Coalition and (5) develop new initiatives on climate change to better understand its impacts on health and be better prepared for the future.

This year we are also very excited to host the Health and Research Congress. This event integrates for the first time the three programs of the Health Pillar of the PRSTRT (PRPHT, Puerto Rico Vector Control Unit and the Puerto Rico Consortium for Clinical Research). Our focus during the event will be on mental health as we recover from past emergencies and natural disasters, with an emphasis on understanding current challenges and opportunities in the field.



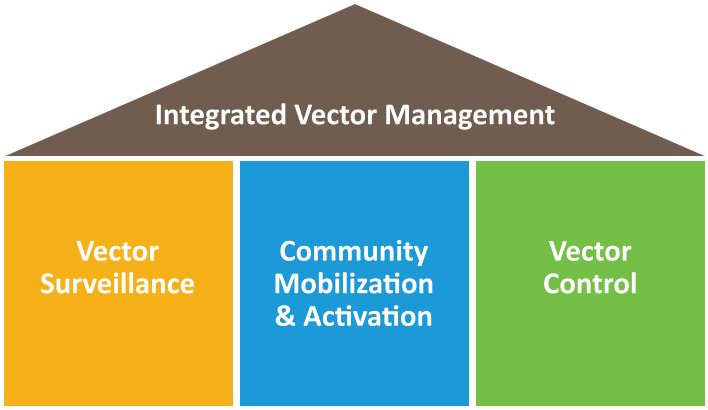


Unidad de Control de
Vectores de Puerto Rico



Unidad de Control de Vectores de Puerto Rico

PUERTO RICO VECTOR CONTROL UNIT



Representation of the three core pillars established by the Unit to implement an Integrated Vector Management model for Puerto Rico.of the three core pillars established by the Unit to implement an Integrated Vector Management model for Puerto Rico.





WHAT WE DO

The Puerto Rico Vector Control Unit (PRVCU) was established in September 2016 as part of a cooperative agreement between the Centers for Disease Control and Prevention and the Puerto Rico Science, Technology, and Research Trust. The PRVCU aims to leverage Puerto Rico's capacity to control the *Aedes aegypti* mosquito, the vector for the diseases Zika, chikungunya, and dengue.

MISSION:

Protect the people of Puerto Rico from the *Ae. aegypti* mosquito, while educating and empowering everyone to reduce mosquito populations across Puerto Rico dramatically and sustainably.

VISION:

Has a modern and dynamic territory-wide integrated vector management program that serves as a local and regional research, evaluation, and training center.

HOW WE DO IT

The unit's non-profit organizational structure makes it unique among vector management programs, all of which are associated with a state or local government. The PRVCU thus has flexibility, independence, and nimbleness that other programs lack. We use these advantages in working with municipalities, health regions, and PR Department of Health to implement those management practices most locally appropriate. We are also active in competing for grants and awards at all levels and, as our reputation and recognition has grown, so has our award success grown. Finally, we strongly emphasize the evaluation and adoption of new technology for vector management.

WHO WE CONNECT WITH



Since 2021, the PRVCU has built a strong vector management program that has been built in Puerto Rico and regionally. Its operations include working with municipalities on Integrated Vector Management (IVM), either individually or through the PRVCU-founded Puerto Rico Vector Management Association which now has participation from most municipalities and well over 200 individual members.

The activities of the PRVCU have been endorsed by the principal mayoral organizations in Puerto Rico which will give the PRVCU additional credibility and political leverage.

EXECUTIVE SUMMARY

The PRVCU is one unit within the larger Puerto Rico Science, Technology, and Research Trust, a non-profit organization. Because of this organizational structure, the Unit has flexibility and nimbleness that other vector management programs lack. It is able to work with any level of government, local, territorial, federal in any project that it deems will help improve the management of human pathogens transmitted by insect vectors.

The Unit has had an extremely successful year in grant funding, awards, and recognition, and in expanding its impact and operations.

Over the past year, it has secured nearly $20 million in grant funds, half of its staff have received significant awards from national or international organizations, it operates throughout Puerto Rico, the US Virgin Islands, Central America and as far west as the island of Palau, near the Philippines.

One of its major achievements this year was being named as a site for a Tropical Island National Training Center for Vector Management. This Center will assist in training vector management staff in the US territories on all aspects of vector management and bringing their skills up to professional levels. Another important achievement was initiating a project in El Salvador using a dengue management technique not yet approved for use in the US but currently in wide use outside the U.S. The project will help reduce dengue in El Salvador and provide significant improvement in their technical abilities. It will also gather data needed for federal approval to use the technique in Puerto Rico.

The Unit also received a $10 million grant to prepare for the likely upcoming dengue outbreak in Puerto Rico. It will help us train vector managers and provide equipment and supplies to them. These managers will, in turn, become the core cadre of vector management for Puerto Rico. One of the biggest successes for the Unit this year has been the prevention of a dengue-3 outbreak in Puerto Rico. Dengue has 4 serotypes and each one is independent of the other. Dengue-3 had not circulated in Puerto Rico for many years and a large outbreak began in 2022 in Cuba. That outbreak caused many travel-related cases in Miami and other areas of the US. Our concern was that, because it had been so long since it circulated in Puerto Rico, it would cause a very large outbreak here with symptoms more serious than usual.

The first cases of dengue-3 appeared in Rio Grande, followed by Canóvanas then Carolina and finally Juncos. At each location, the PRVCU made a maximum effort with insecticides, traps, community engagement, house-to-house inspections, and breeding site destruction, etc. One by one, the dengue-3 clusters died out. As of this writing (July 21, 2023), there have been no human cases since the beginning of March. This success has undoubtedly avoided many thousands of cases and saved many lives.

The PRVCU is an emerging international leader in the control and management of dengue outbreaks. Vector management programs throughout the world will soon look to us as a model to be followed.

IMPACT NUMBERS

$19,184,363.40
New funding

876
Surveillance traps deployed

+5,300
Control traps deployed

20,167
Total pools tested for arbovirus

69
Total pools positive for dengue

+125
WALS applications

110
Outreach and education activities

+21,300
Educational and prevention materials distributed

212
Members of the PRVMA

STRONG CAPACITY BUILDING AND INTERNATIONAL RECOGNITION NEW FUNDING

During this period, the Puerto Rico Vector Control Unit (PRVCU) received five (5) new awards from Centers for Disease Control and Prevention (CDC), US Department of Housing and Urban Development (HUD), and the American Mosquito Control Association (AMCA) for a total of $19,184,363.40. Table 1 shows the details of these awards. However, more detail and progress will be presented in the following sections.

Award Project Title	Agency or Organization	Period of Performance	Description	Award
Enhancing Global Health Security: Strengthening Public Health Surveillance Systems and Preparedness Globally	CDC	September 30, 2021 – September 29, 2026	Establish and evaluate the use of Wolbachia in the Aedes aegypti population throughout the urban areas of El Salvador.	$5,754,654.00
Enhancing Regional Capacity for Vector Surveillance and Control in the US territories in the Caribbean	CDC	September 30, 2022 – September 29, 2026	Develop a dengue hotspot response protocol, Advanced Molecular Detection (AMD) applications, professional networks, among others.	$11,704,710.00
Lead and Healthy Homes Technical Studies (LHHTS) Grant Program	HUD	December 1, 2022- December 1, 2025	Evaluate how effective are the screens in doors and windows to prevent virus borne diseases by Aedes aegypti in Ponce, Puerto Rico.	$925,000
American Mosquito Control AssociationResearch Fund	AMCA	January 15, 2023 – December 31, 2023	Determine the barriers to people's behavior change by comparing different community and educational approaches regarding the prevention and control of Aedes aegypti in Puerto Rico.	$49,999.40
Strengthening Training, Evaluation, and Partnerships in the Prevention and Control of Vector-Borne Diseases	CDC	July 1, 2023 – June 30, 2028	Develop the Tropical Island Training Center (TITC) for vector-borne disease to provide training, evaluation, and partnerships in the prevention and control of vector-borne diseases in the US territories and freely associated states.	$750,000.00
Total of awards during this period				**$19,184,363.40**

COLLABORATION WITH THE PUERTO RICO DEPARTMENT OF HEALTH

In December 2022, a Memorandum of Understanding (MOU) was established between Puerto Rico Science, Technology, and Research Trust and Puerto Rico Department of Health (PRDoH) with the interest in engaging in a collaborative relationship to research most effective alternative methods of controlling the mosquito population in Puerto Rico. This MOU served to evaluate and implement vector control and surveillance activities in the archipelago that includes entomological surveillance system; implementation of pesticide application to control the Ae. aegypti mosquito in different municipalities in areas recommended by the PRDoH; personnel training, community engagement activities; among others. Moreover, this MOU provided the recommendation of PRVCU personnel to obtain the Category 9 license to perform pesticides application. From April to June 2023, the PRVCU personnel received the required training courses through the University of Puerto Rico and the Category 9, license for application of restricted-use pesticides in public health programs, issued by the Department of Agriculture.





Pictures of the employees that approved and received the Category 9 licenses.

RECOGNITIONS AND PRESENTATIONS

PRVCU staff had the opportunity to represent us at different conferences as speakers, panelists, awardees, among others. PRVCU participated as authors in an article in the Wing Beats – Special Latin America Issue, journal of the AMCA. The article can be found in the following link: https://shorturl.at/BFN06. Moreover, PRVCU received a grant from the Entomological Society of America (ESA) – Chrysalis Fund Award 2022 to conduct the educational project titled "Promoting citizen science through monitoring of the Ae. aegypti by high school students". In addition, Raíza Alvarado, Vector Management Technician, and Cristhian Sánchez, Quality Assurance Specialist, participated in the Mosquito BEACONS Workshop in Atlanta.

The purpose of this project is supporting the implementation of an Integrated Vector Management approach for the monitoring and control of invasive mosquito species in the South Region of the United States.





Raíza Alvarado and Cristhian Sánchez during the Mosquito BEACONS Workshop in Atlanta.

From November 13 to 16, 2022, Dr. Grayson Brown, PRVCU Executive Director, participated in the Annual Convention of the ESA in Canadá (Figure 3) and Dr. Julieanne Miranda-Bermúdez, PRVCU Program Manager, conducted a virtual presentation titled "Aedes aegypti life cycle". From November 14 to 17, 2022, Noemí Martínez-Tull, Community Outreach and Education Representative, participated in the Annual Meeting of the Florida Mosquito Control Association (FMCA) sponsored by Clarke and Central Life Sciences.



Dr. Grayson Brown and Dr. Jessica L. Ware, president of the ESA.

In December 2022, Jania García-Zeno, Community Mobilization Supervisor, and Nexilianne Borrero-Segarra, Vector Management Supervisor, participated in a training in Washington, DC, as part of the project funded by HUD.

From January 30 – February 2, 2023, Nicole M. Marrero, Community Outreach and Education Representative, Mark Concepción, Luis Doel Santiago, and Samuel Lacén, Vector Management Technicians, were sponsored by the Southeastern Center of Excellence in Vector – Borne Diseases to participate in the FMCA 2023 Dodd Short Courses educational program in Gainesville, Florida.



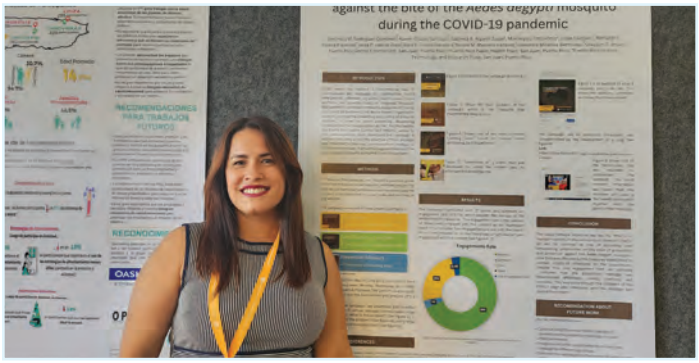
PRVCU staff that participated in the FMCA 2023 Dodd Short Courses in Gainesville, Florida.

In February – March 2023, PRVCU participated in the AMCA Annual Meeting in Reno, Nevada. During this conference, a booth of the Puerto Rico Vector Management Association was established, our team presented two posters, three oral presentations and moderated panels in the Latin American Symposium. Moreover, Joanelis Medina-Quintana and Nicole Marrero-Vázquez won the AMCA 2023 Young Professionals Industry Shadowing Program, and Cristhian Sánchez and Noemí Martínez were awarded with the 2023 Boyd-Ariaz Grassroots Award by the AMCA. This award recognizes the excellent performance and dedication of field staff in mosquito control.



PRVCU staff that participated in the AMCA Annual Meeting in Reno, Nevada.

In March 2023, Verónica Rodríguez, Community Outreach and Education Representative, had the opportunity to present a poster titled "Facebook: A tool to promote a campaign against the bite of the *Ae. aegypti* mosquito during the COVID-19 pandemic" in the 43rd Annual Forum of Research and Education of the University of Puerto Rico, Medical Sciences Campus.



Verónica Rodríguez during the poster presentation in the 43rd Annual Forum of Research and Education of the University of Puerto Rico, Medical Sciences Campus.

From April 8 to 11, 2023, Dr. Julieanne Miranda-Bermúdez and Nexilianne Borrero Segarra participated in the 2023 National Home Performance Conference of the Building Performance Association in Seattle. In this conference they could learn and share experiences in the Program Manager School with other entities that receive funds from the US Department of Housing and Urban Development.





Dr. Julieanne Miranda-Bermúdez and Nexilianne Borrero during the Program Manager School with HUD personnel.

From May 15 to 17, 2023, Dr. Julieanne Miranda-Bermúdez and Joanelis Medina-Quintana received an award from Central Life Sciences and the AMCA to participate in the AMCA Annual Conference in Washington, DC.





Dr. Julieanne Miranda-Bermúdez and Joanelis Medina-Quintana during AMCA Annual Conference in Washington, DC.

Other recognitions of our staff included the selection of Dr. Julieanne Miranda-Bermúdez as part of the exhibition "Borinqueñas en STEM" and as a mentor for "L'Oréal for Girls in Science- Puerto Rico" program in partnership with CienciaPR, and Joanelis Medina-Quintana as ESA Science Policy Fellow.

PRVCU STUDENT PROGRAM

During the summer 2023, the PRVCU had the opportunity to have six (6) interns from the University of Puerto Rico - Medical Sciences Campus. The interns had the opportunity to participate in each area of the PRVCU and provide support for the implementation of the project sponsored by AMCA in Toa Baja municipality.











Interns from the University of Puerto Rico, Medical Science Campus during their applied practice in PRVCU.

VECTOR SURVEILLANCE

AE. AEGYPTI SURVEILLANCE SYSTEM

Laboratory capacity has been established in San Juan and Ponce and working at full capacity since 2018 and 2019, respectively, to support surveillance activities as well as testing for alternate control technologies. As part of the PRVCU mosquito surveillance, female *Ae. aegypti* are collected, identified, and submitted for arbovirus testing weekly. This surveillance system has been expanded to include samples from all our main projects, including samples from Bayamón, Caguas, Carolina, Cataño, Culebra, Dorado, Guaynabo, Hatillo, Juncos, Ponce, San Juan, Toa Baja and Trujillo Alto. However, some of these are not currently part of the surveillance

Municipality	Number of AGO traps	Project or purpose
Bayamón	171	Many positive cases
Caguas	240	DoD Project
Carolina	9	Dengue Hotspot
Cataño	10	Dengue Hotspot
Culebra	37	Rotary Club Project
Guaynabo	21	Dengue Hotspot
Juncos	30	Dengue Hotspot
Ponce	150	HUD Project
San Juan	58	Many positive cases and some Hotspots
Toa Baja	150	AMCA Project

Table 2. Number of active AGO traps as part of the surveillance system until June 2023.

The PRVCU laboratory uses the Trioplex assay developed by the CDC-Dengue Branch. This is a multi-target molecular assay intended for the qualitative detection and differentiation of RNA from dengue, chikungunya and Zika viruses in mosquito samples. If dengue is detected, the DENV1-4 assay is then used to determine the dengue serotype (DENV-1, 2, 3, 4). From January 2018 through June 2023, 217,086 capture chambers have been processed, with 2,354,137 Ae. aegypti females captured. Table 3 shows a summary of the mosquitoes processed and the number of pools tested for arboviruses. We also provide mosquito testing to Pacific islands as a service.



Description	August 2022-June2023	To date (January 2018-June 2023)
AGO captured chamber processed	22,233	223,133
Total *Ae. aegypti* female captured	220,424	2,417,454
Total pools tested for arbovirus	20,167	127,882
Total pools positive for dengue	69	165

Table 3. Summary of mosquito samples processed in the PRVCU laboratory for this period.

Since July 2021, PRVCU agreed to start deploying AGO traps in municipalities around the Island considered, by members of CDC, Department of Health and PRVCU, as hotspots that should be consider as priority in molecular testing for arbovirus surveillance detection. The municipality hotspot selection was based on areas with high incidence of dengue human confirmed cases and mosquito positive traps. Female *Ae. aegypti* are collected from AGO traps, identified, and submitted for weekly testing in PRVCU Molecular Laboratory. Most of those positives are DENV-1, 29 are DENV-2 and 5 is DENV-3. For the first time, PRVCU Molecular lab team was able to detect DENV-3 in a mosquito pool. Table 4 shows the historical overall positive pools detected in the hotspot's areas.









Dengue serotype	Dengue virus positive pools
Dengue 1	47
Dengue 2	29
Dengue 3	5
Dengue 4	0

Historical overall positives pools detected per hotspot zone considering Dengue serotype identification.

INSECTICIDE RESISTANCE ASSAYS

During this reporting period, the Insecticide Resistance Assay (IRA) was performed on the week of December 12, 2022. All assay procedures, diagnostic times and diagnostic doses were documented and reported based on CDC-CONUS protocol. The municipality tested were the following: San Juan, Bayamón, Carolina, San Germán, Ponce, Culebra, and Caguas.

The active ingredients analyzed were Permethrin, Deltamethrin, Phenothrin, Malathion, Chlorpyrifos, Etofenprox, Alpha-cypermethrin, and Beta-cyfluthrin. Table 5 shows that the mosquitoes *Ae. aegypti* exposed to the active ingredients tested in those municipality have resistance and a low mortality rate.

Technical grade pesticide	Diagnostic dose (µg/ml)	Diagnostic Time (minutes)	CAR-HS2			CAR-7 Villa Fontana			Caguas		
			Mortality %	Negative Control Mortality %	Susceptible Control Mortality %	Mortality %	Negative Control Mortality %	Susceptible Control Mortality %	Mortality %	Negative Control Mortality %	Susceptible Control Mortality %
Permethrin	43	20	0	0	100	3	0	100	4	0	100
Deltamethrin	0.75	30	0	0	100	0	0	100	0	0	100
Etofenprox	20	15	0	0	100	0	0	100	0	0	100
Phenothrin	30	20	0	0	100	0	0	100	0	0	100
Lambda-cyhalothrin	10	20	56	0	100	54	0	100	42	0	100
Malathion	400	20	71	0	100	74	0	100	75	0	100
Chlorpyrifos	200	45	76	0	100	78	0	100	74	0	100
Alpha-Cypermethrin	1	30	1	0	100	1	0	100	1	0	100
Beta-Cyfluthrin	1	30	9	0	100	7	0	100	2	0	100

Technical grade pesticide	Diagnostic dose (µg/ml)	Diagnostic Time (minutes)	Culebra			Irlanda, Bayamón			Ponce			San Germán		
			Mortality %	Negative Control Mortality %	Susceptible Control Mortality %	Mortality %	Negative Control Mortality %	Susceptible Control Mortality %	Mortality %	Negative Control Mortality %	Susceptible Control Mortality %	Mortality %	Negative Control Mortality %	Susceptible Control Mortality %
Permethrin	43	20	12	0	100	1	0	100	15	0	100	27	0	100
Deltamethrin	0.75	30	0	0	100	0	0	100	0	0	100	0	0	100
Etofenprox	20	15	0	0	100	0	0	100	0	0	100	0	0	100
Phenothrin	30	20	0	0	100	0	0	100	0	0	100	0	0	100
Lambda-cyhalothrin	10	20	46	0	100	39	0	100	51	0	100	54	0	100
Malathion	400	20	76	0	100	71	0	100	72	0	100	77	0	100
Chlorpyrifos	200	45	78	0	100	78	0	100	78	00	100	78	0	100
Alpha-Cypermethrin	1	30	0	0	100	0	0	100	2	0	100	13	0	100
Beta-Cyfluthrin	1	30	5	0	100	9	0	100	9	0	100	16	0	100

VECTOR CONTROL

PROJECT IN CAGUAS TO DETERMINE MOSQUITO THRESHOLDS NECESSARY TO SPREAD DISEASE

In collaboration with the CDC Dengue Branch, a Department of Defense-funded program was begun to determine the minimum numbers of *Ae. aegypti* mosquitoes required to maintain outbreaks of arboviruses such as dengue, chikungunya and Zika. The three-year project (2021 – 2024) received $900,000. Over 4,000 AGO traps are currently deployed throughout Caguas. The preliminary results show a reduction of *Ae. aegypti* mosquitoes in areas with more traps per house of which that don't have traps. Since the deployment, there have not been significative changes in the percent coverage of traps by cluster, for this reporting period varies between 69.0% to 78.50%.

In September 2022, the first annual cross-sectional serosurvey was completed throughout Caguas study area as another component of this project. The results of the first serosurvey indicated that more than 70% of the participants have been positive to IgG, that represents that the person had an infection sometime in the past. In terms of IgM, around 3.99% were positive at the time of the test, that can represent a recent dengue virus infection. The next annual cross-sectional serosurvey will start on October 2023.



Pictures of the Caguas team working on the project.

DENGUE HOTSPOT RESPONSE AND MUNICIPAL SUPPORT FOR VECTOR CONTROL

One of PRVCU's teams is its Municipal Support Team. They provide many types of vector management support to individual municipalities throughout the archipelago. As part of the collaboration with the CDC, PRDoH and PRVCU, a rapid vector control response has been implemented in areas with active dengue cases. The following areas where cases of Dengue 1, 2 and 3 were detected, PRVCU responded quickly and effectively.

As part of the collaboration with the PRDoH and local municipalities, PRVCU provided support on the use of Wide Area Larvicide Spraying (WALS) in some of the hotspots' areas. During this period, more than 125 WALS applications have been conducted. Table 6 shows the areas that were served during the last year.

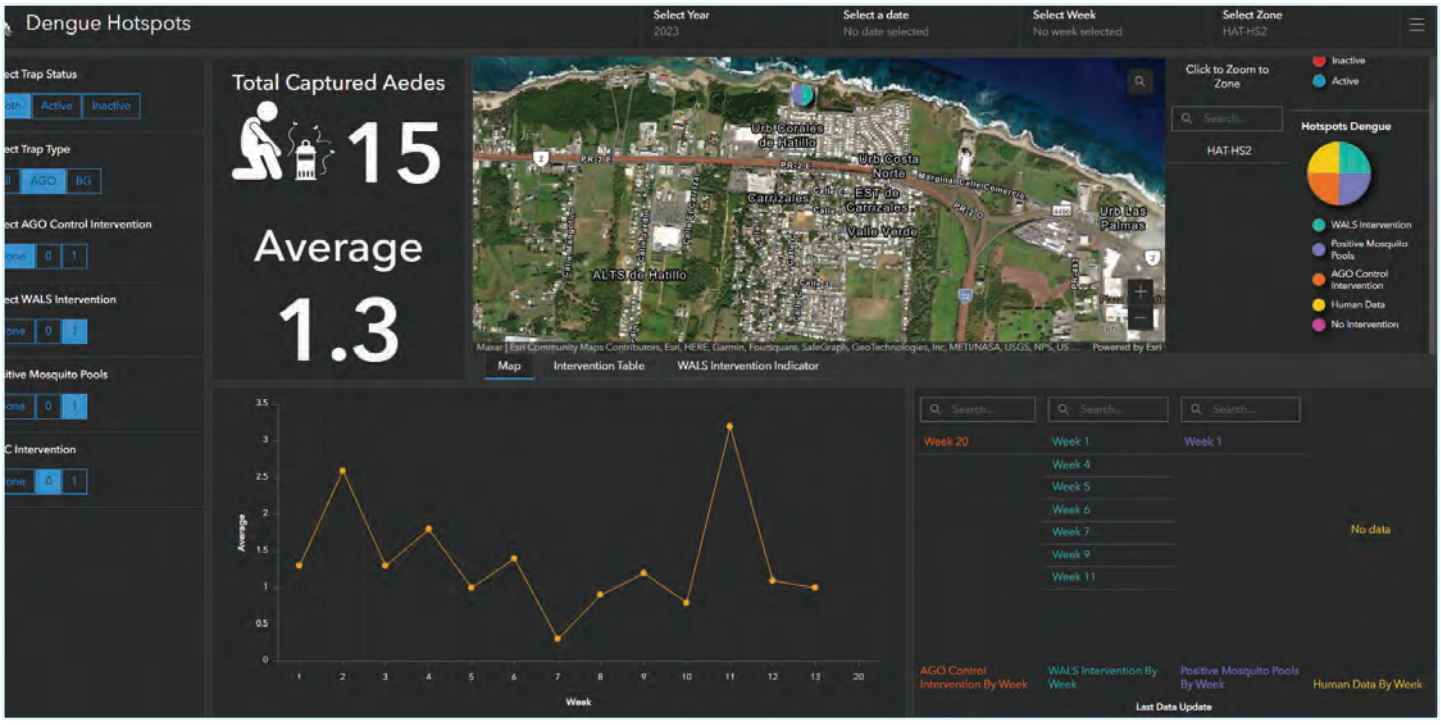
Table 6. Summary of the areas that were served as part of the rapid vector control response.

Start date	Serotype	Area	Activities	Result
September 2022	Dengue 1	Residencial Virgilio Dávila, Bayamón (BAY-HS1)	10 AGO surveillance traps Breeding sites source reduction WALS applications Community and education activities.	No more cases of Dengue 1 were reported.
September 2022	Dengue 3	Barrio Cubuy, Canóvanas (CAN-HS)	9 AGO surveillance traps Breeding sites source reduction WALS applications Community and education activities.	No more cases of Dengue 3 were reported.
September 2022	Dengue 1	Barrio Canovanillas, Carolina (CAR-HS3)	6 AGO surveillance traps Breeding sites source reduction WALS applications Community and education activities.	No more cases of Dengue 3 were reported.
October 2022	Dengue 1	Residencial Juana Matos, Cataño (CAT-1)	20 AGO surveillance traps 14 AGO control traps Breeding sites source reduction Community and education activities.	No more cases of Dengue 1 were reported.
October 2022	Dengue 1	Residencial Columbus Landing, Mayaguez (MAY-HS1)	11 AGO surveillance traps Breeding sites source reduction WALS applications Community and education activities	No more cases of Dengue 1 were reported.
October 2022	Dengue 1	Residencial Sábalos Gardens and Ext. Sábalos Gardens, Mayaguez (MAY-HS2)	21 AGO surveillance traps Breeding sites source reduction WALS applications Community and education activities	No more cases of Dengue 1 were reported.
October 2022	Dengue 2	Urbanización Los Angeles, Carolina (CAR-HS4)	9 AGO surveillance traps WALS applications Breeding sites source reduction Community and education activities	No more cases of Dengue 2 were reported.
October 2022	Dengue 3	Barrio Jiménez, Río Grande (RIO-HS1)	8 AGO surveillance traps 30 AGO control traps Breeding sites source reduction WALS applications Community and education activities	No more cases of Dengue 3 were reported.
October 2022	Dengue 3	Urb. Pedregales and Villas de Cambalache, Río Grande (RIO-HS2)	4 AGO surveillance traps Breeding sites source reduction Community and education activities	No more cases of Dengue 3 were reported.

Start date	Serotype	Area	Activities	Result
October 2022	Dengue 1	Caparra Hills, Guaynabo (GUY-HS1)	10 AGO surveillance traps Community and education activities	No more cases of Dengue 1 were reported.
November 2022	Dengue 1	Residencial La Candelaria, Mayagüez (MAY-HS6)	16 AGO surveillance traps Breeding sites source reduction WALS applications Community and education activities	No more cases of Dengue 1 were reported.
November 2022	Dengue 1	Residencial Franklin D. Roosevelt (MAY-HS7)	10 AGO surveillance traps Breeding sites source reduction WALS applications Community and education activities	No more cases of Dengue 1 were reported.
November 2022	Dengue 1	Villa del Mar, Hatillo (HAT-HS1)	5 AGO surveillance traps 15 AGO control traps Breeding sites source reduction WALS applications Community and education activities	No more cases of Dengue 1 were reported.
December 2022	Dengue 1	Residencial Rafael Hernández (Kennedy) (MAY-HS4)	12 AGO surveillance traps Breeding sites source reduction WALS applications Community and education activities	No more cases of Dengue 1 were reported.
December 2022	Dengue 1	Residencial El Carmen (MAY-HS5)	10 AGO surveillance traps Breeding sites source reduction WALS applications Community and education activities	No more cases of Dengue 1 were reported.
December 2022	Dengue 1	Puertas del Mar, Hatillo (HAT-HS2)	12 AGO surveillance traps 38 AGO control traps Breeding sites source reduction WALS applications Community and education activities	No more cases of Dengue 1 were reported.
December 2022	Dengue 3	Virginia Valle, Juncos (JUN-HS2)	8 AGO surveillance traps 86 AGO control traps Breeding sites source reduction WALS applications Community and education activities	No more cases of Dengue 3 were reported.
January 2023	Dengue 1	Brisas de Bayamón, Bayamón (BAY-HS2)	10 AGO surveillance traps Community and education activities	No more cases of Dengue 1 were reported.
January 2023	Dengue 3	Senderos de Juncos, Juncos (JUN-HS1)	6 AGO surveillance traps 59 AGO control traps Breeding sites source reduction WALS applications Community and education activities	No more cases of Dengue 3 were reported.

Start date	Serotype	Area	Activities	Result
January 2023	Dengue 2	Mariolga, Caguas	20 AGO surveillance traps 421 AGO control traps Breeding sites source reduction Use of larvicide Community and education activities	No more cases of Dengue 2 were reported.
March 2023	Dengue 3	Villa Graciela and Villa Ana, Juncos (JUN-HS3)	7 AGO surveillance traps 49 AGO control traps Breeding sites source reduction WALS applications Community and education activities	No more cases of Dengue 3 were reported.
April 2023	Dengue 3	Jardines de Ceiba Norte, Juncos (JUN-HS4)	10 AGO surveillance traps 86 AGO control traps Breeding sites source reduction WALS applications Community and education activities	No more cases of Dengue 3 were reported.
June 2023	Dengue 1	Urb. Hermanas Dávila and Villa Rica, Bayamón	5 AGO surveillance traps WALS applications	Active

To facilitate the visualization of the hotspot's response, PRVCU developed a dashboard for this purpose that includes the mosquito data, WALS applications, positive mosquito pools, among other variables.



Dengue hotspot dashboard.

COLLABORATION WITH ROTARY CLUB INTERNATIONAL IN CULEBRA

PRVCU received a grant of $199,500 from the Rotary Club International and the Rotary Club of San Juan to conduct a vector control project in Culebra. In collaboration with the municipality of Culebra, PRVCU aim to control the *Ae. aegypti* and prevent epidemics caused by the viruses they transmit. The project, funded for two years, was divided into three key areas: surveillance, control, and community mobilization. PRVCU seeks to continue supporting the Culebra municipality in this project.

Surveillance

A total of 37 AGO traps were deployed to monitor the abundance of *Ae. aegypti*. The surveillance data collected between December 1, 2022, and May 31, 2023, spanning 26 weeks (from project week 71 to project week 96), revealed a significant reduction in the average female *Ae. aegypti* captured per trap per week. During this period, the average number of female *Ae. aegypti* was recorded as 2.74, which represents a 60% suppression rate, with 4.02 fewer mosquitoes per trap compared to the first 70 weeks of the project (Figure 14). During this reporting period, no positive mosquito pools were detected.



Average number of female *Ae. aegypti*/trap/week on the Culebra Project.

Control

A total of 213-yard inspections were completed within the project period, encompassing 185 houses. Among these inspections, 28 were conducted as follow-up visits during this reporting period.

To effectively control *Ae. aegypti* mosquitoes, a total of 510 control AGO traps were deployed.

WALS activities started on December 1, 2022 (Project week 70) with the collaboration of the local municipality and personnel. The WALS approach has proven to be an essential component of vector control efforts, significantly reducing the mosquito population in the treated areas, and contributing to the prevention of mosquito-borne diseases.

213
Yard inspections

500+
AGO traps were deployed



Picture of the team working in the project. First photo from left to righ was performing a house inspection. Second photo, is one of the tecnichian counting mosquitoes as part of the mosquito surveillance.

COMMUNITY MOBILIZATION:

The PRVCU provided educational materials for the Culebra residents; these included distributing more than 1,000 educational flyers, 361 repellents for personal protection, and 308 larvicides for biological control. More than 25 activities such as meetings, train the trainers, brigades, talks, and booths were conducted during this reporting period with an impact of around 300 people. To inform the community about the project, newsletters were developed and distributed. As part of the communications efforts, interviews on radio stations and newspaper were carried out.

25
Activities

1,000 +
Educational flyers

360+
Repellents

300+
Larvicide for biological control



Cover page of El Nuevo Día about the Culebra project.

EVALUATION OF WOLBACHIA REPLACEMENT IN EL SALVADOR

PRVCU received a grant of $5.4 million from the CDC to conduct a vector control project in El Salvador. The objective of this project is to establish and evaluate Wolbachia in the *Ae. aegypti* population throughout the urban areas of the municipalities of Santa Ana, San Sebastian Salitrillo, and Chalchuapa in El Salvador. This project involves collaboration between several disparate organizations working in partnership: PRVCU, World Mosquito Program (WMP), El Salvador's Ministry of Health (MINSAL). These three collaborators will also work in close association with the CDC Dengue Branch in San Juan, Puerto Rico, CDC's Central American Regional Office in Guatemala, and the municipality of Santa Ana, El Salvador.

During this reporting period, PRVCU has been working with the collaborators in the organizational phase and beginning the operational phase. The following items have been completed:

- Kickoff meeting in Puerto Rico with WMP, MINSAL and CDC in October 2022.
- Memorandum of Understanding (MOU) has been established between the four main units: CDC, MINSAL, WMP, and the PRVCU. This MOU established the roles and responsibilities of each of the units in the project. The MOU established the authority of the PRVCU and WMP to operate in El Salvador as needed for this project.
- Contract between WMP and PRVCU.
- Establishment of the steering committee of the project.
- Establishment of the technical team in El Salvador, Both, the WMP and PRVCU established their technical teams on the ground.
- Development of protocols, training courses, key messages, communications plans, among other key activities to start the implementation of the project in August 2023.



PRVCU received a grants of
$5.4 M



Kickoff meeting for El Salvador Project.

SÍSCREENS PROJECT, PONCE, PUERTO RICO

PRVCU received a grant of $925,000 from HUD to evaluate the effectiveness of house screening against *Ae. aegypti* mosquitoes in Puerto Rico and its impact on reducing arbovirus infections. The study will be conducted in Ponce, Puerto Rico, where randomized cluster trials will be conducted to monitor local arbovirus transmission through mosquito virologic surveillance and surveillance for dengue cases among participating households.

The project will also conduct acceptance surveys of screens to understand why window and door screens are not universally used and how consumer acceptance can be increased. The project will encourage new screen design and new materials development and establish up to four micro-enterprises for screen contractors who will provide the initial installations and will continue to provide screen services after project completion.

The project will also develop community engagement guidelines for increasing the use of screens throughout Puerto Rico. During this reporting period, the following activities were conducted: (1) kickoff meeting to present the project to all collaborators with 43 participants; (2) IRB submission and approval; (3) development and approval by HUD of the Quality Assurance Plan that included the SOPs, consents, questionnaires, educational materials, among other key documents; (4) contract with the Ponce Neighborhood Housing Services, contractor for the development and installation of screens; (5) employees hiring and training; (6) deployment of 150 surveillance AGO traps in the study area, and other activities. The implementation of this project will be at the end of July 2023.

925K
Grant from HUD

43
Participants

150
Surveillance AGO traps

5
Employees hiring and training





Pictures of some activities conducted on the SíScreens Project.



COMMUNITY MOBILIZATION PROGRAM

COMMUNITY OUTREACH AND EDUCATION ACTIVITIES

The PRVCU Community Mobilization Program continues participating in the proactive program. Even though some of our activities have been reduced due to the pandemic, the team was able to have a significant impact this year with 110 activities and a distribution of 6,101 educational materials and 14,310 repellents (Table 7). During this period, the PRVCU collaborated with the San Juan School of Mathematics, Sciences and Technology with the project: "Use of an Arduino microcontrol of humidity and temperature to monitor the Ae. aegypti mosquito in AGO and BG traps". This was presented at the Puerto Rican Metropolitan Science Fair, obtaining first place.

110 ACTIVITIES

6,100 +
Educational Materials

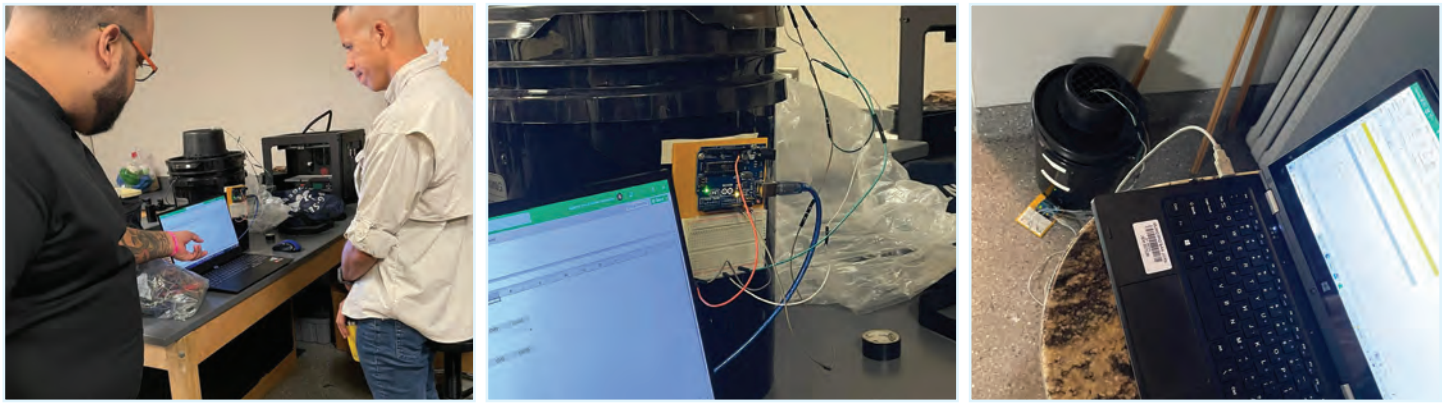
14,300 +
Repellents

Activity/ Material	August 2022– June 2023	Total to date since September 2017	
	Number of activities/materials	Number of activities/ materials	Number of Municipalities
Educational booths	30	656	59
Educational talks (general public)	24	395	42
Educational talks (schools)	16	561	51
Community visits	22	9,345	30
Informational visit	14	399	23
Workshop or training	4	24	7
Summer camps	0	31	8
Distribution of repellents	14,310	132,987	78
Distribution of larvicides	977	6,968	51
Distribution of educational material	6,101	181,263	78
Distribution of activity books	0	19,654	55
Mosquito nets	0	1,331	20

Table 7. Summary of outreach and education activities conducted during this period.



Pictures of education and community outreach activities



Collaboration with the San Juan School of Mathematics, Sciences and Technology

MOSQUITO DAY 2022

World Mosquito Day is observed annually on August 20th to commemorate that day in 1897 when British doctor Ronald Ross discovered that female mosquitoes transmitted malaria. In 2019, the governor of Puerto Rico signed a proclamation to declare August the Awareness Month against the Mosquito *Ae. aegypti* in Puerto Rico.

During this year, the initiative seeks to promote citizen participation in the identification and reduction of breeding sites. Four training workshops were held where a total of 56 captains were impacted. The participants in these workshops were from the following municipalities: Ponce, Yauco, Mayagüez, Aguadilla, Cayey, San Juan, Naranjito, Toa Alta and Peñuelas. Also, we have representation of municipalities such as Culebra, Patillas, Bayamón and Aibonito in activities related to this initiative.

The PRVCU participated in 18 activities during the month of August 2022. A total of 49 breeding kits were delivered. In the inspections carried out, 312 breeding sites were reported as eliminated. There were 703 adults and 106 children for a total of 809 participants. Aibonito, Bayamón, Culebra, Mayagüez, Patillas and Ponce were the municipalities where the use of the Mosquitalo application was reported.

The five most common breeding sites reported were plastic containers (44%) followed by flowerpots (18%), drones (15%), tires (12%) and trash cans (11%). In 47% of the reported breeding sites the presence of larvae was identified, 22% pupae and 5% in both immature stages. The most common action to eliminate the breeding sites was emptying (47%), brushing (25%), covering (19%), throwing away (7%) and using a screen (2%). The Mosquito Day 2022 webpage had 1,002 visits during the campaign period. In the communications area, 14 publications were made in various media and three interviews (TV/Radio) were performed.

More than

18 ACTIVITIES









49
Breeding kits were delivered

312
Breeding sites were reported

800+
Participants

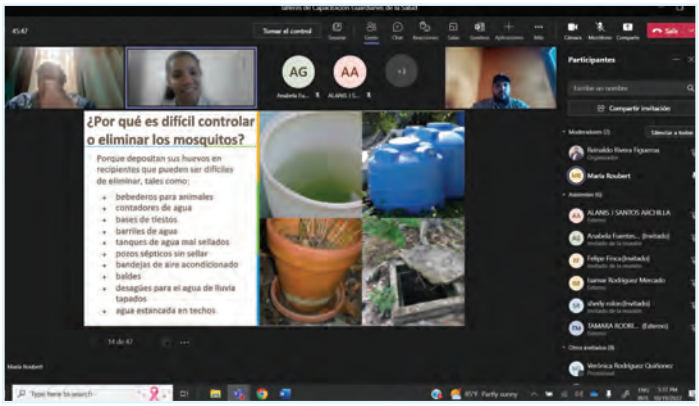
6
Municipalities use Mosquítalo app



Pictures of the Mosquito Day 2022 activities.

HEALTH GUARDIANS

The PRVCU implemented a virtual and in person train the trainers. The trainees need to conduct a series of activities, including presentations to other people or breeding sites reduction activities to receive a certification as "Guardian de la Salud" or Health Guardian. The training is divided into four 1.5-hour sessions. The objective is to train the community and help them foster their leadership in mosquito control. PRVCU provided the materials necessary to conduct their activities for the certification. During this reporting period, a total of four (4) full training sessions have been conducted for a total of 47 trained participants and 41 certified "Guardianes de la Salud". From the beginning of the initiative more than 370 people have been impacted by Guardians of Health. Information about this initiative can be found at http://prvectorcontrol.org/guardianes-de-la-salud/.





Pictures of Health Guardians activities.

DENGUE TOOLKIT

As part of the response of dengue cases and the constant threat of contagion from mosquito-borne viruses, the PRVCU in collaboration with the CDC developed its Dengue Toolkit. The kit is a set of educational and mass communication materials designed to help municipalities, communities, nonprofit organizations, and others to combat the spread of this disease. The kit includes posters, brochures, videos, audios, materials for social networks, and teaching guides on how to prevent and control the proliferation of the *Ae. aegypti* mosquito and the dengue virus. To promote this toolkit, three interviews were conducted in WIPR, ABC Puerto Rico and Be Health social media channel, and a press release was disseminated in the principal newspapers of Puerto Rico including Metro and El Nuevo Día. At the same time, this initiative began to be promoted on the PRVCU social media networks. Link for the Dengue Toolkit: **https://prvectorcontrol.org/recursos/**

In collaboration with the CDC, the Department of Health and the Department of Education, in December 2022 a talk was provided to the schools' nurses with an impact of 400 participants. In addition, in March 2023 health teachers participated in an educational talk with an impact of 228 teachers. These talks had the objective to increase the knowledge of these professionals about the mosquito, protective measures, dengue virus and vaccine.







Promotions of the Dengue Toolkit.





Talks in collaboration with CDC, Department of Health and Department of Education.

ENTOMOLOGICAL SOCIETY OF AMERICA (ESA) PROJECT

PRVCU received an award from the ESA – Chrysalis Fund to conduct a project titled: "Promoting citizen science through monitoring of the *Ae. aegypti* by high school students". In this project, we are training students in a secondary school from the Department of Education in San Juan, Puerto Rico. The objectives of the study are:

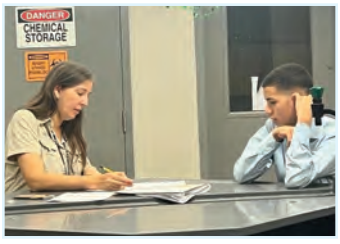
1) to achieve awareness and understanding of *Ae. aegypti* and the pathogens that they transmit and the environment in which they breed and live;

2) increase understanding of the physical control of immature stages of *Ae. aegypti*; and

3) demonstrate scientific skills such as careful observation, scientific illustration, data collection, and written/oral expression.

To achieve these goals, before the implementation of the project a Knowledge, Attitudes, and Practices (KAP) survey about vector management, biology, and vector-borne diseases were administered to the students. They participated in educational modules about the biology, identification, surveillance, and control of *Ae. aegypti* and the use of mobile app to conduct yard inspections.

They built an adhesive trap for gravid female mosquitoes and evaluate if the color trap (red, blue, and black) can attract different numbers of mosquitoes. The students deployed twelve traps (four for each color) in different places in their school. The surveillance had a duration of nine weeks (March 28 to May 23). They identified the mosquito species caught and determine the abundance of *Ae. aegypti* and the risk of dengue virus transmission in their community through data collection and PCR analysis. For the next report, the results of this project will be presented.

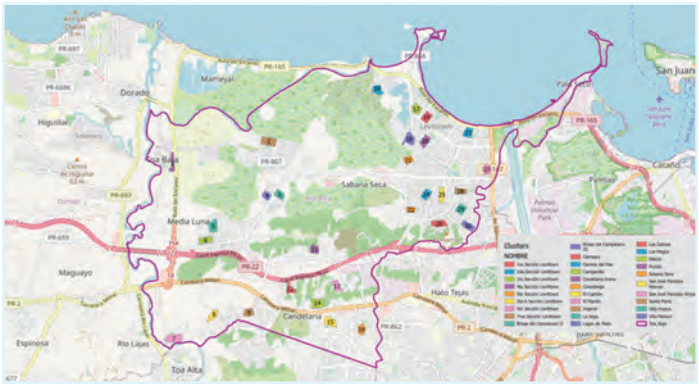




KAP administration and identification of mosquitoes conducted by the students.

ENTOMOLOGICAL SOCIETY OF AMERICA (ESA) PROJECT

PRVCU received an award from the AMCA to determine the barriers to people's behavior change by comparing different community and educational approaches regarding the prevention and control of *Ae. aegypti* in Puerto Rico. Thirty clusters with approximately 100 structures per cluster from Toa Baja, Puerto Rico were randomly selected.



Project study area in Toa Baja, Puerto Rico.

Ten clusters will receive a novel Community Engagement (CE) campaign, ten will receive a traditional CE campaign, and ten will be control sites for evaluation purposes. A subsample of 5 houses of each cluster has an AGO trap deployed in front of the house for a total of 150 AGO traps in the study area. Thus, we will evaluate each campaign's impact on the vector population and arboviral prevalence in that population. In 10 houses in each of the 30 clusters, a KAP survey has been administered to the head of the household to determine what the residents know, do, or believe about the prevention and control of *Ae. aegypti* mosquitoes; the survey will guide community planning for the project.

10 CLUSTER
Receive a novel Community Engagement

10 CLUSTER
Receive a traditional CE campaign

10 CLUSTER
Receive control sites for evaluation process

150
AGO traps in the study area

The KAP survey was administered at the beginning of the project, before the CE campaigns, to establish a baseline. A second KAP survey at the end of the project will be administered for a total of two questionnaires in each of the clusters. When we administered the initial KAP survey, we also conducted a house inspection to quantify the number of positive containers with Aedes larvae on the premises. A total of 106 KAP and yard inspections were conducted during this reporting period. A preliminary analysis of the results so far tells us the following: 82% of participants have heard, read, or seen information related to *Ae. aegypti*, 18% have not; only 32% of the respondents identify mosquitoes as a problem in their community; 95% of participants find some benefit in controlling mosquitoes and mosquito breeding sites, although not all act on this; 60% of participants are afraid of contracting a mosquito-borne disease while 40% have little or no fear.





Yard inspections in Toa Baja.

PUERTO RICO VECTOR MANAGEMENT ASSOCIATION

To date, **212 individuals** from different sectors (municipal, private, academic, among others) have become members of the Puerto Rico Vector Management Association (PRVMA) **representing 64 local municipalities and eight additional countries** (Australia, Chile, Colombia, Ecuador, Spain, United States, Mexico, and Perú). There are **46 municipalitie**s that have representation from municipal employees (OMME or PRDoH).

Efforts will continue to recruit members using social media strategies as well as announcements using traditional media. Every year, all the members receive a welcome kit (poster, calendar, and others) about the Association as part of the recruitment and retention process. As part of the benefits, the members received three orientations about vector control.

On June 2, 2023, the PRMVA was invited by the NMEAD (for its acronym in Spanish) to the Community Hub Meeting in preparation for the hurricane season. On this occasion, the PRVMA had the opportunity to guide the leaders of different municipalities about mosquitoes and how to prevent them in, during and after an atmospheric event.



Distribution of kits to the PRVMA members.

ANNUAL CONVENTION OF VECTOR CONTROL 2022

During this year, the Annual Convention of Vector Control was held from September 14 to 16, 2022 with the participation of approximately 200 professionals. On the first, virtual day, a diverse group of professionals participated who served as speakers from different countries such as Puerto Rico, United States, Colombia, Mexico, and the Dominican Republic.

In addition, the PRVMA instituted the Alfredo Evaldo Casta Vélez Award, which is given to outstanding field personnel in vector control in Puerto Rico. The first prize was awarded to Mr. Carlos A. Febus Castro from the Municipality of Bayamón, Puerto Rico. In addition, a poster submission competition on mosquitoes, community engagement and Integrated Vector Management was launched this year. In addition, we had face-to-face activities in Bayamón and Mayagüez where the participants were able to put into practice what they had learned in the virtual activity and to calibrate their spray machines. Figure 30 shows pictures of the Annual Convention of Vector Control 2022.







Pictures of the Annual Convention of Vector Control 2022.



200
Profssionals

Puerto Rico
United States
Colombia
Mexico
Dominican Republic





PRESENCE IN TRADITIONAL AND DIGITAL MEDIA OUTLETS

The main social media page used by PRVCU is Facebook, with a total of **16,844 followers**. New strategies to increase engagement and provide more relevant information include video blogs, social media campaigns, contests, and mosquito facts.

In addition to Facebook, PRVCU has accounts on Instagram and Twitter as well as a YouTube channel where digital content has been increased to provide additional material to our followers. To increase the subscribers to YouTube, a video blogs series was developed to promote the reuse of potential breeding sites and eliminate them.

A total of 71 videos have been developed and distributed using this platform. The channel has 527 subscribers. Moreover, PRVCU develops monthly newsletters that has being distributed to more than **1,200 contacts** and special newsletters for the Culebra project.

Social Media Channel	Number of followers (last year)	Number of followers (this year)
Facebook	16,632	16,844
Instagram	950	1,064
Twitter	303	322
YouTube	432	527

16,844
Followers

71
Videos developed





Posts of various campaigns for social media.

QUALITY ASSURANCE DIVISION

The PRVCU has a Quality Assurance Specialist to evaluate current and future processes for improvement within and across projects, to identify problems in data management, and to standardize and implement quality controls. To our knowledge, the PRVCU is the only vector management program with a dedicated QA specialist.





FUTURE PLANS
WHAT'S NEXT?

The new funding will enable the PRVCU to expand its municipal support. With the projects in Caguas and Culebra winding down, most of the PRVCU staff assigned to those projects will be reassigned to municipal support. Meanwhile, the new Training Center will be starting with the hiring of a Trainer Coordinator, development of a curriculum, initiation of a Continuing Education Program, and delivering the program. The Unit's administration can now reduce emphasis on grant writing and emphasize legislative initiatives. These will include formalizing the MOU with PRDoH into statutes and securing a tax-based funding stream. Those two items will keep the Unit viable for the foreseeable future.

The Unit will continue to develop, implement, and incorporate new technology. For example, a new mobile molecular laboratory (2024) will be able to assess Wolbachia introgression, insecticide resistance, and dengue sequences. Other exciting technologies will also be adopted. These and other measures will produce a world-class vector management program. One that will be exhibited to the world at the International Congress of Entomology in Kyoto Japan in 2024 and at the Annual Meeting of the American Mosquito Control Association in 2025.

THE PRVCU PROGRAM WILL BECOME A MODEL OF EXCELLENCE TO THE WORLD!

DIRECTOR'S POV



Dr. Grayson Brown
Executive Director

This was a breakthrough year for the PRVCU. We received nearly $20 million in external funding – enough to last the unit for several years.

More importantly, we initiated new projects with new and additional funding partners and these projects will greatly help in our fight against mosquito borne diseases in Puerto Rico. The Unit continued to grow its reputation through major recognition and awards, and this was reflected in the Unit being named as a national training center for vector management. The coming year will see the Unit continuing to execute its mission while building on the successes achieved this year.

MEET THE TEAM



Dr. Julieanne Miranda
Program Manager



Nexilianne Borrero
Vector Management Supervisor



Luis Marrero
Municipal and Special Support Operations



Rafael Saavedra
Vector Management Supervisor



Cristhian Sánchez
Quality Assurance Specialist



Joanelis Medina
Vector Management Supervisor



Jania García
Community Mobilization Supervisor



María Roubert
Vector Management Team Lead



Luis Doel Santiago
Vector Management Technician



Víctor Ramírez
Vector Management Technician



José Maysonet
Vector Management Technician



Samuel Lacén
Vector Management Technician



Albert Silva
Vector Management Technician



Damián Surén
Vector Management Technician



Mariela Charlotten
Vector Management Technician



Mark Concepción
Vector Management Technician



Michael Arrowood
Vector Management Technician



Marla García
Vector Management Technician



Warren Ortiz
Vector Management Technician



Reynaldo Morales
Vector Management Technician



Joel Muñoz
Vector Management Technician



Chinese Figueroa
Vector Management Technician



Luis Pérez
Vector Management Technician



Edgardo Vargas
Vector Management Technician



Amaury Morales
Vector Management Technician



Javier Córdova
Vector Management Technician



Raíza Alvarado
Vector Management Technician



Noemí Martínez
Community Outreach and Education Representative



Xavier Ocasio
Graphic Designer



Verónica Rodríguez
Community Outreach and Education Representative



Paola Colón
Research Assistant



Katherine Torres
Community Outreach and Education Representative



PRCCI
Puerto Rico Consortium
for Clinical Investigation



PRCCI
Puerto Rico Consortium for Clinical Investigation

PUERTO RICO CONSORTIUM FOR CLINICAL INVESTIGATION





WHAT WE DO

MISSION AND VISION

The Puerto Rico Consortium for Clinical Investigation (PRCCI) has a clear vision which is to become the preferred partner for the implementation of clinical trials in Hispanics.

Our mission is to promote and expand clinical research activities optimizing the quality and speed of execution; leveraging strategic partnership (in and outside of Puerto Rico); establishing best practices to conduct clinical trials; building capacity and creating new job opportunities; and educating patients, sponsors and research professionals. These combined efforts result in a direct and indirect impact in inclusion of Hispanics in clinical trials.

HOW WE DO IT

Our value proposition focuses on the continuous growth of clinical research to deliver safe, timely, effective, efficient, equitable patient-centered clinical trials. PRCCI has access to a large network of strongly committed and experienced investigators in Puerto Rico; serves as one-point of contact for sponsors for quick and effective start-up processes; offers an array of local services such as quality assessment and validation, study monitoring, patient recruitment strategies, contract and budget negotiations, invoice and billing, clinical trials management system, regulatory and staffing support; educational and capacity building for healthcare professionals and other staff to share best practices and tailored sessions for advocacy groups.

WHO WE CONNECT WITH



A robust network of connections encompassing various stakeholders within the clinical research ecosystem in Puerto Rico and internationally.

Healthcare providers allow access to a diverse patient populations, ensuring the broad representation necessary for comprehensive clinical trials. We support the delivery of new opportunities to patients while promoting capacity building. Also, forging strategic alliances with pharmaceutical companies that facilitate us to gain access to innovative therapies while making them accessible to our population.

PRCCI also partners with academic institutions that enable us to leverage the expertise of researchers, professors, and students. These strategic connections empower us to make significant strides in advancing clinical research and improving patient outcomes in Puerto Rico.

EXECUTIVE SUMMARY

As part of our commitment to the continuous growth and expansion of clinical research in the island, the Puerto Rico Consortium for Clinical Investigation (PRCCI) has been actively focused on sharing our vision and mission through various means. Carefully selecting scientific congresses and conventions in the United States and Puerto Rico with the main goal of attracting new opportunities to our island and continue strengthening the clinical research ecosystem has been one of our strategies. Increasing our presence in digital and non-digital platforms and engaging with patient advocacy groups could very well increase patient participation and retention in studies executed in Puerto Rico and we are pursuing this venue.

After seven (7) years of the creation of PRCCI, the partnerships achieved both locally and abroad are a testament to our dedication for Puerto Rico to become a beacon of clinical investigation for the Hispanic population. Continuously searching for possibilities outside of the consortium division undoubtedly became the focus, for example, to operate as a clinical research organization (CRO).

PRCCI aims to be the first PR based CRO to provide specialized research services to the pharmaceutical, biotechnology, and medical device industry in a US territory regulated by the highest standards of quality and compliance. The goal is to locally provide services, including but not limited to clinical monitoring, data and document management, regulatory support, protocol development, among others. PRCCI is already in negotiations with US based companies of research and development to bring innovative trials to Puerto Rico.

To further understand our potential for growth on the island, it was necessary to understand the history of clinical research in Puerto Rico as a whole. A renowned economic researcher and data scientist, Dr. Mario Marazzi, PHD, conducted a project which included an economic analysis of the current clinical research ecosystem in Puerto Rico and how PRCCI contributes to the financial growth of this segment directly and/or indirectly. The results of this analysis demonstrate a steady growth in this sector since the creation of PRCCI.

This year, a delightful collaboration took place with the support from "Juvempleo", a youth program developed by the Department of Economic Development and Commerce of Puerto Rico. A program that helps undergraduates acquire their

first work experience in the studied field just before or after graduation. Also, "Programa de Apoderamiento y Retención de Agentes de Cambio" (PARACa) is a program for young university students, professionals or recent graduates recognized for their leadership and sense of responsibility for Puerto Rico. The opportunity is aimed at young people interested in developing professionally in the social sector. These programs introduced young talent to provide support in marketing and social media. Another eight (8) young high school students participated in our Summer Seminar 2023 aimed at developing interest in the areas of STEM.

We now move forward to amplify PRCCI's presence in the US mainland and Puerto Rico with the expertise of an independent agency with the capabilities to lead PRCCI through different channels of marketing in the effort to gain additional exposure to communicate our mission and expand our access to innovative clinical trials.

"WE ARE MOVING FULL SPEED AHEAD TO BRING INNOVATION IN THE AREA OF CLINICAL RESEARCH TO PUERTO RICO"



EXECUTIVE SUMMARY NUMBERS

35 Active Studies	**8** PR Conference participation	**3** US Conference participation
1 New grant (All of US)	**41** Certified CRC's	**7** Webinars
66.7% Social media engagement increase	**132** New followers in social media	**5** Patient advocacy activities

CLINICAL RESEARCH OPERATIONS

The Clinical Research Operations team continued securing clinical trials for this fiscal year 2022-2023, focusing on PRCCI's main therapeutic areas. The studies were focused on the areas of oncology/hematology, respiratory, dermatology, infectious diseases, cardiology, rheumatology, and psychiatry/neurology.

PRCCI contracted 15 clinical trials for our consortium sites during this fiscal year. Administrative support was offered to the consortium sites including the site selection process. During this process, we assisted the sites with effective and expedited completion of feasibility questionnaires and the reduction of the average turnaround time. The team also participated in site qualification visits from Sponsors providing an effective communication between the Sponsor/Site and facilitating the budget and contract negotiations for each study. The team surpassed their goal to increase the study budget for each study by 10% in the per patient total and by 25% in the administrative costs. PRCCI's focus was to have a robust pipeline of studies and it currently has over 35 active studies in the consortium network. This has been possible in part by the partnerships PRRCI has established with different organizations such as new Sponsors/CRO's. The team has been directing PRCCI's overview presentation for over 25 Sponsor's/CRO's and clinical research sites, promoting our services and giving exposure to what Puerto Rico has to offer.

Once again, PRCCI attended the MAGI conference that aims to train clinical research professionals on topics like contract and budget negotiations, clinical operations, regulatory compliance, new tendencies in clinical research, among others. The importance of PRCCI attending this type of conference is that our clinical operations team can learn about new fees being negotiated by sites that can increase the company's revenue. Also, this conference provides important training on clinical trial contracts. Learning from professionals of both Sponsors/CRO's and site's perspectives on how to negotiate certain sections is imperative to protect our sites and subjects.

15
CLINICAL TRIALS

25
Sponsor's/CRO's & clinical research sites

30+
active studies

The team surpassed their goal to increase the study budget for each study by

10% in the per patient total and by 25% in the administrative costs.



MAGI Conference 2023

BUSINESS DEVELOPMENT

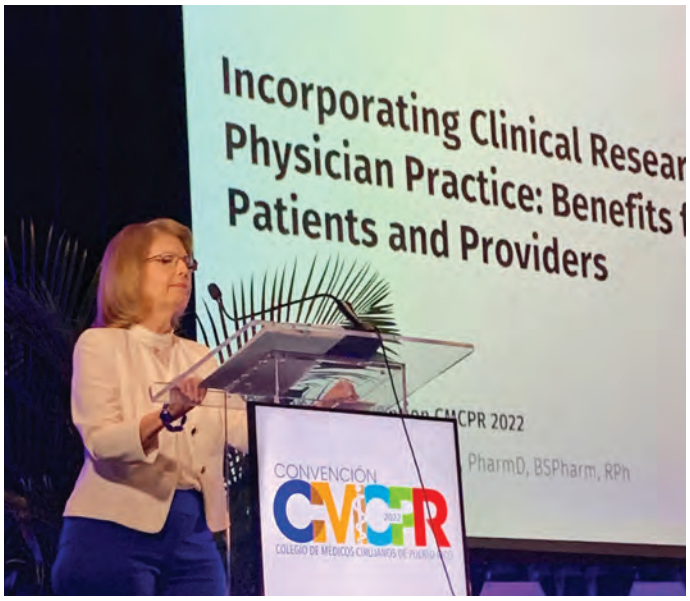
A continuous priority for PRCCI is the participation in scientific events in Puerto Rico where we have the opportunity of sharing general information about clinical research with clinical and general community, attract potential investigators interested in clinical research, connect with sponsors, and educate patients. Leveraging the opportunity in several important local events such as:

- 10th Annual Respiratory Congress
- PR Urologist Annual Convention
- 19th Annual Bioscience Celebration
- 21st Annual Convention CMCPR
- 1st Winter Congress and First Pan American Pulmonary Hypertension Symposium
- Puerto Rico Alzheimer's Disease Research Symposium, among others.

For the second consecutive year, participation in two of the biggest events in the United States pertaining to the clinical research could not be overlooked.

First, the **World Vaccines Congress celebrated at Washington D.C. in April 2023**, where we had the opportunity of networking with pharma, biotech, industry, and academia leaders. Our participation in the World Vaccine Congress represented a unique opportunity to connect with a clinical research sites network located in South America, that is collaborating with us to fulfill our desire of expanding the Clinical Research Coordinator Professional Training Program to other countries.

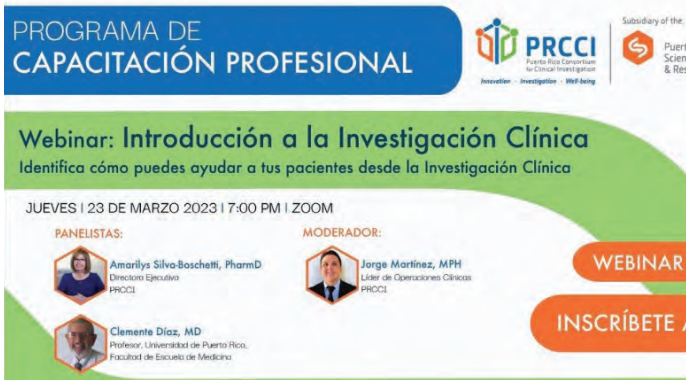
Second, **PRCCI participated in the BIO International Convention 2023** celebrated in Boston, MA in June 2023 as part of the Puerto Rico delegation. This convention had more than 20,000 participants and gave us the opportunity of positioning PRCCI as the preferred point of contact for clinical research in Puerto Rico. We are dedicated to defining potential areas of collaboration with Clinical Research Organizations, biotech companies, scientists, regulatory authorities, academic researchers, and other industry stakeholders interested in coming to Puerto Rico.



21st Annual Convention CMCPR



Webinar Puerto Rican women and their participation in clinical research A look at history



RESEARCH PROGRAM GRANT

The All of Us Research Program, created and fully sponsored by the National Institutes of Health (NIH) is a longitudinal historic effort to gather data about a wide variety of people living in the United States and its territories to improve research and health. The program aims to examine the role that individual differences in genes, environment, and lifestyle play in disease and health, leading to the delivery of precision medicine. The primary objective is to build a robust research resource that can facilitate the exploration of biological, clinical, social, and environmental determinants of health and disease. Today, All of Us hosts the largest and most diverse dataset of its kind, which continues to grow daily through a plethora of collaborations nationwide.

Our organization has been selected as a sub-awardee within the program through direct collaborations with Yale University and the University of California in San Diego. More specifically, PRCCI is now part of the program through a project titled "All of Us Geographic Expansion to Underserved Areas: Measuring Costs and Documenting Processes", which aims to expand the program into new geographic areas, with a focus on low-income participants in San Juan, PR, and to rigorously document all phases of implementing the program at a new institution/site to provide guidance for new institutions in the future.



NIH Visit February 2023 in the Innovation Building located in the Puerto Rico Science, Technology & Research Trust.

Through the aforementioned project proposal, **PRCCI was awarded** $544,047 to cover allocations for equipment, supplies, marketing, and shipping, among other expenses, from **February 1st, 2023**, through **March 31st, 2024.**

PRCCI was awarded

$544,047

Additionally, this budget allows for 100% support for key program personnel:

- Project Manager
- Lead Clinical Research Coordinator
- Clinical Research Coordinator
- Data Specialist
- Research Associate.

Moreover, it provides a small percentage of support to other PRCCI staff that have been key in providing guidance for the implementation of the program within our organization.

Our current All of Us staff and supporting PRCCI personnel have been working diligently in all administrative phases of the program implementation since November 2022. Moreover, PRCCI hosted the visit of NIH All of Us Research Program officials this past February, who were thrilled to establish a new program collaboration model in Puerto Rico.

With a tentative program launch set for mid-August 2023, our primary objective is to recruit 325 or more program participants by March 31st, 2024. To achieve, and ideally surpass this number, we have established a collaboration with Mindful Medical Research Center, a top-performing and well-experienced clinical research site in San Juan led by Dr. Oscar Soto Raíces and Dr. Paloma Alejandro. Moreover, we will also recruit patients at our newly established Clinical Research Facility, which is set to launch in the upcoming weeks.

PATIENT ADVOCACY

Spreading the message of the importance of clinical research to the general community is just as important as participating in scientific events with the medical community. **This year, two roundtable meetings were hosted with leaders of over 20 patient advocacy groups of Puerto Rico.** These meetings are held to continue to better understand patient needs, concerns, and informational gaps regarding how their participation in clinical research can mutually benefit the patient's quality of life and the growth of innovative medicine. Leaders of each advocacy group reach out to provide insight on resource limitations, including language barriers, to educate patients and how PRCCI can become more accessible to the general community to address the informational gaps.

As a starting point, the PRCCI website has now a "For Patients" tab that provides in Spanish, not only information explaining what clinical research is, its benefits and the different types of studies available; but also, the segment provides the opportunity for patients to answer a survey regarding the perception and opinion on clinical research and provides a list of patient advocacy groups that they can join.

PRCCI enthusiastically accepted invitations to patient activities such as "PR MS Walk 3k-5k" hosted by the Multiple Sclerosis Foundation of Puerto Rico, celebrated the Clinical and Translational Research Week in Puerto Rico by participating in a health fair for patients hosted by SanaCoop Institute and later in the summer joining the Solidarity Walk Against Cancer also hosted by SanaCoop Institute.



PR MS Walk 3k-5k



PRCCI website tab: "For Patients"

CLINICAL RESEARCH EDUCATION PROGRAM

Due to all the positive feedback received last year, this fiscal year 2022-2023 PRCCI was energized to provide more digital content for the medical community. For a third consecutive year, **41 professionals successfully completed a 10 week/30 hours Clinical Research Coordinator** (CRC) training program. This program included a comprehensive introduction to clinical research and its core functions. Already eight CRC training courses have been provided since it first started three years ago. A valuable resource for health professionals interested in exploring the world of clinical research. To ensure the CRC training courses are accessible any time of the year, PRCCI implemented On Demand pre-recorded sessions for all individuals interested in the field of clinical research with or without previous experience in clinical research.

All three webinars were well received last year, and this year was no exception with the **7 webinars offered**. PRCCI worked diligently to provide digital content of requested topics and a variety of webinars were offered such as Forum: The Importance of Clinical Research in Puerto Rico (95 participants), R&D Tax Incentives and Clinical Research Studies in Puerto Rico cohosted with the Department of Economic Development and Commerce of Puerto Rico (98 participants), Pfizer 3D (41 participants), Productive Leadership (72 participants), Puerto Rican women and their participation in clinical research (73 participants), Introduction to Clinical Investigation- Part 1 (32 participants), Introduction to Clinical Investigation- Part 2 (22 participants), and Role of the CRC: "Leading the way: Learn the step by step of how to start a successful clinical study" (51 participants).

Last in order of occurrence but just as important, the second **Summer Seminar** was offered to a total of **8 high school students.** The summer seminar was organized for a duration of 2 weeks centered in topics of science, clinical investigation, and technology. In addition, other courses were provided to enhance their professional development in resume building, job interview techniques, personal finances, communications, among other topics. PRCCI is passionate about exposing students to topics of science early on in their high school that may influence the decision-making of their academic future.

41
Professionals successfully completed CRC Training Program

10
10 Week/30 hours Clinical Research Coordinator

95
Professionals successfully completed Webinar of Clinical Research

8
High School Students succesfully completed Second Summer Seminar

7 Webinars
433 Participants

Topic	Participants
The Importance of Clinical Research in Puerto Rico	95
R&D Tax Incentives and Clinical Research Studies in Puerto Rico cohosted with the Department of Economic Development and Commerce of Puerto Rico	98
Pfizer 3D	41
Productive Leadership	72
Puerto Rican women and their participation in clinical research	73
IIntroduction to Clinical Investigation- Part 2	22
Role of the CRC: "Leading the way: Learn the step by step of how to start a successful clinical study"	51

SOCIAL MEDIA MANAGEMENT

Since early May, PRCCI team members have been managing all aspects of the official social media platforms for the organization (Facebook, Instagram, and LinkedIn). Team members enthusiastically keep track of weekly posts and future content, highlighting upcoming events and important dates to be shared with the public.

During this time, the team has consistently followed through with an average of **4 weekly posts which represents a 66.7% increase in post** frequency and consistency when compared to previous similar periods. Moreover, our audience engagement on **Facebook has increased by 500%** when compared to similar periods. In two months, we achieved **48 new followers on Facebook**, 41 new followers on Instagram, and 43 new followers on LinkedIn, numbers which all represent the positive outcome of a consistent approach to engaging new members through these distinct platforms. Additionally, our publications on LinkedIn have attracted 152 key/unique visitors to our page, which represents a 28.8% increase when compared to similar visitors. These visitors are mainly professionals whose job functions are categorized under Research (17.9% of visitors) and Business Development (11% of visitors).

In today's hyperconnected world, it is important to note these numbers and increments have been achieved through organic means, with no monetary input to promote publications. The team continues to strive to reach a broader audience in the upcoming months, particularly with the advent of so many organizational milestones to be accomplished in the near future.



PRCCI Facebook page/ PRCCI LinkedIn page

4
Weekly post

67%
Increase in post frequency

Facebook engagement has increased by
500%

LinkedIn visits have increased by
28.8%









FUTURE PLANS
WHAT'S NEXT?

PRCCI will open a modern facility for new and experienced investigators to perform their clinical trials with the full support system of the consortium. It will be complimentary, synergistic and ancillary to other facilities located in Puerto Rico.

Providing capacity building for new investigators and other clinical research professionals interested in developing skills and experience under the mentorship of experienced professionals; a space for investigators interested in receiving ancillary support to execute their trials and not interested in managing a site; new opportunity for Sponsors (CRO's, pharmaceutical, biotech, and other companies) in need for additional clinical trial facilities to implement their studies; and access to equipment and technologies to manage new tendencies in clinical research (e.g., decentralized and hybrid clinical trials).

We will also provide **highly qualified staff**, experienced and trained in the regulations applicable to clinical research activities with experienced in clinical trial operations; **access to a minority population** with a high prevalence of chronic diseases educated in the benefits of participating in clinical trials; and **additional infrastructure** (back up site) to existing clinical sites who reached their maximum capacity.

DIRECTOR'S POV



Dr. Amarilys Silva - Boschetti, Pharm.D., BS.Pharm.

This past year required us all to find ways to adapt to constraints on how we work and highlighted the importance of our network of committed partners. However, it is not our accomplishment alone. We thank all who have contributed to our success. The mission of PRCCI to expand and enhance clinical research in Puerto Rico is more relevant than ever.

We accelerated efforts to develop our research center, catalyze the development and deployment of new projects, and strengthen new partnerships with sponsors to bring innovative studies to Puerto Rico.

This past year required all of us to find new ways to deliver our training programs and expand our horizons offering trainings to Hispanic markets outside Puerto Rico fulfilling global demands. We continue impacting the well-being of our patients while we make significant contributions to global scientific innovation.

MEET THE TEAM



Ricardo Garcia, CPA
Finance Lead



Jorge Martinez, MPH
Clinical Research Operations Lead



Dayanara Belén, MPH
Strategic Business Development Lead



Edmagally Villafañe, RN
Clinical Research Quality Manager



Mitzy González, EdD
Training and HIPAA Compliance Officer



Astrid Diaz, MSc
Clinical Research Manager



Zulmarie Vázquez, MBA
Research Grants Project Manager



Sonia Camacho
Operations Manager



Obed Pérez
Business Support Specialist



Ana Gomez
Clinical Research Quality Specialist



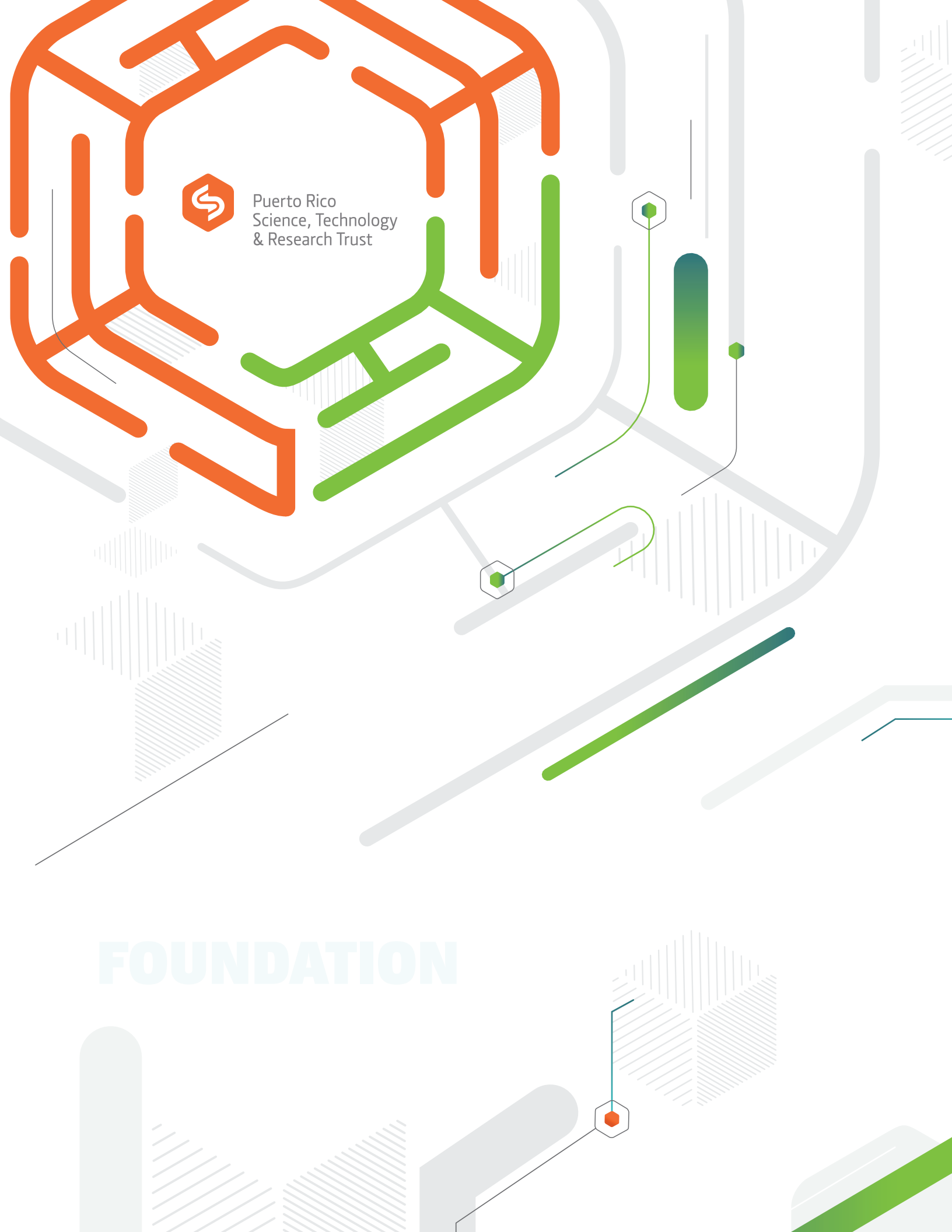
Karla Correa
General Accountant and Business Specialist



Juliemar Aponte
Research Associate

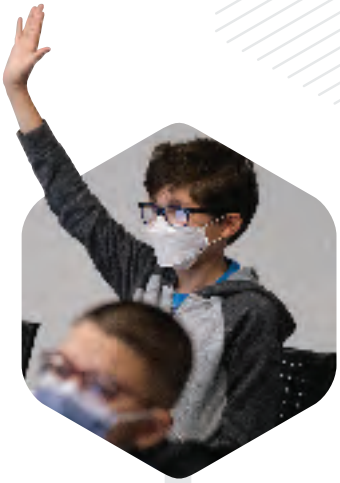


Zuna Maza
Strategic Communications Specialist


Puerto Rico
Science, Technology
& Research Trust
FOUNDATION

FOUNDATION

ANNUAL **REPORT** | **2022-2023**



STEM EDUCATION PROGRAM

PR READY
WORKFORCE TRAINING PROGRAM

ACADEMIA DE CACAO

STEM EDUCATION & WORKFORCE DEVELOPMENT



STEM EDUCATION & WORKFORCE DEVELOPMENT PROGRAM

STEM EDUCATION & WORKFORCE DEVELOPMENT

WHAT WE DO

Global economies, innovation, science, and technology require adaptable, skilled workforces to navigate 21st-century challenges. The STEM Education & Workforce Development Program fosters formal and informal approaches to sustain a healthy K-12 and lifelong learning pipeline through meaningful partnerships, innovative programs, and educational policy advocacy to revolutionize the region's educational and employment systems. It focuses on equity and diversity in STEM opportunities for K-12 students and skills-building in emergent technologies open to interested stakeholders, thereby enabling for success the island's prime asset - its people.

Our mission is to advance, connect, expand, and sustain key initiatives that drive STEM education & Workforce Development as key components of Puerto Rico's economic development.

WHO WE CONNECT WITH

As a strategic partner for the innovation, science, technology and research ecosystem, the program connects with a multitude of stakeholders to deliver high quality STEM education content, programs, and services, as well as workforce development programs specialized in emerging technologies.

HOW WE DO IT

Connecting with key education, technology and innovation projects, communities and organizations, engaging in meaningful work that advances our mission.

Collaborating with key stakeholders to ensure successful STEM, CTE and Workforce Development initiatives.

Designing informal and formal approaches to learning, training, and capacity building.

Evangelizing on behalf of innovation, lifelong learning and professional development as the keys to long-term socioeconomic development on the island.

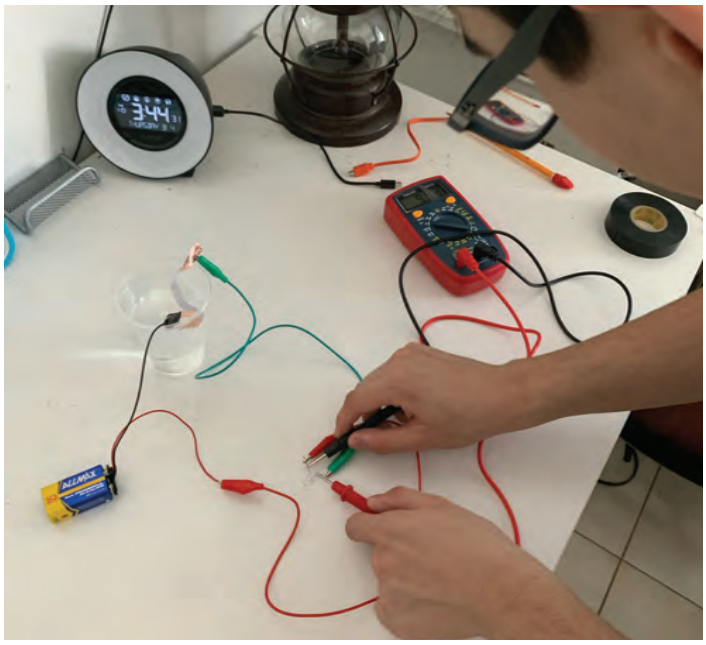
We connect & serve:

- K-12 Students
- Educators
- Parents
- Individuals

We collaborate with:

- Schools
- Academia
- Communities
- Industry
- Nonprofit organizations





Meaningful Learning and Empowerment: Five Years of Transforming Lives through STEM Education and Workforce Development

375
STEM Boxed Kit
New Participants

88
Teachers in
Exploring Computer Science

48
Students in
STEM en la Montaña

25
Students in
Tech Summer Experience

190
Certified in IT, Human Services & Manufacturing Fundamentals

1,337
Engaged in Platforms

EXECUTIVE SUMMARY

As we conclude the STEM Education and Workforce Program's fifth year, we reflect upon a period of significant growth and development in our initiatives. Throughout the year, we welcomed a host of new participants to our programs, kindled interest in emergent technologies, innovation, and promoted participants to consider future careers. Our program has partnered with great collaborators to advance both formal and informal STEM learning to more than a thousand individuals, increasing both interest and engagement in our mission.

We successfully completed a substantial portion of the Community Development Block Grant-Disaster Relief (CDBG-DR) funded Puerto Rico Ready program, awarding 190 credentials to low and mid income individuals. Our return to in-person modalities, alongside enhancements to our hybrid and distance learning offerings, have ensured continuous, high-quality service to the public.

Our STEM Education initiatives, including STEM Boxed Kit, Exploring Computer Science, STEM en la Montaña, and Tech Summer Experience, have continued to cultivate curiosity and empower the next generation of scientists, engineers, and innovators. Our Workforce Development program, Puerto Rico Ready, has progressed significantly in its mission to improve lives through technology training and education as it changes to expand its mission and offerings to the public.

Simultaneously, our agricultural initiatives - Academia del Cacao, Agroecología para el Futuro, and EcoGather - have demonstrated our commitment to sustainable farming practices and education. Academia del Cacao, currently leveraging $50,000 in funding, is moving the cocoa industry forward with sustainable farming practices and supporting local farmers.

As we transition into our next five years, we stand more committed than ever to delivering a wider variety of high-quality STEM education and workforce development programs. Our vision is to continue driving Puerto Rico's economic development with science, technology, research, and innovation at the forefront of our initiatives.

DIRECTOR'S P.O.V.



Jorge A. Valentine, EDP, CAPM Director

In this fifth year, we've welcomed new participants to our host of STEM education initiatives, kindling interest in emergent technologies, helping them experience tools for innovation and engage in exploration of future careers. In the workforce development arena, we have completed most of our CDBG-DR Puerto Ric Ready program, with success stories and 190 credentials offered to low- and mid-income individuals. We have not only returned to in-person modalities but have had the opportunity to improve our hybrid and distance learning offerings for the public. This is a great starting point for the next five years.

The program's achievements wouldn't have been possible without the team's dedication to our mission. In this upcoming year, we are more than ever committed to delivering a wider variety of high-quality STEM Education and Workforce Development programs, underpinning Puerto Rico's economic development with science, technology, research and innovation as the driving force behind our initiatives.

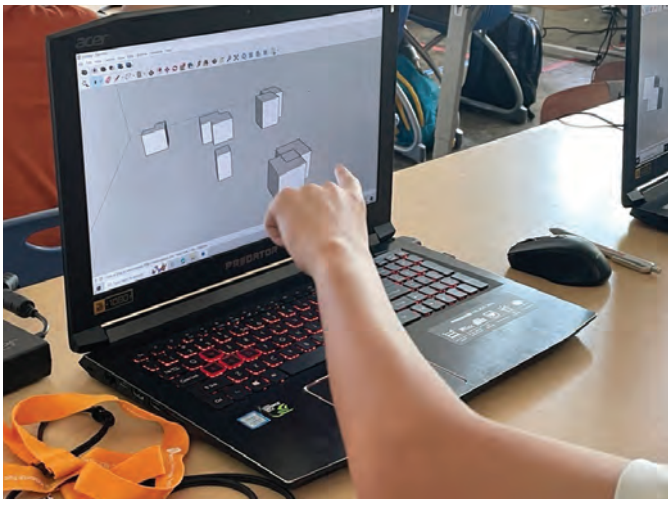






STEM
EDUCATION PROGRAM







STEM EDUCATION

Our program has increased its scope, making more activities open to participants across the island, and partnering with relevant organizations that are working to enable high-quality learning to occur. During the 2022-2023 year, the STEM Education program increased its footprint to more than 1,600 participants served since the program's inception, as well as partnered with recognized stakeholders like Forward Learning, Holberton School, Caribbean University, HITN and Expanding Computing Education Pathways (ECEP).

STEM BOXED KIT

The program that aims to cultivate curiosity, empowering the next generation of scientists, engineers and innovators, has entered its third year with the addition of 375 new faces. These carefully curated kits are delivered free of charge thanks to the kind of program underwriting from the Medtronic Foundation. They serve as a comprehensive educational tool, providing students with hands-on, exploratory learning experiences.

EXPLORING COMPUTER SCIENCE

This collaboration between the Trust, the University of Puerto Rico and the Puerto Rico Department of Education continues to be a potent catalyst for education, with 88 teachers deepening their understanding of the intricate tools and insights to integrate Computer Sciences into their schools. The progress of these 88 teachers reflects ECS's commitment to continual learning to elevate the quality of computer science education in Puerto Rico.

TECH SUMMER EXPERIENCE

In our continuing collaboration with Holberton School, this year, we empower 25 new high-school students to venture into programming. This immersive program provides a solid foundation in various programming languages, helping these students initiate their journey into the digital universe. As they take their first steps in programming, these students acquire essential tech skills and ignite a passion that may shape their future career paths in the technology industry.

SPACE WEEK

In collaboration with HITN and the Puerto Rico Department of Education, the program coordinated and broadcasted the two-day event commemorating Space Week. During the event, more than 800 students from public and private schools had the opportunity to meet and engage in Q&A sessions with astrophysicists and engineers currently working at NASA.

STEM EN LA MONTAÑA

In 2022-2023, our informal learning opportunities returned to in-person formats this past summer with STEM en la Montaña. As dynamic as ever, the program continues its transformative journey in education, engaging 48 enthusiastic learners from the island's central region. The program, a collaborative effort between the Municipality of Utuado and the Puerto Rico Department of Education and facilitated by our long-time collaborator Emergent Tools, offered students their first experiences in Virtual and Augmented Reality (VR & AR).

The program's emphasis on hands-on experience enables the participants to grasp the complexities and potential of VR & AR in fields ranging from gaming to architecture and engineering. Focused on bridging the digital divide students in the mountainous regions experience, the experience opened the door to innovation and curiosity for students who do not have access to learn with emergent technologies in the foreground.

RETO MARTE

In conjunction with Caribbean University, the Puerto Rico Department of Education and Virtual Educa, an international organization advancing innovative education for all, the Program sponsored and supported the local competition known as Reto Marte. In it, 10 public schools from the Bayamón Region engaged in a 3-day challenge learning about Mars, the challenge of colonizing the planet, and developing solutions to reach it while making it livable. The winning team from this competition will represent Puerto Rico on the international competition in Ecuador during 2024.







WORKFORCE DEVELOPMENT

PUERTO RICO READY

The Puerto Rico Ready program has achieved a significant milestone in its mission to empower low and mid income individuals. Entering the "last mile" of its Community Development Block Grant-Disaster Relief (CDBG-DR) funding, the program has seen a total of 190 participants gain valuable credentials in several high-demand fields. This includes Information Technology (IT), Geographic Information Systems (GIS), Drone technologies, Human Services, and Manufacturing Fundamentals. PR Ready underscores the Trust's commitment to improving lives through relevant emergent technology training certificates and credentials.





AGRICULTURE INITIATIVES

ACADEMIA DE CACAO

In the past year, our agricultural initiatives have achieved great traction, reflecting our commitment to sustainable farming practices and education. Academia del Cacao, currently in its pilot stage, is successfully leveraging $50,000 in funding, marking a significant step in our mission to move the cocoa industry forward as a relevant agroforestry practice. This investment is poised to stimulate innovative developments in the sector, fostering sustainable farming practices and supporting five (5) local farmers. This phase of the project will drive much-needed research and demonstrations to ensure that the industry can effectively respond to evolving market demands.

AGROECOLOGÍA PARA EL FUTURO

Our Agroecología para el Futuro project has been actively engaged in a comprehensive status and state analysis of agroecological practices. The project's aim is to gain an in-depth understanding of farming practices, thereby identifying strategies to enhance productivity, diversity, and sustainability in agriculture.

ECOGATHER

We are thrilled to announce that the Trust has successfully developed and integrated four (4) agroecology courses into Sterling College's EcoGather initiative. This pioneering platform provides online educational content to diverse global audiences, with our courses now reaching learners in countries like India and Bhutan.





"We are moving towards scale and better opportunities in STEM learning and Workforce Development."

WHAT'S NEXT

As we look towards the future, we are excited to expand our impact, offering enhanced opportunities in STEM learning and workforce development. This ambition involves scaling up our existing STEM programs, expanding our service base, continuing to open learning opportunities in emerging trends and expanding our catalog of services to reach a broader market. New projects for 2024 include a collaboration with the Department of Economic Development's 21st Century Techforce, as well as the development of more credential options on our workforce program, Puerto Rico Ready, which has set a significant benchmark in workforce development, and we will open our offer to a wider audience interested in new training courses in high-demand fields such as cybersecurity, cloud computing, and data science.

We will work to advance supportive policies in multiple scenarios conducive to improving outcomes in science, technology, innovation, and the future of work.

MEET THE TEAM



Jorge A. Valentine, EdP, CAPM

Director, STEM Education & Workforce Development Program



Frances Zenón Meléndez, PhD

STEM Director



Adriana Santiago Morales

Program Operations Support Manager



Gilmarie Mendoza Robles, EdP

PR Ready Program Manager



Lorraine Negroni Hernández

PR Ready Program Coordinator



Nayla Bezares Saker

Agricultural Initiatives Program Manager





PR RESEARCH & INNOVATION

Meet-ups



PR RESEARCH & INNOVATION
Meet-ups

MEET-UPS PROGRAM

Meetups have become a dynamic platform to identify a variety of issues, from pressing social concerns, like waste management and the protection of our environment, to promising scientific and technological advancements, like in the bioeconomy. We identify, reach out, and engage scientists, researchers, inventors, academics, teachers and students, subject matter experts, as well as leaders from civil society and the private and public sectors, and hone our guest lists to ensure top quality speakers. Our pre-production research allows us to curate topics to enhance a facilitated dialogue that allows us to share and learn by way of the comparison and contrast of ideas that affect our communities and businesses as we identify challenges and give shape to solutions.

8 MEET-UPS EVENTS

581 People in attendance

2 SPECIAL PROJECTS

62 SUBJECT MATTER EXPERTS

9 Program Collaborations

11 External Collaborations

VISION

A robust knowledge economy based on a community that thrives on its diversity and creativity as the pillars of our social wellbeing and economic prosperity.

MISSION

To foster productive dialogues that lead to innovative solutions, ultimately enhancing the well-being of citizens and driving sustainable economic development.



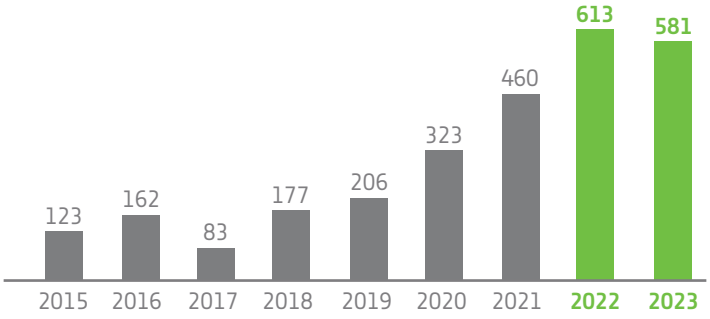
Meet-Up : La Ciencia de Comunicar

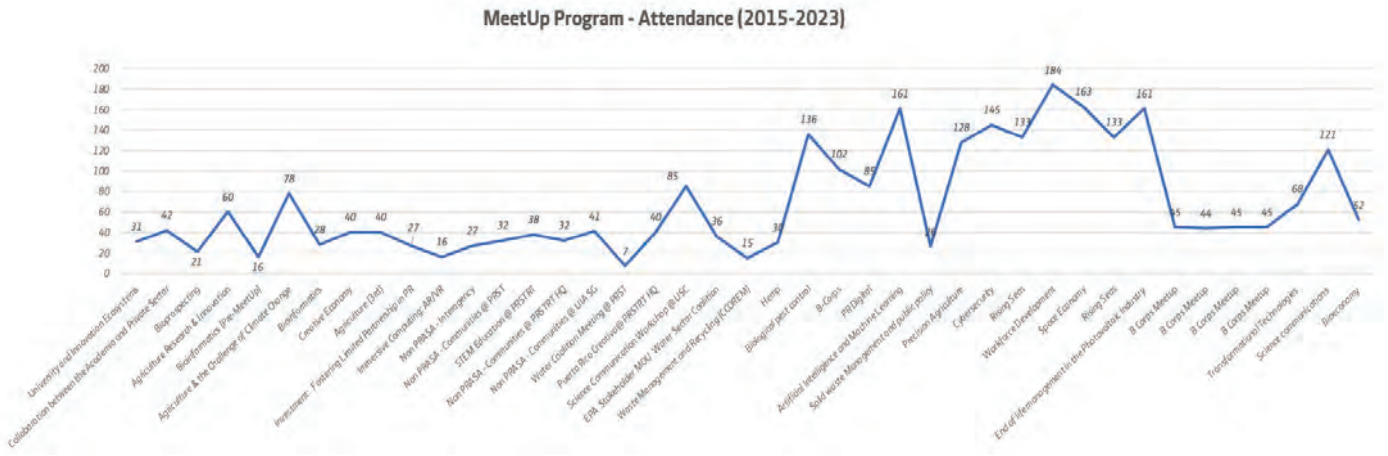
EXECUTIVE SUMMARY

The Puerto Rico Research and Innovation Meetups Program finishes its eighth year of successful outreach and dialogue with a diverse audience of scientists, researchers, teachers, students, business leaders and public servers, as they are important stakeholders of emerging ecosystems that have a high potential of enabling new scientific, business, and civic activity that leads to citizen wellbeing and economic development. The program remains committed to increasing social capital, shared leadership, collaboration, and promoting innovative business practices within Puerto Rico's emerging ecosystems.

The graph below illustrates attendance levels to a diverse agenda of facilitated discussions in our Meetup events (2015-2023).

Meetup Program Annual Attendance
(2015-2022)





DIRECTOR'S P.O.V.

In the face of global challenges and uncertainties, we have focused on leveraging the expertise and dedication of Puerto Rico's knowledge economy stakeholders to drive meaningful change. Through successful meetups and special projects, we have engaged stakeholders, addressed pressing challenges, and explored opportunities for sustainable development. Our audience base has expanded, and we have facilitated knowledge exchange, particularly in the fields of the bio-economy and science communication. Notably, we have made progress in promoting the B Corporation movement, aligning economic development with the United Nations Sustainable Development Goals. Additionally, our efforts in waste management and food security contribute to the well-being and sustainability of Puerto Rico. I am proud of our impact and excited about the future possibilities for positive change and the cultivation of Puerto Rico's social capital.



Ricardo Burgos
Program Director



Ernesto Cruz
Program Manager

MEET-UPS PROGRAM IMPACT

This year we facilitated 4 Meet-up events, with one of them being our first in-person event since the Covid pandemic:

END OF LIFE PHOTOVOLTAIC SYSTEMS

The End of Life Photovoltaic Systems Meet-up was produced in collaboration with Interstate Renewable Energy Council (IREC), Asociación de Consultores y Contratistas de Energía Renovable de Puerto Rico (ACONER) to address the challenges and opportunities associated with the disposal and recycling of photovoltaic system components. The event brought together industry experts, researchers, and policymakers to discuss sustainable strategies for managing end-of-life photovoltaic systems and maximizing their environmental and economic value

BIO-ECONOMY MEET-UP

The Bio-Economy meetup was produced in collaboration with InvestPR and New Lab, to explore the potential of bio-based industries and their contribution to a sustainable and circular economy in Puerto Rico. The event facilitated discussions on bio-based innovations in the use of sargassum for the development of value-added products, the production of biochar and its use in soil remediation practices, the development of biomaterials for their use in the creative industries, and the development of bio-based solutions for the agricultural sector.

SCIENCE COMMUNICATIONS MEET-UP

The Science Communications was a collaborative effort between Universidad del Sagrado Corazón and the Trust. It was also our first in-person event since the Covid pandemic as we aim to bridge the gap between scientific research and the general public. Through interactive discussions and presentations, the event focused on effective science communication strategies, emphasizing the importance of clear, engaging, and accessible communication to foster public understanding and support for scientific advancements.

TRANSFORMATIONAL TECHNOLOGIES

The Transformational Technologies meetup was produced in collaboration with Puerto Rico Blockchain Trade Association and Evolving Space, a nonprofit organization that develops Web 3.0 groups in colleges and universities. This meetup was designed to explore and build awareness of cutting-edge technologies and their potential impact on various sectors in Puerto Rico. The event featured discussions on the development of Web 3.0 applications with a special focus on artificial intelligence, blockchain and NFTs, highlighting through case studies,opportunities for innovation, entrepreneurship, and economic growth.

B CORPS IN FORMATION MEET-UP

The B Corps in Formation Meetups, four in total, were produced in collaboration with B Labs (US & Canada) and Sistema B Latam to elaborate on the concept of B Corporations and their role in promoting social and environmental responsibility within the business community. Besides successfully gathering entrepreneurs and business owners interested in becoming B Certified the events are part of a broader strategy to promote the United Nations Sustainable Development Goals and for business to become a force that drives sustainable economic development in Puerto Rico. The events provided insights into the process of becoming a certified B Corp, shared success stories of existing B Corps, and encouraged collaboration among entrepreneurs interested in using business as a force for positive change.

Salient Achievements of the Program for the past year include:

- Increased stakeholder engagement. The program has successfully expanded its stakeholder base, fostering a diverse and inclusive community of researchers, entrepreneurs, policymakers, and industry professionals invested in Puerto Rico's research and innovation landscape.
- Meaningful dialogue. The meetups have facilitated constructive discussions, knowledge sharing, and collaboration, contributing to the development of innovative solutions to local challenges.
- Ecosystem Mapping and State of Development. These are integral components of our initiatives at the Puerto Rico Science, Technology & Research Trust. We have effectively mapped and assessed emerging knowledge economy ecosystems in Puerto Rico, gaining valuable insights into their current state of development. The knowledge and visibility we acquire through ecosystem mapping enable the Puerto Rico Science, Technology & Research Trust to identify key areas that require support and intervention. This information guides the Trust in strategically allocating resources and designing support strategies that can drive the successful development of these ecosystems.
- Knowledge dissemination and awareness building. The program has played a vital role in disseminating knowledge, promoting best practices, and creating opportunities for networking and partnerships among stakeholders.

PRSTRT PROGRAM SUPPORT

Beyond dialogue facilitation, the Meetups Program is also committed to remaining a transversal supporting unit to other PRSTRT programs. This year our engagements supported eight (9) PRSTRT programs, as described below:

Science Communications Meetup

The highlight of our program collaborations was the participation of 7 PRSTRT programs in one event: our Science Communications Meetup, which was produced in collaboration with Universidad del Sagrado Corazón, with a special guest participation from the Department of Marketing and Communications, we hosted the Center for Rising Seas, the Center for Tropical Biodiversity, the Puerto Rico Public Health Trust, Research Grants Program, the Puerto Rico Consortium for Clinical Investigation, and the Puerto Rico Vector Control Unit.

Center for Tropical Biodiversity

Production of a Bioeconomy Meetup.

Colmena 66 - Creative Economy Project

In collaboration with the Colmena 66 program and the Municipality of San Juan, the program organized a creative economy event. The event brought together key creative entrepreneurs, directors of cultural institutions, and San Juan representatives. The agenda centered on discussing the challenges and opportunities faced by creative entrepreneurs in San Juan, as well as exploring ways in which the city can support their success and overall development. The event aimed to foster collaboration, networking, and knowledge exchange within the creative economy sector.

SPECIAL PROJECTS

In addition to organizing Meetup events, our program actively engaged emerging opportunities as special projects, which are driven by the partnerships and collaborations that arise from our conversations and are centered around areas with strong potential to positively impact the well-being of Puerto Rico's citizens. The Meetups Program continues to engage these initiatives to improve PRSTRT's program's outreach leadership and leverage economic growth and impact. During the last year we engaged three multi-stakeholder sector special initiatives along three core areas explained below:

Waste Management Project

Developed in partnership with the Syracuse University Center for Sustainable Community Solutions / Environmental Finance Center and Generación Circular, the first interactive geo-referenced map of recycling locations in Puerto Rico. This map serves as a comprehensive resource for citizens, providing information on recycling facilities and the materials accepted for recycling. The initiative aims to facilitate recycling efforts by educating citizens about recycling practices and making it easier for them to find nearby recycling centers. By promoting recycling and proper waste management, the project contributes to Puerto Rico's sustainability.

Social and Solidarity Economy Project

The program conducted four encounters with entrepreneurs who expressed a strong interest in becoming certified B Corporations. These events provided a platform for aspiring entrepreneurs to learn about the benefits of becoming a certified B Corp and gain insights from mentors experienced in the process. The encounters aimed to foster a greater understanding of the social and solidarity economy and the significance of B Corp certification in promoting social and environmental responsibility. The program played a crucial role in facilitating the knowledge transfer and networking necessary for entrepreneurs to pursue their certification goals.

Salient Achievements of our Special Projects include:

- Shared leadership and Collaboration. Successful collaboration with Colmena66 and the Municipality of San Juan to promote the creative economy and support creative entrepreneurs in San Juan.
- Data visibility. Development of an interactive geo-referenced map of recycling locations, enhancing accessibility to recycling facilities and promoting responsible waste management practices.
- Networking. Facilitation of four encounters with entrepreneurs interested in becoming certified B Corporations, providing valuable guidance and mentorship on the process and benefits of certification.







FUTURE PLANS

As the Puerto Rico Research and Innovation Meetups Program moves forward, we remain committed to addressing critical challenges and fostering collaboration within Puerto Rico's emerging ecosystems. In the coming year, we will continue to organize impactful meetups, undertake special projects, and further support the growth and development of the creative economy, waste management initiatives, Puerto Rico's food security, and the social and solidarity economy. We express our gratitude to all participants, partners, and supporters who have contributed to the success of our program, and we look forward to another year of fruitful engagement and impactful initiatives.

For the upcoming year (2023-2024), we have outlined a work pipeline focused on expanding the audience base, producing meetups events, and conducting in-depth reviews of emerging ecosystems, as the program aims to stay on top and engage emerging topics and opportunities that align with global trends while promoting the development of Puerto Rico's research, science, and technology sectors. Topics of discussion include:

- Advances in precision agriculture and controlled environment farming. To explore innovative techniques and technologies to enhance agricultural productivity and sustainability.
- Climate technology to address climate change and rising seas impact on Puerto Rico. To examining solutions and innovations to mitigate and adapt to the effects of climate change.
- Well-being economy. To promote a holistic approach to economic development that prioritizes well-being, sustainability, and social impact aligned with the United Nations Sustainable Development Goal.
- Addressing the senior citizen population through science, research, and technology. To explore advancements in healthcare, technology, and social services to cater to the needs of the aging population.
- Remote sensing. To leverage remote sensing technologies and applications to gather data and insights for various sectors and challenges.
- B Corp Certification. To launch the first B Corporation certification cohort with the aim to support entrepreneurs and business owners in their B Corp certification efforts.
- In-Depth Review of Emerging Ecosystems. The program will conduct a comprehensive review of the emerging ecosystems that have been previously addressed over the past seven years. This review will assess their development, and current state, and identify opportunities for future support. By understanding the progress and challenges faced by these ecosystems, the program can provide targeted assistance and guidance to foster their continuous growth and success.

By focusing on emerging topics and conducting in-depth ecosystem reviews, the program aims to stay at the forefront of global trends and contribute to the sustainable development of Puerto Rico's research, science, and technology sectors. We are excited about the opportunities that lie ahead and look forward to engaging with our stakeholders and supporting the growth of Puerto Rico's knowledge economy emerging ecosystems.

We extend our gratitude to all participants, partners, and supporters for their contributions to the success of the program and look forward to another year of meaningful engagement and impactful initiatives.





Science City

SCIENCE CITY

WHAT WE DO

Science City is to become a globally recognized innovation hub connecting and integrating Puerto Rico science and technology ecosystem. As a multidisciplinary international center of collaboration, it will inspire new ideas, inventions and enterprises, resulting from its vibrant and rich environment to innovate, work, and live.

69
***"Cuerdas"* of land**

The Science City, with approximately 69 cuerdas of land, is a project that seeks to convert the estate of the former Oso Blanco State Penitentiary into a central point of economic development. It will be a high-tech scientific research complex that will house facilities and mixed uses to enrich and facilitate the lives of its users, such as high-tech laboratories and spaces for the development and production of new ideas and products ("incubators of ideas"), a hotel, a confe rence center, offices, a civic center with an elementary and intermediate level school, commercial premises, multi-family housing, recreational areas and a linear promenade.

The Science City is located in the geographic center of the San Juan metropolitan area. An important element due to its strategic location is its proximity to the Puerto Rico Medical Center, a structure of seven important medical care facilities. These include the Comprehensive Cancer Center, the Veterans Hospital, the Medical Sciences Campus of the University of Puerto Rico, and other important facilities.

There are three main zones within the proposed development of the Science City. On both sides of the Old Oso Blanco Penitentiary is a development area of laboratories totaling approximately one million square feet, centered around the intersection of the main north-south axis. Other smaller-scale retail businesses are distributed throughout the development, particularly along the perimeter of the central park of the Science City. Medical/professional office space anchors the development to the north and south with highly visible towers marking the entrances to the development. Given the similarities in parcel size requirements, professional office and laboratory areas can be swapped as needed.

The Science City is defined by a series of main roads. These roads are: the Luis A. Ferré Highway (PR-18-Expreso Las Américas), Avenida de Diego and Highway PR-21. In addition, it is located in the area of the Cupey Urban Train and Medical Center stations.

HOW WE DO IT

To support private development efforts to attract tenants to Science City, developers of the Site can take advantage of numerous tax incentives including:

- Full real estate tax abatement.
- Full sales tax abatement on construction materials and capital equipment.
- Full exemption from Federal Income Taxes for bona fide residents of Puerto Rico and Puerto Rican corporations.
- Competitive tax incentives to attract investors, tenants and employees.

Science City specific incentives:

- Up to $250,000 of the compensation received by eligible researchers/scientists residing in Puerto Rico and conducting work within the Puerto Rico Science District created by Act No. 214 of 2004, as amended will be exempt from Puerto Rico income taxes (Section 1031.02(a)(27). This exemption is independent and separate to the other incentives discussed herein.
- Sales tax exemption on construction materials and capital equipment (11.5%)
- New Tax Market Credit Eligible Location



ACHIEVEMENTS FOR 2022-23

PRCCI CLINICAL RESEARCH CENTER

- New clinical trials office space is at the 1st Floor of the Innovation Center.
- The contract amount was $460,000.00.
- The project is completed.





FORWARD CENTER PROJECT

Contract Amount

$6,986,476.67

The project is completed

TEMPORARY PARKING FACILITIES

60 new parking spaces

$603,471.00 Contract amount

80% Project completed

RESEARCH INSTITUTE CORE LABORATORIES

New laboratory space is at the 1st Floor of the Innovation Center.

$900,000.00 Contract amount

The project is in progress

WHAT'S NEXT?

Department of Security

The PRSTRT will rent the parcels B-1 and B-2 to the Department of Security. They will build a Safety Room and the Emergency Operation Center for Puerto Rico. It would be 200,000 square feet building.

Science City Boulevard

The Science City Boulevard will be a road that consists of a half (1/2) mile, of a right of way of 29.3 meters, located in Science City. This boulevard will consist of four (4) lanes to accommodate vehicular traffic from two directions. This proposed pathway will include landscaping, a bike lane on the west side, wide pedestrian-facing sidewalks with street furniture. In addition, it will include a new bridge over Highway PR-18 (Expreso las Américas), which will enable its continuity, from its beginning at the north entrance of the Science City project on Highway PR-21, towards the segment of the boulevard which is currently being built in front of the Comprehensive Cancer Center. This extends towards the south entrance of the Medical Center. This boulevard is essential to continue the full development of the Science City.

PROGRAM TEAM



Eng. Jerry Meléndez Sardiña
Chief Facilities Management Officer



PRCCI Clinical Research Center





Forward Center Building

DMC TEAM



DMC TEAM

Design
Marketing
Communications

DESIGN, MARKETING & COMMUNICATIONS

The Communications & Marketing division, also known as DMC (Design-Marketing-Communications) defines the communication strategy for the Puerto Rico Science, Technology & Research Trust, and its programs. Guided by the strategic pillars of Research & Development, Entrepreneurship, Public Health and our Foundation programs, we give visibility to the discoveries, achievements and talent that form the Trust. Through communication and marketing initiatives, we bring to life the mission of our organization, building upon the visibility, credibility, and achievements of the Trust and its programs.

OUR MISSION

Puerto Rico and the world recognize the Trust as a facilitator and reference for innovation, thanks to our growth in communications and marketing channels.

WHAT WE DO

With the support of our creative resources and talent, we promote the Trust's brand, purpose, and individual program objectives. DMC's core team capabilities include:

- Brand identity and design
- Content development
- Social media
- Websites and blogs
- Channel strategy and campaigns
- Audio, video and interactive productions
- Photography
- Event production and support
- Video Editing & Production
- Podcast Production
- Many other services

DIRECTOR'S POV



Lupe Vázquez, Chief Communications & Marketing Officer

In the changing communications and marketing landscape, it is important to have a talented team equipped with the best technological tools available and the social skills necessary to connect with diverse directors' group to communicate what they do for the organization as program directors. We have consistently obtained optimal metrics and results; we aim to bring the organization closer to diverse audiences so that our work is easily understood. The Trust is a brand of respect, results, and credibility. Our goal is to continue to grow and strengthen our organization's presence as the leading scientific entity on the island.



SUMMARY

We highlight the outstanding accomplishments of the DMC team. From strategic communication and innovative marketing campaigns, to customer relationship management and event production. Our communication team elevated our brand presence and engagement.

The Trust has a total of 20 communications and marketing positions, including regular employees and service contracts. Of the PRSTRT's 16 programs, 11 programs are supported 100% by the core Communications and Marketing (DMC) group, which also defines, strategizes and manages all communications and marketing tasks for the Trust, as an organization and on its social media channels.

The core DMC group consists of 8 people. They currently support in this proportion the following programs: STEM (50%), Research Grants Program (20%); Meetups program (20%); Caribbean Center for Rising Seas, (10%). SBIR and Biodiversity, depending on the month, can be 5% to 10%. We have 12 positions fully dedicated to five programs, such as Parallel18, Colmena66, PRCCI, PRVCU, and PRPHT. For internal audiences, such as employees and staff members, DMC also supports the development and delivery of marketing materials, events, and newsletters that promote an organizational culture aligned with our values and vision.

The communications and marketing team has demonstrated exceptional proficiency in managing a core group of vital operations, for the Trust and 10 programs, including communications, marketing, customer relationship management (CRM), and event coordination. Their efforts have resulted in significant achievements and have helped elevate the organization's brand presence and customer engagement to new heights.

- **Strategic Communication:** The team has effectively developed and executed communication strategies that align with the organization's goals. They have consistently delivered clear and compelling messages to the target audience through various channels, such as email newsletters, press releases, blog posts, and social media updates.
- **Innovative Marketing Campaigns:** Leveraging their creativity and market insights, the team has devised and implemented innovative marketing campaigns that resonate with the target audience. These campaigns have led to increased brand awareness, customer acquisition, and improved conversion rates. Examples of this are STEM Boxes efforts, for STEM & Workforce program, Research Grants Programs calls efforts for AGP and Catalyzer calls, Parallel18 new cohorts' campaigns, BE Fest digital promotion campaigns.
- **Customer Relationship Management (CRM):** By leveraging advanced CRM tools and technologies, such as HubSpot, the team has strengthened customer relationships and improved customer retention. A new position was added to the team, with the CRM Lead, a role that has begun to implement personalized communication and engagement tactics, leading to enhanced customer satisfaction and loyalty. We incorporated a chatbot in the home page of the website, to answer questions about our programs, events, sponsorships, jobs & careers, hours, location and facilities.
- **Some metrics from HubSpot CRM platform:** 4 PRSTRT Programs in HubSpot: 7,840 Contacts registered; 465 Companies registered;30 Registration Forms; 18,000+ Form views; 4,000+ Form Submissions; 515 Conversations.
- **Social Media Metrics & Achievements:** The team has demonstrated a keen understanding of social media platforms and stayed on top of the latest trends. Their adeptness with tools like Sprout Social has enabled them to monitor social media metrics effectively. As a result, they have witnessed substantial growth in social media followers, engagement rates, and overall brand visibility. Some specific achievements for social media are that we have migrated all program accounts to a single main organization account: we share content not only from the Trust, but also from our programs and we have engagement with audiences in all active channels. Some metrics are 147,601 followers for a Total Net Audience Growth of 24.6%, and LinkedIn's best growth channel: with 36.9%. More data in social media graphic summary.
- **Seamless Events Coordination:** The team's meticulous event coordination skills, supported by platforms like Eventbrite, have led to successful and memorable events. They have organized product launches, webinars, conferences, and other promotional events that have garnered positive feedback from attendees and stakeholders. These additional capabilities round out our team, positioning us as a small communications, marketing and event production agency.
- **Email Marketing Excellence:** Utilizing Mailchimp, the team has effectively managed email marketing campaigns, ensuring a targeted and personalized approach. This has resulted in higher open rates, click-through rates, and conversions through email channels. Total audience metric for this fiscal year in Mailchimp is 96,540, with an open rate of 47%.
- **International Projection:** In 2022, the PRSTRT was invited by Invest Puerto Rico to participate in a commissioned

book, called Innovate Puerto Rico. DMC oversaw the compilation of photos, data and editorial production. The INNOVATE® publishing series is a 350-page in-depth study that showcases the people, companies, products, and services that are leading the race within a city's innovation ecosystem. A book with an online platform, and a global network with a common goal of ensuring the best innovations and innovation enablers connect and succeed.



& MARKETING

GROWTH METRICS

EARNED MEDIA

Earned media (or free publicity) refers to publicity gained through promotional efforts other than advertising (paid



COMMUNICATIONS

THE BIG THINK GROUP

bcw

PharMaCon
HEALTH MARKETING & COMMUNICATIONS GROUP

Agency	Non-Paid Publicity	Impressions	Media Appearances
The Big Think Group	$3,192,595.32	2,702,388	350
BCW	$171,200.00	177,682,343	60
Pharmacon	$29,500.00 (rate card)	60,000	3
	$3,494,608.48 Total Non-Paid Publicity	**181,052,094** Total Impressions	**453** Media Appearances

35k
Research & Development Followers

76k
Entrepreneurship Followers

35k
Public Health Followers

4.5k
Foundation Followers

148k
Social Media Followers
of PRSTRT and programs (Facebook, Instagram, LinkedIn, Twitter, YouTube and TikTok)

96k
Mailchimp Contacts
with interests aligned to research and development, entrepreneurship, public health and innovation.

12 Logo designs
FWD Summit 2023 | ARG Space Edition | STEM Box Kit (redesigned) | YOUTH 2050 | ConCiencia Podcast | Agroecología Para El Futuro

Channel Landscape

9 website/landing pages
9 Facebook Pages
1 Facebook Group
8 Instagram accounts
7 LinkedIn pages
6 Twitter accounts
5 YouTube Channels
3 TikTok profiles
7 monthly newsletters for a total of 84 newsletters yearly

Platforms and organizational licenses that facilitate the delivery, monitoring, and optimization of marketing efforts. Some of these are:

Web & Admin:
Wordpress
Google My Business

Social Media & Administration:
Facebook
Instagram
LinkedIn
Twitter
TikTok
Sprout Social
Business Manager

eMarketing:
Mailchimp
Hubspot

Video & Audio
YouTube
Spotify
Anchor

Event Promotion and Ticketing:
Eventbrite

Virtual Events & Streaming:
Streamyard
Teams
Zoom

Recruiting:
ADP
Indeed
LinkedIn

260
FideicomisoTV Videos
Videos produced and published at Fideicomiso TV, youtube channel

25+
Press releases submitted to media

CRM Metrics

4	7.8K	465	30	18k	4k	303	515
Programs in Hubspot	Contacts Registred	Companies Registered	Registration Form	Form Views	Form Sub-missions	Calls	Conver-sations

The communications and marketing team's exemplary performance in addressing crucial functions has proven instrumental in elevating the organization's brand image, increasing customer engagement, and achieving notable business outcomes. Their proficiency in harnessing the potential of innovative platforms like Sprout Social, HubSpot, Mailchimp, and Eventbrite has been a key factor in their success and has positioned the team as a driving force behind the organization's sustained growth and success.

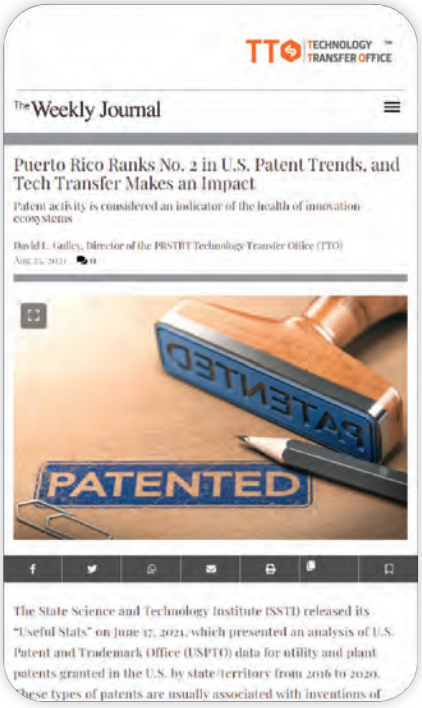




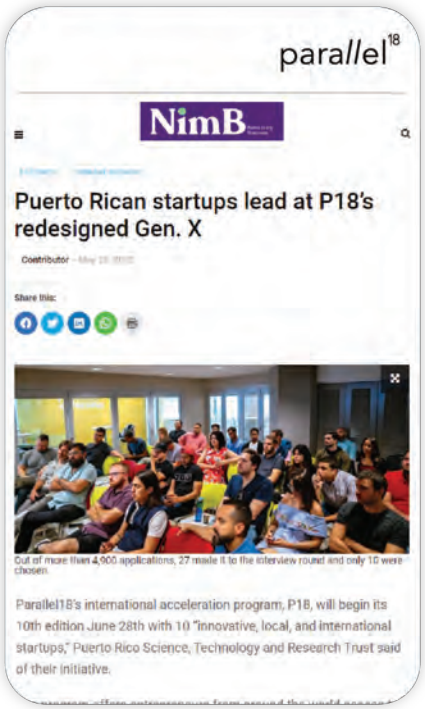


NEWSPAPERS CLIPPINGS











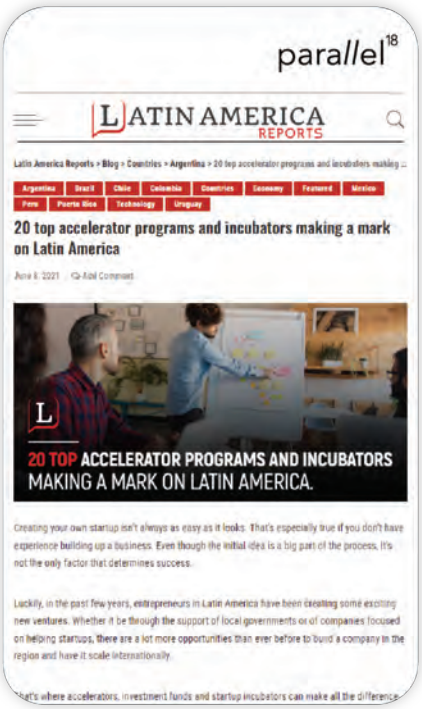


Image 1. The Weekly Journal *"Science Trust Commits $1.8M to Science and Technology Innovation"*

Image 2. News is my business *"Puerto Rican startups lead at P18's redesigned Gen. X"*

Image 3. The Weekly Journal *"Puerto Rico Ranks No. 2 in U.S. Patent Trends, and Tech Transfer Makes an Impact"*

Image 4. News is my business *"Colmena66 to host virtual Boricua Emprende Entrepreneur Fest"*

Image 5. El Nuevo día *"Urge atender el aumento del nivel del mar"*

Image 6. Latin America Reports *"20 top accelerator programs and incubators making a mark on Latin America"*





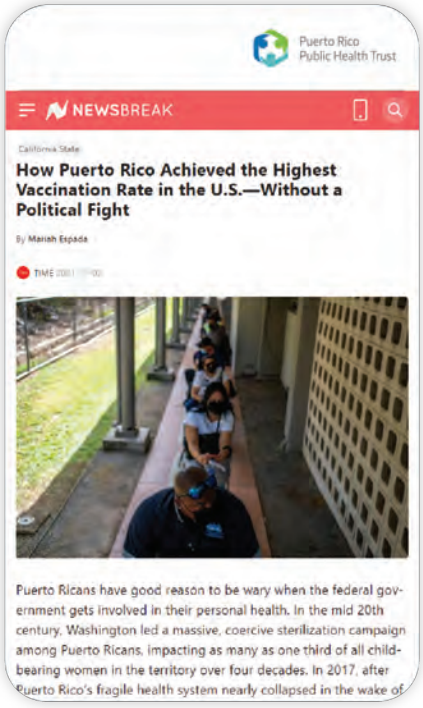








Image 7. Metro *"Culebra se une a la lucha contra los mosquitos y brotes de enfermedades arbovirales"*

Image 8. The Journal *"Medtronic Foundation Pledges $4M, Employee Volunteerism to 13 STEM Programs Serving Underrepresented Students"*

Image 9. News is my business *"Op-Ed: PRCCI supports blood collection efforts in Puerto Rico"*

Image10. El Expresso *"Crearán un "safe room" en terrenos donde albergaba el Oso Blanco"*

Image 11. News Break *"How Puerto Rico Achieved the Highest Vaccination Rate in the U.S.—Without a Political Fight"*

Image 12. DPL News *"Puerto Rico | Urgen a la integración de las mujeres en las carreras STEM"*

DMC TEAM



Lupe Vázquez
Chief Communications & Marketing Officer



Ricky Vázquez
Digital Content & Producer



Marieli Grant
Communications & Marketing Manager



Xavier Ocasio
Lead Graphic Designer



Natasha Sánchez
Graphic Designer & Content Strategist



Alex Morales
Lead Graphic Designer



Claudia Rodríguez
Multimedia Content Writer



Félix Navas Raleigh
CRM Lead

FUTURE PLANS

- Continuity and improvement of non-paid publicity results
- Expand communication and marketing teams' capabilities through recruitment and/or capacity building of our teams. We are working to reformulate a new creative team structure that includes all talent and is distributed by pillar to support more than one program, to better distribute talent and needs. In this way, we intend to distribute tasks and enhance internal talent to continue to exponentiate their strengths.
- We will conduct focus studies and analyze the performance of our webpage to make the necessary adaptations to ensure that it is an easy to navigate homepage with the necessary information to know our pillars.
- We initiated a project for an Endowment plan to bring in new donors, foundations and collaborators.
- Improve our customer experience strategy maximizing platforms like Hubspot and Sprout Social.





Also the PRSTRT's most recent

STRATEGIC PLAN,

applicable from 2022 through 2025
can be reviewed in these attachments.



Puerto Rico
Science, Technology
& Research Trust

Puerto Rico
Science, Technology
& Research Trust

Strategic Plan 2022 - 2025

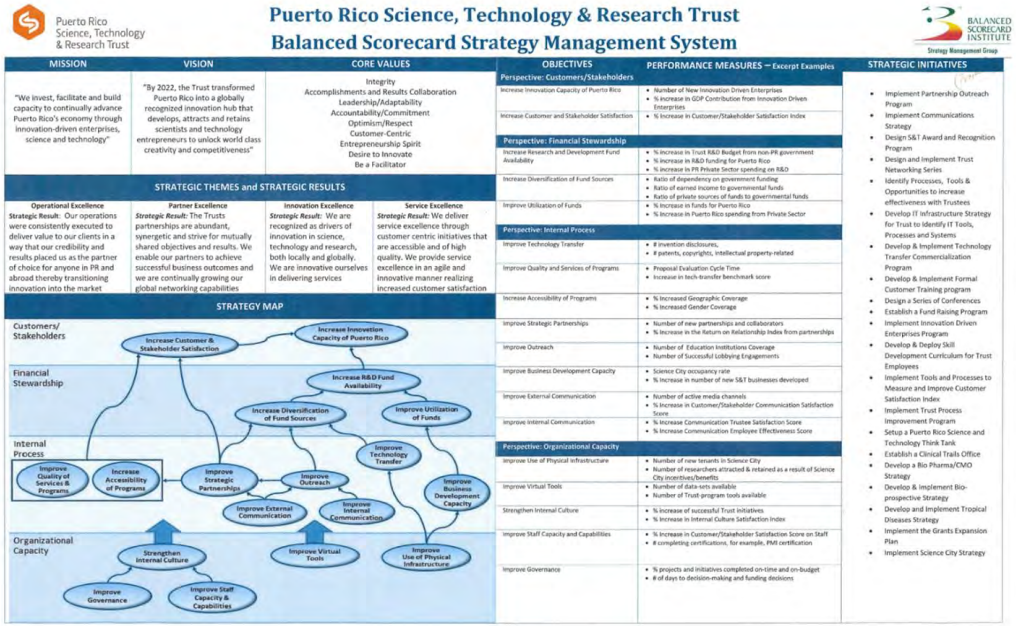
Puerto Rico Science Technology & Research Trust

June 17, 2022



Executive Summary

In 2015 the Puerto Rico Science, Technology & Research Trust completed its first Strategic Plan 2015-2022. The key strategic objective of the plan was to increase the innovation capacity of Puerto. This plan that was developed with ample participation from the different communities we serve: researchers, entrepreneurs, and partner organizations. We also used the plan as the foundation to set the Trust's human and system infrastructure as well as to guide the development and deployment of the Trust's existing programs.



New strategic plan

In 2022, as part of the strategic plan review process, we evaluated how each program was contributing to advancing the organization's mission to build capacity to continually advance Puerto Rico's economy and its citizen's well-being. We also explored and identified potential synergies between programs. As part of this review, we enhanced the mission to reflect the integration of public health activities, we simplified the vision, and we are transitioning from a program-centric approach into a strategic pillar-centric approach. Each pillar is building programs and initiatives that in most cases are complementing each other to grow with enormous collaboration potential, creating a cross-pollination of new solutions and initiatives empowered by the Trust infrastructure. The pillars are shown in the slide to the right.



#WeAreTheTrust

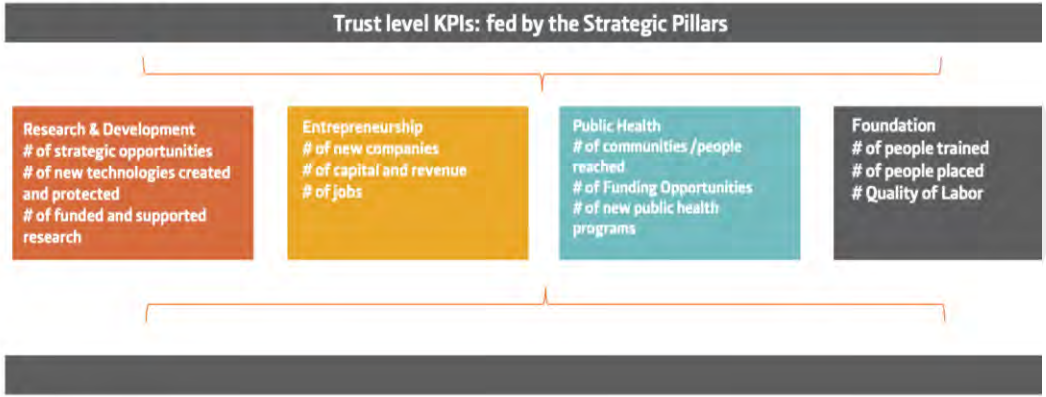
Key Performance Indicators

As part of the review process, we also defined a set of Key Performance Indicators (KPIs) from the aggregate KPSs of each program to reflect the overall Trust performance. In addition to working towards meeting the discussed KPIs, the PRSTRT will make efforts to participate in global indexes and studies regarding innovation, research, development, and entrepreneurship, among others.

This strategic business plan is a living document created by the Trust team. A team characterized by thinking out of the box, taking risks, building innovation in everything we do, and always moving forward to advance Puerto Rico's economy and its citizen well-being.

#WeAreTheTrust

KPIs Logic





PRSTRT TODAY

Puerto Rico
Science, Technology
& Research Trust

Timeline

2004

Established under Public Law 214 as an autonomous entity and constitution deed is signed.

Luz A. Crespo

2015

Eng. Luz A. Crespo start as Chief Executive Officer

Research Grants Program

Science City

Research & Innovation Meetups Program

Center for Tropical Biodiversity

2016

Technology Transfer Office

Brain Trust for Tropical Disease Research & Prevention Program

Parallel 18

Colmena66

PR Consortium for Clinical Investigation

Unidad de Control de Vectores de PR

2017

Amendment of the deed where it is designated as the Institute of Public Health and Educational Organization as a bona-fide fiscal agent of the Government of PR

Cultural Heritage Innovation Program

2018

Program launch

Recuperación Agrícola

STEM Program

SBIR/ STTR Federal Grants

Pre18

Puerto Rico Hurricane Hub

ASHTO

2019

Program launch

Resiliency Business Innovation

Response Innovation Lab

Puerto Rico Public Health Trust

ProdTec

2020

Program launch

Re-Grow PR

Telemedicina

2021

Second signature on the deed

Caribbean Center for Rising Seas

Research Institute

Fase 1

Telemedicina para Adultos Mayores

Laboratorio Genómico de COVID-19

Community Health Promoters Capacity building program

Red de Pacientes de Puerto Rico

Academia del Cacao

PR Ready

2022

Program launch

Xpand

New Initiatives

Agile - Research Grants Program

EnTrust - TTO

Agroecología para el futuro

Puerto Rico
Science, Technology
& Research Trust

Strategic Plan Summary

Roadmap of the Science Trust evolution and strategies:

The PRSTRT early days

- Science and research mandate
- Research Grants as the first Trust Program
- Innovation and entrepreneurship Ecosystem mapping
- Initial Science City Development

Life after the hurricane

- Professionalization of organization departments (HR, IT, Legal, Finance etc)
- Growth in entrepreneurship (parallel18, Colmena66 and RBI) make it own pillar
- The Trust begun to execute its Public Health capabilities through PRPHT
- Increasing the amount of external capital to more than 50% and beginning the endowment.

2021 and beyond

- Reinforcement of our strategy map: Mission and Values
- Scaling of the organization to new heights, but also a scaling of its impact
- Synergies across the organization's pillars to find groundbreaking solutions
- Programs and Pillars new impact

Effective and results driven

The Puerto Rico Science, Technology, and Research Trust is a reputable and effective organization that has complied with its mandate: keep driving research, innovation, entrepreneurship, public health policies, and more, on the island. After experiencing accelerated growth in the last six years, it is time to start thinking about the next six and setting up the right structure to maximize its impact.

The organization has 20+ programs under its umbrella. To define its purpose and messaging it has begun to group them into four main pillars:

- Research
- Entrepreneurship
- Public Health
- Foundation

#WeAreTheTrust

Who we are

We are a private non-profit organization created in 2004 to encourage and promote innovation, transfer and commercialization of technology and creation of jobs in the technology sector. We are responsible for Puerto Rico's public policy for science, technology, research and development.



Daniel Colón Ramos



Salvador Moncada



Alfredo Casta



Gualberto Medina



Ubaldo Córdova



Dara Schuster



Esther Alegria



Manuel Cidre



Enrique A. Volckers Nin



Edith A. Perez, MD



Frances Santiago-Schwarz, Ph.D.

Trustees

Our Council of Trustees is composed of distinguished professionals who support and oversee our work and provide guidance to ensure that the Trust us managed within its mission and vision.



Moving Forward

Puerto Rico
Science, Technology
& Research Trust

Strategic Plan 2022 - 2025

Puerto Rico Science Technology & Research Trust

June 17, 2022



Mission

We invest, facilitate, and build capacity to continually advance Puerto Rico's economy and its citizens' well-being through innovation-driven enterprises, science, research, public health and technology.

Vision

Puerto Rico is a globally recognized innovation hub.


Optimism
& Respect
Entrepreneurship
Spirit
Accountability
& Commitment
Be a
facilitator
Desire
to innovate
Integrity
Leadership &
Adaptability
Customer
Centric
Accomplishments
& Results

Core Values

Puerto Rico
Science, Technology
& Research Trust

Strategy Map

Puerto Rico Science, Technology, and Research Trust

Organizational capacity

- Strengthen internal culture
- Enhance governance
- Enhance staff capacity, capabilities, and work environment
- Leverage on Trust ICT resources to get recognized as a data management powerhouse
- Continue development of physical infrastructure (Science City)

Programs and internal proce synergies

- Transform public health paradigm Expand and clinical trial capabilities
- Accelerate technology transfer
- Expand entrepreneurship and business development capability
- Evolve STEM adoption and workforce development
- Expand on outreach and accessibility
- Enhance strategic partnerships

Financial stewardship

- Increase Trust fund availability
- Increase diversification of funding sources, including earned income mechanism
- Increase endowment funds
- Expand Trust's financial capabilities

Plan Objective: Increase Puerto Rico's innovation capacity

Puerto Rico
Science, Technology
& Research Trust

The strategic pillars come to life

The strategic pillars have created a more comprehensive structure to incorporate new initiatives and enhance existing ones consolidating in units that have a common pattern. It is important to mention that one of the highlights across the board of the pillars has been an investment in our governance by including a complete compliance infrastructure and a safety department

Research

- Increased reach with new COVID Programs
- TTO with new record patents and Life Science Accelerator
- Beginnings of Climate with Caribbean Center for Rising Sea
- Exposing inventions and research is still a challenge
- Collecting funds for research it is a growing opportunity

Entrepreneurship

- Solid infrastructure with tangible results with Colmena66 and Parallel18
- New Programs to increase pipeline: Fase1, pre18, and Investment
- Deep tech startups through SBIR/STTR space to grow
- Exportation for a startup is still a challenge

Public Health

- Successful Federal funding raise
- Strategic talent attraction
- Community driven approach across the island
- Telemedicine Pilots
- COVID19 SME and communication
- Vector Control performance
- CDC, HHS and Department of Health relationships

Foundation

- STEM program to strengthen critical thinking and scientific skills from the early days of the school journey
- Science City used to find specific real estate projects and host the Science Trust administration and special projects
- Research Meet ups key events and discussions around critical island challenges

RESEARCH

- RESEARCH GRANTS PROGRAM — FUNDS TO GROW
- TTO TECHNOLOGY TRANSFER OFFICE
- Caribbean Center for Rising Seas
- CENTER FOR TROPICAL BIODIVERSITY — A program of Puerto Rico Science, Technology & Research Trust
- PRSTRT RESEARCH INSTITUTE

ENTREPRENEURSHIP

- Colmena66 — Tu Camino Empresarial
- parallel18
- SBIR/STTR Federal Grants
- Fase 1
- xpand

PUBLIC HEALTH

- Puerto Rico Public Health Trust
- Puerto Rico Vector Control Unit
- PRCCI — Puerto Rico Consortium for Clinical Investigation

FOUNDATION PROGRAMS

- STEM EDUCATION & WORKFORCE DEVELOPMENT
- Science City
- PR RESEARCH & INNOVATION Meet-ups

#WeAreTheTrust

Puerto Rico
Science, Technology
& Research Trust

Program Strategic Plan Research Grants Program

What do we want to achieve?

Empower local scientists and researchers to take Puerto Rico's knowledge economy to a higher level of excellence.

How do we want to achieve it?

Provide seed funding and incentives to advance locally developed R&D projects to become more competitive for federal and private funding and/or commercialization.

How are we going to measure it?

funded research projects

of external grants secured after receiving Trust's funds (ROI)

# of research assets (publications, patents, students impacted, PhD dissertations, companies funded, participation in local/international conferences to present findings)

# of female researchers participating in the program

strategic relationships that promote R&D and attract more funds to the island

of active researchers with a complete profile in BEACON

# of research administrators trained in the pre & post award grants cycle **process.**

Puerto Rico
Science, Technology
& Research Trust

Program Strategic Plan Scientific Research Institute

What do we want to achieve?

Build an ecosystem that works for the researcher and to bridge opportunities for collaboration and evolution

How are we gointo measure it?

funded research projects and $
strategic relationships that promote R&D and attract more funds to PR
of research assets (publications, patents, students impacted, PhD dissertations, companies funded)

How do we want to achieve it?

- We are going to use all powers of Law 214
- Designate Scientific Advisory Board
- Commission an assessment of the current state of research in PR
- Create the perfect administrative support
- Deploy unique research infrastructure
- Attract merit-based intramural & extramural affiliated researchers
- Establish educational and training programs

#WeAreTheTrust

Puerto Rico
Science, Technology
& Research Trust

Program Strategic Plan Technology Transfer Office

What do we want to achieve?

Advance innovations from the lab to the marketplace in order to benefit the public.

How do we want to achieve it?

Provide best-of-class technology transfer services in partnership with our academic partner institutions.

How are we going to measure it?

Performance is measured by using our profession's standards regarding research funding, technology transfer activities, and impact of innovation.

Program Strategic Plan Caribbean Center for Rising Seas

What do we want to achieve?

1. Redefine Professional Knowledge and Understanding of Sea Level Rise + Flooding
2. Update Building Codes, Zoning, and Land Use in Puerto Rico
3. Change Urban Development Practices

How do we want to achieve it?

1. Outreach, Community Engagement, Education, and Professional Training Program
2. Rising Seas Policy Reference and Resource Center
3. Advisory Service Program

How are we going to measure it?

- # of Stakeholders Contacted and Level of Engagement in Puerto Rico >>> (Workforce Development)
- # of Legislation/Policy/Planning/Educational Standards/Building Standards addressed and modified (Opportunity Development)
- # of Publications, Literacy Tools, Key Reference Documents/Instances >>> (Knowldege Transfer, Outreach)
- # of Coastal Communities Engaged in Puerto Rico and Level of Engagement>>> (Mental Health, Research, Economic Development)
- Tracking public and private building projects and level of built-in resiliency and adaptation measures to flooding and SLR >>> (Research)

Puerto Rico
Science, Technology
& Research Trust

Program Strategic Plan Center for Tropical Biodiversity

1) To establish Puerto Rico as the regional leader in the development of biodiversity products.
2) To make biodiversity protection a major component of the regional agenda for economic development.
3) To increase the local portfolio of biodiversity-related companies

1) Providing key services to companies that develop (or seek to develop) biodiversity products.
2) Increasing the scope and value of existing research on biodiversity-related products.
3) Building a catalog of biodiversity assets for Puerto Rico and the Caribbean

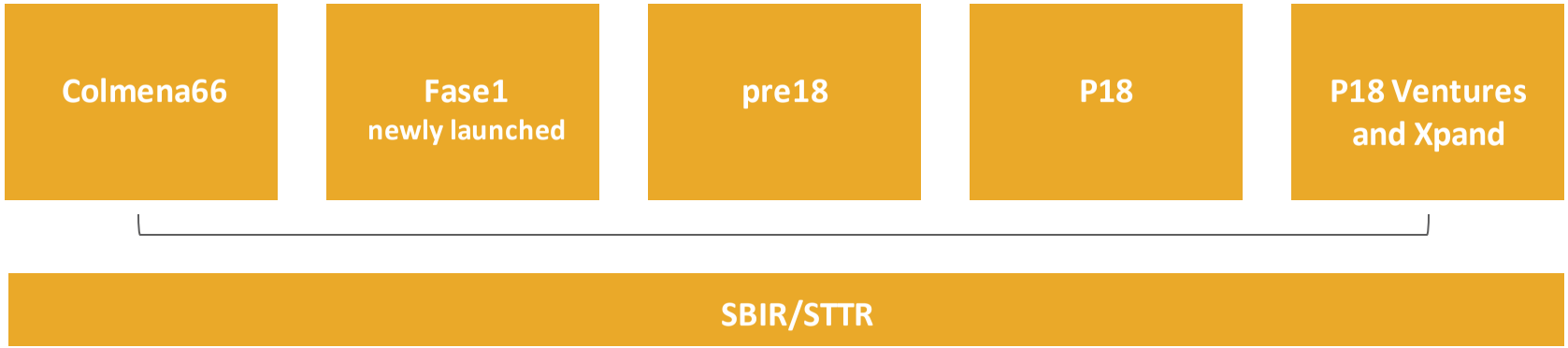
1) Number of biodiversity-related products entering the IP protection or licensing pipelines of the TTO.
2) Number of companies developing biodiversity-related products, seeking SBIR support.
3) Number of users and depositors for the Natural Product Online Repository (NatPORT).

Puerto Rico
Science, Technology
& Research Trust

Entrepreneurship

Since 2015, entrepreneurship has been in the DNA of the PRSTRT with programs like parallel18 and Colmena66. They have been paving the way for a stronger entrepreneurial culture in the island, broader access to capital and technical resources, retention and repatriation of talent, and regional an international reputation.

With this background and its current status, the Entrepreneurship pillar has a clear new approach of building a innovation platform



Puerto Rico
Science, Technology
& Research Trust

Parallel18: Pre18 and P18

2016

- P18 was launched
- 40 participants
- $14M total revenue
- $7.8M total revenue in PR
- $7.4M total investment raised by companies
- $1.87 M total investment raised by P18 companies in PR
- 3 initial investments by P18Ventures
- Pre18 born after hurricane Maria in 2017 as a one-time program. Became a fixed program in 2018

2021

- 9 cohorts
- 291 participants
- $189M total revenue
- $62M total revenue in PR
- $126 M total investment raised by companies
- $20 M total investment raised by P18 companies in PR
- 59 investments by P18Ventures
- Pre18
  3 cohorts
  903 applicants
  43% female led
  47 moved to P18

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Puerto Rico Science, Technology & Research Trust

Colmena66

2016

Launch with 160 collaborators on the Net

2017

- Networking Meetings
- Levanta Tu Negocio: Huracán María
- Shop&Hire
- PRSTRT Co-Working Space

2018

- Tu Camino Empresarial (Map)
- Tu Camino Empresarial Tour

2019

- First Boricua Emprende Fest
- SBIR/STTR: SBIR Road Tour
- Meeting Agro Industries
- Tu Camino Empresarial: Versión Agro
- Personalized Action Plan

2020

- Levanta Tu Negocio: Terremotos
- Levanta Tu Negocio: COVID-19
- Recovery Guide
- COVID-19
- Webinars SBIR
- Boricua Emprende Fest Virtual: eCommerce Edition
- Refuerzo PyME
- Entrepreneurs up to date

2021

- Serie de Incentivos
- Acércate al Grant: Fase 0
- SBA Lab-to-Market: Super Connector Award
- SBIR Growth Accelerator Fund Competition
- Boricua Emprende Fest Virtual

In 2021:

2,212 entrepreneurs served
4,275 interactions
7,632 referrals
274.5 counseling hours
7K searches on the network navigator
2,212 entrepreneurs served

Puerto Rico Science, Technology & Research Trust

SBIR

43 Winning proposals

37 SBIR

6 STTR

35 STTR

8 Phase II

$9M Total of obtained funds

51% of funds generated are part of the Trust's efforts since 2015.

35% of total awards belong to this period as well.

16 total awards were received during this period.

Puerto Rico
Science, Technology
& Research Trust

Program Strategic Plan Colmena66

What do we want to achieve?

Everyone in Puerto Rico can start and grow a business.

How do we want to achieve it?

Colmena66 facilitates entrepreneurship by connecting and building the entrepreneurial community.

We:

Catalyze and facilitate access and resources
Build and connect the entrepreneurial community
Create and Drive innovation

How are we going to measure it?

We have a series of 17 measurable objectives to measure (1) business development, (2) network navigation, (3) communications and marketing, (4) data, and (5) innovation.

Puerto Rico
Science, Technology
& Research Trust

Program Strategic Plan: Fase1

What do we want to achieve?

Facilitate and transform new idea generation into proper innovative businesses (start-ups), and thus creating a **stronger base of successful companies** in Puerto Rico.

How are we going to measure it?

of individuals that participate in FASE1 Lab: 500
# of projects selected to pass to FASE1 Intensive: 50
# of businesses that get into pre18 selection committee: 30 at least
# of training modules developed: 3 permanent, 4+ additional content per year
# of businesses established
Number of people hired
Revenue generated & Capital Raised

How do we want to achieve it?

With a dual approach:
Fase1 Lab – an entrepreneurial virtual academy to: 1) change the mindset of participants into an entrepreneurial mindset 2) provide a framework and validated knowledge for idea generation 3) provide tools and resources to facilitate the transformation of ideas into business ventures; 4) track performance; 5) transform traditional business ideas into scalable ones.

Fase1 Intensive – our 12-weeks curriculum ideas incubator program to 1) develop ideas into services or products (MVP); 2) to provide individual, targeted support to increase successful start-ups generation; and 3) provide structured tracking of milestones achievements.

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Puerto Rico
Science, Technology
& Research Trust

Program Strategic Plan for parallel18

What do we want to achieve?

To become the leading player involved in the Global Startup Incubation Program by providing mentorship, and investment to underrepresented founders around the globe to turn their ideas into market leading startups.

How do we want to achieve it?

- Raising outside capital from Limited Partners to create a sustainable and profitable program
- Adding corporate partners to fund the cohorts and Studio companies

How are we going to measure it?

# of new startups funded and created by parallel18 programs
# of private capital raised by parallel18 programs
# of Jobs created by starts created and funded by parallel18 programs
# of underrepresented founders funded.
# of companies created by parallel18 programs

Puerto Rico
Science, Technology
& Research Trust

Program Strategic Plan SBIR/STTR Federal Grants

- Increase the number of SBIR/STTR awards in Puerto Rico.
- Create jobs
- Bring funding to support our entrepreneurship community

- Recruiting small businesses and individuals located in Puerto Rico to participate in the program
- Recruiting companies from outside Puerto Rico to establish on the island
- Providing support to companies considering the program
- Providing support to companies working on proposals

- Number of awards
- Amount of funding brought to Puerto Rico
- Number of jobs created

Public Health

The Puerto Rico Public Health Trust (PRPHT)

The PRPHT has experienced a major positive growth in the last two years, driven primarily by the pandemic. The organization has been able to successfully leverage its expert positions, building a knowledgeable innovative reputation that has attracted experienced talented staff, secured key grantors and funding opportunities, and generated impact by increasing access to health by empowering communities and formalizing strategic alliances with external an internal partners

After a significant 2020 the PRPHT decided to begin year 2021 designing how they want to move forward the next three years, organizing a week long workshop involving all the leadership team of the organization, where they came up with the most critical goals and strategies.

Puerto Rico Public Health Trust (PRPHT)

Goals and Strategies
Programmatic

- Increase presence in our communities for health promotion, increase preparedness, and decrease disease burden
- Obtain, collect, and use data to drive our work and create initiatives
- Promote, inform the creation of public health policy, informed by evidence, focused on enhancing health equity and social justice.
- Increase research and opportunities for research of chronic and infectious disease in public health.
- Effectively create, implement, and distribute telemedicine and telehealth technology.

Organizational Outputs
Programmatic

- Health promotion/education curriculums on chronic disease; CHW training/certification program; All Hazards Center established at PRPHT
- Centralized data hub for all PRPHT programs data;
- Two position papers; Two (per year) public health policy issues promoted; Attend three discussions/formal legislative hearings on public health policy
- One report on five most prevalent chronic diseases in Puerto Rico; One community based participatory research project conducted.
- One strategic plan to increase telemedicine utilization; One promotion plan for telemedicine and telehealth adoption; One plan for technology use in chronic disease health education;

Puerto Rico Public Health Trust (PRPHT)

Goals and Strategies
Operational

- Improve and create effective processes for operations and management
- Create and maintain PRPHT as a place to work where one is valued and successful

Organizational Outputs
Operational

- One needs assessment report; One operational improvement plan; One sustainability plan.
- One cultural assessment; One culture management plan; One performance management process; Individual goals for all staff and contractors; Goals based performance reviews for all staff.

Puerto Rico
Science, Technology
& Research Trust

OUR FOUNDATION

Vision

Achieve sustainable health equity in Puerto Rican communities and improve their quality of life through innovation, collaboration, and community engagement.

Mission

Serve as a trusted ally working with private and public partners to identify and execute community-led, evidence-based solutions.

Priorities

- Emergency Preparedness, Recovery and Response
- Chronic Diseases
- Health Equity
- Climate Change
- Mental Health
- Opioid Epidemic
- Emerging Public Health Issues

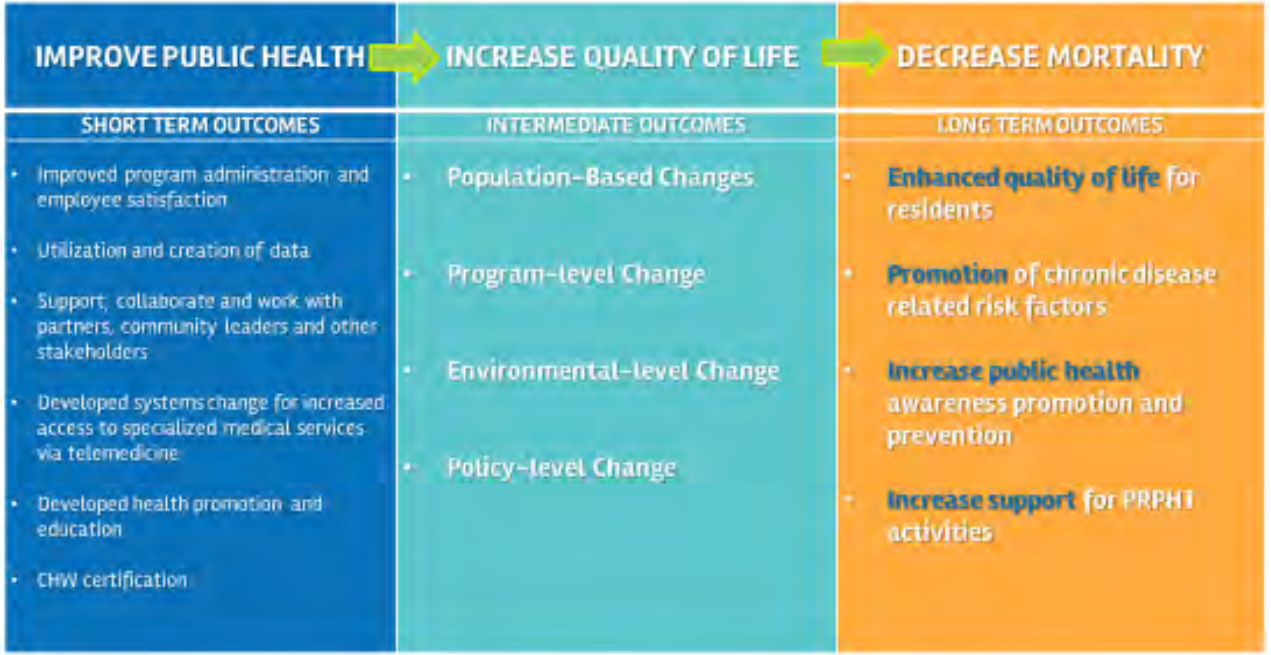
Values

- Collaboration
- Equity
- Excellence
- Inclusion
- Innovation
- Integrity
- Respect
- Social Justice

Divisions & Projects

- Community Engagement
- Covid Variants Lab
- All Hazards
- Telemedicine & Telehealth
- Health Communication

Outcomes Driven



Puerto Rico
Science, Technology
& Research Trust

Program Strategic Plan Puerto Rico Public Health Trust

What do we want to achieve?

Achieve sustainable health equity in Puerto Rican communities and improve their quality of life through innovation, collaboration, and community engagement

How do we want to achieve it?

Serve as a trusted ally working with private and public partners to identify and execute community-led, evidence-based solutions.

How are we going to measure it?

We have a series of 28 measurable objectives to measure organizational, programmatic, and operational strategies.

Puerto Rico Science, Technology & Research Trust

Puerto Rico Vector Control Unit (PRVCU)

The PRVCU has done a titanic work all over the island controlling the biggest mosquito outrage in the United States. The key to their success is the generation of close and trustful relationship with local municipalities, the Department of Health, and the CDC.

The latter has laid down the road to continue to find financing, formalize a collaboration with PRDoH, strengthen their relationship with municipalities, PRVCU authority for IVM plan development

Develop an entrepreneurial applied R&D arm, industry funded, capitalizing on our unique situation.

Shift operational emphasis on vector control to the municipalities.

External approach: Research institutions and Center of Excellence; Building program with USVI; Collaborations with Latin America.

Path to PRVCU financial sustainability

Puerto Rico
Science, Technology
& Research Trust

Program Strategic Plan Puerto Rico Vector Control Unit

What do we want to achieve?

Striving together for a Puerto Rico free from mosquito-borne disease.

How do we want to achieve it?

Protect the people of Puerto Rico from the Aedes aegypti mosquito, while educating and empowering everyone to dramatically and sustainably reduce mosquito-borne disease across Puerto Rico.

How are we going to measure it?

Continuing our surveillance system to provide accurate data to stakeholders; strengthing the collaboration with the municipalities and provide plans for vector management; and completing evaluations and implementation of vector control techniques.
PRVCU laboratory is currently conducting dengue serotype assays (# of assays); # of traps deployed (on-demand); # of mosquitoes and # of human dengue cases; % of participants completing community assessments (pre and post tests, questionnaires); # of people, schools, communities, municipalities, collaborators reached/trained/impacted; # of people/municipalities enrolled in the Puerto Rico Vector Management Association.

#WeAreTheTrust

STEM Education and Workforce Development

These efforts began with STEM programs impacting younger generations and were aligned with the Research and Development pillar of the organization. Today the Education pillar of the PRSTRT is evolving to focus on Public Policy, Strategic Partnership, and equitable access to STEM and Workforce Development.

Today, the STEM and Workforce Development program is not only serving an external audience, but the PRSTRT as a whole.

STEM

- STEM training Teachers
- Resuelvelo Boricua
- STEM KIT BOX, funding through MEDTRONIC. (Online component)
- Partnership Departamento de Educación

Workforce Development

- ISACA Certifications
- Academia del CACO
- Puerto Rico Ready (PR-READY): CDBG-DR Workforce Development Grant
- Good Jobs Challenge

Puerto Rico
Science, Technology
& Research Trust

Program Strategic Plan STEM Education & Workforce Development

What do we want to achieve?

STEM Education
- We want the STEM Ed Program to become a source for public policy leadership and relevant STEM data to inform such public policy.
- That the program can provide high-quality informal STEM learning for grades K-12.
- That the program includes relevant professional development opportunities to STEM educators on the island.

Workforce Development
- To lead the public policy on workforce development on the island.
- To become the leading program in emergent technology certifications for the island.
- To be the leader organization in upskilling the IT/Innovation workforce

How do we want to achieve it?

STEM Education & Workforce Development

- By developing appropriate frameworks and practices for public policy.
- By developing programs with best practices and innovative component.
- By establishing effective partnerships.
- By accessing funding that enables it.

How are we going to measure it?

STEM Education & Workforce Development
- By establishing clear KPIs
- By developing SMART objectives
- By conducting formal program evaluations:
  - Formative assessments (customer surveys)
  - Evaluative assessments (aligning KPIs and execution)



Organization KPIs

Puerto Rico
Science, Technology
& Research Trust

KPIs Logic

Trust level KPIs: fed by the Strategic Pillars

Research & Development
# of strategic opportunities
# of new technologies created and protected
# of funded and supported research

Entrepreneurship
# of new companies
# of capital and revenue
# of jobs

Public Health
# of communities /people reached
# of Funding Opportunities
# of new public health programs

Foundation
# of people trained
# of people placed
Quality of Labor

Puerto Rico
Science, Technology
& Research Trust

Trust level KPIs: fed by the Strategic Pillars

Research:

#funded/supported research labs that consequently are capable of supporting their research through other sources, including corporate, non-profit, and governmental entities.

#research assets that result in (a) technologies disclosed, protected, and transferred from research labs (differentiate academic v private) to the market for the public benefit; and (b) knowledge transfer outputs (e.g., publications, research collaborations, consulting).

#strategic opportunities that informs funding decisions to leverage research assets and support technology and knowledge transfer.

Entrepreneurship:

new companies created through any of the Trust programs including the companies registered and referred by Colmena66

#Private and public Capital raised and revenue generated in Puerto Rico by the companies graduated from the Trust programs

#Employees hired by the companies supported by the Science Trust infrastructure

Public Health:

resources and funding to support public health activities in Puerto Rico

public health programs and efforts in Puerto Rico through formalized partnerships with the Department of Health and other governmental entities

#Puerto Rican communities through capacity building and training to increase positive health status for citizens

Foundation:

individuals trained by the Puerto Rico Ready program, STEM and eventually Good Jobs Challenge

individuals placed in different labor opportunities presented by the Trust workforce initiatives

#quality of labor: Increasing income of participants, improving in perceived working conditions

#WeAreTheTrust

Basic Consolidated Financial Statements 2022-2023



Puerto Rico
Science, Technology
& Research Trust

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

(A Puerto Rico Not-For-Profit Organization)

Basic Consolidated Financial Statements
June 30, 2023

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RSM Puerto Rico
PO Box 10528
San Juan, PR 00922-0528

T 787-751-6164
F 787-759-7479
www.rsm.pr

INDEPENDENT AUDITORS' REPORT

To: The Board of Trustees of
Puerto Rico Science, Technology and Research Trust

Opinion

We have audited the consolidated financial statements of Puerto Rico Science, Technology and Research Trust, a Puerto Rico not-for-profit organization, and its Subsidiaries, which comprise the consolidated statement of financial position as of June 30, 2023, the related consolidated statements of activities, functional expenses, and cash flows for the year then ended, and the related notes to the consolidated financial statements.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Puerto Rico Science, Technology and Research Trust and its Subsidiaries as of June 30, 2023, and the changes in its net assets and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of Puerto Rico Science, Technology and Research Trust and its Subsidiaries and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Emphasis of Matters

As discussed in Note 1 to the consolidated financial statements, on July 1, 2022, Puerto Rico Science, Technology and Research Trust and its Subsidiaries adopted the ASC Topic 842, *Leases*, issued by the Financial Accounting Standards Board. Our opinion is not modified with respect to this matter.

As discussed in Note 2 to the consolidated financial statements, the net assets as of June 30, 2022 have been restated to correct a misstatement. Our opinion is not modified with respect to this matter.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about Puerto Rico Science, Technology and Research Trust and its Subsidiaries' ability to continue as a going concern within one year after the date that the consolidated financial statements are available to be issued.

RSM Puerto Rico is a member of the RSM network and trades as RSM. RSM is the trading name used by the members of the RSM network. Each member of the RSM network is an independent accounting and consulting firm which practices in its own right. The RSM network is not itself a separate legal entity in any Jurisdiction.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the consolidated financial statements.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of Puerto Rico Science, Technology and Research Trust and its Subsidiaries' internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the consolidated financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about Puerto Rico Science, Technology and Research Trust and its Subsidiaries' ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

San Juan, Puerto Rico
October 31, 2023.

Stamp No. E554046 was affixed to
the original of this report.

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENT OF FINANCIAL POSITION
June 30, 2023

ASSETS:		
Cash	$	21,109,811
Accounts receivable, net of allowance for doubtful accounts of $58,337		488,982
Prepaid expenses		45,037
Due from governmental entities		1,649,372
Investments		4,176,405
Notes receivable, net		419,415
Other assets		27,261
Endowment fund		47,201,182
Property and equipment, net		2,278,702
Right-of-use asset for operating lease, net of accumulated amortization of $34,198		215,939
Building, net		14,517,984
Land and property for research, development and infrastructure project related to science and technology		18,100,307
Land development costs		11,794,958
Construction in progress - Science City		11,148,357
	$	133,173,712
LIABILITIES AND NET ASSETS		
LIABILITIES:		
Program service payable	$	1,280,346
Accounts payable		2,385,558
Refundable advances		2,753,965
Accrued expenses		479,296
Operating lease liability		216,086
Other liabilities		178,616
		7,293,867
NET ASSETS:		
Without donor restrictions:		
Undesignated		49,601,974
Designated by the Board of Trustees for endowment		47,201,182
		96,803,156
With donor restrictions:		
Purpose restrictions		10,976,382
Perpetual in nature		18,100,307
		29,076,689
		125,879,845
	$	133,173,712

The accompanying notes are an integral part of this consolidated statement of financial position.

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENT OF ACTIVITIES
For the year ended June 30, 2023

	Without donor restrictions	With donor restrictions	Total
REVENUES, SUPPORT AND OTHERS:			
State grants and assessments	$ 7,285,080	$ -	$ 7,285,080
Federal grants	10,596,966	1,532,478	12,129,444
Private grants and sponsorships	768,048	1,368,831	2,136,879
Donations and contributions	26,684	-	26,684
Clinical trials	91,014	-	91,014
Rental income	282,279	-	282,279
Interest Income	493,695	-	493,695
Net return on investments	170,610	80,719	251,329
Net return on endowment fund	2,099,356	-	2,099,356
Other income	249,179	-	249,179
	22,062,911	2,982,028	25,044,939
Net assets released from restrictions:			
Satisfaction of program restrictions	1,633,780	(1,633,780)	-
	23,696,691	1,348,248	25,044,939
OPERATING EXPENSES:			
Program and services:			
Research and data	4,131,052	-	4,131,052
Public health initiative	11,005,778	-	11,005,778
Technology transfer and commercialization	6,684,998	-	6,684,998
Science City development	108,396	-	108,396
	21,930,224	-	21,930,224
Supporting services:			
Management and administrative	5,840,608	-	5,840,608
	27,770,832	-	27,770,832
CHANGE IN NET ASSETS	(4,074,141)	1,348,248	(2,725,893)
NET ASSETS, beginning of year (as restated)	100,877,297	27,728,441	128,605,738
NET ASSETS, end of year	$ 96,803,156	$ 29,076,689	$ 125,879,845

The accompanying notes are an integral part of this consolidated statement.

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENT OF FUNCTIONAL EXPENSES

For the year ended June 30, 2023

	Program activities				Support activity	
	Research and data	Public health initiative	Technology transfer and commercialization	Science City development	Management and administrative	Total
Program support:						
Capacity builiding and sponsorships	$ 184,982	$ -	$ 62,650	$ -	$ -	$ 247,632
Research and development grants	864,059	-	324,188	-	-	1,188,247
Matching grants	-	-	412,500	-	-	412,500
Parallel 18 grants	-	-	2,204,787	-	-	2,204,787
Other program initiatives	387,913	3,561,627	780	-	-	3,950,320
	1,436,954	3,561,627	3,004,905	-	-	8,003,486
Personnel costs:						
Salaries and wages	1,277,888	2,965,572	1,645,678	17,538	2,197,879	8,104,555
Benefits and payroll taxes	497,560	1,312,069	573,674	3,965	1,029,077	3,416,345
	1,775,448	4,277,641	2,219,352	21,503	3,226,956	11,520,900
Professional services	429,537	1,194,968	779,238	66,264	685,577	3,155,584
Occupancy expenses:						
Depreciation and amortization	27,446	1,331,921	3,705	1,816	266,338	1,631,226
Rent	-	1,000	212,090	-	74,446	287,536
Repairs and maintenance	1,123	-	1,165	16,356	286,977	305,621
Security	-	-	-	-	185,313	185,313
Other	3,984	28	14,172	-	529,298	547,482
	32,553	1,332,949	231,132	18,172	1,342,372	2,957,178
Travel	54,318	102,363	115,233	-	63,813	335,727
Other	402,242	536,230	335,138	2,457	521,890	1,797,957
Total operating expenses	$ 4,131,052	$ 11,005,778	$ 6,684,998	$ 108,396	$ 5,840,608	$ 27,770,832

The accompanying notes are an integral part of this consolidated statement.

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENT OF CASH FLOWS
For the year ended June 30, 2023

CASH FLOWS FROM OPERATING ACTIVITIES:		
Change in net assets	$	(2,725,893)
Adjustments to reconcile change in net assets to net cash used in operating activities:		
Bad debts expense		295,399
Unrealized loss on investments		88,476
Realized loss on investments, net		187,401
Capitalized income on Endowment fund		(2,099,356)
Unrealized gain on Endowment fund		(139,021)
Depreciation and amortization		1,631,226
Amortization of right-of-use asset for operating lease		34,198
Changes in operating assets and liabilities-		
Increase in assets:		
Accounts receivable		(26,212)
Prepaid expenses		(29,651)
Due from governmental entities		(646,007)
Other assets		(1,000)
Increase (decrease) in liabilities:		
Program service payable		225,296
Accounts payable		(1,072,015)
Refundable advances		(2,065,798)
Accrued expenses		33,962
Operating lease liability		(34,051)
Other liabilities		(1,803)
Net cash used in operating activities		(6,344,849)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Advances under notes receivable		134,050
Proceeds from sale and redemption of investments		301,062
Purchase of investments		(475,000)
Contributions to Endowment fund		(169,808)
Purchase of property and equipment		(831,238)
Additions to building		(3,129,880)
Additions to land development		(228,096)
Net cash used in investing activities		(4,398,910)
NET DECREASE IN CASH		(10,743,759)
CASH, beginning of year		31,853,570
CASH, end of year	$	21,109,811

The accompanying notes are an integral part of this consolidated statement.

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
June 30, 2023

1) Organization and summary of significant accounting policies:

A) Organization – Puerto Rico Science, Technology and Research Trust (the Trust) is a not-for-profit organization created on August 18, 2004 by Act No. 214, as amended (the Act 214), of the Legislature of the Commonwealth of Puerto Rico (the Commonwealth). The purpose of the Trust is to foster, and fund research, development and infrastructure projects related to science and technology that will promote the economic, social or educational development of the Commonwealth and to operate exclusively for charitable, educational and scientific purposes. The Act 214 also designates the Trust as a Public Health Institute, an Educational Organization and allows the Trust to act as fiscal agent to pursue certain federal funding opportunities on behalf of the Commonwealth. The Act 214 also enables the Trust to establish a research institute through which researchers from public and private research institutions might affiliate with and enables the Trust to evaluate competitive grant proposals and/or act as fiscal sponsor to pursue funding opportunities on behalf of these institutions.

The projects of the Trust are financed as follows: (i) the greater of $6,340,000 or 31% out of the monies deposited in the Special Fund for Economic Development (FEDE for its Spanish acronym) managed by the Puerto Rico Industrial Development Company (PRIDCO) for the fiscal years ended June 30, 2017 through 2019, (ii) the monies of Scientific Investigation Fund for the Centenary of the University of Puerto Rico (Centenary Fund), (iii) $5,000,000 annually from the balance of collections of federal excise taxes in accordance with Section 7652(a)(3) of the United States Internal Revenue Code of 1986, as amended, and (iv) private grants and donations, other government funds, and legislative appropriations. Effective for the fiscal year ended June 30, 2020 and thereafter, FEDE was superseded by the Economic Incentive Fund (EIF), created under Act 60 titled *"Código de Incentivos de Puerto Rico"*. Section 5010.01 of Act 60 bestows upon the Secretary of the Department of Economic Development and Commerce (DEDC) total discretion upon the use of the EIF.

The Act 214, as amended in August 2017, provides that the Board of Trustees is to be composed of eleven (11) trustees, two (2) of whom shall be members *ex officio* including the Secretary of the Department of Economic Development and Commerce and other government agency representative to be appointed by the Governor of the Commonwealth; and nine (9) members from the private sector.

Since September 2016, the Trust has been awarded, as prime recipient and subrecipient, with federal funds from the US Department of Health and Human (DHHS) - Center for Disease Prevention and Control, the DHHS - National Institutes of Health, the US Department of Commerce – Economic Development Administration, the US Department of the Treasury, and the US Department of Agriculture. In addition, during the year ended June 30, 2023, the Trust has been the primary recipient, or acted as fiscal sponsor, for the implementation of privately funded initiatives, mostly related to recovery efforts after the passing of Hurricane Maria in Puerto Rico in September 2017 and the organization's Public Health Institute initiative.

Subsidiaries – The Trust has established the following subsidiaries by virtue of Article 5(26) of Act 214, as amended, whereby the Trust may organize subsidiaries or affiliates subject to its total or partial control to carry out any assignment from the Trust's Board of Trustees for the best interest of the Trust:

- The Puerto Rico Consortium for Clinical Investigation, Inc. (PRCCI) – A not-for-profit entity organized on January 20, 2016. PRCCI began operations on April 1, 2016 and its purpose is to improve the impact, quality, and speed of clinical research activity conducted in Puerto Rico, especially in the fields of oncology, infectious diseases, neurological disorders and cardio-metabolism. To achieve its mission, PRCCI partners with clinical research sites across Puerto Rico to ensure access to a diverse patient population. PRCCI's operations are sustained through a combination of revenues obtained from clinical research sponsors, grants and contracts with state and private entities, and contributions from the Trust.

- PRST, Inc. (PRST) – A not-for-profit entity organized on December 28, 2016. The purpose of PRST is to act as a Qualified Promoter as defined in Section 2034.01 of the newly enacted Incentives Code of Puerto Rico. A Qualified Promoter is authorized by the Department of Economic Development and Commerce to engage in the promotion of new companies established in Puerto Rico and to obtain decrees under Act No. 20 of 2012, to establish and expand their export services.

These consolidated financial statements include the accounts of the Trust and its Subsidiaries (collectively referred as the Trust and its Subsidiaries), as of and for the year ended June 30, 2023.

B) Summary of significant accounting policies – The Trust and its Subsidiaries prepare its consolidated financial statements in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP) for not-for-profit organizations. The significant accounting policies used by the Trust and its Subsidiaries are as follows:

Principles of consolidation – The accompanying consolidated financial statements include the accounts of the Trust and its Subsidiaries, as described in Note 1A. Intercompany transactions and accounts have been eliminated in consolidation.

Basis of presentation – The consolidated financial statements of the Trust and its Subsidiaries report information regarding its financial position and activities according to the following net assets classifications:

- Net assets without donor restrictions – Net assets that are not subject to donor-imposed restrictions and may be expended for any purpose in performing the primary objectives of the Trust and its Subsidiaries. These assets may be used at the discretion of the Trust and its Subsidiaries' management and the Board of Trustees.

- Net assets with donor restrictions – Net assets that are subject to stipulations imposed by donors and some grantors. Some donor restrictions are temporary in nature; those restrictions will be met by actions of the Trust and its Subsidiaries or by passage of time. Other donor restrictions are perpetual in nature, whereby the donor has stipulated the funds be maintained in perpetuity.

  Donor restricted contributions are reported as increases in net assets with donor restrictions. When a restriction expires, net assets are reclassified from net assets with donor restrictions to net assets without donor restrictions in the statements of activities. However, if a restriction is fulfilled in the same period in which the contribution is received, the Trust and its Subsidiaries report the support as without donor restrictions.

As of June 30, 2023, the Trust and its Subsidiaries' net assets with donor restrictions include the following:

Purpose restrictions:

- Federal funds that are restricted for the implementation of programmatic initiatives, and funds from private sources that are restricted for the implementation of initiatives related to recovery efforts after the passing of Hurricane Maria through Puerto Rico on September 20, 2017 and the Coronavirus Pandemic (COVID-19).

- Monies for the Scientific Investigation Fund for the Centenary of the University of Puerto Rico. This fund was created to improve the infrastructure, activities and environment of investigative activities of the University of Puerto Rico, and to facilitate the commercialization of the innovations that are developed there. Among the activities to be supported are the recruitment and retention of researchers and the promotion of technology transfer.

Perpetual in nature:

- Consist of a land, described in Note 11 that was contributed with the restriction of using it for the purpose described in Act 214, as amended, through the implementation of a Master Plan.

Accounting estimates – The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect certain reported amounts of assets and liabilities, at the date of financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Allowance for doubtful accounts – The Trust and its Subsidiaries provide an allowance for doubtful accounts equal to the amount of estimated uncollectible amounts. The estimate is based on the review of the current status of donor pledges, contributions and grants.

Investments – Investments represent a Puerto Rico government bond, private equity securities and Simple Agreements for Future Equity (SAFE) investments, that are recorded at its fair value. Net investment return (loss) is reported in the statements of activities and consists of interest and dividend income, realized and unrealized capital gains and losses, less external and direct internal investment expenses.

Fair value measurements – Fair value is defined as the exchange price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants on the measurement date. The valuation techniques are based upon observable or unobservable inputs. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect the entity's market assumptions. Market or observable inputs are the preferred source of values, followed by assumptions based on hypothetical transactions in the absence of market input. These two types of inputs create the following fair value hierarchy:

Level 1 – Quoted prices for identical instruments in active markets.

Level 2 – Quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active and model-derived valuations whose inputs are observable or whose significant value drivers are observable.

Level 3 – Significant inputs to the valuation model are unobservable.

The Trust and its Subsidiaries maintain policies and procedures to value financial instruments using the best and most relevant data available.

Property and equipment – Property and equipment are stated at cost, or if donated, at the fair value at date of receipt. Maintenance and repair costs that do not improve or extend the useful life of the respective assets are expensed as incurred. Costs of renewals and betterments which extend the useful life of the respective assets are capitalized. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the related assets, as follows:

Description	Estimated Useful Life
Furniture and fixtures	5 years
Computer and laboratory equipment	3 to 5 years
Leasehold improvements	Lease term

At the time property and equipment is sold or otherwise disposed of, the cost and related accumulated depreciation or amortization are removed from the books and the resulting gain or loss, if any, is credited or charged to operations.

Building – Is carried at cost less accumulated depreciation. Depreciation is provided on a straight-line basis over the useful life of 35 years. Maintenance and repair costs that do not improve or extend the useful life of the building are expensed as incurred while the costs of renewals and betterments which extend its useful life are capitalized. When the asset is sold or disposed of, the cost of the asset and the related accumulated depreciation are removed from the books and the resulting gain or loss, if any, is credited or charged to operations.

Accounting for the impairment or disposal of long-lived assets – The Trust and its Subsidiaries' long-lived assets held and used in operations are tested for recoverability whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. Assets are considered to be impaired if the carrying amount of the asset exceeds the sum of the undiscounted cash flow expected to result from the use and eventual disposition of the asset.

If such assets are impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds its fair value. Assets to be disposed of, other than by sale, continue to be classified as held and used until they are disposed of. Assets to be disposed of by sale are classified as held for sale in the period in which certain criteria are met and reported at the lower of the carrying amount or fair value. At the time such criteria are no longer met, such assets are reclassified as assets held and used in operations.

Land development costs – Represent costs for a land site consultation approval, certification of environmental compliance, architectural design, and other costs incurred in connection with land received by the Trust and its Subsidiaries for the construction of its facilities.

Contributions and support revenue – The Trust and its Subsidiaries mainly derive its revenues from state and federal grants, contributions received from the government, corporations, sponsors and individuals. The Trust and its Subsidiaries recognize contributions when cash, securities or other assets; an unconditional promise to give; or a notification of a beneficial interest is received. Grants, contribution, and conditional promises to give with a measurable performance or other barrier and a right of return are not recognized until the conditions on which they depend have been met. All revenues and contributions are considered to be available for unrestricted use, unless specifically restricted by the donor. Amounts received that are designated for future periods or restricted by the donor for specific purposes are reported as donor-restricted support that increases the net assets with donor restrictions class. However, if a restriction is fulfilled in the same period in which the contribution is received, the Trust and its Subsidiaries report the support as an increase in net assets without donor restrictions. The Trust and its Subsidiaries also report donor restricted contributions that were initially conditional as increases in net assets without donor restrictions if both the donor-imposed restriction and the condition are met in the same period. The Trust and its Subsidiaries has a similar policy for reporting gains and investment income that are limited to specific uses by donor-imposed restrictions and the restrictions on the gains and income are met in the same reporting period as the gains and income are recognized.

A portion of the Trust and its Subsidiaries' revenue is derived from cost-reimbursable federal and state contracts and grants, which are conditioned upon certain performance requirements and/or the incurrence of allowable qualifying expenses. Amounts received are recognized as revenue when the Trust and its Subsidiaries have incurred expenditures in compliance with specific contract or grant provisions. Amounts received prior to incurring qualifying expenditures are reported as refundable advances in the consolidated statements of financial position.

In-Kind contributions – Contributed nonfinancial assets include donated professional services, donated equipment, and other in-kind contributions which are recorded at the respective fair values of the goods or services received. There were no in-kind contributions during the year ended June 30, 2023.

Leases – In February 2016, the FASB issued new guidance related to accounting for leases, ASC Topic 842, which requires lessees to record assets and liabilities reflecting the leased assets and lease obligations, respectively, while following the dual model for recognition in statements of income requiring leases to be classified as either operating or finance. Operating leases will result in straight-line expense (similar to current operating leases) while finance leases will result in a front-loaded expense pattern (similar to current capital leases). The Trust and its Subsidiaries adopted the new standard effective July 1, 2022, as allowed, using the modified retrospective approach.

The Trust and its Subsidiaries elected the practical expedients of not reassessing whether any expired or existing contracts are or contain leases, not reassessing the lease classification for any expired or existing leases and not reassessing any initial direct costs for existing leases. In addition, the Trust and its Subsidiaries elected the practical expedient to not separate lease and non-lease components for all of our asset classes. A permitted accounting policy election was made to not apply the new guidance to leases with an initial term of 12 months or less. Those lease payments are recognized in the statement of operations and retained earnings on a straight-line basis over the lease term. As of July 1, 2022, the adoption of the standard did not result in the recognition of a lease liability or a right-of-use, or ROU, asset. A lease entered during the year ended June 30, 2023, however, was recognized under the new accounting standard resulting in the recognition of a ROU asset and a lease liability for $250,137 at the inception of the lease. The standard does not materially affect the results of operations, cash flows and liquidity. See Note 14 for further information.

In addition, under Topic 842, lessors will only capitalize incremental direct leasing costs. As a result, starting July 1, 2022, the Company no longer capitalizes non-incremental direct costs. These costs are expensed as incurred and are included within general and administrative expenses on the statement of operations.

Functional allocation of expenses and operational expenditures – The costs of providing the Trust and its Subsidiaries' programs and other activities have been summarized on a functional basis in the accompanying consolidated statements of activities. The statements of functional expenses present the natural classification detail of expenses by function. During the year ended June 30, 2023, certain costs have been allocated among the following programs and support activities:

- *Research and data*: includes expenses aimed to improve, analyze and/or strengthen the local research and development (R&D) infrastructure and the breadth of science and technology activity in Puerto Rico. It also includes support activities to strengthen science, technology, engineering and mathematics (STEM). Expenses within this function include: clinical trials, grants to support laboratory infrastructure, research grants, research institute and educational organization initiatives, grants to attract or retain distinguished researchers, studies to determine R&D, innovation, knowledge economy activity in the Island; and, salaries and professional services to support this area.

- *Public health initiative*: includes expenses incurred regarding the *Puerto Rico Public Health Trust*, an initiative established by the Trust and its Subsidiaries to act as Public Health Institute (PHI). Acting as a PHI, the Trust implements programs which aim is to improve public health capacity, systems and outcomes by fostering innovation, leveraging resources and building partnerships to improve the publics' health. Expenses within this function include: integrated vector management initiatives, farmers support, health-outcome-and-measures research and studies, and salaries and professional services to support this area.

- *Technology transfer and commercialization:* includes expenses incurred in initiatives to support technology transfer and commercialization and direct investments in technology development projects which have a clear commercialization aim. Expenses within this function include: intellectual property assistance, sponsorship, grants for technology developments; investment in technology commercialization accelerators and startup incubators, salaries and professional services to support this area.

- *Science City development*: includes non-capitalizable expenditures necessary for the on-going development and construction of sites at the Science City. These expenditures include salary and professional services to support this area, planning and assessment projects, security services to enable construction work, etc.

- *Management and administrative*: includes all administrative expenses incurred to support all functional areas as described above which are not directly allocable to any of them. These expenses include administrative staff salaries, accounting fees, depreciation and amortization, utilities, etc.

- *Fundraising*: includes expenses incurred in soliciting contributions, gifts, grants, etc. These expenses include publicizing and conducting fundraising campaigns, soliciting grants from foundations and government agencies, costs of participating in federated fundraising campaigns, preparing and distributing fundraising manuals, instructions and other materials. The Trust and its Subsidiaries did not engage in any fundraising activity during the year ended June 30, 2023.

Certain categories of expenses are attributed to more than one program or supporting function. Therefore, expenses require allocation on a reasonable basis that is consistently applied. The expenses that are allocated include mainly salaries, fringe benefits and payroll taxes, which are allocated on the basis of time and effort.

Income taxes – The Trust and its Subsidiaries are exempt from Puerto Rico income taxes under the provisions of Act 214, as amended, and from federal taxes under the provisions of Section 501(c) of the Internal Revenue Code. Accordingly, no provision for income taxes has been recorded in the accompanying consolidated financial statements.

The Trust and its Subsidiaries follow the guidance for uncertainty in income taxes issued by the Financial Accounting Standards Board (FASB). Management evaluated the Trust and its Subsidiaries' tax positions and concluded that the Trust and its Subsidiaries had taken no uncertain tax positions that require adjustments or disclosure in the consolidated financial statements.

All applicable tax returns have been appropriately filed by the Trust and its Subsidiaries. The Trust and its Subsidiaries' open audit periods are fiscal years ended June 30, 2019 to 2023.

Advertising and promotion – The Trust and its Subsidiaries charge to operations advertising and promotion costs as they are incurred. During the year ended June 30, 2023, the Trust and its Subsidiaries incurred in advertising and promotion expenses of approximately $181,000.

2) Correction of prior year net assets classification:

During the year ended June 30, 2023, the Trust and its Subsidiaries corrected the classification of the beginning net assets classification in order to properly present the funds received from the US Department of Commerce - Economic Development Administration (EDA) grant as net assets with donor restriction.

According to the grant, the funds are to be used for the construction of a building to provide space to high-technology ventures to conduct research and development and manufacturing activity for a period of 20 years from the date of its completion. Accordingly, the net assets classes as of June 30, 2022, are presented as restated in the accompanying consolidated statement of activities.

The effect of the restatement on the net assets classification as of June 30, 2022, is as follows:

Description	Net assets without donor restrictions	Net assets with donor restrictions
As previously reported	$ 105,096,819	$ 23,508,919
Funds received with purpose restrictions	(4,219,522)	4,219,522
	$ 100,877,297	$ 27,728,441

3) Concentrations of credit risks:

Financial instruments, which potentially subject the Trust and its Subsidiaries to concentration of credit risks, consist of cash deposits and accounts receivable.

The Trust and its Subsidiaries maintains its cash deposits in various financial institutions. The cash deposits, at times, may exceed the amount insured by the Federal Deposit Insurance Corporation (FDIC) of $250,000 per financial institution or the amount protected by the Securities Investor Protection Corporation (SIPC) of $250,000 per brokerage firm. As of June 30, 2023, the Trust and its Subsidiaries' cash deposits exceeded the insured limits of FDIC and SIPC by approximately $19,407,000.

For the year ended June 30, 2023, grants and contributions from state and federal entities represent approximately 78% out of total revenues. The balance due from these state and federal entities represent approximately 75% of total accounts receivable.

4) Liquidity and availability:

As of June 30, 2023, financial assets available for general expenses, that is, without donor restriction or other limiting their use, within one year of the financial position date, comprises the following:

Description	Amount
Cash	$ 21,109,811
Accounts receivable	488,982
Due from governmental entities	1,649,372
Investments	4,176,405
Endowment fund	47,201,182
	74,625,752
Less amount not available to be used within one year:	
Net assets with donor restrictions	(5,224,382)
Financial assets available to meet general expenditures over the next twelve months	$ 69,401,370

5) Investments:

As of June 30, 2023, investments consisted of the following:

Description	Cost	Fair value
Fixed income:		
Puerto Rico government bond	$ 2,044,237	$ 1,692,598
Private equity securities	1,783,807	1,783,807
SAFE investments	700,000	700,000
	$ 4,528,044	$ 4,176,405

6) Fair value measurement:

For certain of the Trust and its Subsidiaries' financial instruments, including cash, accounts receivable, accounts payable and accrued liabilities, the carrying amounts approximate fair market value due to their short-term maturities.

Below is a description of the methodology used for instruments recognized at fair value, including the classification of such transactions in accordance with the valuation hierarchy.

Puerto Rico government bond – The fair value of this bond is obtained from third party pricing service providers that use a pricing methodology based on an active exchange market and quoted market prices for similar securities. This bond is classified as Level 2.

Private equity securities and SAFE investments – The objective of these investments is to achieve current income by providing debt and equity financing alternatives to targeted privately-held companies that are mostly organized or engaged in trade or business in Puerto Rico. These investments are classified in Level 3 since its market value was determined based on unobservable inputs that are significant to the market value measurement.

As of June 30, 2023, the Trust and its Subsidiaries' investments are classified as follows:

Description	Level 1	Level 2	Level 3	Total
Fixed income:				
Puerto Rico government bond	$ -	$ 1,692,598	$ -	$ 1,692,598
Private equity securities	-	-	1,783,807	1,783,807
SAFE investments	-	-	700,000	700,000
	$ -	$ 1,692,598	$ 2,483,807	$ 4,176,405

The change in carrying values associated with investments measured at fair value on a recurring basis using significant unobservable inputs (Level 3), are as follows:

Description	Private equity securities	SAFE investments	Total
Balance at July 1, 2022	$ 1,636,208	$ 450,000	$ 2,086,208
Purchases	175,000	300,000	475,000
Conversion of SAFE investments to private equity securities	50,000	(50,000)	-
Conversion of note receivable to private equity securities	110,000	-	110,000
Realized losses	(187,401)	-	(187,401)
Balance at June 30, 2023	$ 1,783,807	$ 700,000	$ 2,483,807

The table below presents qualitative information for all assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3), as of June 30, 2023:

Description	Valuation Technique	Unobservable Input
Private equity securities	Acquisition cost	None
SAFE investments	Acquisition cost	None

7) Notes receivable:

As of June 30, 2023, the Trust is the holder of the following promissory notes:

Description	Amount
5% interest bearing promissory note, due in May 30, 2024.	$ 25,000
5% interest bearing promissory notes, convertible to shares of common stock of the issuers. The notes are due in December 2023.	125,000
5% interest bearing promissory notes, convertible to shares of common stock of the issuers. The notes were due in August 2022. The notes are currently in the process of either conversion or payment.	175,000
5.25% interest bearing promissory note, due on June 30, 2024.	74,329
5% interest bearing promissory note, due on July 5, 2023.	6,000
5% interest bearing promissory note, due on June 30, 2023.	14,086
5% interest bearing promissory note, convertible to shares of common stock of the issuer. The note is due in May 2024.	25,000

Continues…

Description	Amount
Continued…	
3% interest bearing promissory note, convertible to shares of common stock of the issuer. The note is due in December 2023.	75,000
7% interest bearing promissory note, convertible to shares of common stock of the issuer. The note is due in December 2023.	75,000
10% interest bearing promissory note, convertible to shares of common stock of the issuer. The note was due in August 2022. A repayment agreement is currently in progress.	50,000
5% interest bearing promissory note, convertible to shares of common stock of the issuer. The note was due in January 2021 and a repayment agreement is in progress.	75,000
	719,415
Less: Allowance for doubtful accounts	(300,000)
	$ 419,415

8) Endowment fund:

During the year ended June 30, 2020, the Trust and its Subsidiaries established an investment fund that has a perpetual investment horizon and is tax exempt. Its main purpose is to provide for long-term sustainable growth, while addressing any current operational expenses and those public financial responsibilities established by applicable law, rules and regulations.

The endowment fund includes funds designated by the Board of Trustees to function as endowments, including reserves created by the Trust and its Subsidiaries to assist in assuring its sustainability and its projects into perpetuity. The endowment fund might be nurtured as well of donations from individuals, private corporations and the U.S. government. Net assets associated with endowment funds, including funds designated by the Board of Trustees to function as endowments, are classified and reported based on the existence or absence of donor-imposed restrictions.

The Trust and its Subsidiaries have adopted an investment policy for endowment assets, as approved by the Board of Trustees, that attempts to provide a predictable stream of funding while seeking to maintain their purchasing power. Under this policy, total investments' return should exceed the rate of inflation, as measured by the Consumer Price Index plus 3%, net of fees, expenses and taxes. This objective should be achieved in such a manner that the fund is protected from unwarranted market risk. Actual returns in any given year may vary from this amount. To satisfy its long-term rate-of-return objectives, the Trust and its Subsidiaries rely on a total return strategy in which investments' return is achieved through both capital appreciation (realized and unrealized) and current yield (interest and dividends). The Trust and its Subsidiaries targets a diversified asset allocation and provides its managers appropriate guidelines to achieve its long-term objective within prudent risk constraints. The preferred asset mix, expressed in lower-upper limits, is: 10%-70% global equities, 10%-40% global fixed income, 0%-25% alternative investments and 0%-5% cash and equivalents.

As of June 30, 2023, the endowment fund is presented in the net assets without donor restrictions as designated by the Board of Trustees. Changes in the endowment fund for the year ended June 30, 2023, consisted of the following:

Description	Amount
Endowment fund at beginning of year	$ 44,792,997
Investment return:	
Investment income, net	2,099,356
Net appreciation	139,021
Total investment return	2,238,377
Contributions	169,808
Endowment fund at end of year	$ 47,201,182

9) Property and equipment:

As of June 30, 2023, property and equipment consisted of the following:

Description	Cost	Accumulated depreciation and amortization	Book value
Furniture and fixtures	$ 346,281	$ 159,092	$ 187,189
Computer and equipment	4,896,498	2,839,156	2,057,342
Leasehold improvements	829,068	826,013	3,055
Vehicle	59,025	27,909	31,116
	$ 6,130,872	$ 3,852,170	$ 2,278,702

10) Building:

As of June 30, 2023, building consisted of the following:

Description	Amount
Innovation Center Building - A three-story building that houses the Trust's headquarters and provides space for both, the incubation of local hi-tech startups and strategic service providers, creating a synergistic effect to accelerate the commercialization of technologies.	$ 4,632,321
Puerto Rico Environmental Quality Board's Laboratory - Building that houses the laboratory facilities of the Puerto Rico Environmental Quality Board and the laboratory facilities of the Puerto Rico Vector Control Unit.	3,558,446
Forward Center Building - A three-story building partially funded by EDA grant. In connection with the EDA grant imposed restrictions, the property shall only be used to provide space to high-technology ventures to conduct research and development and manufacturing activity for a period of 20 years from the date of its completion.	7,684,408
	15,875,175
Less: Accumulated depreciation	(1,357,191)
	$ 14,517,984

11) Land and property for research, development and infrastructure project related to science and technology:

On October 22, 2007, the Trust received prime real estate in the metropolitan area of San Juan, which includes the former Río Piedras Correctional Facilities (Oso Blanco State Penitentiary). The land and property were valued based on a market appraisal opinion report, dated October 20, 2008.

As established by Act 214, as amended, the Trust and its Subsidiaries plan to develop the land of Oso Blanco State Penitentiary site into a research park, which combines residential, retail, educational, and civic facilities with laboratory and research and development facilities with the purpose of facilitating the development of infrastructure favorable to the research and development of science and technology. Costs related to the design, development and improvements of the campus are capitalized as incurred. As of June 30, 2023, the land was restricted by donor for research, development and infrastructure project related to science and technology.

The land was restricted by donor for research, development and infrastructure project related to science and technology.

12) Construction in progress - Science City:

The Trust and its Subsidiaries' main infrastructure-related initiative is the Science City, located in a 69-acre mixed-use land located in San Juan, in a dense concentration of hospitals, universities, and other science and technology resources. The aim for the development of the Science City is to strengthen Puerto Rico's research infrastructure and enable its use as a tool to develop, attract, and retain a vibrant research ecosystem.

Since the year ended June 30, 2016, the Trust and its Subsidiaries are executing a plan of action with the ultimate goal of facilitating such an innovation ecosystem, including the identification of a Master Development Partner (MDP) to lease, finance, develop, and manage the Science City project. To facilitate the identification and attraction of a MDP, the Trust and its Subsidiaries have invested approximately $11,150,000 in critical infrastructure comprised of the construction of the Laboratory Road and major improvements for the interconnection of Highway 21 and 28 to the Science City. These projects will be further developed and finalized after the identification of the MDP.

13) Rental income:

The Trust and its Subsidiaries lease building spaces under operating lease agreements. The lease agreements are for periods of one year with a renewal option for an additional year on a month-to-month basis.

In addition, as of June 30, 2023, the Trust and its Subsidiaries lease a facility for two (2) years expiring during the year ending June 30, 2025. The monthly rental payments are approximately $21,000.

As of June 30, 2023, future minimum lease payments to be received from these agreements during the remaining non-cancellable term of the lease is as follows:

Year ending June 30,	Amount
2024	$ 260,100
2025	252,000
	$ 512,100

For the years ended June 30, 2023, revenues on rental agreements amounted to approximately $282,000.

14) Leases:

The Trust and its Subsidiaries lease an office space located in Ponce, Puerto Rico, under an operating lease agreement expiring on December 31, 2025. The remaining term of the agreement calls for monthly rental payments of $7,500.

For the year ended June 30, 2023, the component of the lease cost is as follows:

Description	Financial Statement Classification	Amount
Operating lease cost	Program and services-Public health initiative	$ 37,648

The weighted average remaining lease term and discount rate for the Trust and its Subsidiaries' operating lease were as follows as of June 30, 2023:

Description	Years / Discount Rate
Weighted-average remaining lease term in years	2.5
Weighted-average discount rate	3.5%

As of June 30, 2023, maturities of lease liability for the operating leases are as follows:

Year ending June 30,	Amount
2024	$ 90,000
2025	90,000
2026	45,000
Total lease payments	225,000
Less: Imputed interest	(8,914)
Present value of lease liability	$ 216,086

For the year ended June 30, 2023, total rent expense amounted to approximately $603,000.

15) Retirement plan:

The Trust and its Subsidiaries have established a defined contribution retirement plan (the Plan) that covers all full-time employees who have reached 21 years of age, without requiring eligibility service requirements. Under the Plan, participants may contribute an amount not exceeding $15,000 per year. The Trust and its Subsidiaries is not required to make matching contributions but reserves its right to start making matching contributions based on a maximum of 3% out of each dollar contributed by the employee, up to 10% of compensation. The Trust and its Subsidiaries may contribute a discretionary amount in addition to the matching contribution for all eligible participants. Amounts contributed by the Trust and its Subsidiaries are 100% vested after an employee completes one (1) year of service. Total contributions made by the Trust and its Subsidiaries during the year ended June 30, 2023, amounted to approximately $220,000.

16) Commitments:

The Trust has entered in certain commitments to invest in various private equity funds. These commitments and the investment as of June 30, 2023, are as follows:

Entity	Commitment	Investment
Parliament Credit Opportunities Fund, LLC	$ 500,000	$ 350,000
Semillero Investment Fund I, LLC	500,000	499,620
Semillero Investment Fund II, LLC	1,000,000	411,142
Bluhaus Small Business Fund, L.P.	250,000	187,500
Grupo Guayacán, Inc.	1,000,000	12,893
	$ 3,250,000	$ 1,461,155

17) Supplemental disclosures for the statement of cash flows:

A) Non-cash from investing and financing transactions – During the year ended June 30, 2023, non-cash investing and financing activities consist of the following:

Description	Amount
Adoption of ASC 842:	
Right-of-use asset for operating lease	$ 250,137
Lease liability	$ 250,137
SAFE investments converted in private equity securities	$ 50,000
Note receivable converted into investment in private equity securities	$ 110,000
Unpaid additions to building charged against accounts payable	$ 368,638
Unpaid additions to land development charged against accounts payable	$ 226,403

B) Other cash flows information – During the year ended June 30, 2023, the Trust and its Subsidiaries made no interest payments.

18) Subsequent events:

In July 2023, the US Department of Health and Human Services (US DHHS)'s Centers for Disease Control and Prevention awarded a yearly grant amount of $750,000 to implement a project titled *Strengthening Training, Evaluation, and Partnerships in the Prevention and Control of Vector-Borne Diseases*. The program expires in June 2028.

In August 2023, the Trust and its Subsidiaries signed an agreement with the Puerto Rico Department of Economic Development and Commerce (DEDC) to implement an initiative titled *"Proyecto de Innovación Digital Educativo"* with the aim of introducing Science, Technology, Engineering and Math (STEM) projects and/or classes into local school curriculums. The agreement provides a total of $1,919,710 in funds and expires on June 30, 2024.

In September 2023, the US DHHS's Centers for Disease Control and Prevention awarded a yearly grant amount of $500,000 to implement a project titled *Caribbean All Hazards Program to Building Resilience Against Climate Effects for the Promotion and Protection of Human Health*. The program expires in September 2025.

Subsequent events were evaluated through October 31, 2023, the date on which consolidated financial statements were available to be issued.

IMPACT REPORT
Parallel18 and Colmena 66



Puerto Rico
Science, Technology
& Research Trust

Colmena66
Tu Camino Empresarial

Status Report of Puerto Rico's Entrepreneurial Community

IMPACT REPORT **2022**



A PROGRAM OF

Puerto Rico Science, Technology & Research Trust

POWERED BY

SOURCE LINK®

Thank you for supporting the entrepreneurial community!

DEPARTAMENTO DE DESARROLLO
ECONÓMICO Y COMERCIO
DDEC

Oriental

You could bee part of it too.
Beecome a sponsor bee to the hive!

Colmena66
Tu Camino Empresarial

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Working together to drive equitable and inclusive entrepreneur-led economic development

Executive Summary

With the goal of continuing to inform the ecosystem and provide actionable data, we previously launched the Status Report of the Entrepreneurial Community in Puerto Rico. Furthering our analyses and exploring new topics, in this 2022 report we include impact metrics for the year from efforts such as Network Meetups, the Xpand and Pulso programs, Levanta Tu Negocio PR, Boricua Entrepreneur Fest (BE Fest) 2022, and more.

Responding to the community's interest for deeper insights about entrepreneurs, we share the results of our Annual Entrepreneurship Survey 2022. We delve into who is starting and growing businesses, the types of businesses being formed, the impact they have and the gaps we must collectively address; such as, crisis preparedness and access to capital. We also include deeper insights about special interest groups, specifically Females, Afro-Caribbeans, Adults 50+, and the LGBTQ+ community. Finally, we share the results of our Annual Resource Partner Survey 2022 where we explore the sectors and regions the entrepreneurship community serves, the gaps they have identified and the types of support they need as organizations.

With this report we expect to continue highlighting the stories and challenges our community faces and how we have all been working together to drive equitable and inclusive entrepreneur-led economic development.

Colmena66
Tu Camino Empresarial

The Queen Bee:
A Message from our CEO

I am proud that as the leading innovation ecosystem integrator, Colmena66 is presenting the Status Report of the Entrepreneurial Community in Puerto Rico for 2022. As the first step for many potential entrepreneurs and the first stepping-stone within the Trust's Entrepreneurship Pillar, Colmena66 is focused on building an entrepreneurial community that helps entrepreneurs start and grow successful businesses, drive innovation and foster sustainable economic activity on the Island. In the last year, Colmena66 reached 10,515 searches on its Network Navigator, delivered 472 counseling hours, and facilitated 3,630 referrals to the Resource Network, serving 2,933 entrepreneurs. Colmena66's success is evident in its ranking among the top affiliates of the 80+ affiliate national Source Link® network on key performance indicators, such as network access and counseling hours.

Some of the many significant contributions of the program during 2022 were: The launch of Xpand, a program developed in partnership with Parallel18 and funded by Banco Popular Foundation, to support innovative startups with over three years of operation, annual revenue of $250K or more, and the basic infrastructure to begin their expansion process. Colmena66 co-launched Pulso, a program led by Foundation for Puerto Rico and funded by the SBA Community Navigator Pilot Program that supports entrepreneurs in the northern region of the island. With the impact of Hurricane Fiona in September, Levanta Tu Negocio PR was reactivated and Colmena66 was able to quickly gather disaster data and share its insights with the ecosystem, helping deploy resources and participate in regional business support brigades. Colmena66 also hosted the Boricua Entrepreneur Fest 2022, Puerto Rico's largest entrepreneurship education event, gathering over 1,200 participants with over 100 speakers and mentors, 50+ educational sessions, networking, 70+ Resource Expo, and more.

In this report, Colmena66 shares valuable data about the community from their 2022 Annual Entrepreneurship Survey and Resource Partner Survey. Compared to 2021, the Annual Entrepreneurship Survey participation increased 47% and the Resource Partner Survey increased 27%. Leveraging this data, they provide deeper insight into the topics covered in their 2021 report and highlight the collective impact the entrepreneurial community has had. This is actionable data for stakeholders and decision-makers in various sectors of the ecosystem to make data-backed decisions on programming, funding, and policy, among others.

At the Puerto Rico Science Technology and Research Trust, we recognize the important role that entrepreneurs play in transforming the economy. Colmena66's insights, consistently updated resource hub, events, and projects have helped support entrepreneurs and build the entrepreneurship ecosystem on the Island. This report provides a glimpse into the impact the program has had and highlights areas where more resources are needed to continue building a more equitable and inclusive entrepreneurship ecosystem in Puerto Rico.

Eng. Luz Crespo Valentín, CEO

Puerto Rico
Science, Technology
& Research Trust



A Message from the Bees:
Welcome

We are thrilled to present the Colmena66 2022 Status Report of the Entrepreneurial Community in Puerto Rico, which provides a comprehensive view of our role as an entrepreneurship ecosystem builder, tools and projects developed, and the collective impact of our entrepreneurship community. The report reflects our ongoing commitment to supporting entrepreneurs, bridging gaps and strengthening multisector collaboration for the advancement of equitable and inclusive entrepreneur-led economic development.

We are convinced of the vital role that entrepreneurs play in creating wealth, driving economies forward, and shaping our communities. We also recognize that an inclusive and equitable entrepreneurial ecosystem requires more than just entrepreneurs, and that is why we build ecosystems: communities that support entrepreneurs. Together we are creating the invisible infrastructure to support them, including tools and access ramps so that anyone can participate, grow, and thrive.

The year 2022 was a transitioning period for all of us, as pandemic restrictions eased, new challenges arose that presented us with opportunities to adapt and come together. Our aim with this report is to highlight the stories and collective impact of the community, furthering our understanding of the challenges we face and how we may overcome them.

We believe that the future of Puerto Rico's entrepreneurial ecosystem is bright and optimistic, and we are grateful to our partners for their continued support and hard work. The spirit of collaboration and trust has been key to developing solutions that benefit our communities, and we are eager to see where we go next.

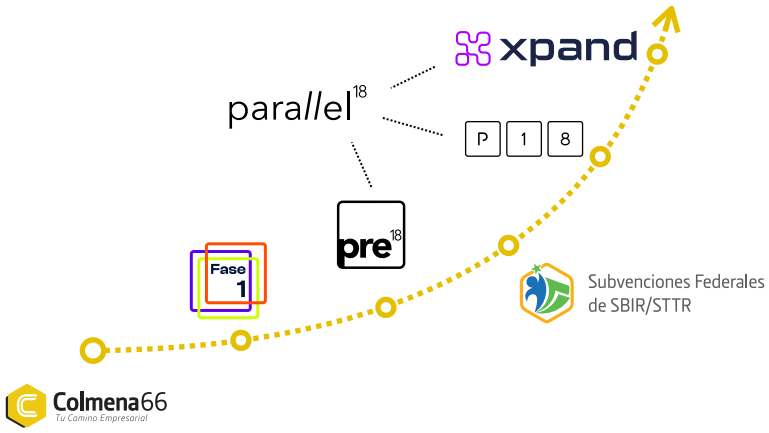
We trust that the data and stories presented in this report will prove both engaging and valuable to you, and that the resources provided therein will be invaluable to all types of decision makers as they shape public policy, deploy philanthropic funds, design workforce development and technical assistance programs, and invest. Thank you for your collaboration and contributions during the past year, we look forward to continuing our work together.

The Colmena66 Team



The honeycomb:
Where the entrepreneurial beehives are

The Trust's entrepreneurship pillar provides a blueprint to support businesses throughout all their stages of development, stimulate their growth and foster economic development. Entrepreneurship is essential, it fuels innovation and creates new jobs, industries, and markets. It also has the potential to improve our lives, communities, and countries. As business community builders, we strive to serve entrepreneurs effectively, share data to inform the ecosystem, and convene partners to address ecosystem gaps.



COLMENA66 provides primary business assistance for entrepreneurs who are looking to start or grow their business.

- Resource Mapping
- Understand needs
- Connect with resources
- Creation of educational content
- The resource hub for entrepreneurs along their journey

FASE1 provides universal access to entrepreneurial education and incubates ideas that can turn into successful businesses.

- 6 free and on-demand educational modules
- Incubation program
- Workshops and mentoring sessions

PRE18, a pre-acceleration program focused on helping innovative, early-stage Puerto Rican startups that have global potential to get to market.

- $25,000 grant
- Expert mentoring
- Access to corporate network through P18 Connect

PARALLEL18 offers entrepreneurs from all over the world access to high-quality business training, funding, and networks to help them scale globally.

SBIR PROGRAM provides expert technical assistance and matches innovative small business with grant writers to access federal funding for high-risk research and development.

XPAND is a post-acceleration program for Puerto Rican based founders in second stage that have been operating for at least 3 years, generating $250K annually and seeking to expand.

- Accompaniment from mentors and other founders
- Talent Bank Access
- International Investor Network
- Funded by Banco Popular

Colmena66 is the first step for any entrepreneur looking to start or grow a successful business in Puerto Rico. Through our services, they can easily navigate the entrepreneurial community, access educational content, and receive personalized support. Our events help entrepreneurs network with peers, find resources, and explore business opportunities to advance their business development. As an ecosystem integrator, we work closely with other programs within the Trust and with Entrepreneurship Support Organizations (ESOs) in our Resource Network to connect entrepreneurs with the right resource at the right time.

Our resource partners can also leverage our events, communication channels, and data to amplify their reach and improve their services. Entrepreneurship Support Organizations can network, educate their audience, and join ecosystem wide efforts through Resource Network Meetups, the Boricua Entrepreneur Fest, Tu Camino Empresarial, regional events, and many more. We share their new opportunities, events, and programs through our website, social media, and newsletter. Partners can also be better informed of trends and impact in the ecosystem with the data we collect, analyze, and publish so they can make data-backed decisions.

Building effective business communities requires commitment to see long-term results, with our knowledge we aspire to inform key decision makers about the progress made and the work that needs to be done to continue improving the circumstances needed to start and grow successful businesses in Puerto Rico.

An essential part of the hive:
The buzzy bees

Just like the bees in the hive, this committed, highly skilled and passionate team has grown over the years. We continue to strengthen our work and address new challenges in the entrepreneurial community.



Denisse Rodríguez

Executive Director



Samuel Merced

Program Manager



Natalia Alicea

Senior Marketing Strategist



Gian Ortiz

Business Development Specialist



Nadya Solá

Entrepreneurship Strategist



Nackira Castro

Lead Creative Designer



Ibanaliz Santoni

Entrepreneurship Strategist



Paola Maldonado

Entrepreneurship Strategist



Noriana Meléndez

Community & Content Specialist



Bridgette Padilla

Entrepreneurship Strategist

What drives our buzz at the hive

We believe in the transformative power of entrepreneur focused economic development that is equitable and inclusive, necessary to build generational wealth, reduce poverty and improve the quality of life in our communities.

Vision

Anyone in Puerto Rico can start and grow a business.

Mission

To facilitate entrepreneurship by connecting and building the entrepreneurial community.

High Impact Goals

1. Catalyze and facilitate access and resources
2. Build and connect the entrepreneurial community
3. Create and Drive innovation

Building the Hive through the years:
Our growth

We have developed multiple initiatives to continue advancing equitable and inclusive entrepreneur-led economic development, support entrepreneurs during and after crises, foster networking and collaboration, educate the community, provide accompaniment to high-growth startups, and much more.

2016

Launch with 160 collaborators in our network

2017

Network Meetups

Levanta Tu Negocio: Hurricane María

Shop&Hire

PRSTRT Co-Working Space

2018

Map unveiling & first regional tour

2019

First Boricua Emprende Fest

SBIR/STTR Committee: SBIR Road Tour

Agribusiness Network Meetup

Tu Camino Empresarial: Agro Edition

Personalized Action Plan

2020

Levanta Tu Negocio: Earthquakes

Levanta Tu Negocio: COVID-19

Recovery Guide: COVID-19

SBIR Webinar Series

Boricua Emprende Fest Virtual: eCommerce Edition

Refuerzo PyME

Empresarios al Día

2021

Incentives Series

Acércate al Grant: Phase 0

SBA Lab-to-Market: Super Connector Award

SBIR Growth Accelerator Fund Competition Winner

Boricua Emprende Fest Virtual

2022

Pulso – SBA Community Navigator Pilot Program

Xpand launch

Lunch and Learn, San Juan

Report on the State of Puerto Rico's Entrepreneurial Community 2021

Levanta Tu Negocio: Huracán Fiona

Boricua Emprende Fest 2022

Through the years we have:

Served **17,000+ entrepreneurs**
Grown our network to **270+ organizations**
Provided **28,000+ referrals**

Making the honey:
One resource at a time

Colmena66 is the one-stop shop to help entrepreneurs navigate community resources. We are the only organization in Puerto Rico that works with all types of businesses, at any stage. As the first step for many entrepreneurs who are looking to start or grow their business, we help find answers to any business question, develop action plans and foster connections to enable them to reach their goals.



Call Center
Entrepreneurs can call us with any question they have about their business. Our team takes the time to understand their needs and share the most accurate information.



Entrepreneurial Action Plan
A checklist guide that takes entrepreneurs from the ideation stage all the way to marketing and improving their sales.



Blogs
We partner with industry experts to bring entrepreneurs the latest on resources, initiatives and their frequently asked questions, in Spanish.



Events Calendar
A space where we share events, conferences, workshops and more happening in the ecosystem, making sure entrepreneurs get access.



Step-by-Step Guides
We do the research and provide easy to follow steps for addressing business needs, planning, access to capital, marketing and much more.

Spreading the honey:
Resources for the community

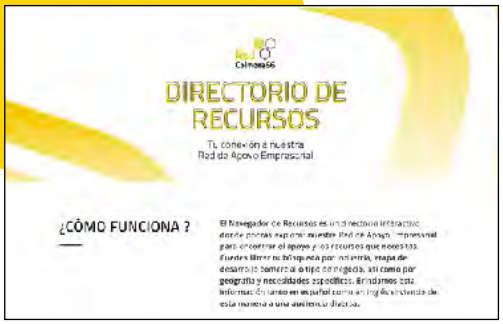
Tu Camino Empresarial Map



A map where you can easily identify the resources available to start or grow your business, according to the type of company and business stage in which you are.

Start your entrepreneurial path!

Resource Navigator



An interactive resource directory where entrepreneurs can search for services and resources from our 270+ partners according to their needs and business stage.

Start searching!

The Weekly Buzz



A convenient and curated weekly update where we summarize new opportunities and resources for entrepreneurs and share all the events taking place each week

Add honey to your mailbox!

Business Development Opportunities



New funding opportunities, capacity building and technical assistance programs are researched and organized by business stage and requirements to help you apply before the deadline and take your business to the next level.

See what's new!

The Beehive:
Our Community Impact

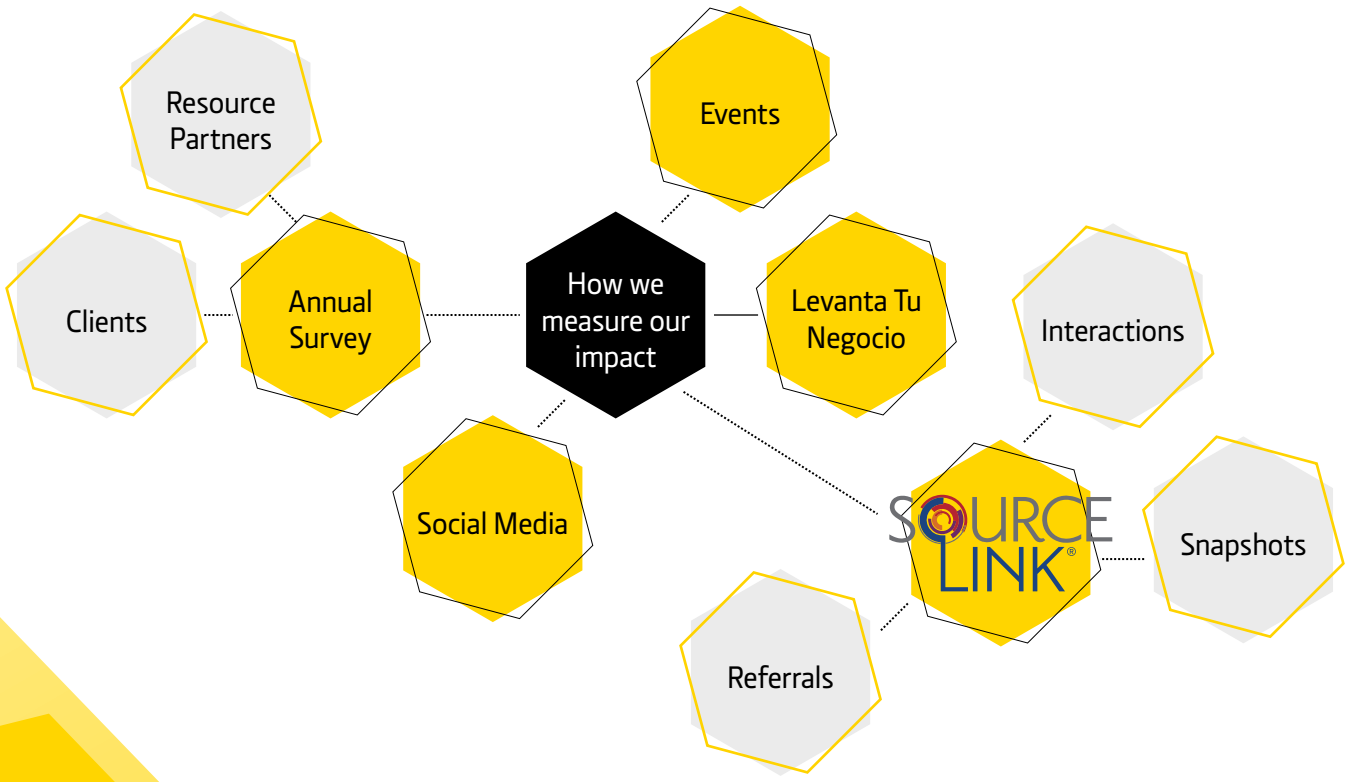


Measuring our honey:
The consistency

As our entrepreneurial community continues to progress, accurate and accesible information continues to be a crucial asset for decision making processes at all levels. As entrepreneurial community builders, we share this responsibility to help inform stakeholders about the challenges, efforts and progress being made by the community.

We know that a top priority for Puerto Rico's ecosystem during the next years is gathering and sharing actionable data. This report serves to share insights about the entrepreneurial community and the collective impact of our resource partners. Learn more about our research and insights here.

To achieve this, we gather data through our client relationship manager (CRM) SourceLink® Pro, social media, events and our annual surveys. With these strategies we've compiled information on more than 17,000 entrepreneurs since 2016.



How we rank with other beehives

Throughout the years, Colmena66 has improved its offering and ranked among the top SourceLink® affiliates. We believe that in the following years Puerto Rico's entrepreneurship ecosystem will become a case study and a great example of equitable and inclusive entrepreneur-led economic development for other island nations, various regions across the United States, and the world.

Network Access

Entrepreneurs Seeking Assistance through **Hotline and/or Email**:

2,933

Rank: 1 of 76
Affiliates using SourceLink Pro

Searches Using Resource Navigator

Total Searches through the **Resource Navigator** on the Web:

10,515

Rank: 7 of 30
organizations using The Resource Navigator

Counseling Hours

Counseling Hours Provided:

472

Rank: 1 of 79
Affiliates using SourceLink Pro

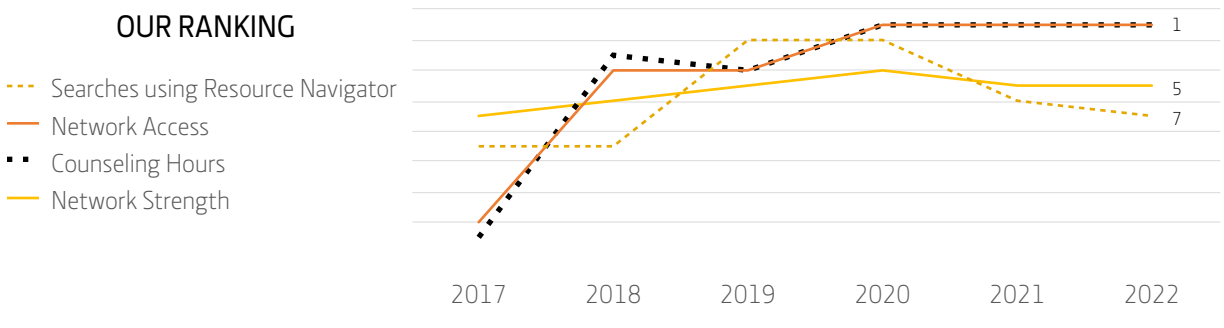
Network Strength

Resource Navigator Profiles:

272

Rank: 5 of 78
organizations using The Resource Navigator

OUR RANKING



We had a buzzy year in the Hive

Recovering from the COVID-19 pandemic and most recently having been hit by Hurricane Fiona, entrepreneurs in Puerto Rico have been dealing with lingering economic adversities such as inflation and labor shortages for which they continue to seek support.

Colmena66 saw a decrease in the number of unique entrepreneurs served, from 3,072 individuals served in 2021 to 2,933 in 2022. However, 9% of previously served clients in 2021 were supported again in 2022.

2,933
Entrepreneurs Served

10,515
Resource Navigator Searches

3,630
Referrals

472
Counseling Hours

9.4/10
Average Rating of Service (Survey)

279
Returning Entrepreneurs from 2021

Our Step-by-Step Guides and downloadable content help entrepreneurs get things done, from business planning to e-commerce, and much more.

The most requested resources during 2022

333
Personalized Action Plans

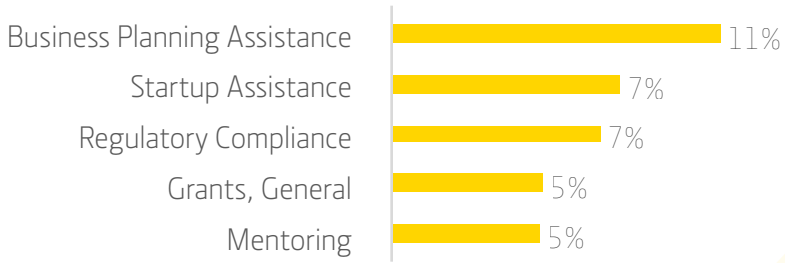
273
Commercial Registration Guide Downloads

309
Tu Camino Empresarial Downloads

226
Tu Camino Agroempresarial Downloads

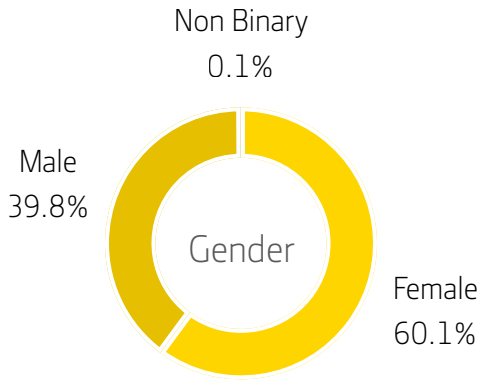
Business Planning Assistance was the most requested type of assistance in 2022 from entrepreneurs contacting Colmena66, remaining in the top position as in 2021. More entrepreneurs requested assistance with grants in general and mentoring during 2022 when compared with 2021, when most businesses had requested Technology grants and Loans.

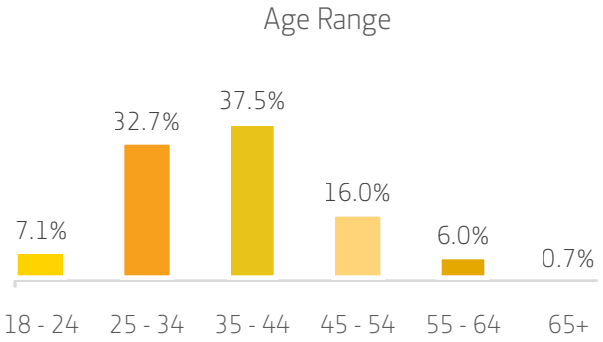
Top 5 assistance requested in 2022 (%)



The bees that kept us buzzy

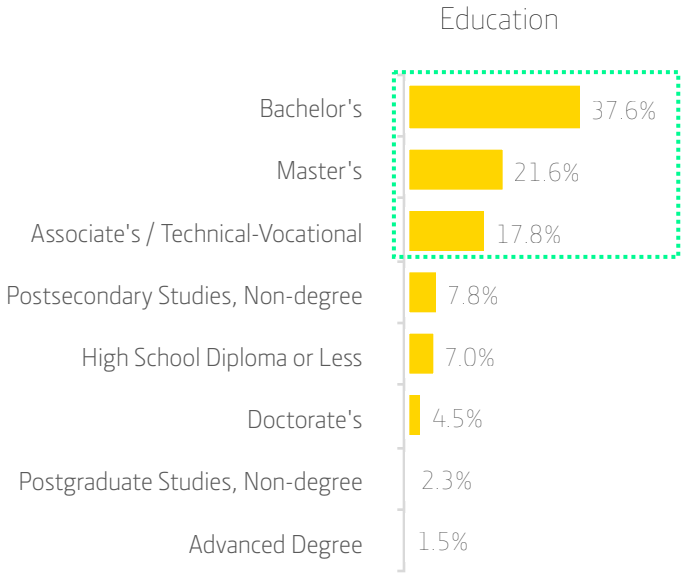
To learn about Puerto Rico's entrepreneurial ecosystem and make decisions that empower our entrepreneurs, Colmena66 uses SourceLink® Pro as a Client Relationship Manager. The platform, which also serves as a decision-making engine, connects and tracks entrepreneurs through every point of contact with our organization to streamline data collection and reporting efforts.





Approximately 2 out of every 3 entrepreneurs served in 2022 identified as female, with a large proportion seeking support with Business Planning or Startup Assistance, similar to the 2021 results.

Individuals between the ages of 25 and 44 represented 70% of all entrepreneurs served in 2022. We saw a notable 12-point increase in the 45 – 54 age segment compared to 2021.



As a continued trend, individuals with Associate's, Bachelor's and Master's degrees are those who most commonly contact Colmena66 for business support.

Top Bachelor's Degree Holder Profiles by Gender and Age that contacted Colmena66:

13%

Female

35–44 Years old

Bachelor's Degree

17%

Male

25 – 34 Years old

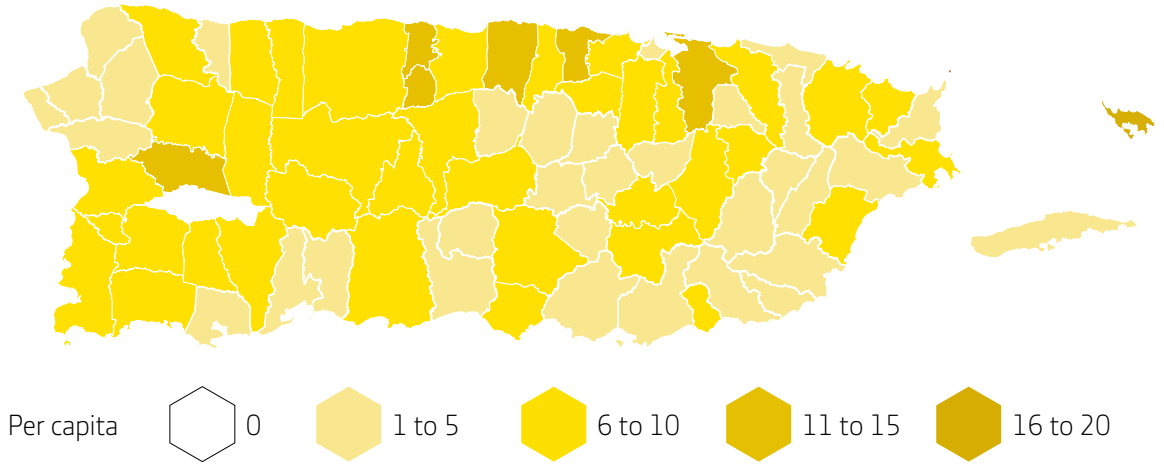
Bachelor's Degree

Pollinating at 100x35

In 2022, Colmena66 served entrepreneurs in 77 of 78 municipalities across the island. The majority of these individuals were located in the San Juan Metropolitan Area, including Bayamón, Carolina, and Guaynabo. Other large portions of individuals were located in Ponce, Caguas, and Arecibo.

When we compared the number of entrepreneurs served per every 10,000 residents in the municipalities, we had the most reach in Culebra, Las Marías, Dorado, Florida, San Juan, Barceloneta, and Vega Baja..

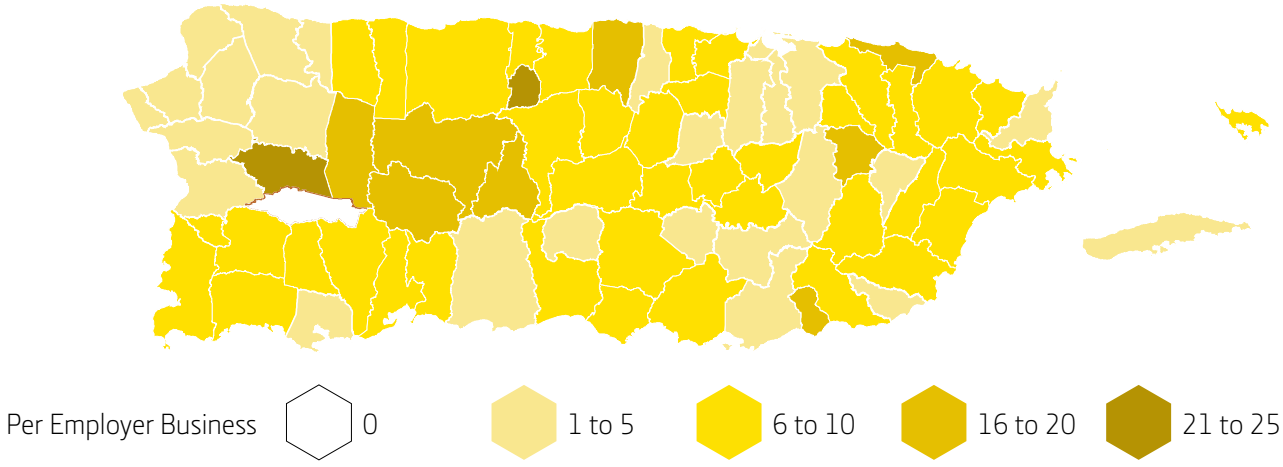
People served relative to the Per Capita Index



* Numbers are at a rate of 1:10,000 municipal residents.
Source: According to US Census Data, American Community Survey, 2021

When we compared the number of entrepreneurs served per every 100 employer businesses in the municipalities, we had the most reach in Florida, Las Marías, Jayuya, Lares, and Arroyo.

People served relative to Employer Businesses by Municipality



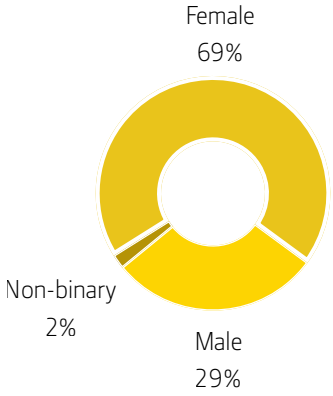
* Numbers are at a rate of 1:100 employer businesses in each municipality
Source: According to US Census Data, Economic Survey 2020

In the buzz

We have built a robust communications platform to reach entrepreneurs where they are. Our channels help communicate new opportunities and resources effectively and timely as a result of the trust and commitment to our audience. Likewise, our partners achieve great results by leveraging our platform to support their outreach strategies.

21.6K
Followers

34%
35 – 44 years old



Top Content

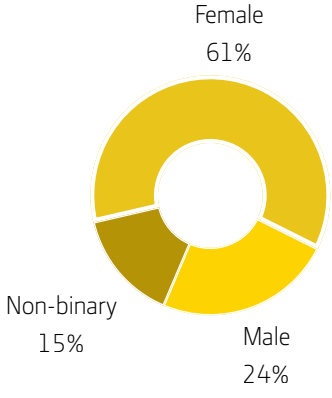
"Pulso – Impulsa tu Agronegocio" workshop event

Levanta Tu Negocio PR – FB Live with the Department of Economic Development and Commerce about disaster relief resources after Hurricane Fiona

"Pulso – Próximos eventos" agribusiness and access to capital workshops and networking events

8.6K
Followers

40%
25 – 34 years old



Top Content

BE Fest 2022 invitation from our Executive Director Denisse Rodríguez.

BE Fest 2022 "behind the scenes" reels with our Senior Marketing Strategist Natalia Alicea.

Recap – A successful San Juan Lunch and Learn workshop and networking event

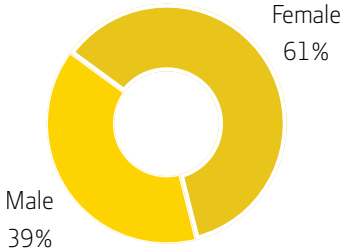
1.5K
Followers

Top Post

Recap – Status Report of Puerto Rico's Entrepreneurial Community 2021 Network Meetup

1.3K
Followers

38%
25 – 34 years old



We have been everywhere!

Bees love teamwork!

In 2022, we pollinated the island together with Resource Partners and the community in approximately 62 events. Here are some of our highlights:



San Juan Lunch & Learn

March 24, 2022

Denisse Rodríguez in the kickoff event in collaboration with the San Juan Municipality.



Xpand Launch

April 21, 2022

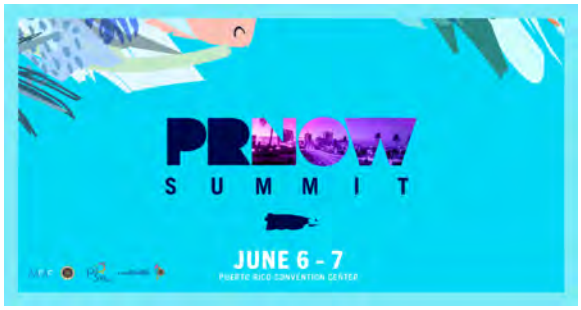
A community-driven post-acceleration program designed to support innovative companies in a growth-stage, funded by Banco Popular.



Pulso Onboarding

August 17, 2022

Onboarding to the companies of the second cohort of the Pulso Program with Foundation For Puerto RIco, INprende, Centro para Emprendedores, Brands of Puerto Rico and Latino Economic Development Center.



PRNOW Summit 2022

June 6-7, 2022

Denisse Rodríguez participated as a panelist in a conversation about economic development where she focused on equitable and inclusive entrepreneur-led strategies.

We have been everywhere!



Report of the Status of the Entrepreneurial Community in Puerto Rico

August, 31, 2022

First event to launch the Report for the Colmena66 Resource Network public policy decision-markers, and the press.



Ecosystem Building Leadership Project

September, 8-9, 2022

Denisse Rodríguez and Samuel Merced were invited to Indianapolis for the Ecosystem Building Leadership Project led by InBIA and funded by the Kauffman Foundation. Seventy (70) entrepreneurship ecosystems builders came together to support the construction of pilot projects and resources that will continue developing ecosystem building as a new field of work and study.



Women Economic Forum

November, 17, 2022

Denisse Rodríguez, Colmena66, participated in the panel "Aprende a Emprender" , together with Dr. Javier Hernández, Universidad Sagrado Corazón, Dr. Gloria Viscasillas, Echar Pa'lante and Alex Rodríguez, Universidad Interamericana.



Boricua Emprende Fest 2022

December 6, 2022

First face-to-face event after 2 years as a virtual format. More than 1,200 people attended.

Bee part of the community!

Support the Hive here

Expanding our Beehive

PULSO

Small Business Support Program

In 2022, Foundation for Puerto Rico received a $1 million grant from the SBA Community Navigator Pilot Program to design a program that provides tools and resources for small business in the visitor economy in the northern region.

"...Foundation for Puerto Rico will impleMat this program together with Colmena66, Centro para Emprendedores, INprende, Brands of Americas and Latino Economic Development Center, which will provide technical assistance and companionship using a tiered methodology." Outlet: News is my Business


NimB

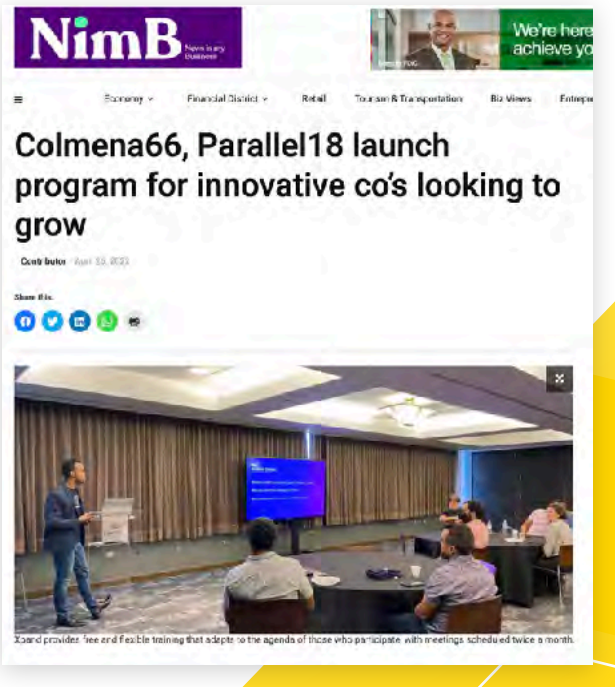
Foundation for PR lands $1M SBA grant to support 150 businesses

From left: Josue E. Rivera, district director of the SBA in Puerto Rico and the USVI and Marlene Cintrón, who oversees the federal agency's operations in Puerto Rico, the USVI New York, and New Jersey.

xpand

Together with Parallel18 and funded by Fundación Banco Popular, we launched Xpand. A community-driven post-acceleration program designed to support innovative companies in their growth-stage.

Outlet: News is my Business


NimB

Colmena66, Parallel18 launch program for innovative co's looking to grow

Xpand provides free and flexible training that adapts to the agenda of those who participate with meetings scheduled twice a month.

Expanding our Beehive



Se reactiva plataforma para ayudar a los pequeños negocios tras el paso del Huracán Fiona

Visita a comercios afectados en Caguas.

Colmena66, un programa del Fideicomiso para Ciencia, Tecnología e Investigación de Puerto Rico (FCTIPR), convocó a la comunidad de apoyo empresarial para reactivar la plataforma de recuperación ante desastres para Pymes, Levanta tu Negocio Puerto Rico.

LEVANTA TU NEGOCIO PR

After Hurricane Fiona, the business community's disaster recovery platform, Levanta tu Negocio PR, was promptly reactivated.

With this platform and the data collected, opportunities were identified from which business support organizations could create solutions for affected businesses.

Outlet: WIPR



BE fest 2022
Boricua Emprende Fest

After 2 years of doing the virtual event, we were able to host it in person with more than 1,200 people.

We had 14 mentions in the radio, written press, and other media platforms.

Outlet: Metro



Pollinating the community: Strengthening the hive

Resource Network Meetups

Trust and action are at the center of successful entrepreneurial ecosystems. We organize periodic meetups with the Resource Network to foster open dialogue, collaboration, and collective action.

In 2022 we held 3 meetups to share resources among partners and continue strengthening relationships within the ecosystem focused on:



February Meetup

New goals, programs and opportunities for 2022



March Meetup

Developing an inclusive entrepreneurship ecosystem in Puerto Rico with Dr. Dell Gines*



August Meetup

Status Report of Puerto Rico's Entrepreneurial Community 2021

*Dr. Dell Gines is Vice President of Partnerships, Advisory Services, Thought Leadership at the International Economic Development Council. Learn more about his work here.

Resource Network Meetups



These events helped connect and inform stakeholders in the ecosystem, receiving a very high satisfaction rating.

220+
Network participants

4.7/5
Satisfaction rating

SAN JUAN LUNCH & LEARN

Office for Economic Development and Tourism

Understanding entrepreneurs' need for connection, especially after the isolation period brought on by the pandemic, we came together with the City of San Juan's Office for Economic Development and Tourism to design this educational series, comprising capacity building workshops and networking, based on our entrepreneurship data.

EVENTS

1. **March** – Women Entrepreneurs: Success Stories and How to Start Businesses in San Juan
2. **August** – Access to Capital Opportunities
3. **December** – Emergent Technologies (BE Fest 2022 plenary session)

98%
Would participate in future events

100%
Learned of new ecosystem resources

4.7/5
Satisfaction rating



Ecosystem Building Leadership Program

Entrepreneurial ecosystem building is an emerging approach in economic, community, entrepreneurial and workforce development. The EBLP, funded by Kauffman Foundation and operated by InBIA, is paving the road forward by uniting select ecosystem builders tasked with defining the future of Ecosystem Building as a practice and professional field.

Denisse Rodríguez was invited to be part of the Collaborative Advisory Group and Samuel Merced serves as a member of the Network Health working group. Both participated in a two-day working session in Indianapolis during September 2022. They were able to connect with fellow ecosystem builders throughout the US, learn about new áreas of work in the field, and share experiences about ecosystem building in Puerto Rico.







PULSO

Small Business Support Program

PULSO is part of SBA's Community Navigator Pilot Program, designed to provide small businesses with tools and resources to survive, grow and expand. Through this program, Foundation for Puerto Rico and its partners guide small businesses in the northern region of the island through a multi-stage business development path.

Deploying a Hub and Spoke model, Foundation for Puerto Rico partnered with Colmena66, Centro para Emprendedores, INprende, Brands of Americas, and the Latino Economic Development Center. Together we help businesses identify needs and ecosystem resources, learn about and comply with regulatory requirements, develop or improve their business plan, strengthen their marketing and social media strategies, and prepare them for the access to capital process. This includes workshops, capacity building, mentoring and technical assistance throughout the different stages.

Hub and Spoke model



PULSO

Small Business Support Program

Our Collective Impact

1,158+
Unique clients trained

100+
Training hours (Workshops)

$283K+
Approved in loans and grants

$566K+
Requested in loan and grant applications

1K+
Individual counseling hours



PULSO

Small Business Support Program







At Colmena66 we believe PULSO proves to be a great example of how collaborative networks can amplify the impact of individual stakeholders while strengthening programmatic offerings with federal funding and simultaneously helping government accomplish its mission. With this program, multiple organizations were able to pursue federal funding opportunities collectively and work together to benefit the entrepreneurial community, a definite win-win situation. Through this process we were able to work closely together to address challenges, share best practices, develop institutional knowledge, and provide entrepreneurs much needed resources and services. As our ecosystem continues to develop, this type of collaborative model can help stakeholders leverage resources (such as federal funds for disaster relief) and maximize the impact individual entities have on our own.

POWERED BY

SBA

U.S. Small Business Administration

Funded through a grant with the U.S. Small Business Administration. All opinions, conclusions, and/or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the SBA.

xpand



Xpand is a novel program powered by Parallel18 and Colmena66, funded by Banco Popular, to support innovative second-stage startups with more than three years in operation, generating over $250,000 in annual revenue, and with the basic infrastructure to begin their expansion process and sustain their growth. Due to Puerto Rico having a young emergent ecosystem, there is a need for founders at these stages to connect and exchange resources for growth.

Program Objectives

- Increase participant knowledge in access to capital through investment management, bank financing alternatives and commercial connections.
- Increase participant knowledge in exports through market research resources.
- Provide specialized mentoring and accompaniment.

Xpand 2022 cohort profile

17
Startups

58%
Actively exporting

41%
Female-owned

300+
Employees

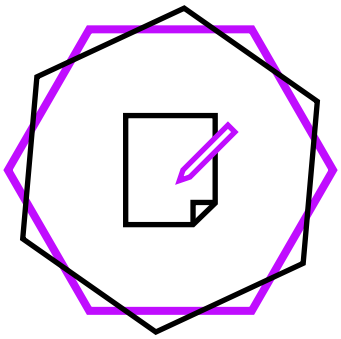
$7.5M
In solicited investment

$1.4M
Average annual revenue

These startups were able to connect with 19 mentors and resources, receiving 36 counseling hours.

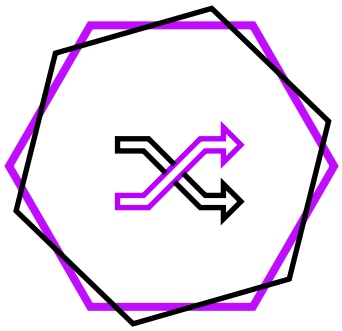
THE TOPICS COVERED DURING THESE SESSIONS INCLUDED:

- Financial products and services with Banco Popular
- Perspectives on raising capital after acceleration with expert investors and investment managing partners from Soma Capital, Rockelis Partners and Dotline
- Product Development and Manufacturing with the Coca-Cola Company Puerto Rico
- Exporting Product and Services with Puerto Rico's District Export Council
- Development of the Startup Ecosystem: Investments, Human Capital, and Growth with Uva!, Skootel and Raise Group



What we learned in 2022

1. Tailored experience through smaller cohorts and one-on-one assistance.
2. Emphasis on mentorship in manufacturing, distribution, and exporting, with increased variety of mentors.
3. Increase business connections and fundraising opportunities.

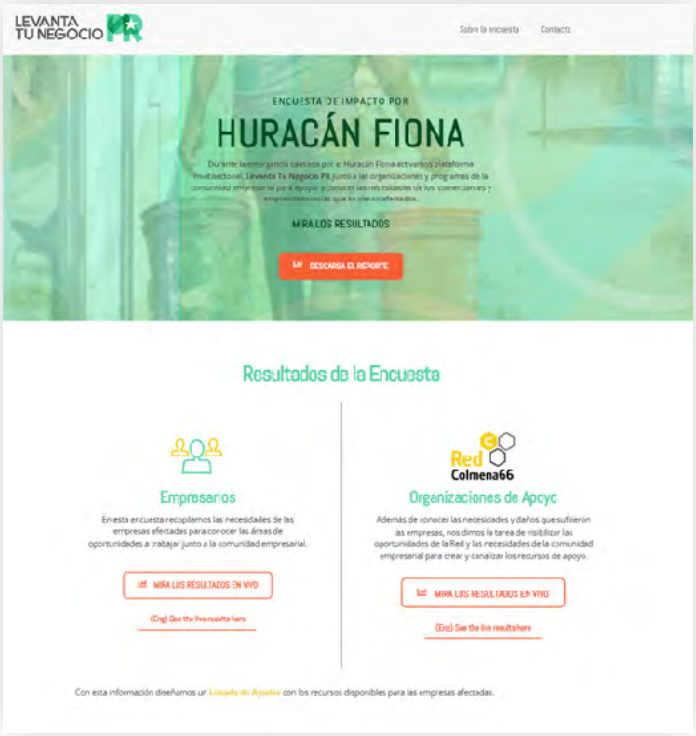


What we'll do for the next cohort

1. Provide access to Parallel18's investment network and talent bank.
2. Obtain strategy and governance resources via corporate partnerships through P18 Connect.
3. Provide access to vetted investors, educational resources, and financing opportunities through Banco Popular.

LEVANTA TU NEGOCIO PR

During the emergency caused by Hurricane Fiona in September 2022, we reactivated Puerto Rico's tech platform for small business disaster recovery, Levanta tu Negocio. This multisector collaborative platform is a tool for data gathering and analysis of challenges entrepreneurs faced in the aftermath. Entrepreneurship support organizations, local and federal government, foundations, media, academia, and others are able to make data-backed decisions to deploy limited resources such as cash grants, disaster loans, technical assistance and other support. We launched two surveys, for entrepreneurs and support organizations, and created a recovery guide to compile available relief resources in one place.



Through previous iterations of this platform during Hurricane Maria (September 2017), Earthquakes (January 2020) and COVID-19 (March 2020) we have developed our proven disaster response process.

React

Activate communication channels, mitigate damage and provide immediate relief

Refocus

Sharing survey data with partners and identifying resources to ease entrepreneurs' research process

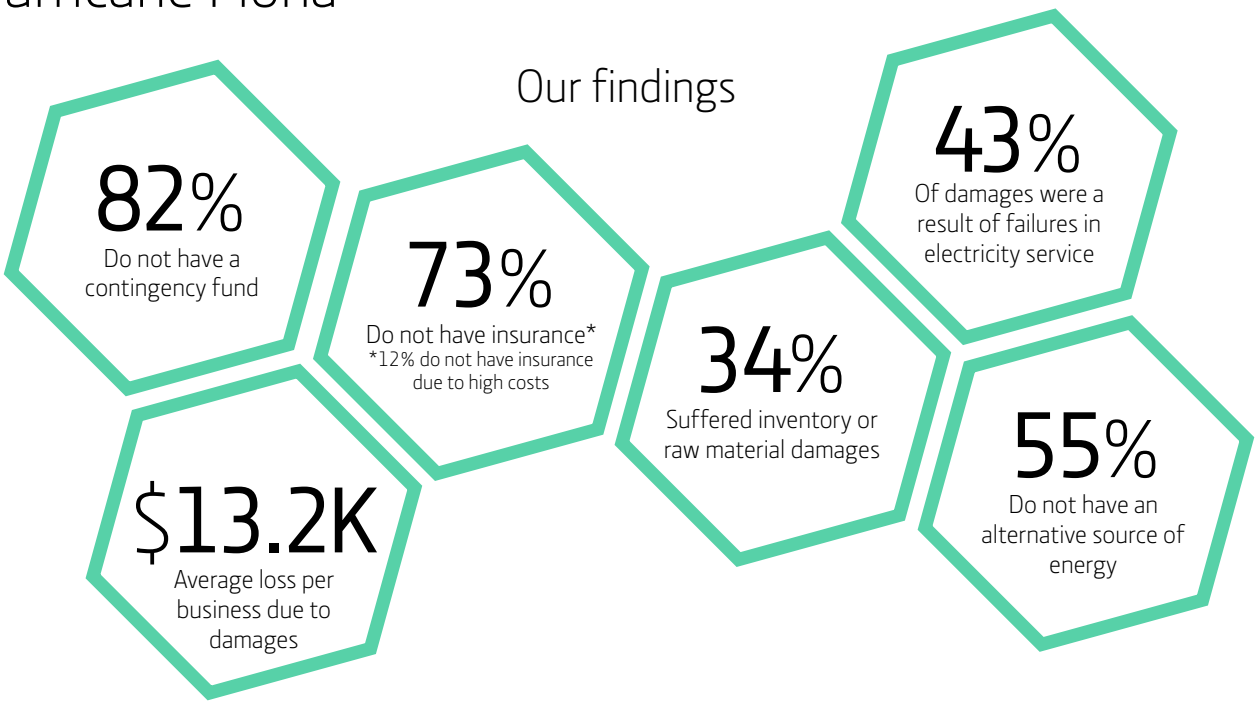
Rebuild

Colmena66 continues connecting entrepreneurs with resources and supporting the community's relief efforts

In just 6 weeks, **we received 660 responses to our entrepreneur survey from individuals in 76 of 78 municipalities**. With this information we built two online dashboards updated real-time and shared disaster data with partners deploying relief resources.

Levanta Tu Negocio PR:
Hurricane Fiona

Our findings



Relief efforts with the Resource Network

- We published 2 dashboards, in English and Spanish, to highlight entrepreneur needs and ecosystem resources.
- We published and constantly updated the Disaster Recovery Guide covering incentives, loans, co-working spaces, technical assistance, among others.
- We participated in 5 Regional Entrepreneurial Support Brigades organized by PR-SBTDC, SBA, and Foundation for Puerto Rico to bring resources to entrepreneurs in affected areas and collect data.
- We opened a co-working space in Ponce together with P11 (The City's Office of Economic Development), benefiting over 40 entrepreneurs.
- We included the BE READY Lab in our Boricua Emprende Fest 2022 agenda for December, adding topics based on the data to help businesses be better prepared for future crises.

As we continue to strengthen our knowledge of crisis preparedness and response, we are now shifting focus to "**precovery**". How can we help entrepreneurs be better prepared for future crisis? How do entrepreneurship support organizations organize in a way that we are more agile and less reactive? We have made this topic a top priority for Colmena66.

We will be taking on a more proactive approach to these issues and convening the Resource Network to collectively design our preparedness and response to crises and disaster recovery efforts looking forward. If you are interested in learning more or supporting this effort, visit levantatunegociopr.com.

Where the bees gather and celebrate:
Boricua Entrepreneur Fest 2022

The Boricua Entrepreneur Fest 2022 was celebrated on December 6th, 2022. This is Puerto Rico's largest, most inclusive, and accessible annual business education and celebration event. The design and agenda cater to all types of entrepreneurs at every business stage and from all backgrounds within the entrepreneurial community. We provide a unique experience focused on connection and community. Thanks to efforts of our team, partners and sponsors, the event was of low cost to participants and proved to be a huge success, convening 1,200 participants. Feedback from the community was excellent, **with over 90% of participants giving a very positive rating**.

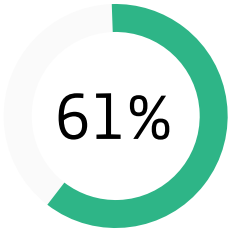
BE fest 2022
Boricua Emprende Fest

120+ Expert Speakers and Mentors

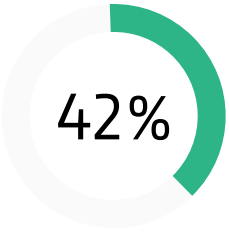
59 Education Sessions

70+ Booths in Resource Network Expo

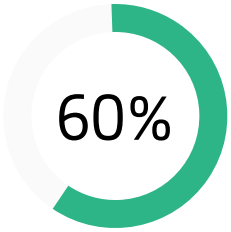
Our audience in numbers:



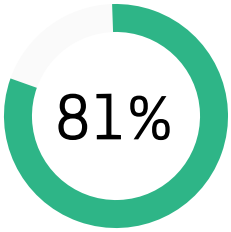
Are females



Have an established business



25-44 years old



1st time participants

1,200+ participants





Where the bees gather and celebrate:
Boricua Entrepreneur Fest 2022

9/10

Participants would recommend attending a future BE Fest again

95%

Expressed being better prepared and educated in entrepreneurship after the event

Participant's feedback:

"I participated in the previous [BE Fest] and it is the best business event experience I have attended in Puerto Rico."

- Frances Rodríguez Gómez

"The agenda, the opportunity for networking and mentoring as well as learning. It seemed to me a unique and important event."

- Abneris Silva Rodríguez

Our Sponsors

DEPARTAMENTO DE DESARROLLO ECONÓMICO Y COMERCIO
DDEC

TRIPLE-S
COMPAÑÍA DE TURISMO PUERTO RICO
POPULAR
SAN JUAN, CIUDAD CAPITAL EMPRENDIMIENTO CAPITAL
RUMS of PUERTO RICO RUM CAPITAL OF THE WORLD
SAN JUAN AVANZA POR TI
AeroNet go faster
Ferraiuoli LLC Looking Forward
TITÍN FOUNDATION
Liberty Business
AARP Puerto Rico
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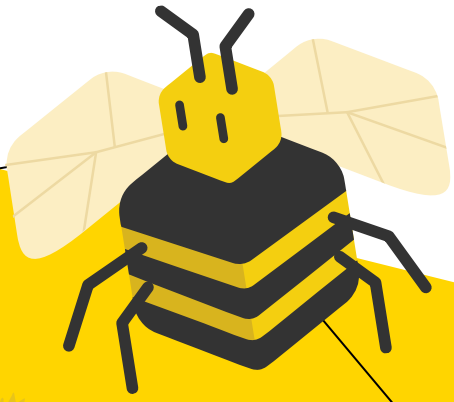


What drives our buzz: Entrepreneurs

Entrepreneurship Survey 2022

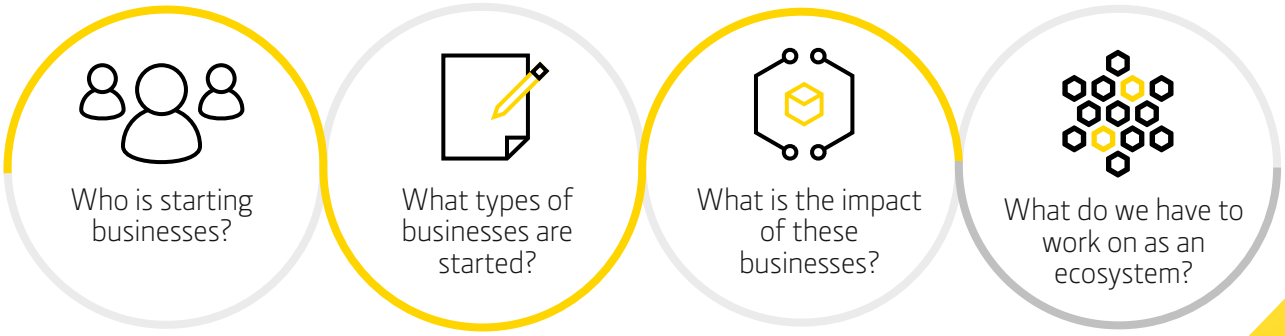
Access to data continues to be a pressing need in Puerto Rico and a priority issue for Colmena66. We developed and continue to improve our Annual Entrepreneurship Survey to help inform the entrepreneurial community about who is starting businesses, what types of businesses are being formed, the impact these businesses have, and what gaps need to be addressed. We also compile demographic data to analyze results in relation to segments of interest such as gender, education level, industry, business stage, and more.

The main purpose of these surveys is to provide actionable data to stakeholders and decision-makers in entrepreneurial support organizations, government and other institutions. We make our insights accessible so stakeholders can use this data to improve their programs, create new tools and initiatives, develop policy, leverage the data for their strategic goals, and to better understand the people they serve.

As Puerto Rico faces continued economic crises, data sources such as this are crucial to accurately assess gaps in the community and to allocate resources to where they are most needed. Within this context, it is important that we continually improve our offering and the effectiveness of our efforts. Through a well-informed and well-equipped community, we can collectively address issues to ensure Puerto Rico is considered a top destination for business and investment both locally and internationally.

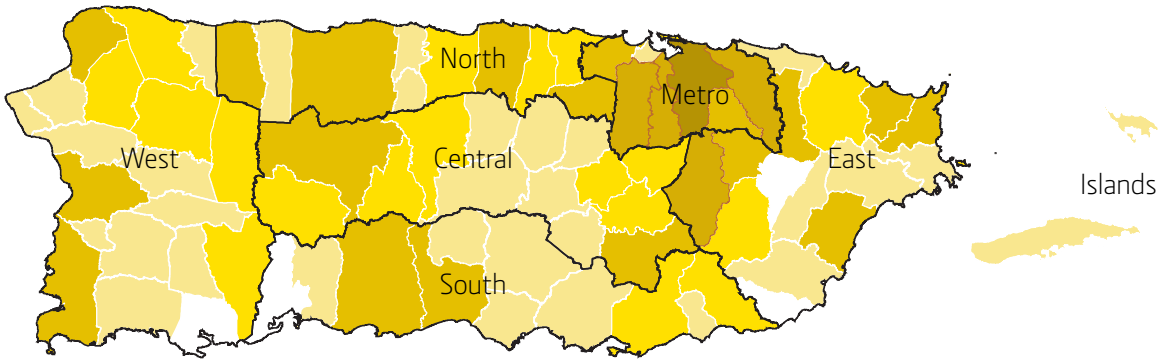
For 2022, we broadened our survey sample, reaching 693 responses, from which 555 met our requirement of being an entrepreneur with an established business or actively developing a business idea. This is an increase of 47% when compared to 2021 (378 responses). This sample was collected between December 2022 and January 2023 through social media, email and text message campaigns. Our strategies were also supported by partners that shared the survey to their entrepreneurs through newsletters, social media, and other channels.

Survey Design



Geographic Representation of our Sample

Survey Responses by Municipality & Region



. . . by Municipality

- 0%
- 0.01% -0.5%
- 0.51% - 0.9%
- 0.91% - 1.00%
- 1.01% - 4.00%
- 4.01% - 9.00%
- 9.01% - 14.00%
- 14.01% - 20.00%

. . . by Region

- 1% Islands
- 10% South
- 10% Central
- 14% West
- 11% North
- 39% Metro
- 15% East

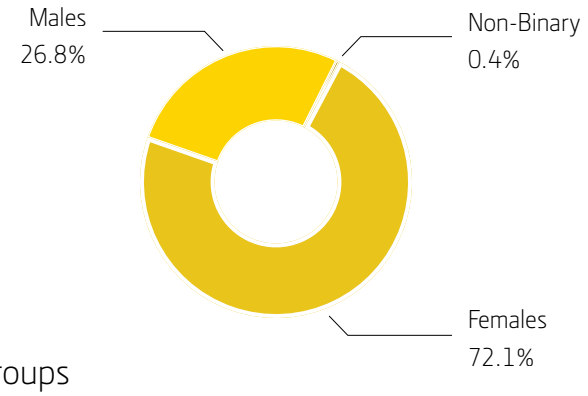
Our 555 response sample had representation from all across the island, reaching 74 of 78 municipalities. A majority of individuals were from the Metro Region (39%). We did not receive responses from Guayanilla, Guánica, Maunabo and Juncos (in white).

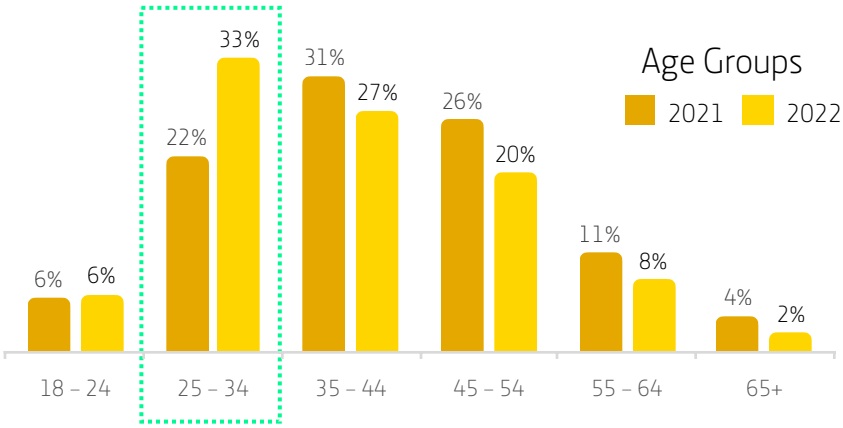
To reach this sample, the following organizations helped us by sharing the survey with their audiences. Thank you for your continued support to help inform Puerto Rico's entrepreneurial community.

1. Grupo Guayacán
2. Puerto Rico Manufacturing Extension (PRiMEX)
3. Mujer Emprende Latina
4. Kiva Puerto Rico, Causa Local
5. PR SBTDC
6. Centro Unido de Detallistas
7. Hecho en Puerto Rico - Asociación de Productos de PR
8. Parallel18
9. Cámara de Comercio de Puerto Rico
10. World Central Kitchen
11. Asociación de Agricultores de Puerto Rico (Puerto Rico Farm Bureau)
12. Asociación de Industriales de Puerto Rico (PRMA)
13. Entrepreneurs Organization PR
14. UPRM E-Ship Network, Área-E, Centro de Negocios y Desarrollo Económico
15. La Cámara de Comercio LGBTTQ de Puerto Rico
16. Cámara de Mercadeo, Industria y Distribución de Alimentos (MIDA)
17. Centro para Puerto Rico | Fundación Sila María Calderón
18. Centro para Emprendedores
19. Cámara de Comercio del Sur
20. Fase1
21. EmprendeCoop
22. Nuestro Barrio de Santurce
23. National PR Chamber of Commerce

Who's starting businesses in the beehive?

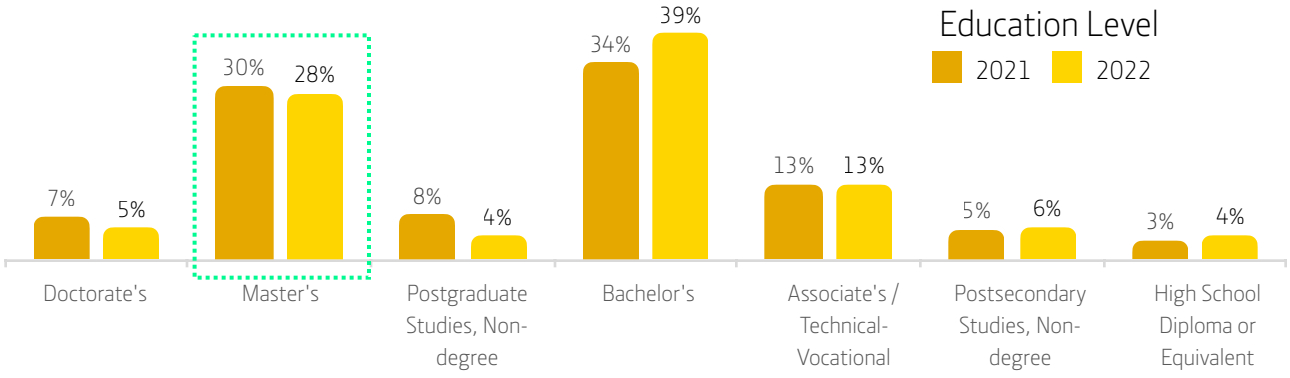
Most responses to our survey were from Female segments, representing 72.1% of the sample. Within this sample, Males made up 26.8% and 0.4% were Non-Binary. Only 0.7% of respondents chose not to identify themselves. Additionally, 7.4% of respondents identified as LGBTQ+.



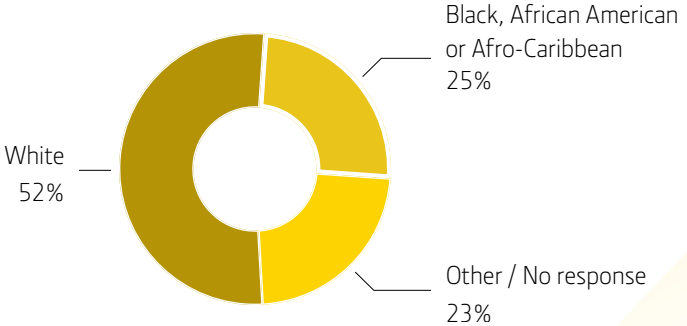


In 2022, our survey sample reflected an 11-point increase in the 25-34 years old age group, with other groups slightly shrinking.

Educational level is an important factor for entrepreneurial activity. In 2022 we saw a 5% increase in the Bachelor's degree group responding to our survey. In general, individuals with higher levels of formal education seem to have higher rates of participation in entrepreneurship and are becoming more involved within Puerto Rico's entrepreneurial ecosystem.



Similar to our data in 2021, approximately half of all respondents identified as White, while 2.5 out of every 10 identified as Black, African American or Afro-Caribbean. Only 2% of entrepreneurs identified as another race and 21% preferred not to respond.



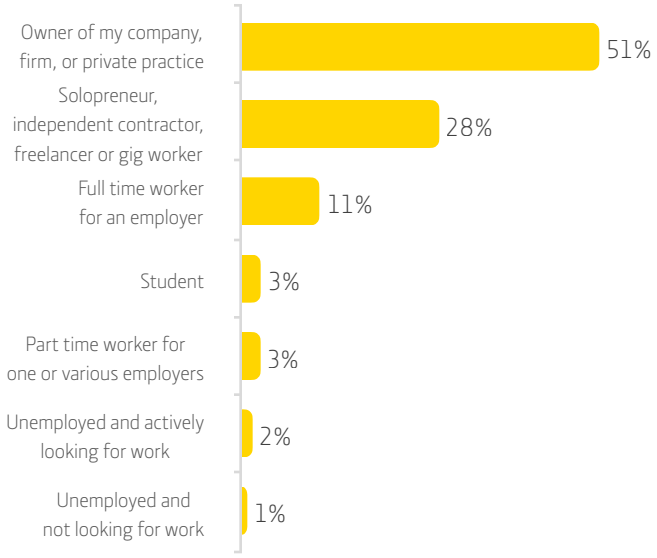
Who's starting businesses in the beehive?

Of the survey responses received, 79% expressed they were the owners of their own companies or working independently. Another 11% reported being full time workers, and smaller portions described they were students or unemployed.

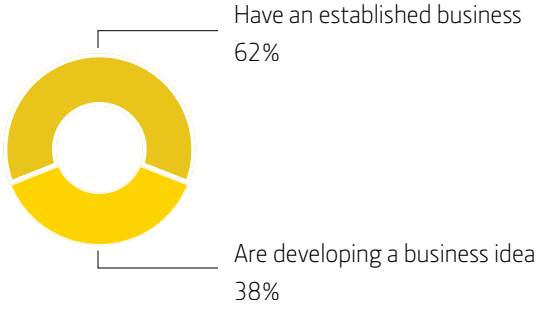
More males in our sample are business owners (52.3%) or work independently (28.9%) when compared to females (50.5% and 27.3% respectively).

The most represented age groups for business owners were in the 25 – 34 (53.8%) and 35 – 44 age ranges (54.4%). Interestingly, the highest percentages of those working independently were in the 45 – 54 (30.9%) and 55 – 64 age ranges (32.6%).

Labor Status



Type of entrepreneur (Self-Described)



Respondents also self-described what type of entrepreneur they were. Most have one or various established businesses and almost 2 out of 5 are developing a business idea.

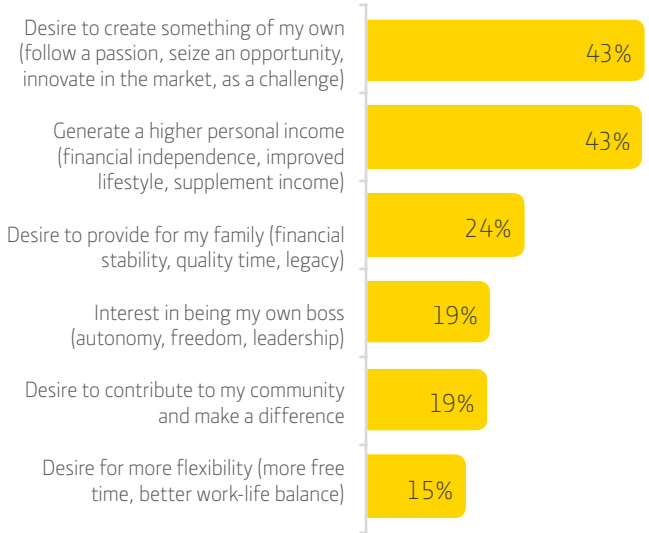
In 2022, the most common reason to start a business across our respondents was the desire to create something of their own and to generate a higher personal income. This was followed by the desire to provide for their family and the interest in being their own boss. Nonetheless, motivations vary among different population segments.

Females indicate wanting more flexibility 1.5x, contributing to their community 1.4x, and generate higher income 1.2x more often than males. Males on the other hand, reported wanting to provide for their families 1.3x more often than females.

In contrast with 2021, the two top motivations to start a business were:

- Interest in being my own boss (34%)
- Desire to create something of my own (30%)

What motivated you to start a business?



N=555 participants who completed the survey. The sum of percentages can be greater than 100%. An independent count was done for each answer in this multiple-choice question.

Who's starting businesses in the beehive?

Top 3 motivations to start a business… by gender

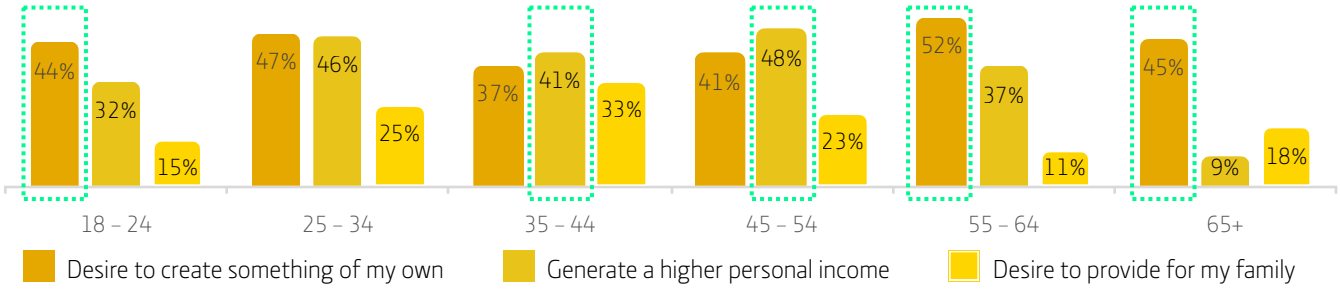
Female

- 44% Generate a higher personal income
- 43% Desire to create something of my own
- 23% Desire to provide for my family

Male

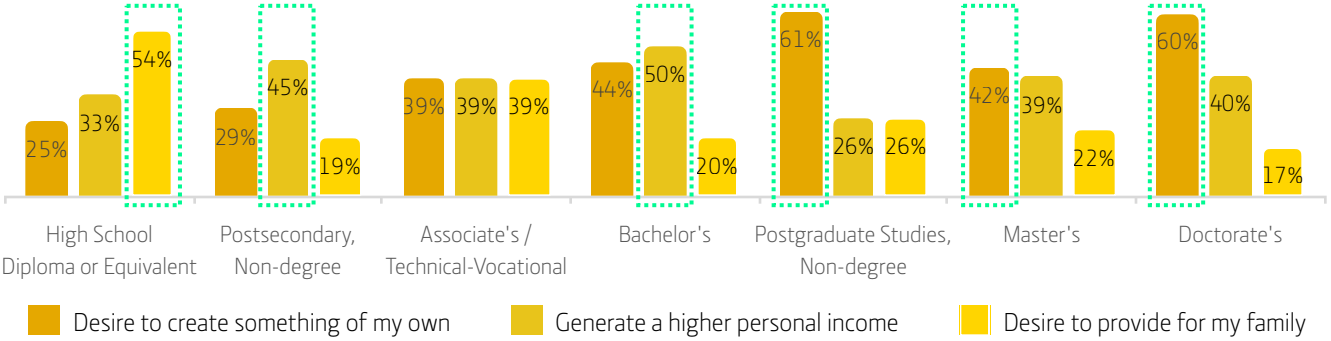
- 44% Desire to create something of my own
- 38% Generate a higher personal income
- 30% Desire to provide for my family

Top 3 motivations to start a business… by age range



Examining motivations to start a business across age ranges, we can observe the desire to create something of their own is highest among 18 – 24, 55 – 64 and 65+ age ranges. Wanting to generate a higher personal income is higher motivator for 35 – 44 and 45 – 54 age ranges. We can also observe that the desire to provide for their family is highest among the 35 – 44 age range.

Top 3 motivations to start a business… by education level



Individuals with the highest levels (Postgraduate Studies, Master's and Doctorate's) of education seem to also be the most motivated to start a business by the *desire to create something of their own*. Individuals with some college education (Postsecondary Studies) or a Bachelor's degree report being most motivated by *generating a higher personal income*. Individuals with a High School level education report being most motivated by the *desire to provide for their family*, which in some contexts can be seen as the *need to provide for their families*.

The Entrepreneurial Journey

AGUA FRESCAS PR

Founded in 2013 by Alexa Paola Figueroa Carrasquillo, entrepreneur and cooperative agent, Aguas Frescas PR is a company dedicated to providing healthy and affordable juice options to the Puerto Rican market. Inspired by her experience in a study exchange in Guadalajara, Mexico, Alexa decided to bring to Puerto Rico the tradition of aguas frescas, natural drinks without preservatives very popular in Mexico. The products offered by Aguas Frescas PR include a variety of juices, aguas frescas, fruit trays and empanadas.

Currently, the company operates from the founder's home in Caguas, where she prepares these drinks and makes deliveries to customers and restaurants in nearby towns. Aguas Frescas PR is currently in the process of opening a food truck and formalizing its operations in the San Juan area. With the opening of this food truck, Alexa hopes that more people can enjoy her products and that the company can continue to expand on the island.

COMPANY PROFILE

Industry – Retail

Location - Caguas, Puerto Rico

Type of Business - Microenterprise

Business Stage – Early Growth

Time generating sales – Between 3 and 12 months

Classification – Minority-Owned, Female-Owned, Youth-Owned, Low to Moderate Income Owned

THE TEAM



Alexa Paola Figueroa Carrasquillo, Founder

CONNECT WITH THEM ONLINE:



The Entrepreneurial Journey

CHALLENGES FACED

Access to capital – Capital needed to invest in expanding operations and purchasing equipment.

Formalization (compliance with regulatory requirements) - Slow regulatory processes and high costs limit the speed with which the company can be established and expand operations as a food truck.

ENTREPRENEURIAL JOURNEY & COMMUNITY SUPPORT

Beginning her entrepreneurial journey as a student in the University of Puerto Rico system, Aguas Frescas PR was created with a focus on the Solidarity Economy. Since then, Alexa has sought further assistance and participated in various programs where she has received capacity building to run her business and access capital opportunities.

ACHIEVEMENTS

Being able to continue developing her business idea after 10 years.

Aguas Frescas PR surviving through the multiple crises that have struck Puerto Rico, particularly the pandemic.

Accessing $10,000 in capital to invest in her business after a difficult review process.

ADVICE FOR OTHER ENTREPRENEURS

"Be very persistent and seek support from the entrepreneurial community, Colmena66 is there to help."

WHO HAS HELPED THEM ALONG THEIR PATH

Stage 1
Idea | Concept

Instituto de Cooperativismo de la Universidad de Puerto Rico

Colmena66

Mujer Emprende Latina - $1,000

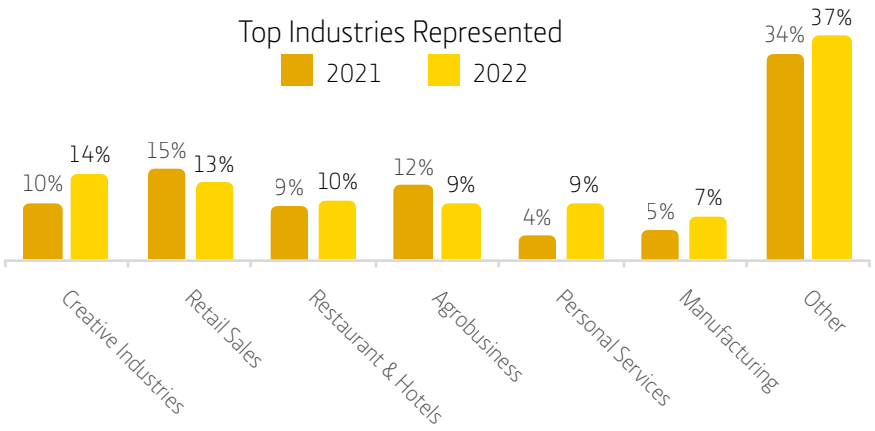
PromoCaguas

Capital Mujer - $1,000

Banco de Desarrollo Económico - $10,000

What types of businesses are started?

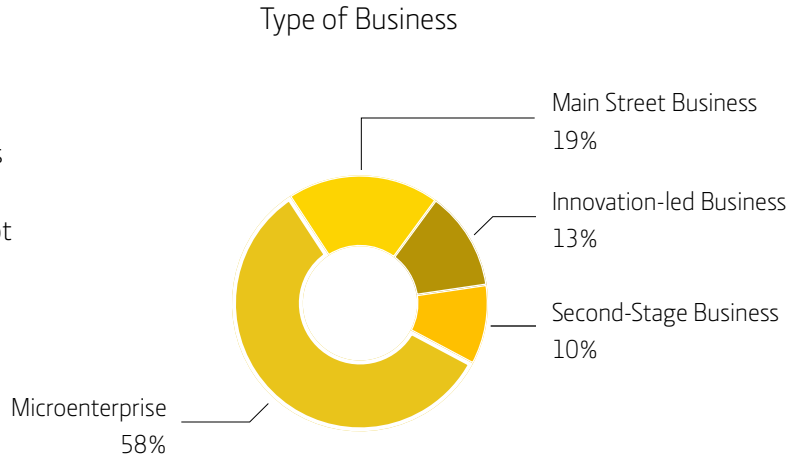
In our 2022 survey sample, the most represented industries were Creative Industries, Retail Sales, and Restaurant & Hotels. Compared with 2021, we observe a decrease in representation for Retail Sales and Agribusiness. However, representation for Creative Industries, Restaurant & Hotels, Personal Services and Manufacturing increased.



We also asked respondents to describe what type of business they had based on the definitions of our "Tu Camino Empresarial" resource map.

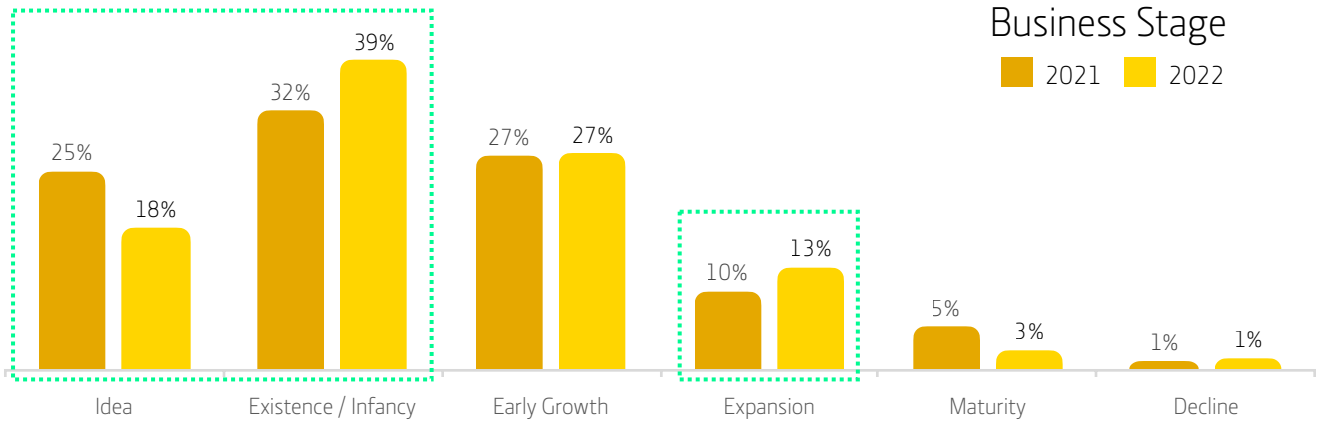
Most entrepreneurs in this sample categorized their business as a Microenterprise, which refers to a business that requires little capital to launch, is mainly built around the owner's personal expertise, and they may not require a physical location. Online businesses and solopreneurs also fall into this group.

The second most selected category was Main Street Businesses. These companies have a physical location, employees, need operations support and are typically focused on increasing sales.

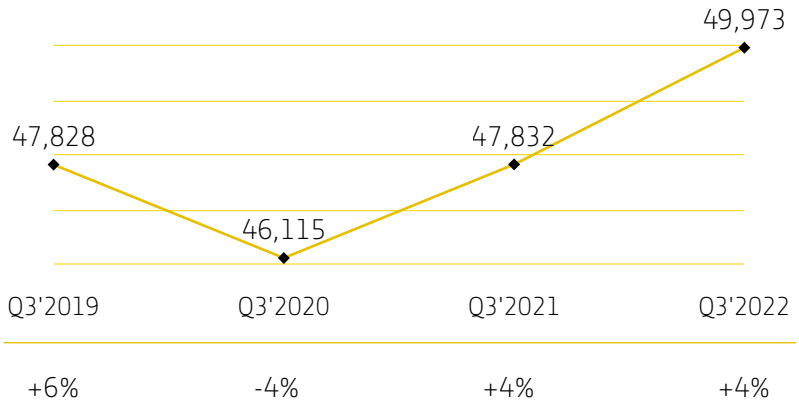


What types of businesses are started?

Comparing data from 2021 with 2022, there was an equal 7% change of business reporting to be in the Idea stage (decrease) in 2021 and those reporting their business is in the Existence / Infancy stage (increase) in 2022. We also observe a 3% increase in businesses reporting to be in the Expansion stage.



Business in Puerto Rico, according to the Puerto Rico Department of Labor



This may be indicative of a wider trend of new businesses starting in Puerto Rico as was pointed out in our 2021 report. According to data from the Puerto Rico Department of Labor and Human Resources, the there was a 4% (2,141 units) increase in businesses in Puerto Rico between Q3'2021 and Q3'2022, after a previous 4% increase between Q3'2020 and Q3'2021.

A look into the business profiles in our community

It is understood that the first 3 years of a business are the most crucial period for its survival. We asked respondents to share their business start date and the length of time generating sales to understand the age of businesses.

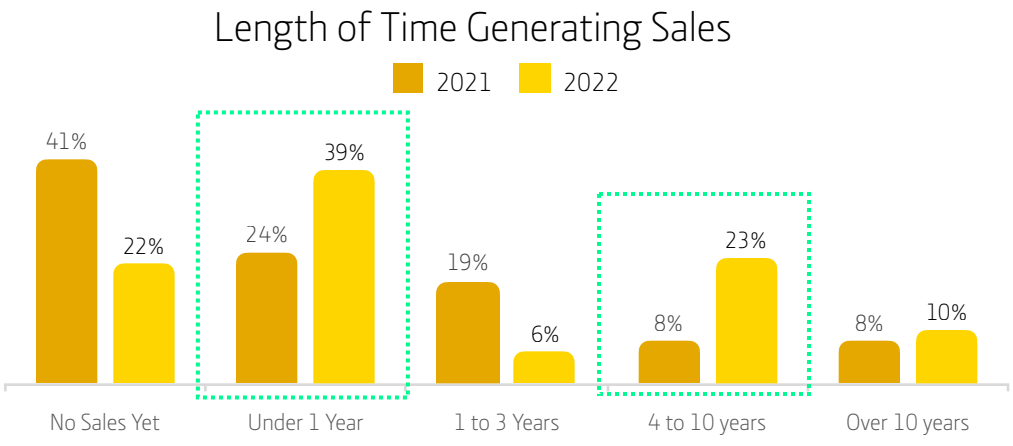
Business Age	
Average	2018 (5 years)
Median	2020 (3 years)
Maximum	1945 (78 years)
Minimum	2022 (1 year)

N=468 participants that answered this question.

Analyzing the business start date, 25% of entrepreneurs reported having begun their operations during 2022, a year or less since the survey sample was collected. By comparison, only 7% of entrepreneurs in our sample reported having started in 2018, the average start date. Furthermore, we observed that 25% of the total sample had started their business before 2018, but a whopping 68% started their business after 2018.

The length of time generating sales reported during 2022 matches the business age data. This is deduced because 22% express having not yet generated sales and a total 45% express having generated sales for 3 years or less (for a total of 67%, compared to 68% who started their business after 2018). Additionally, 33% have been generating sales for over 4 years (compared to 32% who started their business in 2018 or before).

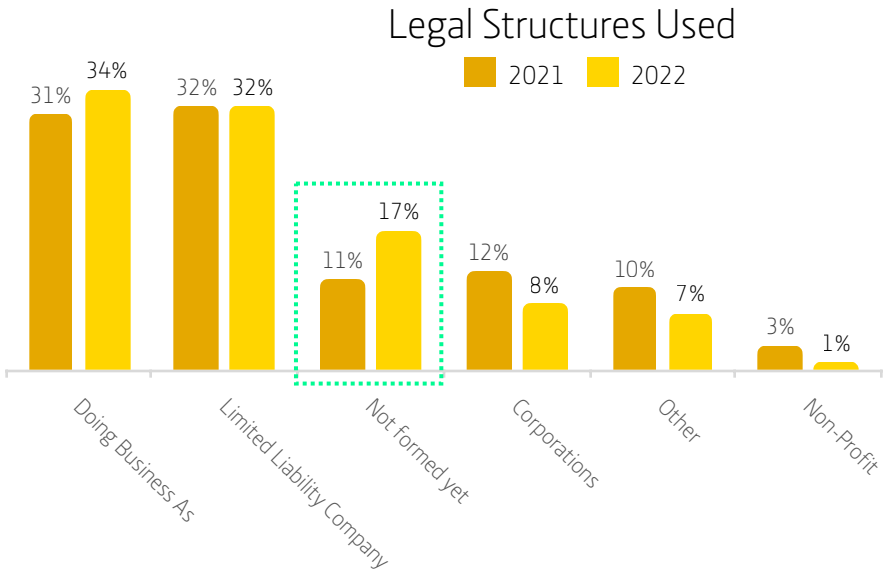
When we compare this data with 2021, there was a 19% decrease in the number of businesses that had not yet generated sales and a 13% decrease in the number of businesses generating sales for 1 to 3 years. There were also 15% increases for entrepreneurs generating sales in both the under 1 year and 4 to 10 years categories.



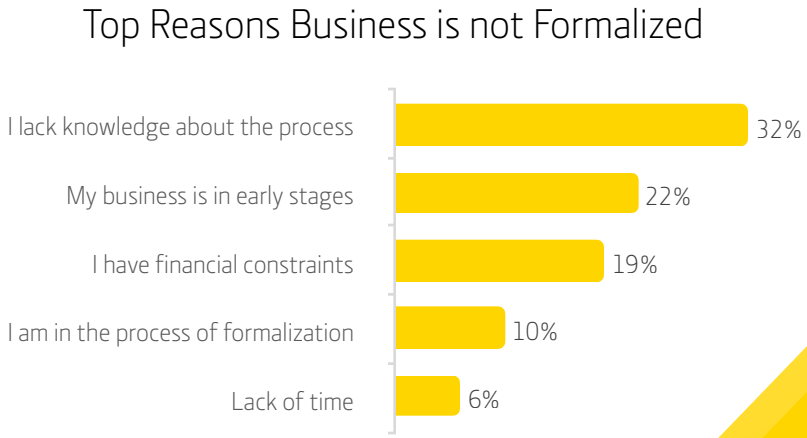
A look into the business profiles in our community

Seemingly, the most used legal structures in Puerto Rico for businesses are DBAs (Doing Business As) and LLCs (Limited Liability Companies), which make up 66% of the total sample.

Our data shows that 17% of individuals (up 6% from 2021) have not yet incorporated their companies. Amongst non-incorporated projects, 43% are already generating sales (down 20% from 2021). Comparing this data with 2021, we again see that 7% of all survey respondents are operating their business informally.



The main reasons these businesses have not yet been incorporated are lack of knowledge, businesses in early development stage, and financial constraints.

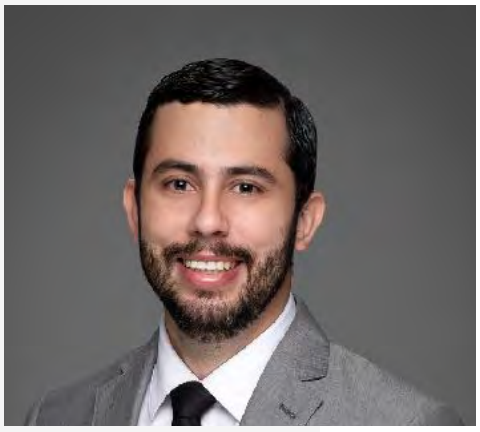


Learningbp

THE TEAM



Dr. Pierette Bartolomei-Torres, Founder



Dr. Ian Crespo Orta, Co-founder

CONNECT WITH THEM ONLINE:

The Entrepreneurial Journey

LEARNINGBP

Learningbp LLC is a virtual educational company founded by Dr. Pierette Bartolomei-Torres and Dr. Ian Crespo Orta. The idea came about in 2019 after Dr. Bartolomei completed her doctoral thesis in education based on the theories of multiple intelligences and started writing an educational blog. In 2020, after the earthquakes in southern Puerto Rico and the pandemic, alumni and parents approached asking for additional support in the educational process. This led Dr. Bartolomei to turn her blog into a company that provides educational reinforcement, tutoring, and educational mentoring services for students, parents, and teachers.

This project has the vision of becoming the benchmark for virtual education based on the use of multiple intelligences as a facilitating tool for the teaching-learning process for students, teachers and parents. To achieve this, they plan to continue expanding their services of tutoring to students, educational reinforcement, workshops and mentoring for teachers through more strategic alliances with other projects, organizations and educational centers in Puerto Rico. In addition, as a long-term goal they want to offer these services in other markets around the world and diversify their offer of online courses.

COMPANY PROFILE

Industry – Education

Location - Digital Company based in San Juan, Puerto Rico

Type of Business - Microenterprise

Business Stage – Early Growth

Time generating sales – Between 1-3 years

Classification – Female-Owned



The Entrepreneurial Journey

CHALLENGES FACED

Changes in the market – When the education system normalized in the late stages of the pandemic, they had an initial drop in the number of participants due to their return to in-person classes. To solve this, they adapted their service schedules to the needs of families.

Recruitment of personnel - During their second year of operations, they found it difficult to hire tutors to meet demand for their services. In this process, the Colmena66 team and Kinesis Foundation were very helpful. They developed an internship program with which they could access trained resource banks and resolve the challenge.

Effect of crises on the market - Although their team was ready to offer the services from the day after Hurricane Fiona, the students were not. They carried out a needs assessment with which they were able to adjust their process to the different alternatives, devices and accessibility of the students and continue offering the services.

ADVICE FOR OTHER ENTREPRENEURS

"…Start with Colmen66. Through the Tu Camino Empresarial map and mentoring [you] will be able to find the resources and entities that will help you grow."

ENTREPRENEURIAL JOURNEY & COMMUNITY SUPPORT

Upon contacting Colmena66, Dr. Bartolomei received an individual mentoring session where she was able to identify resources and programs from the business community useful for the development of her project. With this starting point she has received business training and has been able to connect with peers in the community. They are currently in the process of researching and accessing sources of capital within the entrepreneurial ecosystem.

ACHIEVEMENTS

From 2022 to 2023, they had a 67% increase in participating students receiving mentoring.

This year, for the first time, they will be impacting Bright Stars students of the Kinesis Foundation with consultancy on their educational journey toward the College Board and SAT exams. In addition, they have joined the program as employers to provide first job opportunities to undergraduate and graduate students.

They achieved a collaboration with the Department of Education Sciences of the University of Puerto Rico at Ponce to recruit university students who will serve as tutors.

This year they began to offer their catalog of workshops for teachers in private schools.

They were selected as part of the 25 finalists in Grupo Guayacán and Liberty Foundation's Conectando tu Negocio al Éxito competition.

Learningbp

The Entrepreneurial Journey

WHO HELPED THEM ALONG THEIR PATH



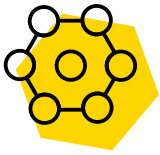
Stage 1
Idea | Concept

Colmena66

Operation Hope
- Entrepreneur Training Program

Centro para Emprendedores
- Núcleo

Causa Local and Verizon
- Causa Local Academy
- Verizon Small Business Digital Ready



Stage 2
Proof of Concept | Prototype | Market Entry

Fase1 Lab & Intensive

Centro de Negocios y Desarrollo Económico (CNDE) | UPRM
- Área E

Grupo Guayacán and Liberty Foundation
- Conectando tu Negocio al Éxito - $500

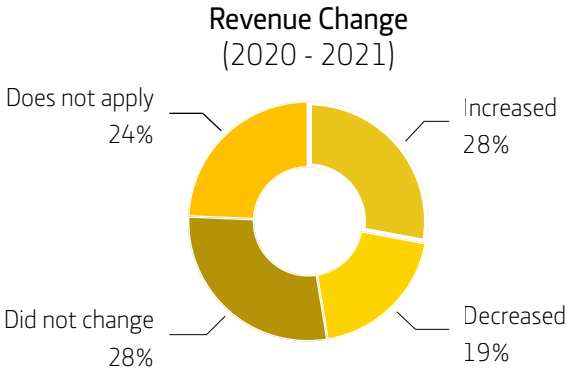


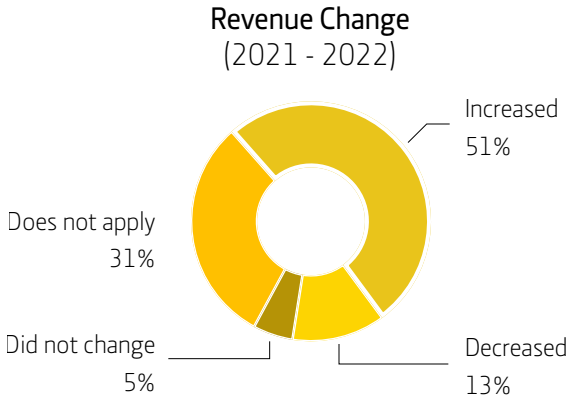
Stage 3
Launch

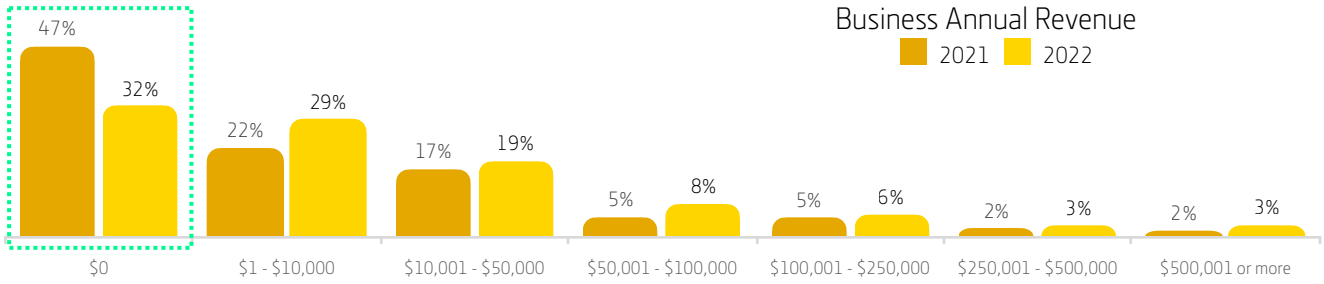
Co.co.haus
- Co-working space

What is the impact of these businesses?

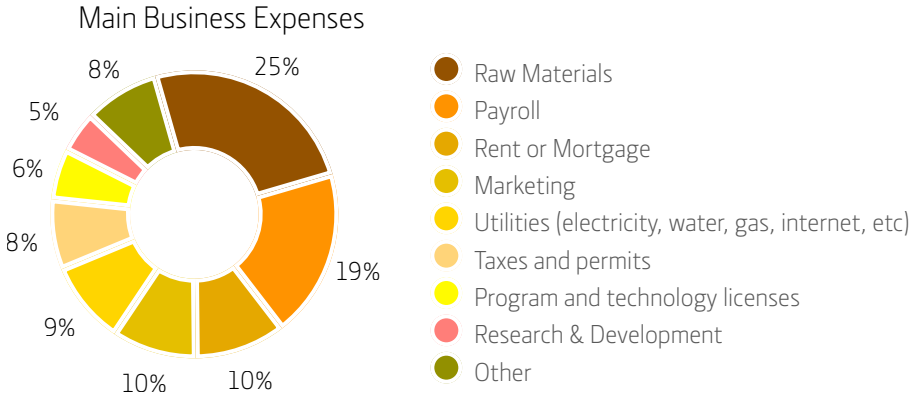
Between 2021 and 2022, 51% of surveyed businesses reported their revenues increased. This also correlates with the business start date and the length of time generating sales, as many new businesses were formed during 2021 and 2022. Manufacturers (63%) and Agribusinesses (58%) had the highest percentages of reported revenue increases. Interestingly, Agribusinesses (17%) and Retail (17%) reported the highest percentages of revenue decreases.







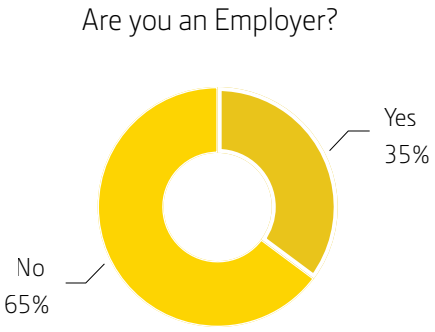
The number of entrepreneurs that had not generated revenue fell 15% from 2021 to 2022. Approximately 2 out of every 5 business in Creative Industries and Retail report generating less than $10,000 in revenue in 2022. Meanwhile, Manufacturers and Restaurants & Hotels had the most businesses generating over $100,000 annually, at 22% and 16% respectively.

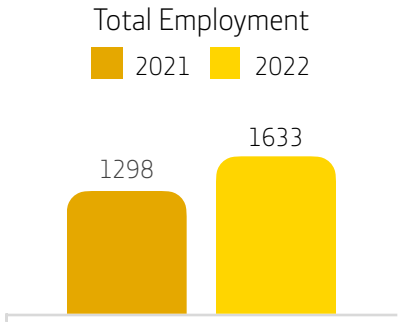


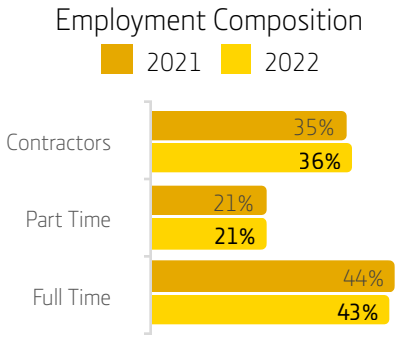
The main business expenses reported are raw materials, payroll and rent or mortgage. Examining these expenses by industry, Manufacturing (51%), Retail (44%), and Creative Industries (36%) reported raw materials as their main expense. Payroll was the main expense for Restaurant & Hotels (27%) and Agribusiness (31%).

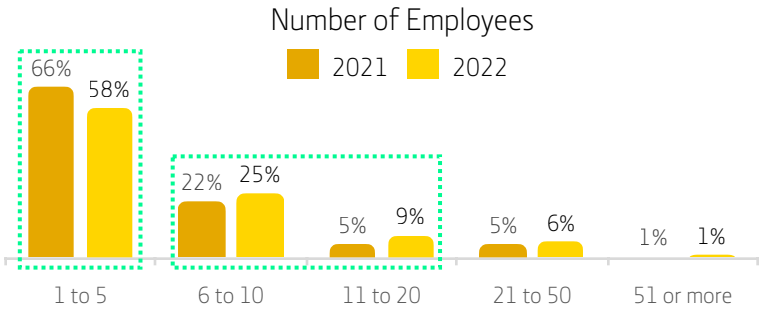
What is the impact of these businesses?

Job creation is another important factor to understand the impact of businesses. In 2022, 35% of entrepreneurs in our sample expressed they were employers. In 2021, they employed a total of 1,298 people, which grew to 1,633 jobs in 2022, an increase of 26% (335 new jobs). This total employment is composed primarily of full-time employees, followed by contractors and lastly part-time employees. This composition was very similar when comparing reported employment in 2021 to 2022.









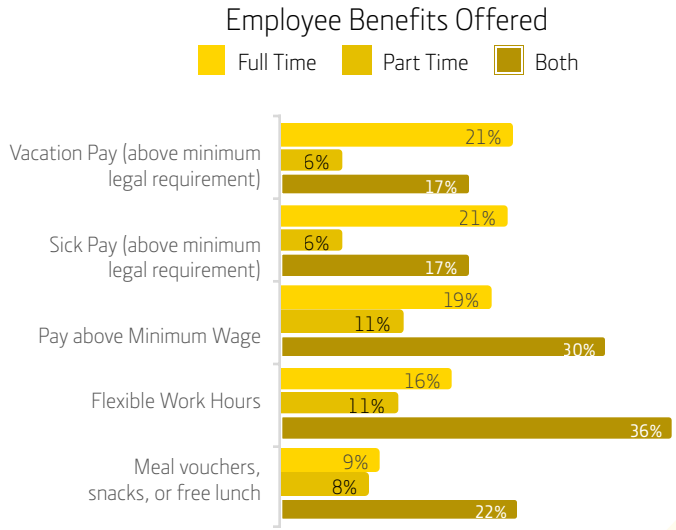
N=148 employers in 2021 and 175 employers in 2022 who answered this question.

A majority of businesses employ 1 to 5 employees. Businesses with this workforce size decreased 8% from 2021 to 2022. However, businesses with workforce sizes of 6 to 10 and 11 to 20 employees increased 3% and 4% respectively (7% total).

In the context of economic crisis and labor shortages, strategies to retain talent are gaining more importance. We asked employer businesses what types of benefits they were currently offering.

Most employers offer full time employees additional vacation and sick pay (21% for each) benefits above minimum legal requirements. Both full time and part time employees are most offered flexible work hours (36%) and above minimum wage salary (30%).

The types of benefits not offered by most employers are child daycare (89%), access to mental or emotional health services (85%), and partial or total tuition reimbursement (84%).



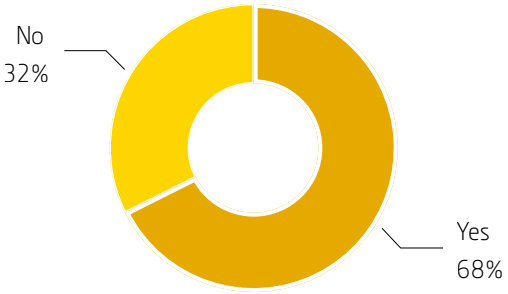
N=197 employer businesses who answered this question.

What is the impact of these businesses?

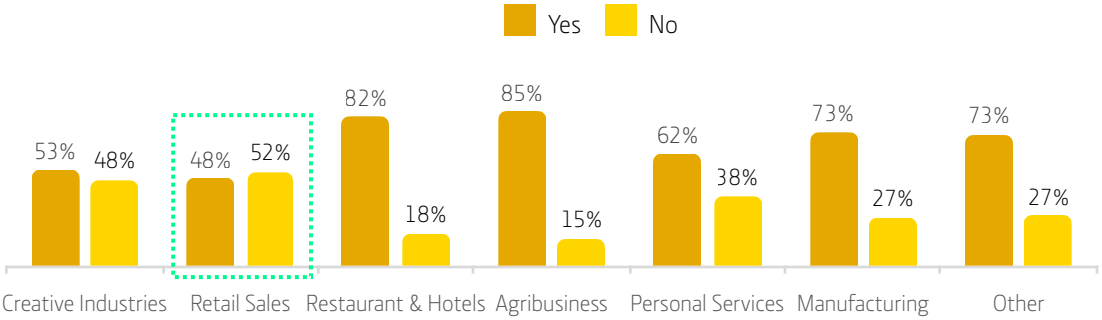
Approximately 2 out of every 3 entrepreneurs surveyed expect to hire new employees during 2023. A similar trend is also observed across industries, business stages and time generating sales.

It is important to note that only in the Retail industry, more than half of businesses do not expect to hire new employees in 2023.

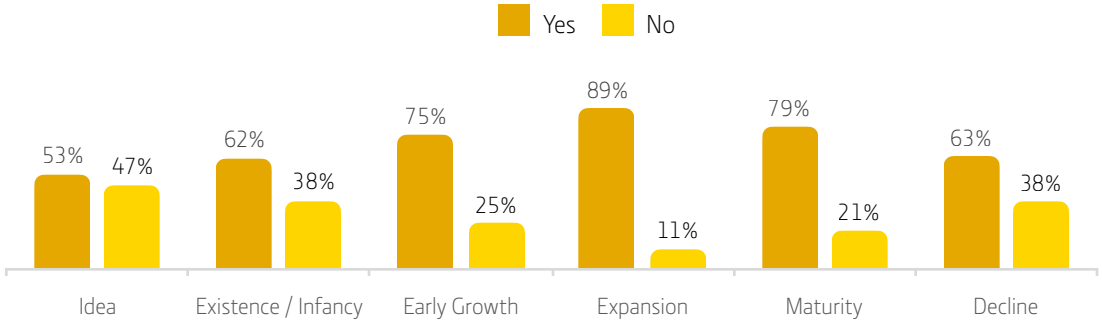
Do you plan to hire new employees in 2023?



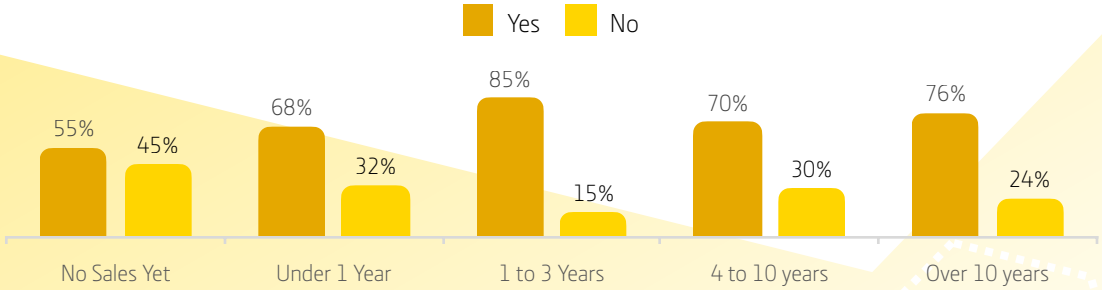
Expectation to hire in 2023 by Top Industries Represented



Expectation to hire in 2023 by Business Stage

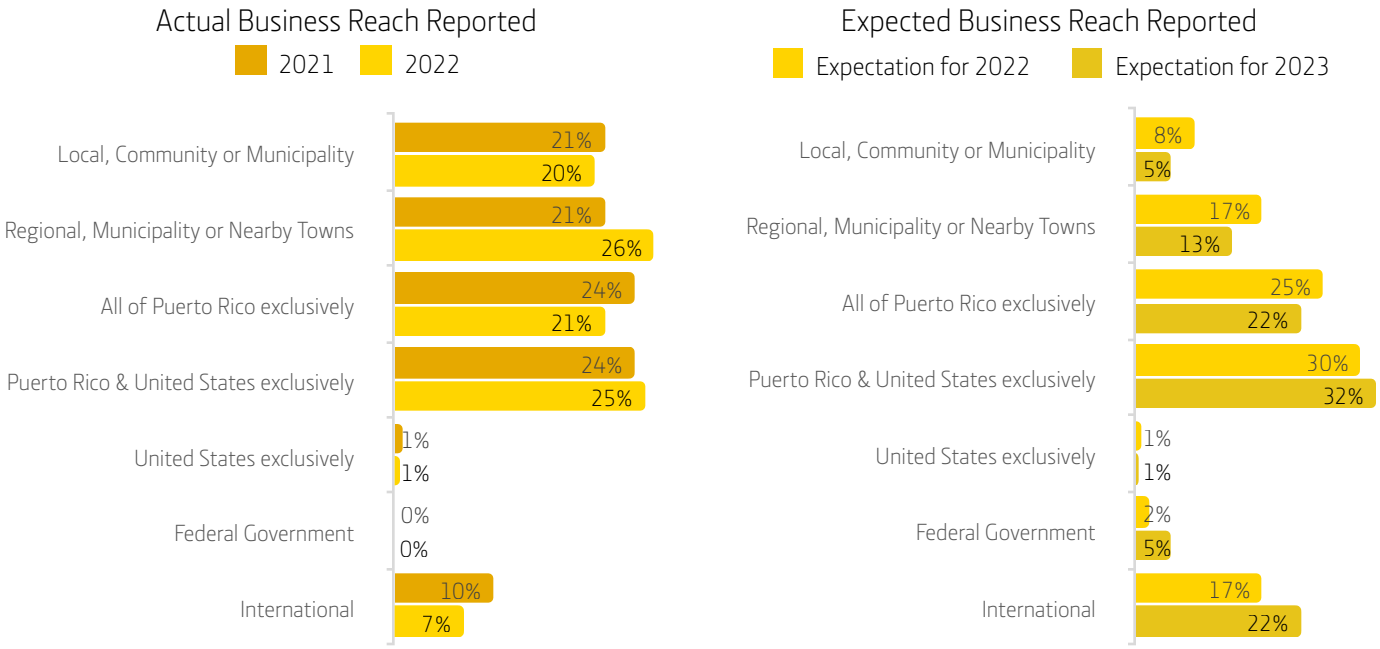


Expectation to hire in 2023 by Length of Time Generating Sales

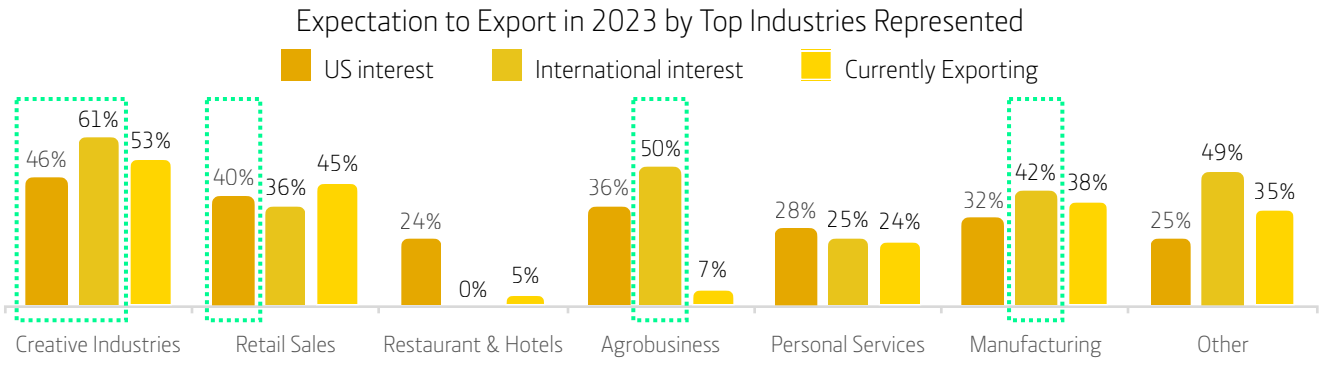


Are entrepreneurs prepared to export?

In 2022 the majority of entrepreneurs surveyed only serve the Puerto Rico market (67%), which is similar to our 2021 data (66%). When asked about their interest in exporting, 54% of operating businesses expect to export to the US or Internationally in 2023. Of those who currently only serve the Puerto Rico market, 31% hope to export to the US and 7% Internationally. Out of those currently exporting to the US, 47% hope to export internationally.



Percentages exclude responses of businesses in the Idea stage and who had not yet generated sales. "Actual Business Reach" refers to businesses actively exporting at the time of response. "Expected Business Reach" refers to the expectation to be actively exporting during the year after the time of response.



N=417 responses of participants, excluding those in the Idea stage and who had not yet generated sales.

Taking a closer look at the businesses that serve Puerto Rico and are interested in reaching the US market by industry, Creative Industries, Retail and Agribusiness have the highest percentages. When focusing on the businesses that already have reach in the US and are interested in reaching International Markets, Creative Industries, Agribusiness and Manufacturing have the highest percentages.

MOLCAJETE FOODS, LLC

THE TEAM



Co-Foudners:

Daniel Rivera Ramos

Roberto Rivera Ramos

Juan Rivera Ramos

VISIT THEM ONLINE

The Entrepreneurial Journey

MOLCAJETE FOODS, LLC

Molcajete Foods is a company founded by three engineer brothers: Daniel, Roberto and Juan Rivera Ramos, with the goal of creating something that reflects their Mexican heritage and honoring their grandmother Dolores and her secret corn tortilla recipe, which has been passed down from generation to generation for more than 100 years. Located in Caguas, Molcajete Foods began operations in 2017, 6 months before Hurricane Maria.

The mission of this company is to produce food with simple and high quality ingredients, contribute to the economic development of Puerto Rico and improve food sovereignty through local food development and manufacturing. The company is dedicated to the manufacture of corn tortillas and tortilla chips Doña Lola, using natural and organic ingredients. Its products are free of gluten and preservatives, and are characterized by their low sodium content.

Molcajete Foods seeks to continue innovating with new products and using more local ingredients. Its expansion plans include creating a new manufacturing facility for the local market and for exporting.

COMPANY PROFILE

Industry – Manufacturing

Location - Caguas, Puerto Rico

Type of Business - Company based on innovation

Business Stage – Expansion

Time generating sales – Between 4 to 5 years

Classification – Minority-Owned



MOLCAJETE FOODS, LLC

ADVICE FOR OTHER ENTREPRENEURS

"We started with I-Corps by Grupo Guayacán we where able to validate our idea in a scientific way. Our advice is to look for opportunities and different entrepreneurial support programs. If there is an idea and desire to develop it, you just need to ask for help and join the ecosystem."

The Entrepreneurial Journey

CHALLENGES FACED

Access to capital – Capital needed to invest in expanding operations and purchasing equipment. Manufacturing is a capital-intensive industry.

Formalization (compliance with regulatory requirements) - Slow regulatory processes and high costs limit the speed with which they can expand operations.

Market Competition – Certain protectionist laws limit the competitive capacity of emerging companies in Puerto Rico, hindering their bargaining power.

ENTREPRENEURIAL JOURNEY & COMMUNITY SUPPORT

Having already vast experience in the manufacturing industry in the United States, these three brothers return to Puerto Rico to develop their company starting with a process of idea validation and customer discovery with the I-Corps program of Grupo Guayacán. Since then, they have been able to insert themselves in other programs of the business community and support themselves to survive through crises and grow their company successfully. In their journey, they have accessed over $570K from multiple sources of capital.

ACHIEVEMENTS

Develop a new segment of products manufactured in Puerto Rico characterized by fresh products without preservatives and free of allergens.

The impact of employing people who were out of work or lost jobs due to the economic crisis and the pandemic.

Raising the standard of the food manufacturing industry in PR.

Having a 57% increase in sales during 2022 compared to 2021.



MOLCAJETE FOODS, LLC

The Entrepreneurial Journey

WHO HELPED THEM ALONG THEIR PATH

Stage 1
Idea | Concept

Grupo Guayacán
- I-Corps
- Hispanic Federation - $5,000

Colmena66

INprende & FirstBank
- 1Éxito - $3,000

Oficina de Desarrollo Económico de Caguas

Stage 2
Proof of Concept | Prototype | Market Entry

Parallel18
- Pre18 - $20,000

Grupo Guayacán
- EnterPRize - $15,000
- Idea Seed Fund - $100,000

Stage 3
Launch

Kiva | Causa Local
- COVID-19 grant $5,000
- Loans $20,000

Parallel18
- P18 - $40,000

Stage 4
Growth | Expansion

Departamento de Desarrollo Económico y Comercio

Grupo Guayacán
- Scale Up

Community Development Venture Capital Alliance (CDVCA)
- Unlock Capital

Parallel18
- P18 Ventures - $25,000

Startup Popular - $40,000

Small Business Administration (SBA)
- EIDL $198,000
- PPP $15,000

Banco de Desarrollo Económico Centro Oriental (BADECO)
- Loan $4,000
- Incentive $5,000

World Central Kitchen - $20,000

Departamento de Hacienda
- Incentive $1,500
- Incentive $5,000

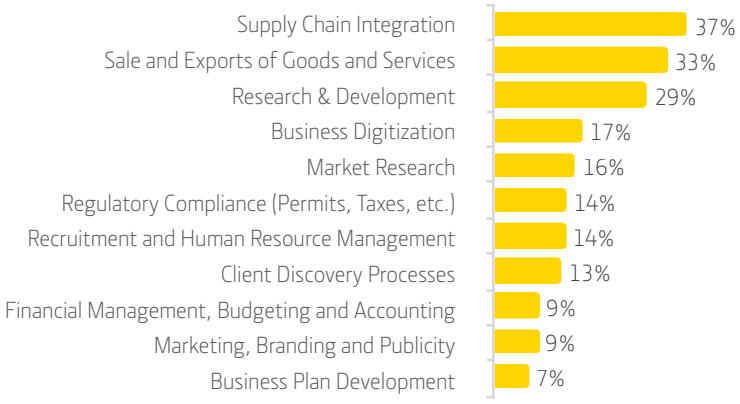
Banco de Desarrollo Económico
- CDBG-DR Small Business Financing (SBF) - $50,000

What do we have to work on as a community?

To identify areas of improvement and offer specific recommendations on where our resources and energy can be allocated, we will go over the perceptions entrepreneurs have of the entrepreneurial community, obstacles, and other important topic areas.

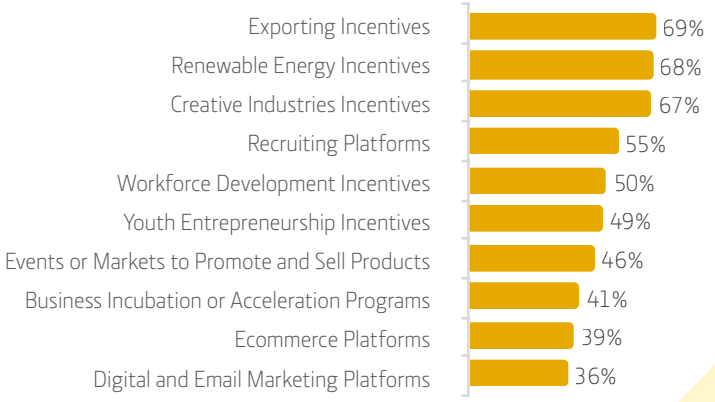
When asked about important business development areas, entrepreneurs show a lack of knowledge in topics relating to Supply Chain Integration (37%), Sale and Export of Goods and Services (33%), and Research & Development (29%). Most entrepreneurs have a basic understanding of each of these topics, but an average of 25% reported having advanced knowledge in Financial Management, Budgeting and Accounting (27%), Business Plan Development (24%), and Marketing, Branding and Publicity (24%).

Knowledge Gaps in the Community



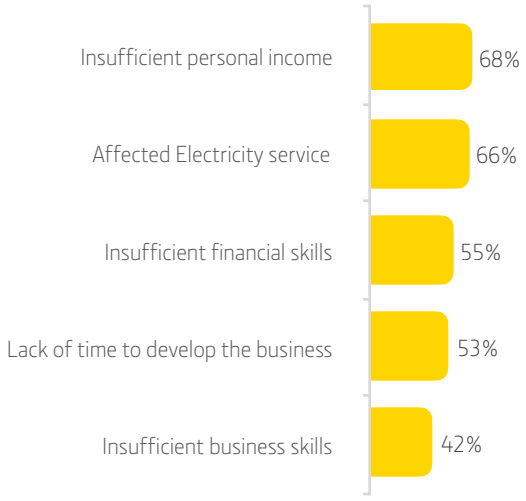
To further gauge possible knowledge gaps, we asked respondents about their level of familiarity with existent community resources. Considering that 54% of operating businesses expect to export in 2023, it is important to point out that 69% of the total sample are unaware of Exporting Incentives. We also observe that 55% of entrepreneurs in the Creative Industries are unaware of incentives for their industry. Of the entrepreneurs expecting to hire new employees in 2023, 47% are unaware of Workforce Development Incentives and 49% are unaware of Recruiting Platforms.

Unfamiliarity with Existent Community Resources



Personal factors affecting business development

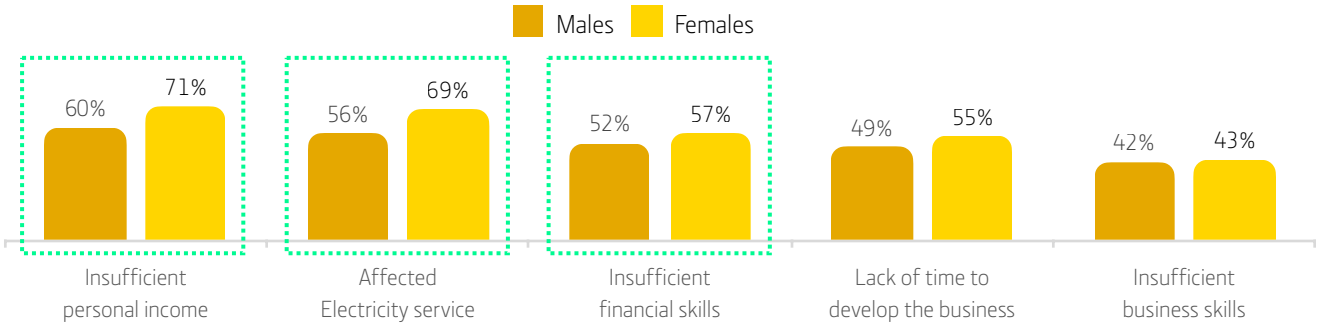
What personal factors have affected your business development?



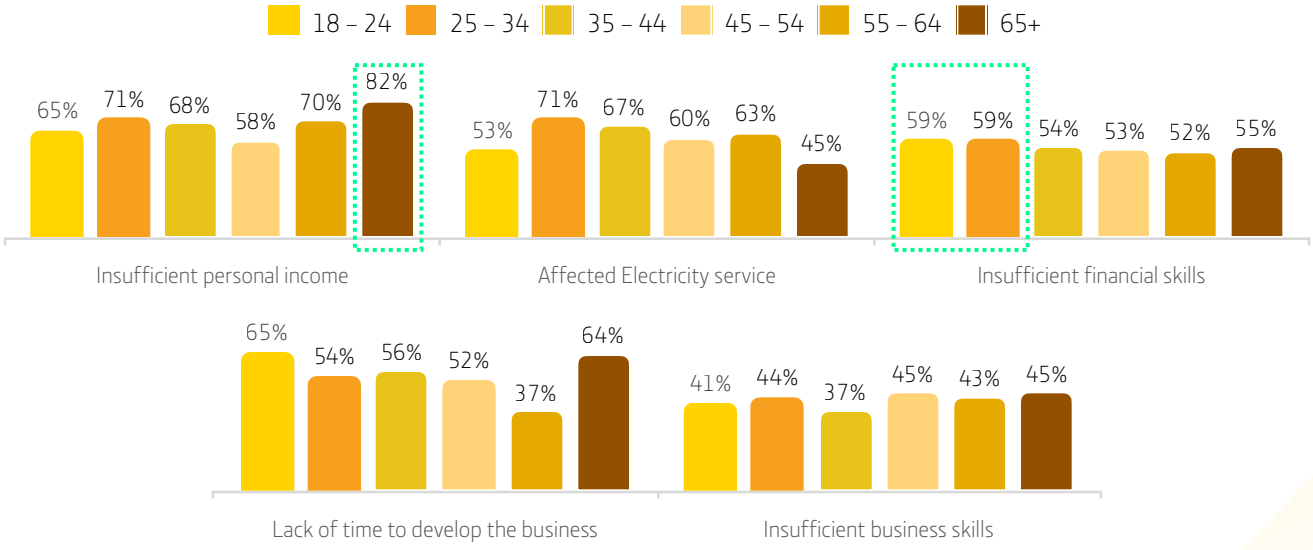
In 2022, the most common personal factors affecting business development are insufficient personal income and an affected electricity service. When personal factors are considered in relation to gender, females report being more affected by insufficient personal income, affected electricity service and insufficient financial skills. Considering other less common personal factors that affect business development, females are 1.7x more likely to be affected by impaired mental health and 1.4x by impaired physical health. Males, on the other hand, are 1.3x more likely to be affected by lack of access to transportation.

Considering these personal factors by age range, insufficient personal income affects 65+ year olds most (82%), this group is also disproportionately affected by insufficient technological skills (73%). Insufficient financial skills are higher among 18 – 34 year olds, and seem to gradually decrease with time for older groups.

Personal Factors affecting Business Development by Gender



Personal Factors affecting Business Development by Age Range

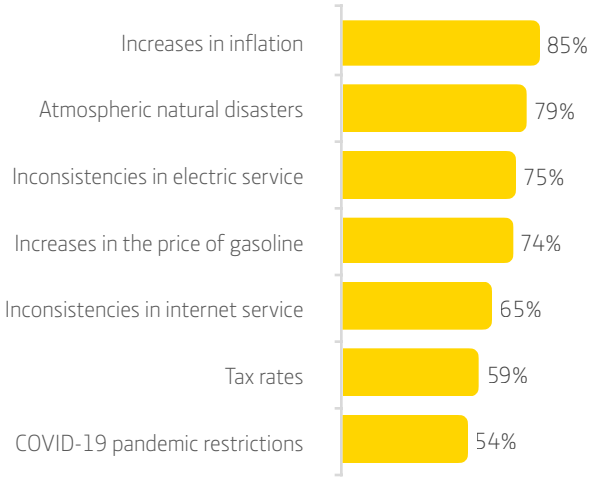


External factors affecting business development

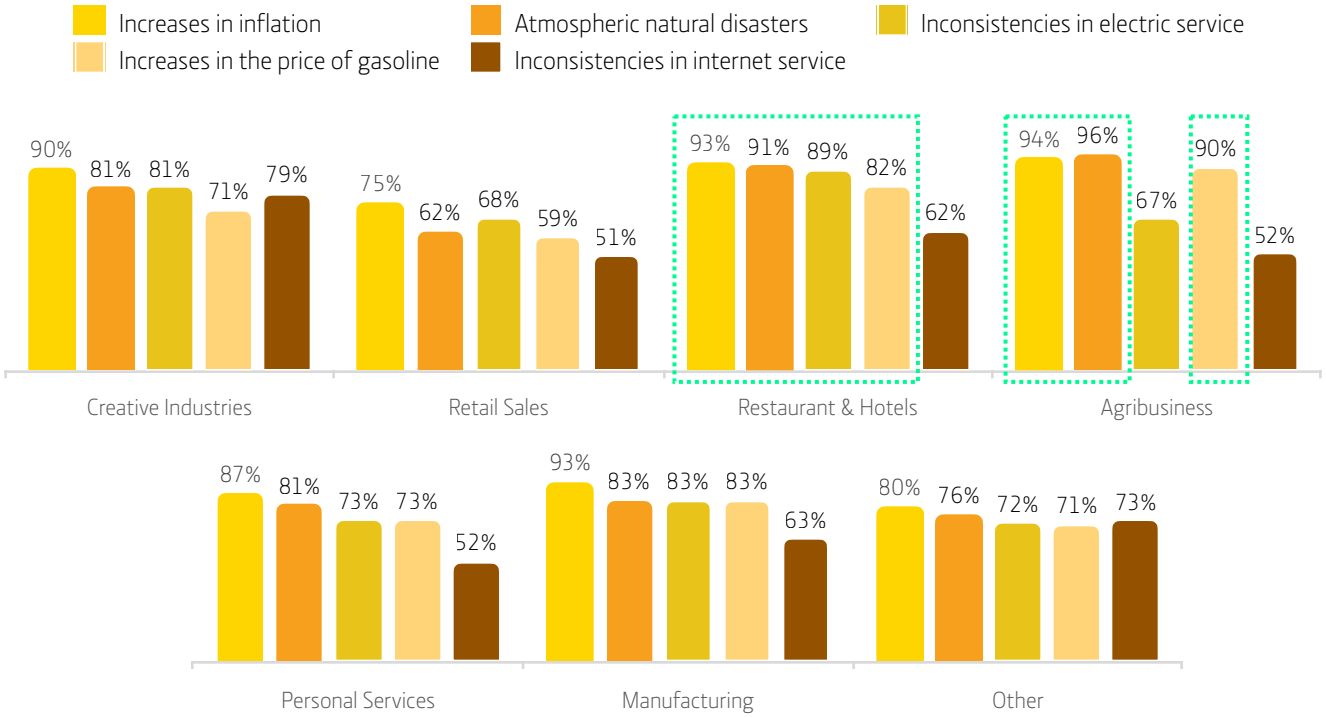
In addition to personal factors, it is important to understand what forces outside of the entrepreneurs' control are affecting their business. The most common external factors affecting business development are inflation and natural disasters (Hurricane Fiona hit in September of 2022).

Considering the external factors affecting business development by industry, all have been impacted greatly, but we see Agribusiness and Restaurant & Hotels have been harshly affected. Restaurant & Hotels have also been affected by tax rates (75%) and inconsistencies in electric service (67%). Agribusinesses also report being disproportionately being affected by COVID-19 restrictions (79%). Manufacturers also report being affected by tax rates (66%).

What external factors have affected your business development?



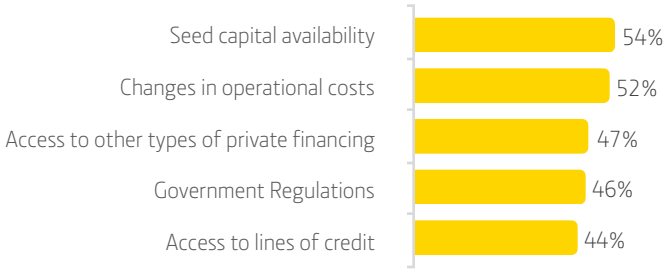
Top 5 External factors affecting Business Development by Industry



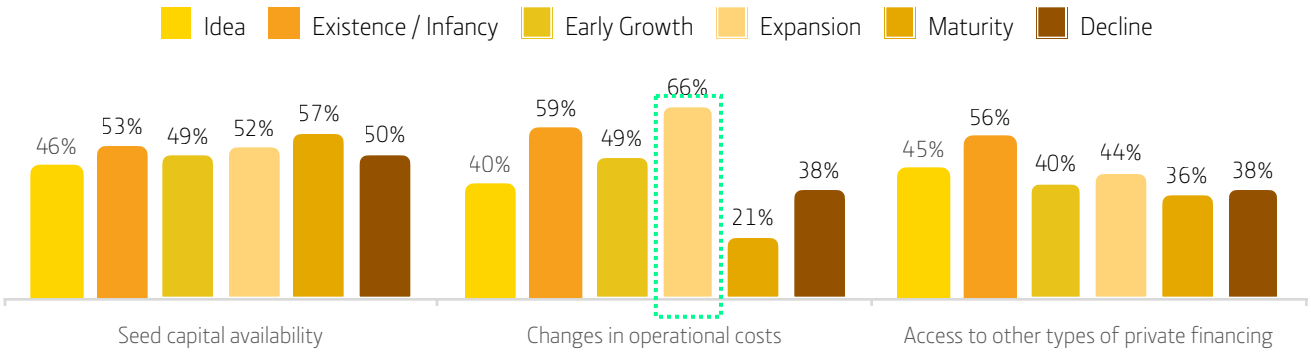
Obstacles to Business Development in 2022

The most common challenge entrepreneurs reported in 2022 was seed capital availability. This challenge can be observed in similar proportions across industries, business stage, and time generating sales. Changes in operational costs seem to particularly affect businesses in the Expansion stage (66%) and those operating for over 10 years (64%). This is a very important topic, considering our economy has been facing high inflation, and this could affect the long-term stability of older businesses while hindering the growth of new ones.

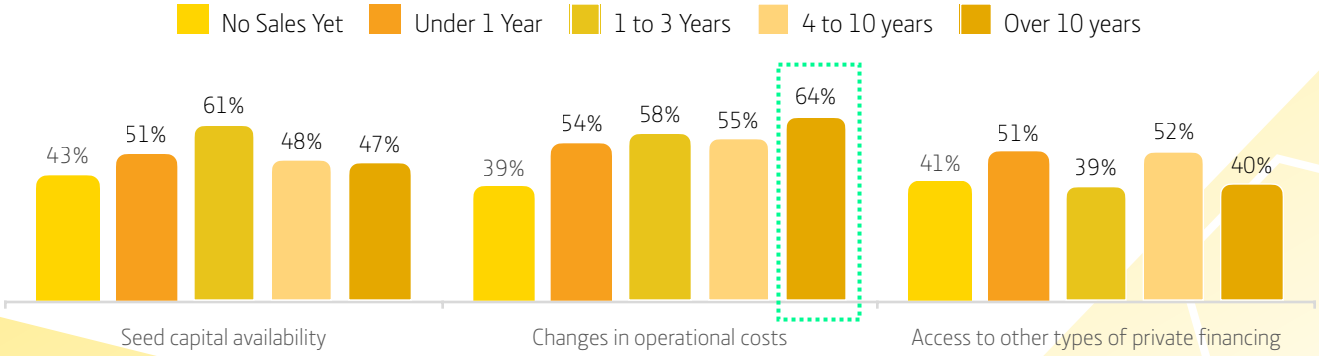
Main Obstacles to Business Development



Top 3 Obstacles by Business Stage



Top 3 Obstacles by Length of Time Generating Sales



Obstacles to Business Development by Industry



Creative Industries

Seed capital availability: 63%
Changes in operational costs: 54%
Access to other types of private financing: 53%



Retail Sales

Seed capital availability: 63%
Access to other types of private financing: 55%
Changes in operational costs: 54%



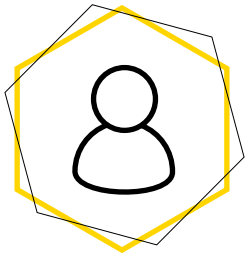
Restaurants & Hotels

Changes in operational costs: 62%
Access to other types of private financing: 51%
Seed capital availability: 49%



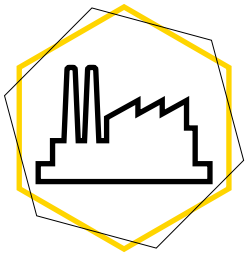
Agribusiness

Changes in operational costs: 52%
Seed capital availability: 50%
Access to lines of credit: 46%
Access to other types of private financing: 46%



Personal Services

Seed capital availability: 60%
Changes in operational costs: 58%
Recurring revenue: 54%



Manufacturing

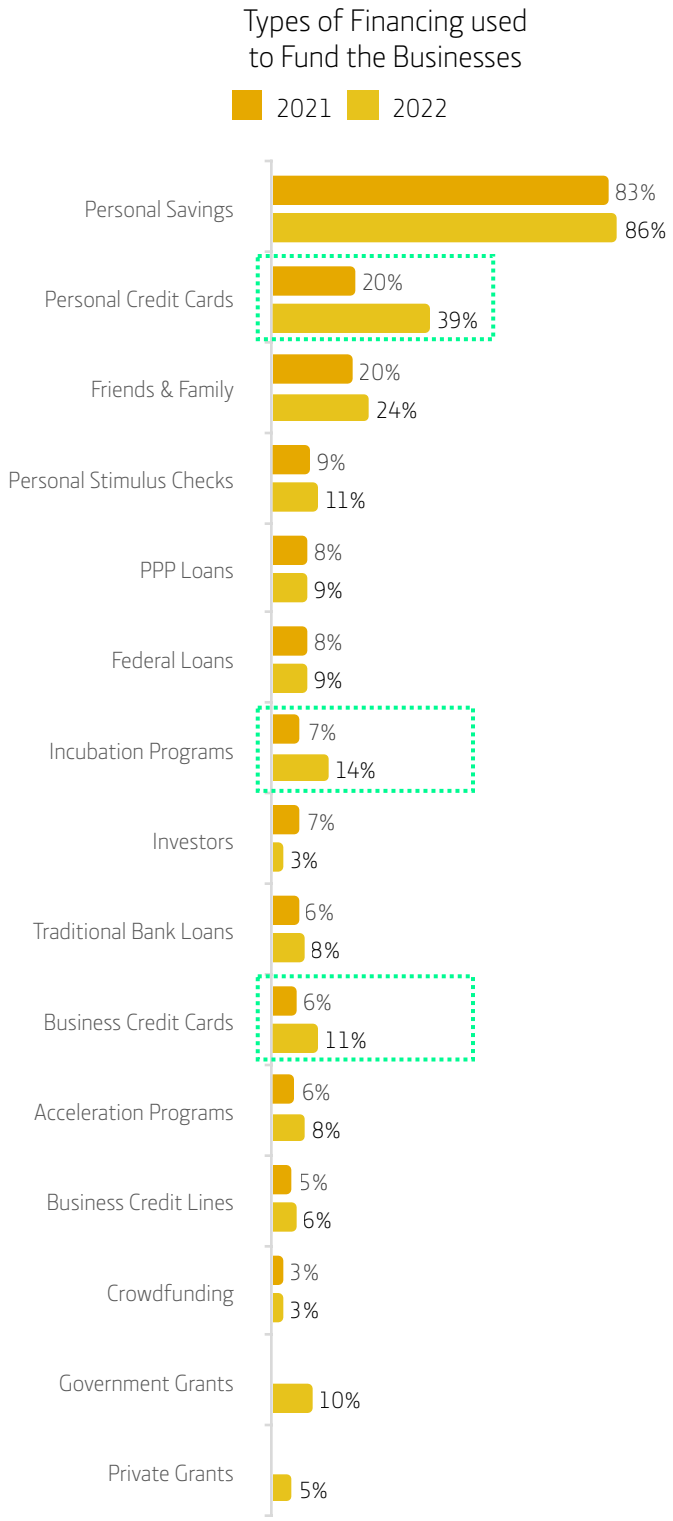
Changes in operational costs: 71%
Government Regulations: 61%
Seed capital availability: 54%
Acquisition of insurance, licenses and special permits: 54%

Access to Capital:
A gap in the community

In 2022, 86% of entrepreneurs surveyed expressed having used their personal savings to fund their business, followed by personal credit cards (39%) and friends & family (24%). It is also important to note that 10% used government grants and 5% private grants for their businesses (we did not collect this data for 2021). In comparison to our 2021 sample, more entrepreneurs report using personal credit cards, incubation programs, and business credit cards.

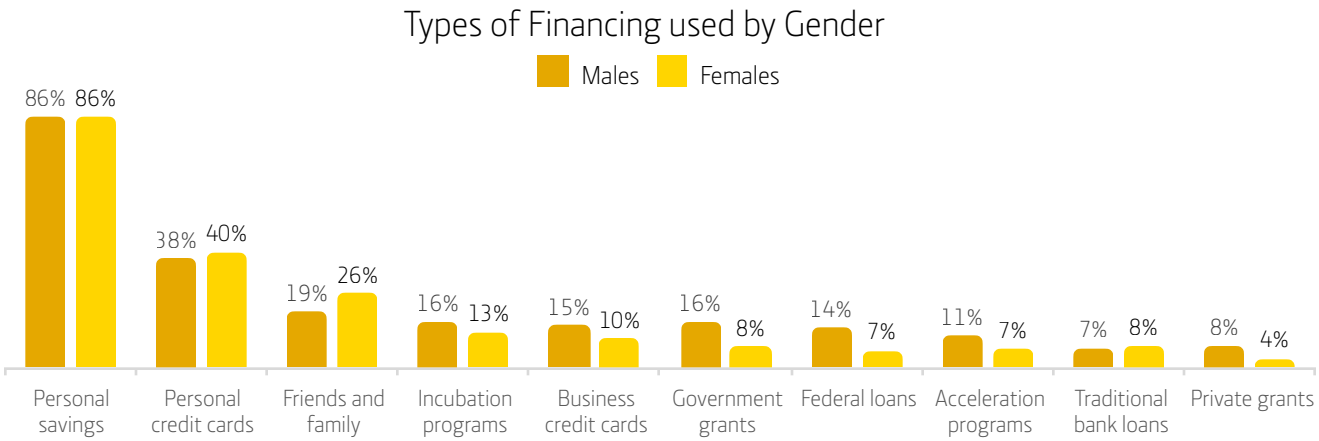
Traditional Bank Loans were used by 8% of the sample. More advanced forms of access to capital ,in this case investment, was used by only 3% (dropping from 7% in 2021) of entrepreneurs. And alternative financing options, specifically crowdfunding, was used by 3%.

This is a very important area to address because the challenges reported by entrepreneurs are insufficient personal income as the primary personal factor, inflation as the primary external factor, and seed capital availability as the main obstacle affecting their business development. This also has to be considered within the context of Puerto Rico's ongoing economic crisis and future economic outlook.

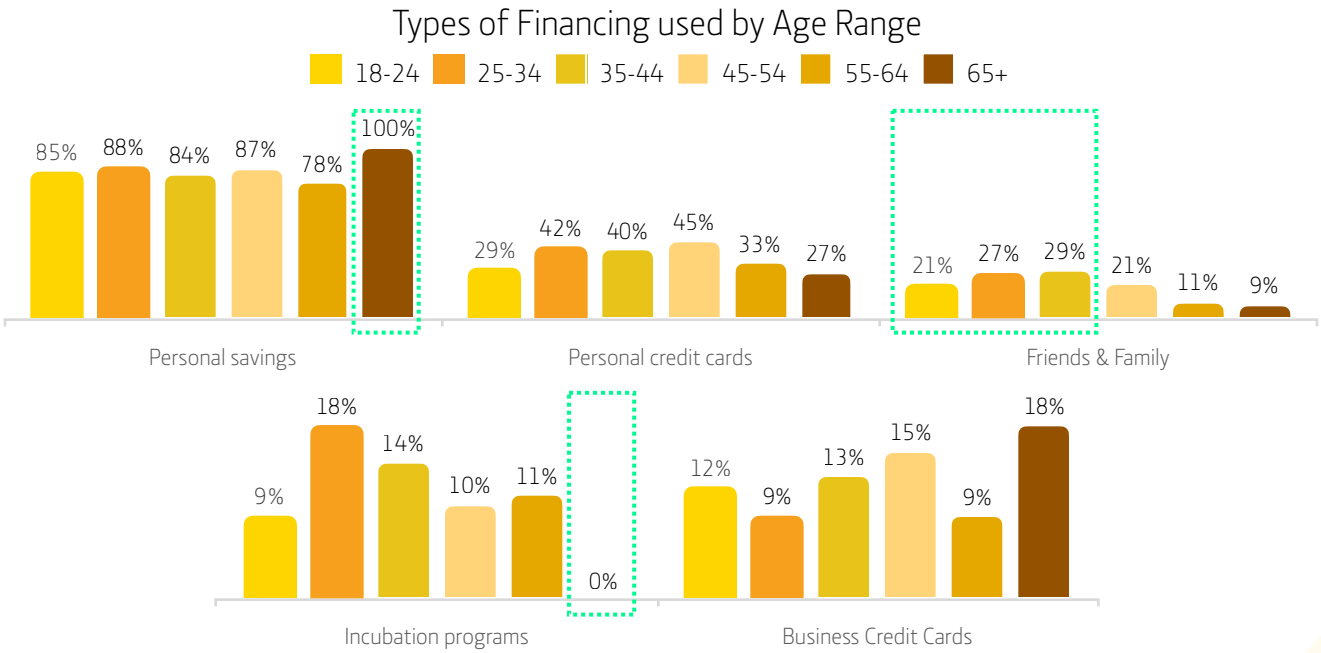


Access to Capital:
A gap in the community

Males and females use their personal savings, personal credit cards and traditional bank loans to finance their business in very similar proportions. Females are 1.3x more likely than males to depend on Family and Friends to finance their business. Meanwhile, males are 2.2x more likely to use Federal Loans, 2.1x Private and Government Grants, and 2x more likely to access investors.



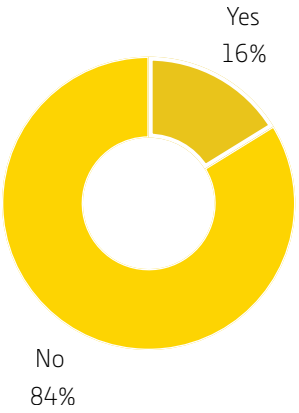
In 2022, Personal Savings were used by all entrepreneurs on the 65+ age range, differing from our data in 2021 where this group had the lowest use by a margin of 42% when compared year to year. This 65+ segment also reports not having used financing alternatives from Incubation programs. In 2021 we observed Friends and Family was used in higher numbers across younger segments, which is still the case for 2022.



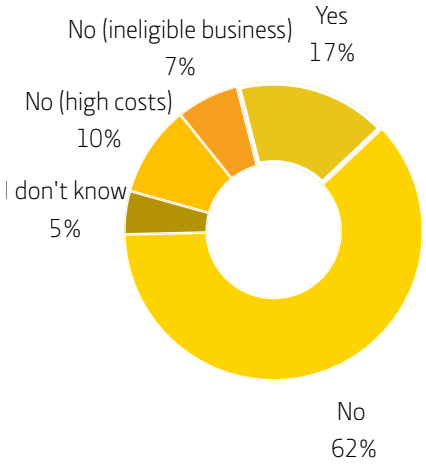
Business Crises Preparedness

Crises preparedness has become a must for any business in Puerto Rico, particularly over the last 5 years. We wanted to learn more about how entrepreneurs were approaching this topic to identify potential gaps.

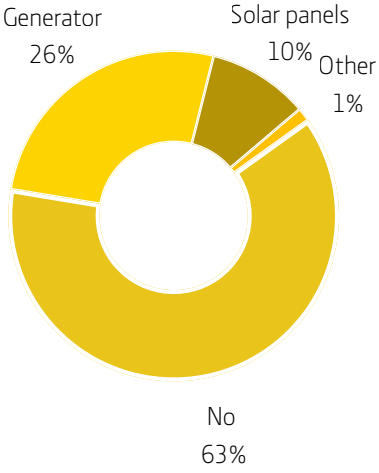
Does the business have contingency funds for a future crisis?



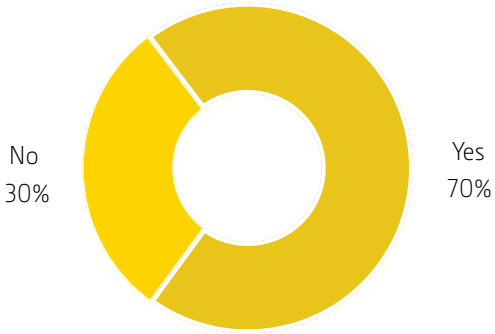
Does the business have disaster insurance?



Does the business have alternative sources of energy?



Is the business better prepared to face a crisis than it was a year ago?



LEVANTA TU NEGOCIO PR

Our findings with this survey sample were very similar to what we learned with Levanta Tu Negocio PR – Hurricane Fiona. Examining these elements across industries, business stage, and time generating sales we observe that a majority of entrepreneurs are still very vulnerable to crises and natural disasters. As they continue to struggle with lingering effects of the pandemic and the current economic crisis, there is an opportunity to collectively and systemically design proactive "precovery" strategies to prepare businesses and respond to a crisis as a well coordinated community.

The Story and Impact of

insu health design

THE TEAM



Co-founders:

Mason Lucich

Doris Candelaria Esteves

Luis Blanco Riveiro

CONNECT WITH THEM ONLINE:

INSU HEALTH DESIGN

A year after Hurricane Maria, a group of students from the University of Puerto Rico and the University of Houston investigated the main problems caused by the hurricane. After interviewing people in multiple communities and entities, they identified that one of the main problems was the lack of effective methods to store medicines that require refrigeration. The prolonged lack of electricity and scarce resources, such as ice, caused thousands of health mishaps, hospitalizations, monetary losses, and even deaths. As a result of this analysis å with the support of the UPR i+C program, Insu Health Design is born, a Puerto Rican startup founded in 2019 with the aim of designing innovative temperature control solutions in refrigerated storage and transportation systems.

Funded through the Small Business Innovation Research (SBIR) Phase I program with the National Science Foundation, their technology has the potential to become the ideal storage solution that can protect and cool temperature-sensitive biomaterials such as drugs, blood, organs, vaccines, chemicals and hormones for extended periods, even in areas that have an unstable power grid or lack one. In addition, this type of product could help decrease the $35 billion annual loss in the global biopharmaceutical industry due to failures in temperature-controlled logistics.

Now located in Mayagüez, they want to enter the market with an excellent first product, improve it and begin research and development of new applications for the technology. Their goal is to maintain the operation of the company 100% in Puerto Rico, create jobs and invest in the development of the business community.

COMPANY PROFILE

Industry – Manufacturing

Location - Mayagüez, Puerto Rico

Type of Business - Company based on innovation

Business Stage – Early Growth | Launch

Time generating sales –They haven't generated sales yet

Classification Female-Owned, Youth-Owned



The Entrepreneurial Journey

CHALLENGES FACED

Access to capital – Capital necessary for the research and development process, which by the nature of the product is long and complex. They have to invest in the development of facilities and the purchase of equipment necessary for the prototyping and manufacture of the product.

Product Development – They have identified technical challenges, manufacturing challenges and scalability challenges that they are solving in order to be able to launch to the market.

Product Market Fit – Identifying the right clientele for their product to ensure its commercial viability. For this, they are carrying out additional market validation and customer discovery processes for a B2B model.

ADVICE FOR OTHER ENTREPRENEURS

"It is the ideal time to start a business. Now there are a lot of opportunities and resources that didn't exist before for people looking to create solutions to real problems."

ENTREPRENEURIAL JOURNEY & COMMUNITY SUPPORT

Starting at the Center for Innovation and Commercialization of the University of Puerto Rico (UPR i+c), Insu Health Design has received support from multiple organizations in the innovation ecosystem in Puerto Rico and in the United States. Through their efforts, they have raised $580K from non-dilutive financing sources to invest in their company.

ACHIEVEMENTS

To date, their greatest achievement has been raising $500K+ through the awards and grants they have won.

They have also received important recognitions from Grupo Guayacán, Bravo Family Foundation, and others.

Their most recent achievement was being awarded an SBIR Phase 1 grant from the National Science Foundation, and matching funds from the Puerto Rico Science Technology and Research Trust, which they will use to take their product to market.

insu health design

The Entrepreneurial Journey

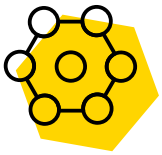
WHO HELPED THEM ALONG THEIR PATH



Stage 1
Idea | Concept

Centro de Innovación y Comercialización de la Universidad de Puerto Rico (UPR i+c)

Parallel18
- Pre18 - $20,000



Stage 2
Proof of Concept | Prototype | Market Entry

Grupo Guayacán
- EnterPRize -$32,000

Colmena66

Puerto Rico Science, Technology and Research Trust
- Ácercate al Grant
- Research Grants Program - $100,000

Carbono3
- C3 Impact Lab

Departamento de Desarrollo Económico y Comercio
- Pymes Innovadoras - $40,000

National Science Foundation
- SBIR - $256,000

RedLABS - $2,000

VentureWell - $25,000

Roddenberry Foundation - $15,000

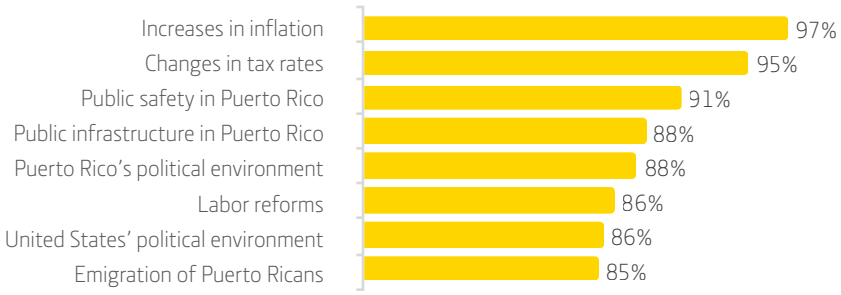
Bravo Family Foundation
- Rising Entrepreneurs Program - $90,000

Community Development Venture Capital Alliance (CDVCA)
- Unlock Capital

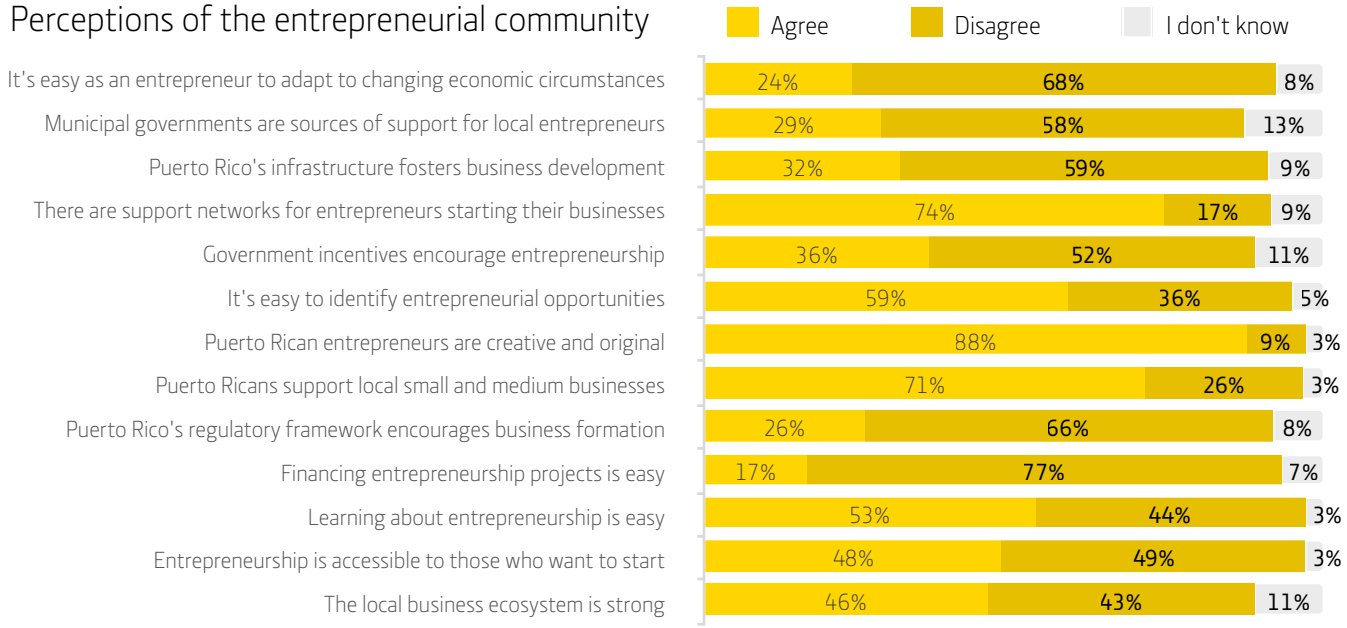
Business Outlook & Community Perceptions

Inflation is the topic that most worries entrepreneurs in Puerto Rico (97%). It is important to note that inflation was reported as the primary factor that affected business development (85%). Additionally, entrepreneurs are worried about changes in tax rates, public safety, public infrastructure and the political environment in Puerto Rico.

What are entrepreneurs most worried about?

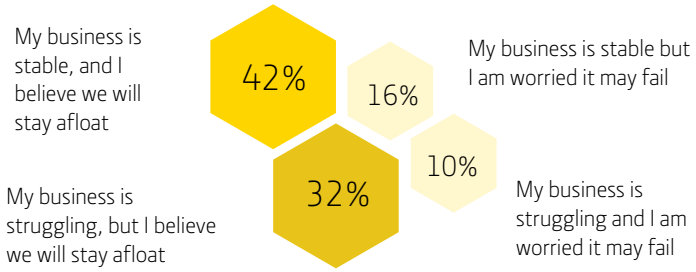


Perceptions of the entrepreneurial community



Most individuals in this sample agree that Puerto Rico has creative and original entrepreneurs (88%) and that there are support networks for them to start their business (74%). Most individuals disagree that financing entrepreneurship projects (77%) and that adapting to changing economic circumstances (68%) is easy. Opinions seem most divided around entrepreneurship being accessible to anyone who wants to start and that Puerto Rico's business ecosystem is strong.

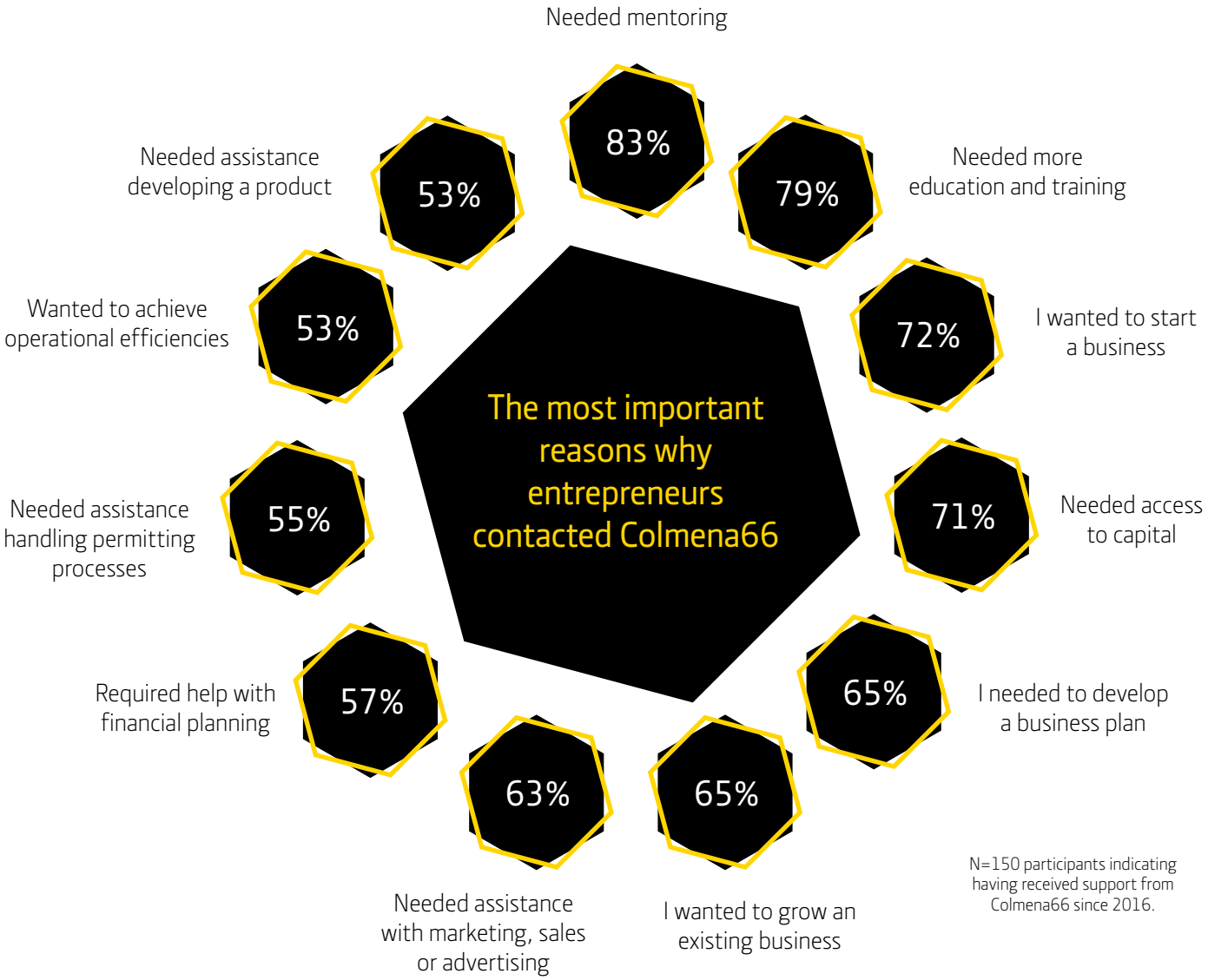
What is your current business outlook?



N=417 responses of participants, excluding those in the Idea stage and who had not yet generated sales.

The majority (74%) of businesses in our survey expect to stay afloat in the near future (a 9-point drop in comparison with 2021), even if currently struggling. The remaining 26% show negative perspectives about the future of their business. This shows that the percentage of businesses with a negative outlook increased from 2021 to 2022.

Before contacting Colmena66

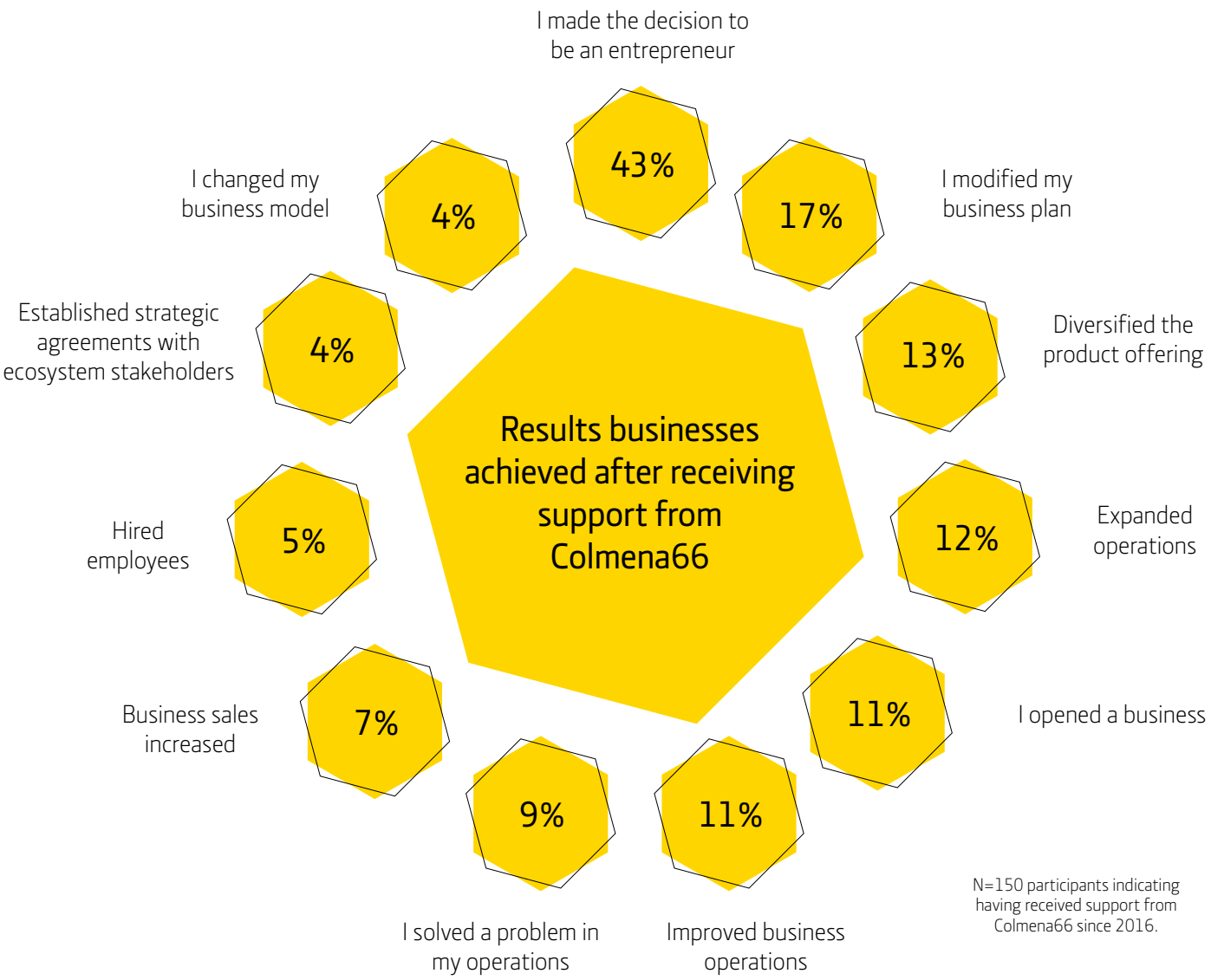


N=150 participants indicating having received support from Colmena66 since 2016.

Entrepreneurs contacted Colmena66 mainly because they needed mentoring, education or access to capital or because they wanted to start a business. Males were 2.3x more likely than females to contact Colmena66 for assistance after a natural disaster, 2.1x for assistance with government contracting, and 1.9x for support developing a proposal.

Considering the reasons Colmena66 was contacted by age ranges, individuals 25 – 34 years old contacted Colmena66 because they needed mentoring (96%) and education (87%) to start a business. Those 35 – 44 mainly needed to grow an existing business (82%). Individuals 45 – 54 mainly needed mentoring (93%) and access to capital (90%).

After contacting Colmena66



N=150 participants indicating having received support from Colmena66 since 2016.

9.4/10

Entrepreneurs recommend Colmena66 to anyone who wants to start or grow a business

After receiving support from Colmena66, most individuals decided to become an entrepreneur, they modified their business plan or they diversified their product offering. Females who contacted Colmena66 were 2.6x more likely than males to establish strategic collaborations with other entrepreneurship support organizations, 2.3x to hire employees, and 1.8x more likely to open a business. Males were 1.6x more likely to resolve an issue in their operations and 1.3X more likely to expand their operations.

Individuals in the 25 – 34 and the 45 – 54 decided to start a business (48% and 42% respectively). Additionally, 32% of individuals 45 – 54 years old reported they diversified their product offering.

“Colmena66 has provided me with exposure to different opportunities for each stage of my business. From programs and competitions to mentoring and informative content, they have helped me start a business.”
- Kiara Rodríguez, Beyond Technology

"Thanks to Colmena66, I was able to develop the business model canvas, as well as connect with numerous organizations that I discovered through their website. This has been a great tool for my business.
– Mónica Narváez, Pure Path

Those who make pollination possible: Our Resource Partners



Annual Resource Partner Survey 2022

Red Colmena66

To build a thriving entrepreneurial community we also have to understand the perspectives of Entrepreneurship Support Organizations (ESOs), their impact, their challenges and how our efforts collectively impact all facets of the community. With this understanding we can communicate how our resources and programs are effective, where there are opportunities to address and, in the same manner we expect to support entrepreneurs, accurately allocate resources to allow these ESOs to continue doing what they do best: advancing entrepreneurship as a tool for economic development.

This survey had the purpose of gauging the experience of ESOs in our network to learn about the sectors being served, types of services provided, organizational challenges, best practices and their outlook on the future of the community. We increased our survey sample to 70 responses (a 27% increase from 2021: 55 responses), which represent 26% of our Resource Network (274 total organizations and programs). These responses are from for-profit, non-profit, academic, private and government institutions who support entrepreneurs.



Annual Resource Partner Survey 2022

Red Colmena66

A

Asociación Agro-Mujer de PR, Inc

Asociación de Pequeñas y Medianas Empresas ASOPYMES

B

Banco de Desarrollo Centro Oriental (BADECO)

Banco de Desarrollo Económico para Puerto Rico

Boys and Girls Club of Puerto Rico

Bravo Family Foundation

C

Casa sin Fronteras, Inc.

Centro de Apoyo a la Innovación y Comercialización (UPR i+c)

Centro de Desarrollo de Emprendimiento (CDE) InterEmprende Ponce

Centro de Innovación Colaborativa Neeuko

Centro de Negocios y Desarrollo Económico

Centro de Recursos de Patentes y Marcas USPTO

Centro para Emprendedores

Centro para Puerto Rico, Fundación Sila María Calderón

Centro para Renovación Económica Crecimiento y Excelencia (CRECE)

Centro Unido de Detallistas

Community Development Venture Capital Alliance (CDVCA)

Consultores Comunitarios (CONSULTCOM)

Cucina 135

D

Departamento de Desarrollo Económico y Comercio (DDEC)

Departamento de Educación

E

El Nodo

Elemento 360

Enactus Puerto Rico

Endeavor Puerto Rico

F

Fase1

Fondo de Inversión y Desarrollo Cooperativo (FIDECOOP)

Foundation for Puerto Rico

Fundación Borincana - PRECAP

Fundación Comunitaria de Puerto Rico

Fundación Monte Azul

G

Grupo Guayacán

I

Incubadora Génesis Agroempresarial, UPR Utuado

Incubadora Inova- INTECO

INprende

Instituto de Permacultura de Puerto Rico, Inc.

K

Kingbird Innovation Center (UAGM)

Kiva Puerto Rico, Causa Local

L

Latino Economic Development Center

Lendreams (Cofecc)

Link Puerto Rico

M

Mentes Puertorriqueñas en Acción

Molecular Science Research Center (MSRC)

Morro Ventures

Mujer Emprende Latina

Mujeres de Islas

Mumas Renaciendo

O

Operation HOPE, Inc. Trujillo Alto-Fajardo

P

P11 Departamento de Desarrollo Económico, Municipio Autónomo de Ponce

Parallel18

PathStone Enterprise Center

PR MBDA Business Center

Pre18 - Parallel18

Puerto Rico Manufacturing Extension (PRiMEX)

Proyecto P.E.C.E.S.

PR-SBTDC Arecibo

PR-SBTDC, Barranquitas

PR-SBTDC Caguas

PR-SBTDC, Comercio Internacional

PR-SBTDC Ponce

Puerto Rico Minority Supplier Development Council (PRMSDC)

Puerto Rico Small Business Development Center

Puerto Rico Techno Economic Corridor, Inc. (PRTEC) - Vitec2

S

StartUp Popular - Banco Popular de Puerto Rico

U

USDA, Food and Nutrition Service

U.S. Export Assistance Center of San Juan

Universidad Interamericana de PR, Centro de Emprendedores InterEmprende Metro

Universidad de Puerto Rico en Ponce (Epicentro Empresarial)

Universidad de Puerto Rico Recinto Cayey Titulo V

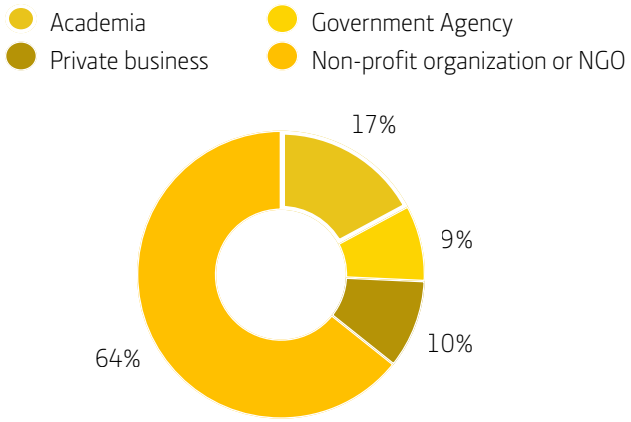
UPRA-Emprende840



Thank you! To all the collaborators who completed the survey. Your contributions help us better understand the status of our community and what needs to be done so we can work more effectively together.

Who is helping build the hive?

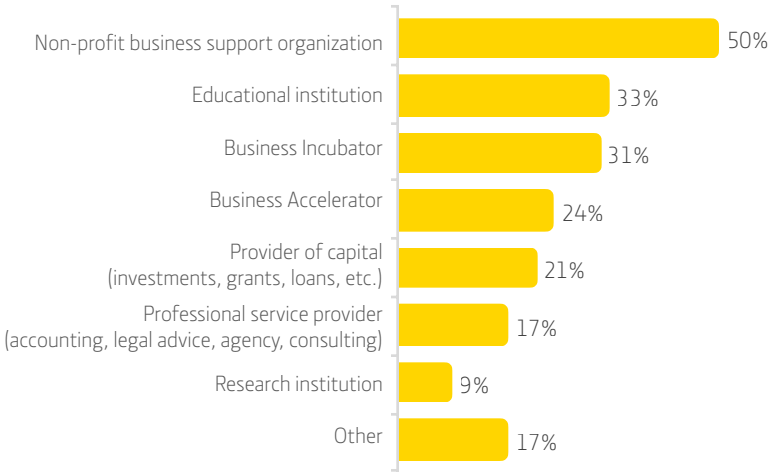
Type of Organization



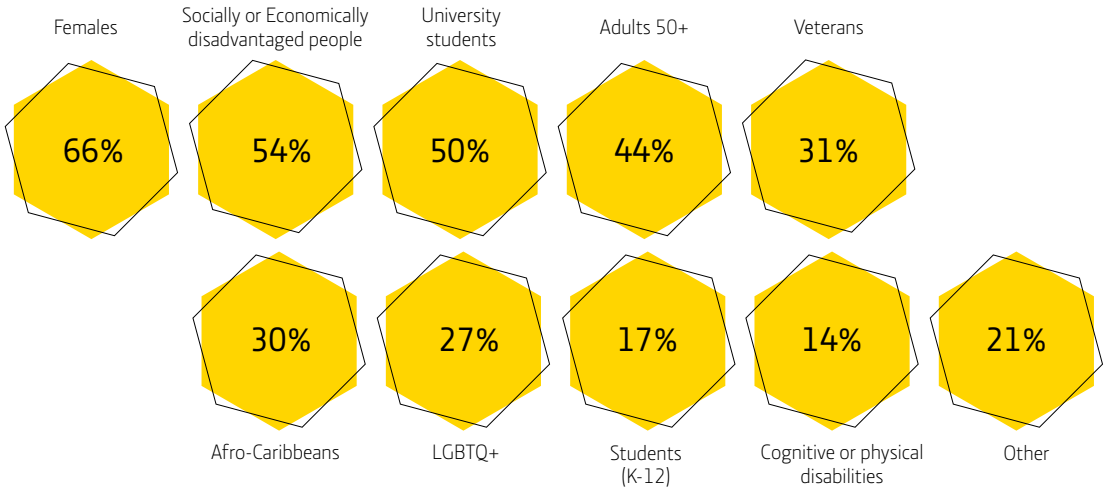
Entrepreneurship Support Organizations, or Resource Partners as we often call them, are organizations that provide entrepreneurs with services and resources such as mentoring, capacity building, networking events, acceleration programs, loans, investment, technical assistance, grants, co-working spaces, and many more types of support. These stakeholders represent multiple sectors such as non-profit, academia and government. We share the goal of advancing equitable and inclusive entrepreneur-led economic development and help create the support system so entrepreneurs can thrive and reinvest in their communities.

Some of these entities can play various roles within the ecosystem. Survey respondents reported that 33% were educational institutions, 21% are capital providers, and 17% are professional service providers. These professional service providers help address technical challenges relating to business formation or development, such as accounting, legal advisory, permits, and many others.

Role in the community

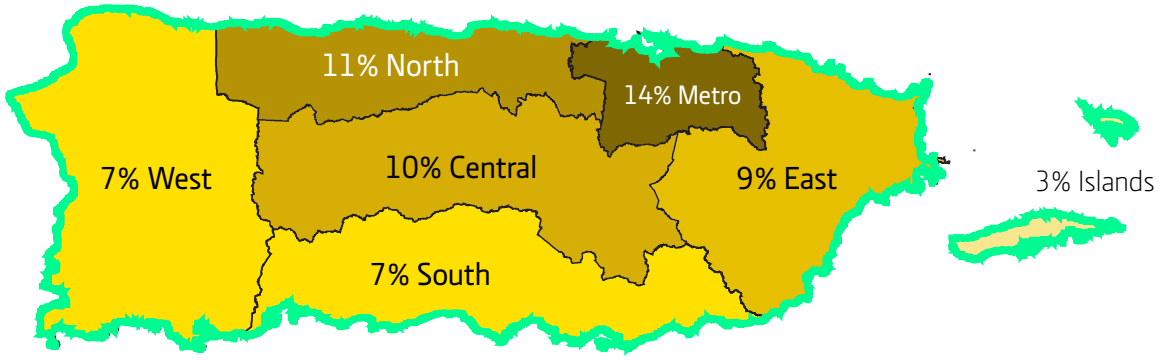


Which sectors does your organization serve?



The reach of our Resource Network

Regions served by ESOs



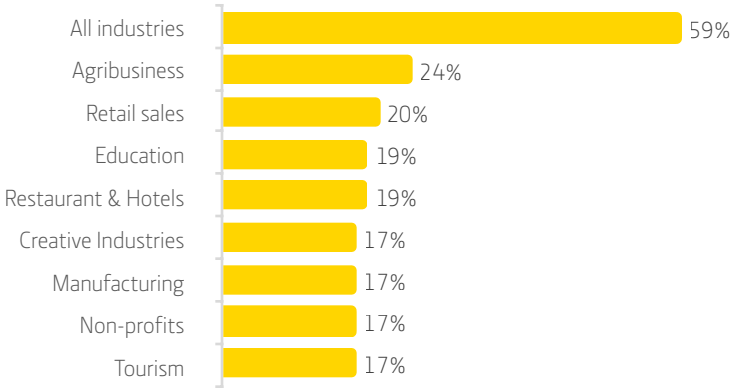
Most ESOs in our sample 69% serve any and all regions in Puerto Rico

.Analyzing the reach other organizations have, the Metro region is served by 14% of organizations, 11% in the North, 10% in the Central Region, 9% in the East, 7% for both West and South, and only 3% in Vieques and Culebra.

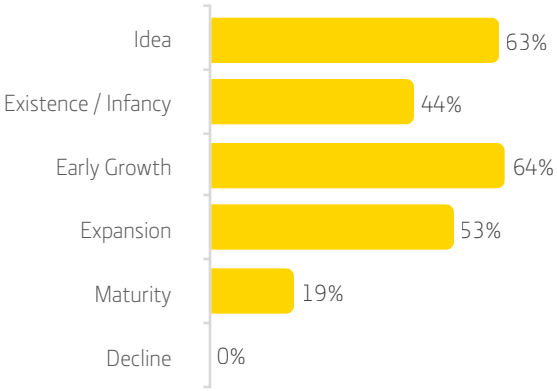
Where and how are resources deployed?

Most ESOs in the Resource Network are industry agnostic. Considering the top represented industries in the 2022 Annual Entrepreneurship Survey, 17% of ESOs have focused support for Creative Industries, 20% for Retail, 19% for Restaurant & Hotels, 24% for Agribusiness, 10% for Personal Services and 17% for Manufacturing.

Top Industries Served by ESOs



Business Stages Served

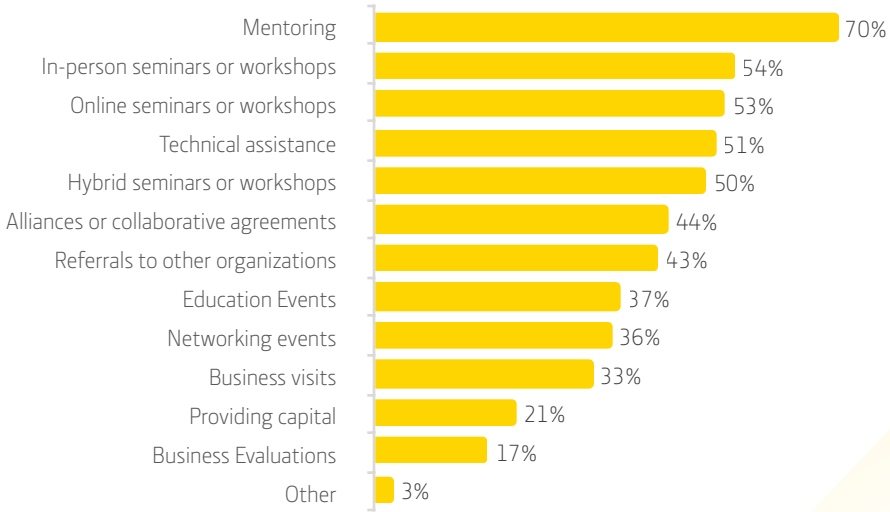


When asked about the business stages these ESOs serve, the Resource Network seems to have strong support for the Idea, Early Growth and Expansion stages. However, there is an opportunity to support entrepreneurs in their Existence / Infancy stage, as this is typically that difficult period before reaching the 3-year survival mark. Additionally, there is an opportunity to develop support resources for established businesses that have had sustained growth or have existed for longer periods of time. In this sample, we observe that there are no support services for declining businesses, which again points to an opportunity to develop resources that can help declining or failing businesses.

Deriving best practices from the experiences of ESOs working with entrepreneurs, we asked what were their most effective strategies to deploy resources and address the issues their audiences face.

The most commonly used strategies reported were mentoring, in-person and online seminars or workshops, and technical assistance.

Most effective strategies and tools ESOs use to deploy resources



Collective Impact & Findings

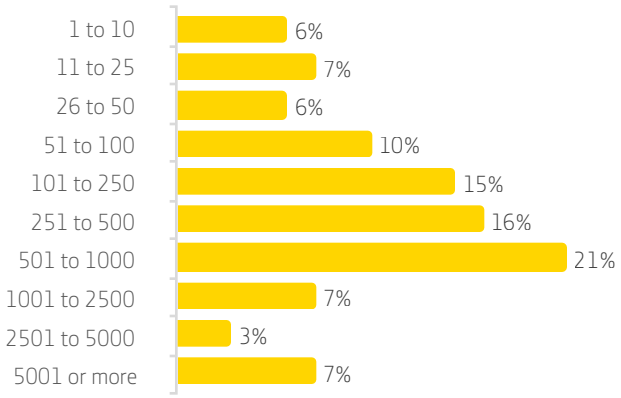
95K+

People served collectively by the Resource Network

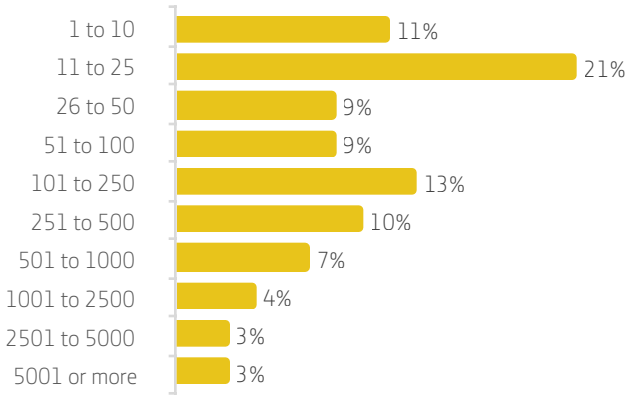
52.1K+

Potential and established businesses served collectively by the Resource Network

People Served by ESOs in 2022



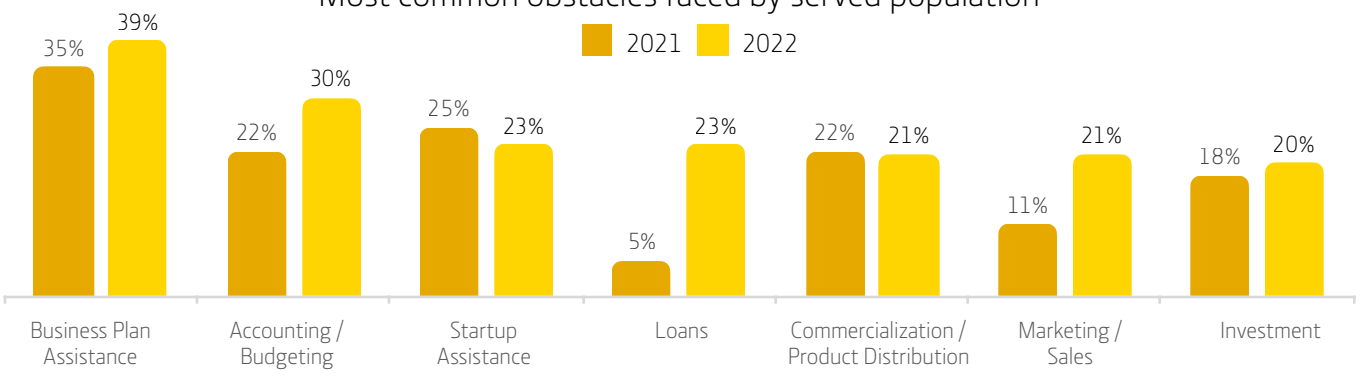
Businesses Served by ESOs in 2022



N=63 ESOs that reported having served businesses.

This collective impact only takes into account the 70 organizations in our survey sample, which means that this impact could be much higher. Data points such as these are important because, as a community, we should soon be able to establish a series of impact metrics and benchmarks that can help us understand the reach and effectiveness of our efforts, something the Global Entrepreneurship Monitor (GEM) Report has already started to do in Puerto Rico.

Most common obstacles faced by served population



In 2022, the most common obstacles entrepreneurs face, as reported by the organizations serving them, were Business Plan Assistance, Accounting/Budgeting, and Startup Assistance. In comparison with what organizations reported in 2021, we see large increases in obstacle related to Loans (18%) and Marketing/Sales (10%).

The Story and Impact of

upr i+c

THE TEAM





Co-Founders:
Dr. Manuel Lobato,
Dr. Javier Rodriguez
Dr. Carmen Correa
Dr. Jordi Maura
Dr. Camille Villafañe

CONNECT WITH THEM ONLINE:

UPR i+c

The Center for Innovation and Commercialization Support (UPR i+c) was founded in 2017 by a group of professors from different disciplines of the Faculty of Business Administration of the UPR Río Piedras. Its objective is to provide support to students, researchers, and entrepreneurs in the process of commercializing their ideas, technologies and inventions.

UPR i+c was established as a space open to people from all disciplines to experiment and learn. The center has collaborated with the School of Architecture and its FabLab, the School of Law and its Intellectual Property Clinic, both of the Río Piedras Campus, and the Puerto Rico Technology Assistance Program (PRATP) to integrate services and promote projects.

Since 2019, the organization has also provided services to entrepreneurs from the external community, and in 2021 an incubator was inaugurated on its premises. This incubator offers specialized mentoring and accompaniment to complete the initial phases of business development successfully. In addition, they lead the I+CARE project, with the support of the Economic Development Administration (EDA), which was launched in 2021 to support initiatives focused on people with functional diversity and older adults.

UPR i+c has also developed educational resources to strengthen skills related to entrepreneurship and innovation. They offer several certificates including: Innovation, Commercialization of Innovations and Development of "Small Business Innovation Research (SBIR) Commercialization Plan". They also created a Minor Concentration in Design and Innovation alongside the School of Architecture. The purpose of the course is to train students in design, innovation and entrepreneurship for the development of a service or a specific innovation project that can be commercialized in global markets. Through these support services they bring together members of the academic community and partners of the local innovation ecosystem to develop solutions to social problems and bring to market new technologies that improve the well-being of their users.

PROFILE

Sector – Academia

Location - San Juan, Puerto Rico

Regions Supported- Metro Region

Business Stages Supported – Idea, Existence/Infancy, Early Growth

Industries Supported – All Types of Industry

Do you provide access to capital? – No

Year Started – 2017

upr i+c

CHALLENGES FACED

Lack of entrepreneurial culture in academia – There is not a strong culture of business development within the academic community, therefore, innovations that are the product of research at the university are not brought to market.

VISION OF THE ENTREPRENEURIAL COMMUNITY

"The business community will continue to grow and consolidate itself as the axis of Puerto Rico's economic development. I expect transformations that should be the result of the maturity of now incipient processes, such as a focus on greater efficiency and impact by incubators, the emergence of true "business angels" (who will probably be the entrepreneurs who are now beginning to succeed with their startups) and greater attention from venture capital firms in the United States. The role of Colmena66 and the Trust have been and will be crucial in this development, especially if they continue to prioritize impact and create new programs to contribute to the balanced development of the ecosystem."

IMPACT ON THE COMMUNITY

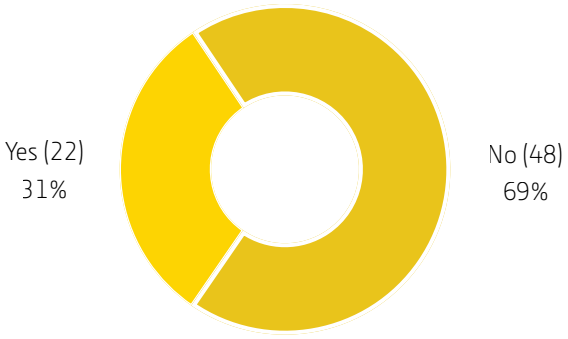
Between 2018 and 2023 they have supported 67 innovation projects, including 18 spinoffs or startups.

They have supported 31 additional ventures through their incubator program.

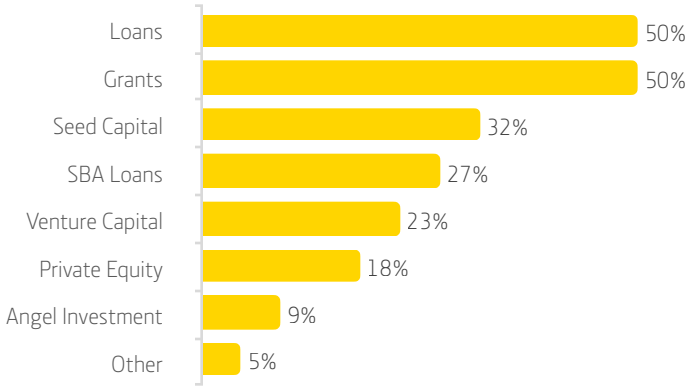
Projects supported by UPR i+c have successfully participated in numerous competitions and programs of the innovation ecosystem in Puerto Rico and United States, including NASA MITTIC, ImpactaLatam, NSF I-Corps and SBIR.

Access to Capital:
A Provider's Perspective

Does your organization provide access to capital?



Types of capital provided

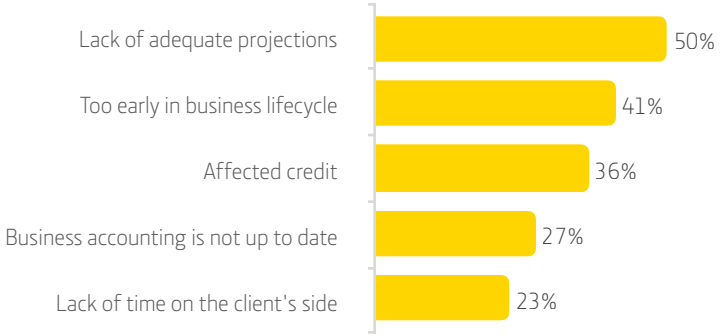


N=22 ESOs that provide capital

Approximately one third (31%) of respondents in our survey are access to capital providers. The capital alternatives most offered by these organizations are Loans, Grants and Seed Capital.

When asked about why requests for capital they received from entrepreneurs were not completed, most of our Resource Partners who provide access to capital mentioned that companies who request capital often lack adequate projections (50%) and are too early in their business development (41%). This may also be related to the main obstacles the broader Resource Network reported entrepreneurs face around Accounting/Budgeting (30%), Loans (23%) and Investment (21%).

Main obstacles faced by companies when accessing capital



Capital Deployed in 2022

$19.2M

Excluding $72M deployed by government agencies

Capital Available in 2023

$19.4M

Excluding $174M available from government agencies

The comparison of these figures could be indicating a significant gap between available capital and actual deployment. This presents an opportunity to enhance support for businesses in accessing capital and reaching a larger number of enterprises. Furthermore, evaluating existing funding mechanisms and exploring alternative financing options can help bridge this gap and deploy capital more effectively.

The Story and Impact of UnlockCapital

THE TEAM





Dr. Ernesto Villarini, Managing Director

Lic. Alejandra Jiménez, Program Manager

Lic. Emmanuel Loubriel, Program Manager

CONNECT WITH THEM ONLINE:

UNLOCK CAPITAL

The Community Development Venture Capital Alliance (CDVCA) is an organization dedicated to providing venture capital for community economic development in underserved markets in the United States. Founded in 1994 in New York, CDVCA has a presence in Puerto Rico since 2016 with the Puerto Rico Fund for Growth (PRFG) program, which has invested over $46M. It was created in the wake of the Riegle Community Development and Regulatory Improvement Act of 1994 which created the Community Development Financial Institutions and the CDFI Fund to support and partially capitalize these financial institutions.

CDVCA's mission is to represent the network of the U.S. community development venture capital investment field. Its focus is on community economic development in underserved markets, including job creation and wealth. To manage investor's risk avertion, CDVCA provides technical support and professional education to venture capital fund managers, enabling them to identify opportunities and invest capital in underserved industry or geographic sectors.

CDVCA offers an investment readiness program called Unlock Capital. This program is aimed at founders and executives of companies seeking capital for growth, offering them education, mentoring, technical assistance and other services to help companies attract investors and raise capital. The program has been hugely successful, with its first cohort in 2022 raising more than $1.8 million in capital during its time in the program and a second cohort beginning in March 2023.

The Unlock Capital program helps participants understand the mindset of investors, understand the different types of financing available, and prepare them for capital raising. Unlock Capital is a valuable tool for founders and executives of companies seeking capital for the growth of their businesses and helps meet the need for capital in underserved markets, such as Puerto Rico.

PROFILE

Sector – Non-governmental or non-profit organization

Location - San Juan, Puerto Rico

Regions Supported- All Regions in Puerto Rico

Business Stages Supported – Early Growth, Expansion, Maturity

Industries Supported – All Types of Industry

Do you provide access to capital? – Yes | Private Equity, Venture Capital

Year Started – CDVCA began in the USA in 1994. They establish programs in Puerto Rico in 2016.

CHALLENGES FACED

Risk aversion in Puerto Rico as a market – Perception of risk that investors have considering investment opportunities in localities or regions that do not stand out for being highly developed ecosystems of emerging companies (startups).

VISION OF THE ENTREPRENEURIAL COMMUNITY

"We've seen a lot of growth in the ecosystem and that the gaps are being bridged better each time. Fairly robust and better educated companies are also developing. There is a large gap when it comes to access to capital, but it is slowly being addressed by various organizations and sectors. More resources need to be leveraged in the United States to facilitate capital investment and business growth through the export of goods and services to the United States, the Caribbean, and globally. We see a lot of potential and opportunities to expand our impact. We hope that this ecosystem will continue to grow and become one of the most important hubs in the hemisphere."

IMPACT ON THE COMMUNITY

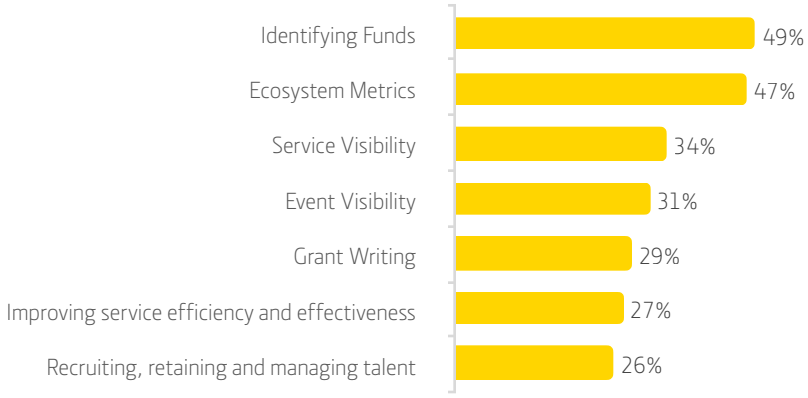
The PRFG invested over $46M in 171 companies, either through a funds managed in Puerto Rico or direct investment in companies. Of these, 142 companies (83%) are based on the island.

With its first cohort, Unlock Capital has managed to help 15 companies obtain $1.85 million in investments or financing to support growth and has already begun its work in 2023 with 16 additional companies.

Cross-pollination with Resource Partners

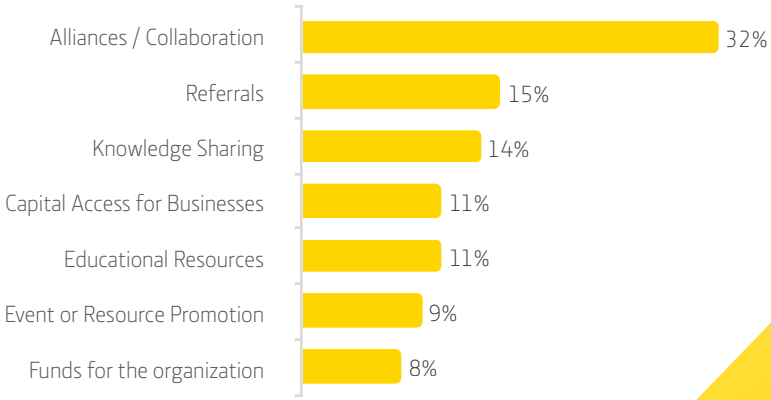
Challenges faced by Entrepreneurship Support Organizations

The three main challenges reported by the Resource Network are: identifying funds, lack of ecosystem metrics, and lack of service visibility. These needs express that organizations want to find ways to address program sustainability, accurate data to improve effectiveness or to allocate resources, and to promote their services and programs so more entrepreneurs can receive their services.



What are you expecting to benefit the most from by being part of the Resource Network?

Colmena66's network of resource partners not only facilitates entrepreneur's access to resources, but also generates cross-pollination among the network's organizations. They share learned lessons, best practices and assist each other. Therefore, when asked what organizations need from others, the top responses were: collaboration (32%), client referrals (15%), knowledge sharing (14%) and identifying access to capital opportunities for the businesses they serve (11%).

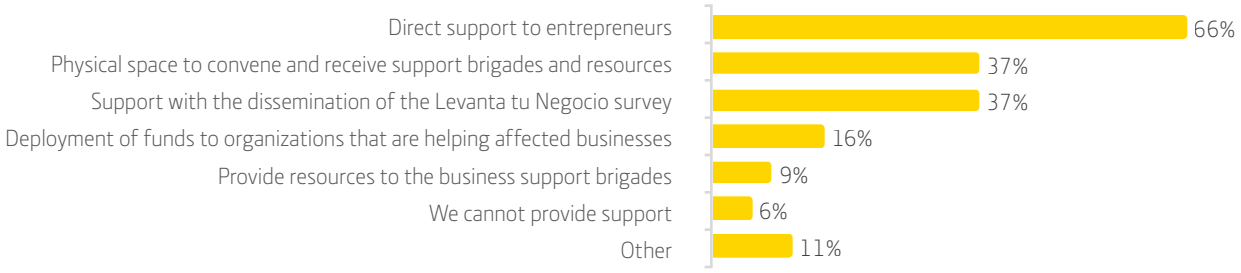


N=65 ESOs that answered this question.

Ecosystem Crises Response

With what we have learned about how entrepreneurs are underprepared to face crises, we wanted learn what resources and support the Resource Network could provide. This is one of our first steps into understanding what the community can do and how we can design a coordinated effort to proactively address this issue.

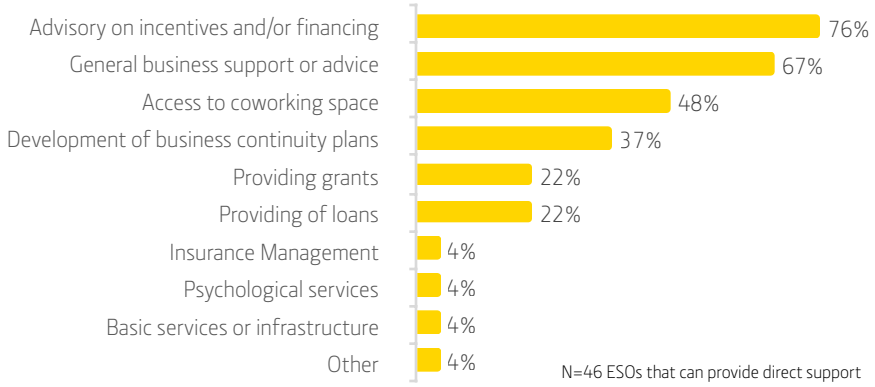
In a crisis event, how is your organization ready to support affected entrepreneurs?



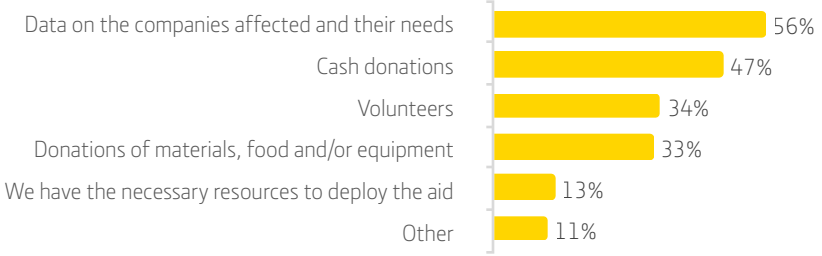
In a crisis event, 66% of organizations can provide direct support to entrepreneurs. Other organizations can indirectly benefit affected entrepreneurs by supporting community efforts. Only 6% cannot provide support.

What direct support can your organization provide?

The direct support these ESOs can provide is mainly advisory related. In terms of physical space, 48% can provide access to coworking spaces and 4% can provide basic services or infrastructure such as generators, drinking water, fuel, etc. In terms of funding, 22% can provide grants and loans.



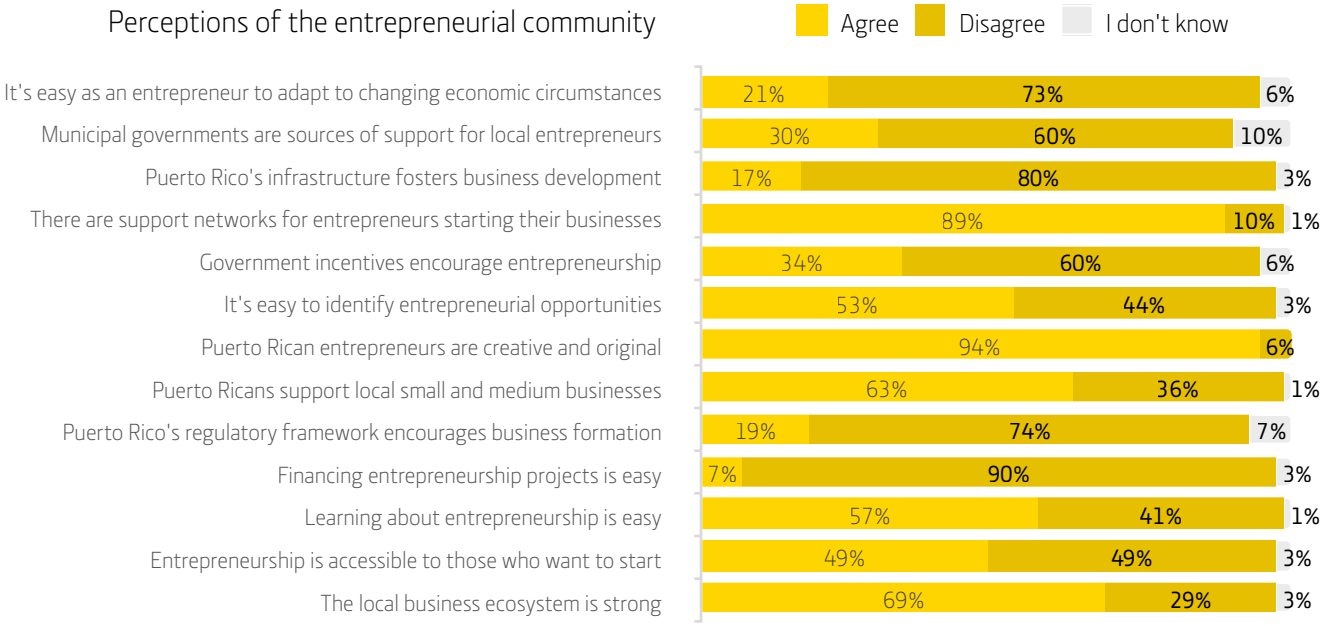
What does your organization need to deploy these resources?



In turn, to provide these resources ESOs need mainly data of the affected entrepreneurs to allocate resources, cash donations, volunteers, and the necessary materials such as food or equipment.

Ecosystem Outlook & Experience in the Network

Perceptions of the entrepreneurial community



Comparing the perceptions of Resource Partners with that of entrepreneurs, most individuals in this sample agree that Puerto Rico has creative and original entrepreneurs (94% vs 88%) and that there are support networks for them to start their business (89% vs 74%). Most individuals disagree that financing entrepreneurship projects (90% vs 77%) and that adapting to changing economic circumstances (73% vs 68%) is easy. Resource Partner's opinions seem most divided around entrepreneurship being accessible to anyone who wants to start, and that identifying entrepreneurial opportunities is easy.

Resource Partner's Experience in the Network

9.5/10

Resource Partners recommend other ESOs join our Resource Network

9.3/10

Resource Partners recommend Colmena66 to anyone who wants to start or grow a business

Resource Partners see Colmena66 as an Entrepreneurship Support Organization that helps identify needs, foster connections, and allocate resources. Our platforms help them bring visibility to their initiatives, services and programs. We convene them in various events to share knowledge, network and design solutions to gaps in the community. Our partners are very thankful of our work helping them, and we are very thankful of their work helping entrepreneurs succeed. Through sustained collaboration and a shared vision, Puerto Rico is slowly but surely building the foundations of a very impactful entrepreneurial community where anyone can start or grow a successful business.

The Story and Impact of

ECHAR PA'LANTE

LEADING THE WAY



Dr. Gloria M. Viscasillas

Lead Integrator at Echar Pa'Lante

Vice-President of Economic Development Programs at Popular

VISIT THEM ONLINE

ECHAR PA' LANTE

Echar Pa'Lante is a multisector alliance that aims to accelerate the development of a global culture of entrepreneurship and innovation to transform Puerto Rico into the Enterprising Island. Since 2012, the organization has brought together hundreds of organizations and thousands of volunteer allies, as well as national and international experts, to collaborate on the design and implementation of systems to stimulate entrepreneurship and innovation (E&I) at the school, university, and community levels.

Understanding that Puerto Rico faces a significant and socio-economic challenge, Echar Pa'Lante focuses on developing the culture of entrepreneurship by (1) building multisector alliances that are geared towards action and a collective vision, (2) building entrepreneurship capacity by educating the educators and other multisector leaders, and (3) building the systems to transform schools, universities and municipalities into enterprising communities that will foster accelerated business development. Echar Pa'Lante is certifying K-16 educators, entrepreneur support practitioners and other multisector leaders in entrepreneurship and innovation, which will then foster the necessary systemic changes to build resilient enterprising communities that drive sustained socio-economic development.

Investing in the development of an entrepreneurial mindset from an early age until retirement (lifelong learning), human capital resources, training, infrastructure, and support for programs that stimulate entrepreneurship in schools and post-secondary communities represents the most significant investment in capital of the 21st century. Echar Pa'Lante's proposal is based on social projects that promote a new paradigm of the education system, combining 21st-century skills development, which are required for the future of work, and the retention of students in schools and post-secondary institutions. This is done through the implementation of systems that stimulate entrepreneurship and innovation, developing citizens who are globally competitive through curricular, co-curricular, and extracurricular activities in economics, finance, entrepreneurship, and creativity.

The organization also focuses on entrepreneurship to address the critical issues of unemployment and underemployment in Puerto Rico. The World Economic Forum anticipates that by 2023, 52% of the tasks currently performed by humans will be managed by artificial intelligence, and by 2025, 50% of the global workforce will depend on self-management. The island is facing global competition for investment, and many companies are moving their operations to other countries where production costs are lower. Encouraging entrepreneurship and lifelong learning can be an alternative to generate jobs and create local capital.

CHALLENGES FACED

Significant educational transformation – updating the curriculum and educational methodologies to develop the skills and knowledge students need for the future of work.

Achieving sustained economic development and socio-economic recovery – focusing on entrepreneurship to address issues of unemployment and underemployment while ensuring academic and socio-economic recovery by developing entrepreneurial communities.

VISION OF THE ENTREPRENEURIAL COMMUNITY

"Echar Pa'Lante will migrate to a new digital learning and collaboration community. We also plan to provide college professors and entrepreneur mentors with advanced certifications in topics such as innovation, scientific entrepreneurship, exporting and law. We expect that E&I education will be fully integrated in 100% of high schools. Additionally, we plan to implement a PR Lifelong Learning Strategy. Through these efforts and the work the entrepreneurship support network is doing we expect that new ways of collaborating will be adopted and there will be more cooperation among sectors. We can expand our impact and position Puerto Rico as a highly skilled and competitive workforce in the Americas and the world."

IMPACT ON THE COMMUNITY

Established strong & cohesive multisector coalition behind a common purpose: empower Puerto Ricans with essential skills to accelerate the development of an entrepreneurship and innovation (E&I) culture to help restore growth and bring prosperity to all.

Developed a critical mass of K-16 educators and a network of support practitioners. As of May 2022:

- 1,106 college professors trained
- 10,061 K-12 educators trained
- 496 entrepreneur support practitioners trained

Integrated E&I in K-16 curriculum and enabled the implementation of systems to transform educational institutions and municipalities into enterprising communities.

The diversity of bees in our honeycomb: Deep Diving into Specific Interest Groups



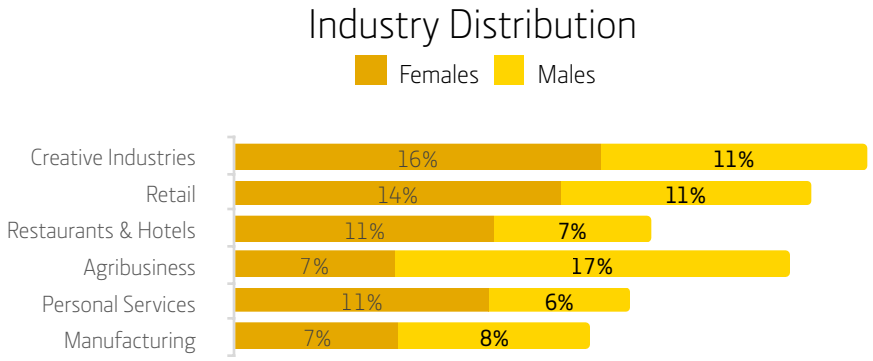
The buzz of our female bees

72%

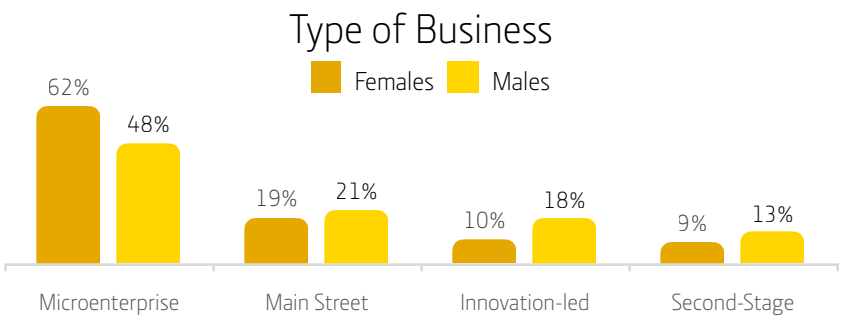
of survey respondents identify as females

The US Census Bureau estimates 53% of Puerto Rico's population is female.

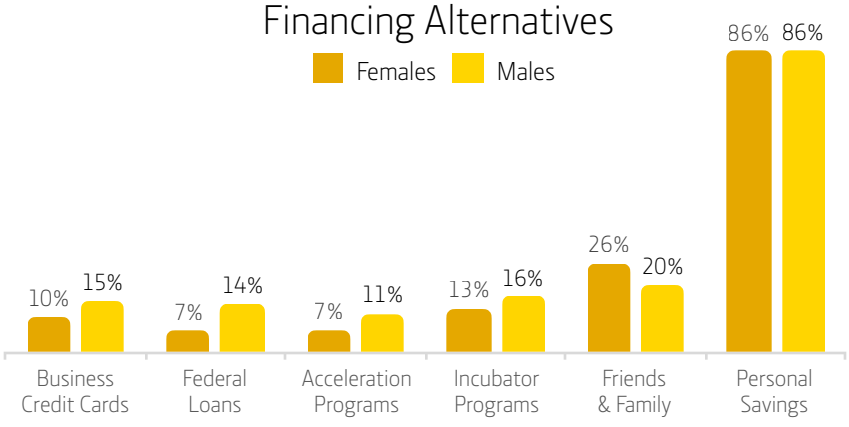
Examining the top industries represented in our sample, Females have a higher participation in Creative Industries, Retail, Restaurant & Hotels, and Personal Services. Males have higher participation in Agribusiness and Manufacturing.



As to their types of businesses, Females reported having a Microenterprise 14% more than Males. On the other hand, Males report having more Innovation-led and Second-Stage businesses than Females, 8% and 5% respectively.

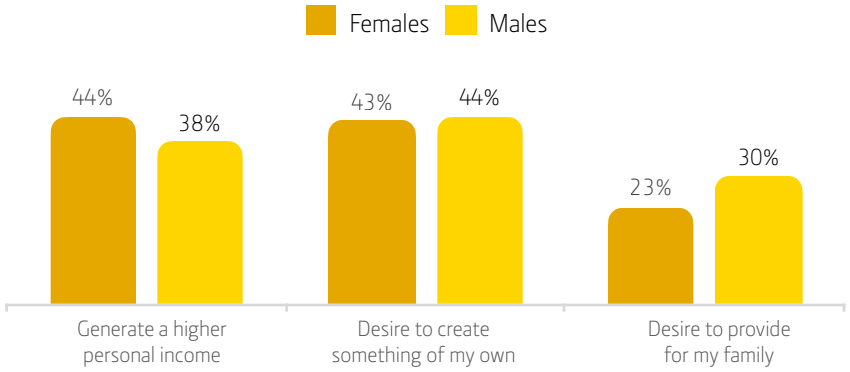


In terms of financing alternatives used to fund their business, Females use Personal Savings on a similar level to their Male counterparts. Friends and Family comes up as the second alternative more often used by Females, using it 6% more than Males. Interestingly, Males show a larger percentage of use for Business Credit Cards, Federal Loans, Acceleration and Incubator programs.

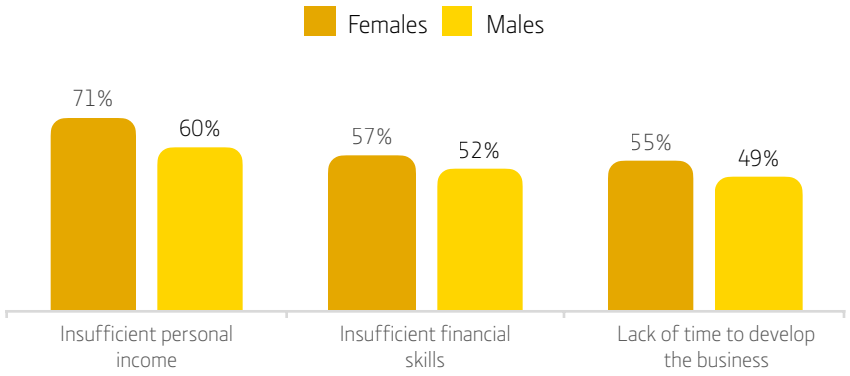


The buzz of our female bees

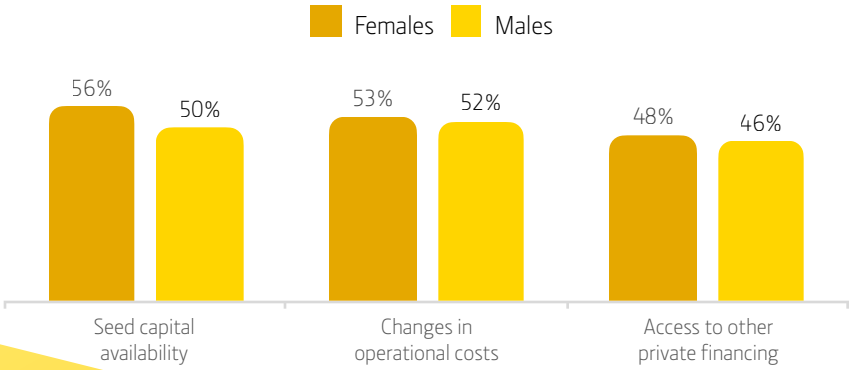
Entrepreneurial Motivations



Personal Situations



Main Business Obstacles



The afro-bees of our hive

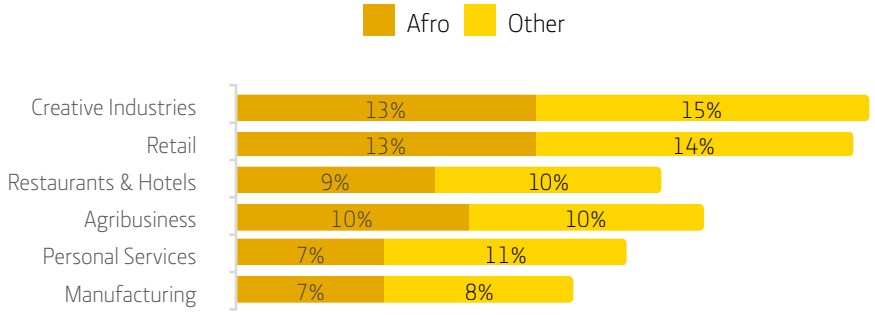
25%

of survey respondents identify as Black, African American or Afro-Caribbean

The US Census Bureau estimates 10% of Puerto Rico's population identifies as Black or African American.

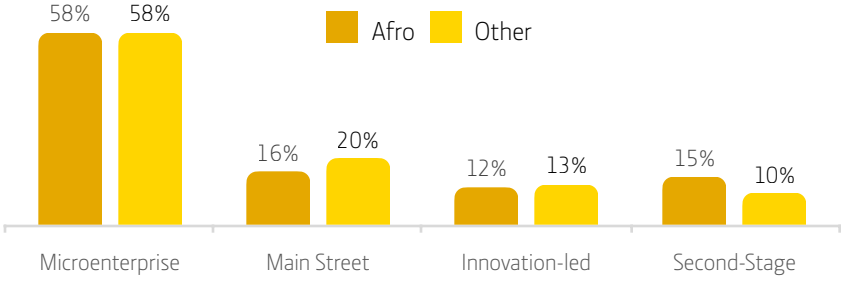
This population seems to be represented in similar proportions to other groups across industries. In 2021, we saw a higher percentage in Agribusiness (14%), Restaurants & Hotels (12%).

Industry Distribution



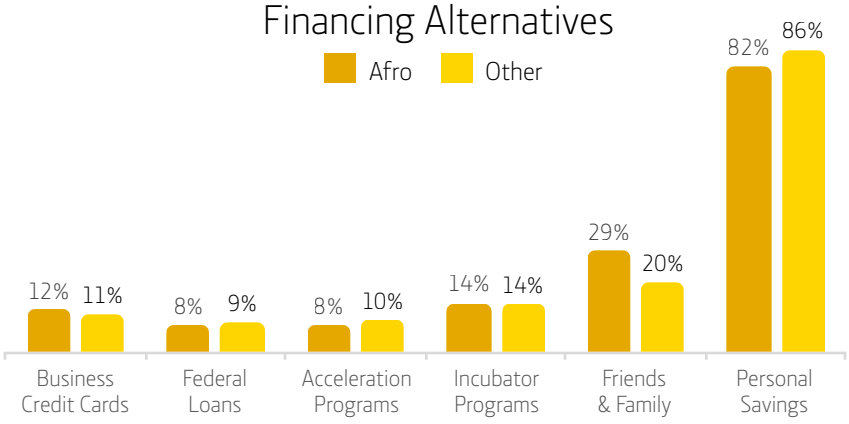
Afro-Caribbean entrepreneurs report having Microenterprises at the same proportion as other groups. Interestingly, this group reports having 5% more Second-Stage businesses than the rest of the sample.

Type of Business



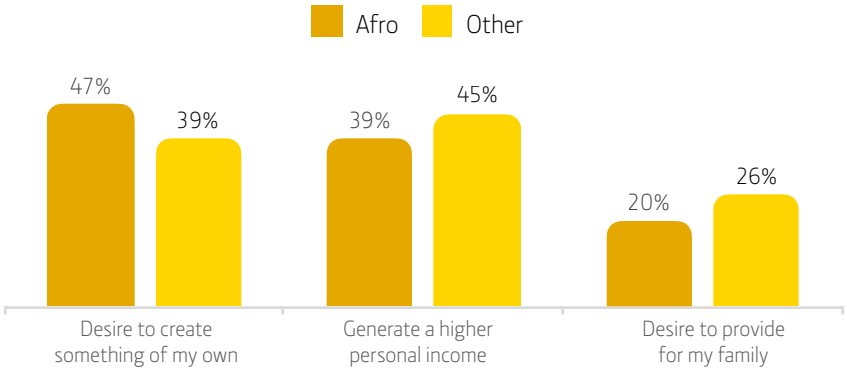
On par with other groups, Afro-entrepreneurs finance their business using mainly Personal Savings. The second most likely business financing source are Friends and Family (9% difference). When observing other alternatives, these groups have a very proportional spread.

Financing Alternatives



The Afro-bees of our hive

Entrepreneurial Motivations



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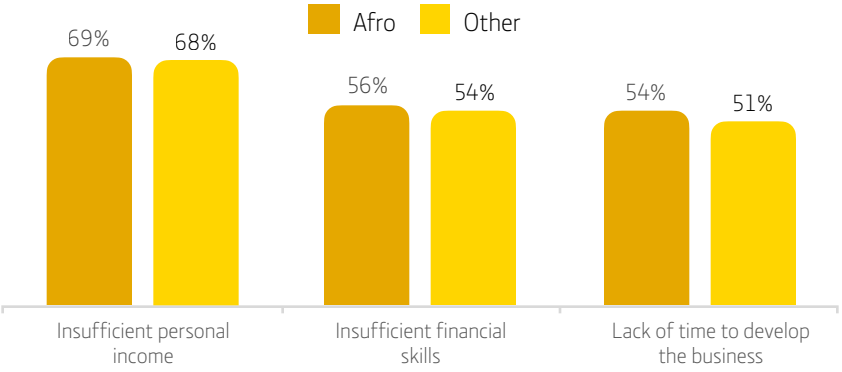
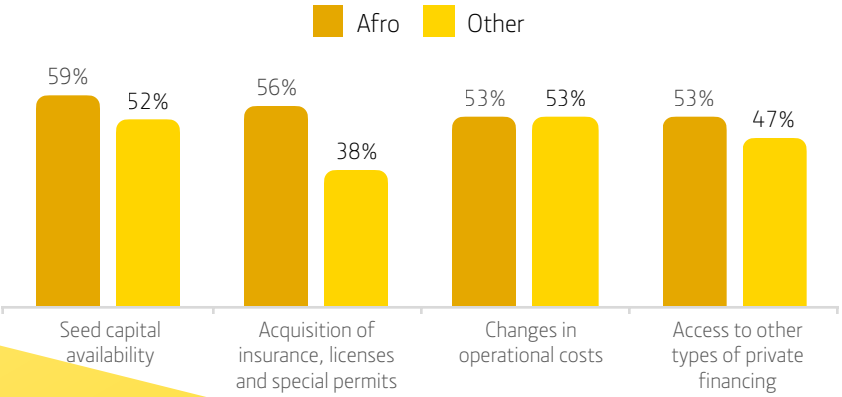


Main Business Obstacles



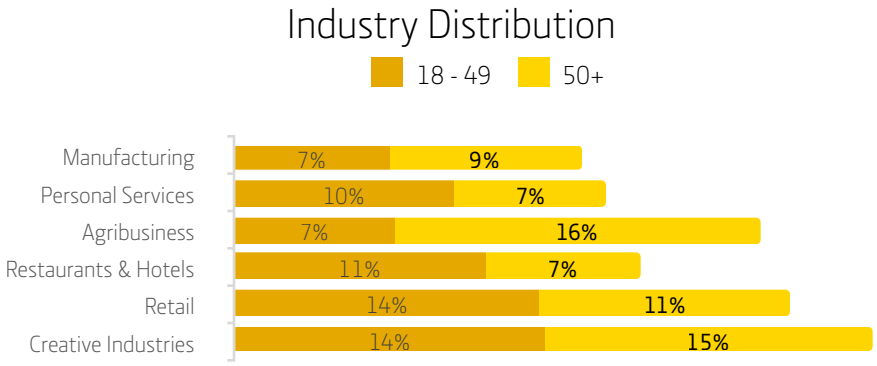
The wisest bees in the hive

14%

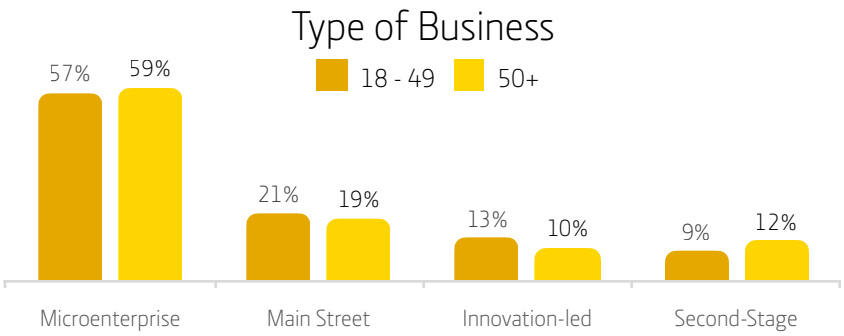
of survey respondents are 50+ years old

The US Census Bureau estimates 43% of Puerto Rico's population is 50+ years old.

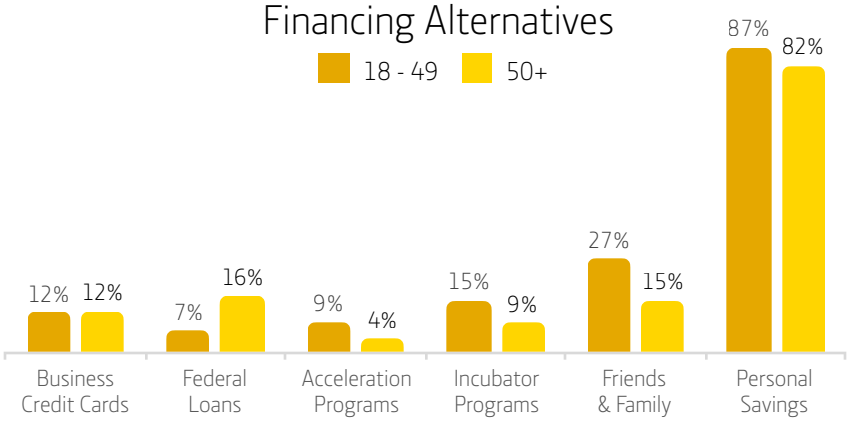
Individuals 50+ years old in our sample have a higher participation in Agribusiness (9% difference) than other groups. We can also spot a difference in Restaurant & Hotels, where other 18 – 49 years olds have a higher participation (4% difference).



Entrepreneurs 50+ have 3% more Second-Stage businesses than younger groups. While the 18 – 49 year olds have 3% more Innovation-led businesses. Both groups have similar proportions in terms of Microenterprise and Main Street businesses.

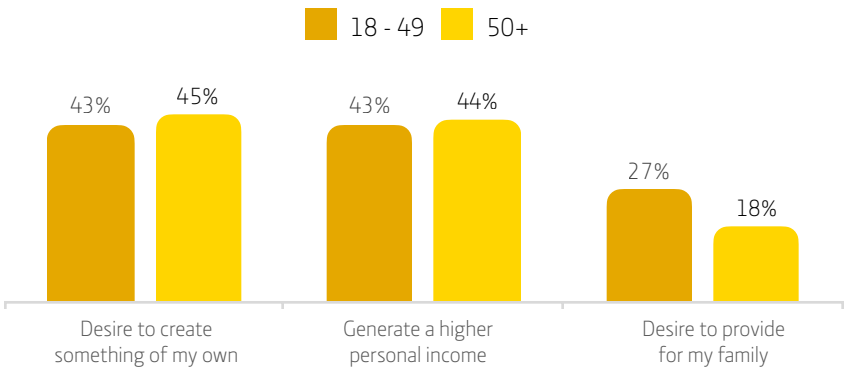


On par with other groups, Afro-entrepreneurs finance their business using mainly Personal Savings. The second most likely business financing source are Friends and Family (10 point difference), as well as Acceleration programs that provide seed funding. However, they seem less likely to use traditional financing, or receive private investment.

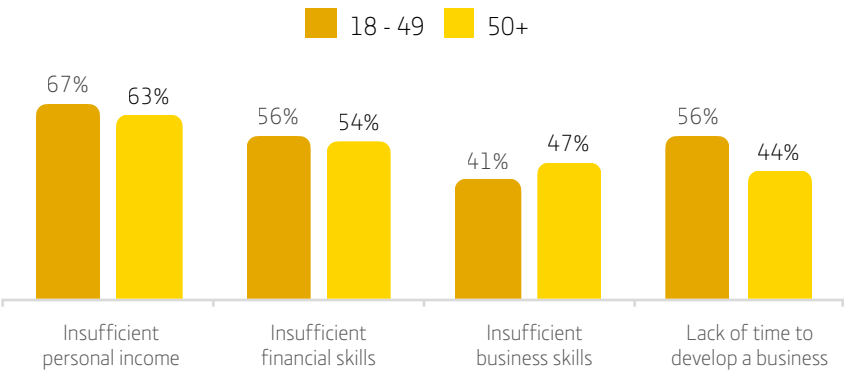


The wisest bees in the hive

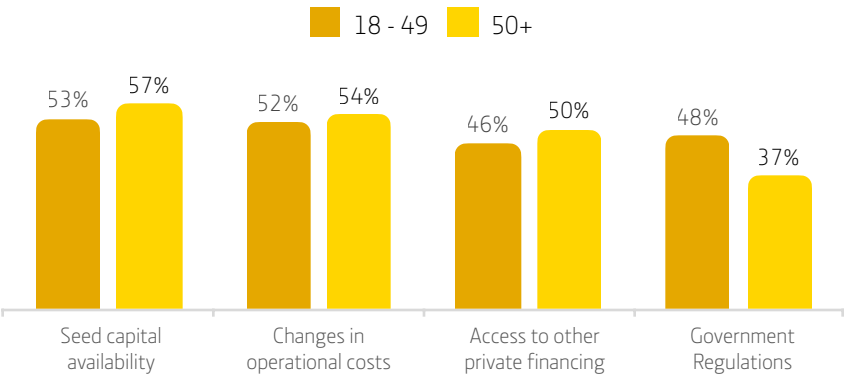
Entrepreneurial Motivations



Personal Situations



Main Business Obstacles



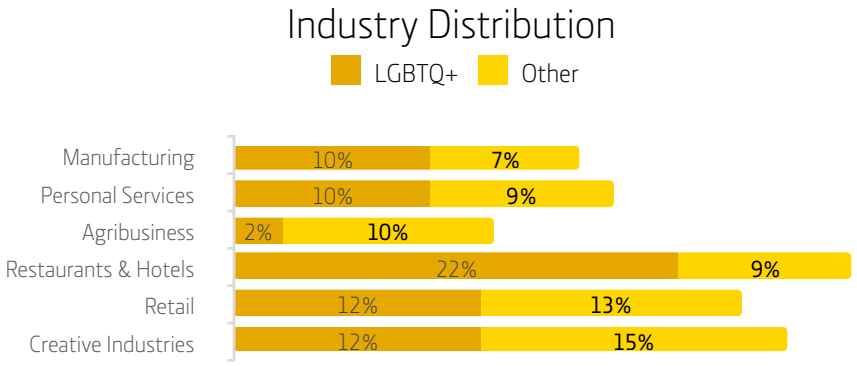
The LGBTQ+ community

7%

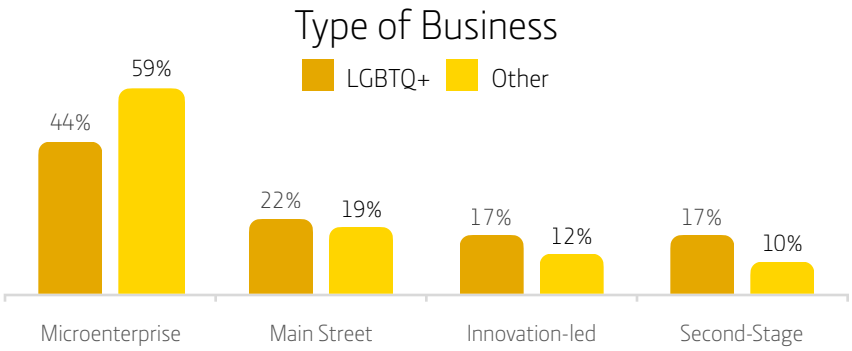
of survey respondents identify as LGBTQ+

Currently, there is no accurate data regarding Puerto Rico's population that identifies as LGBTQ+. A study by Gallup estimates 7.2% of the US population identifies as LGBTQ+.

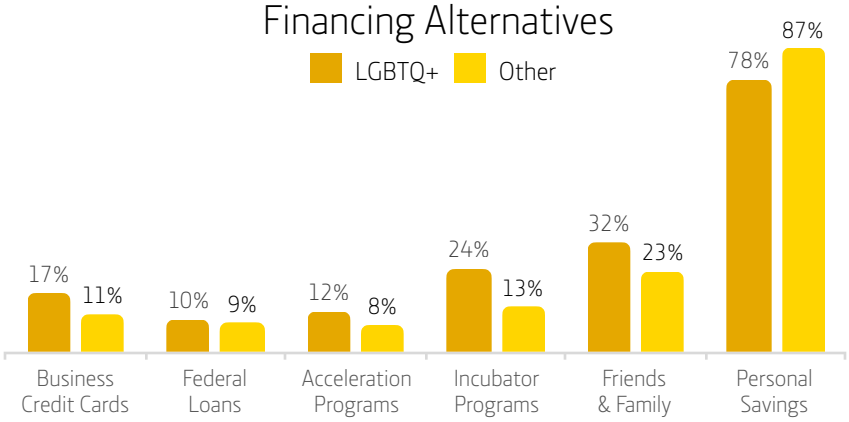
Entrepreneurs that identify as LGBTQ+ have a higher participation in the Restaurants & Hotels industry (13% difference) and a lower participation in Agribusiness (2%).



Entrepreneurs in this group report having more Main Street, Innovation-led and Second-Stage businesses than other groups. They also have a much lower percentage of Microenterprises (15% difference)

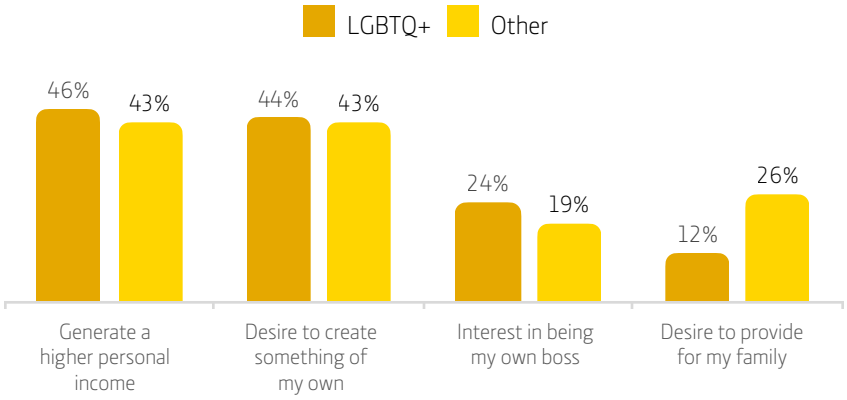


Similar to other groups, individuals in the LGBTQ+ community have mostly used Personal Savings to fund their business. In our sample, they have used Friends & Family, Incubators, and Business Credit Cards much more.

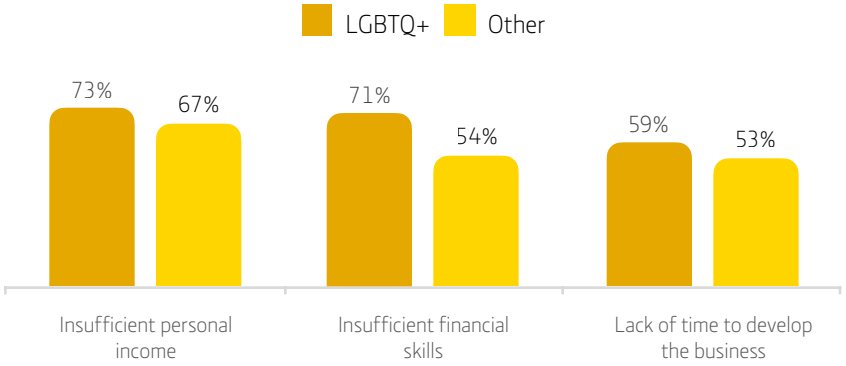


The LGBTQ+ community

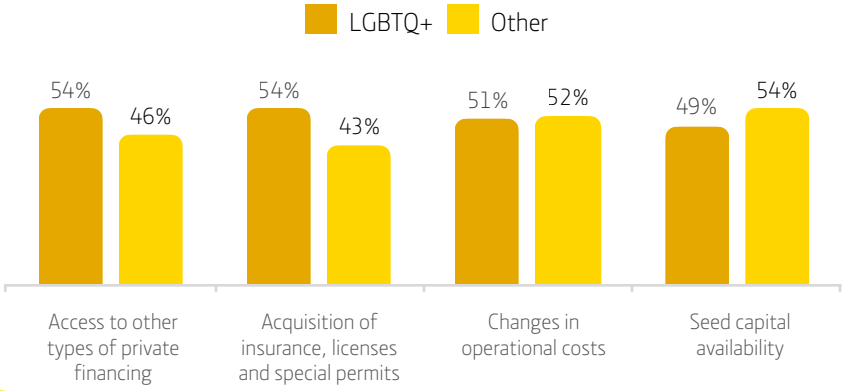
Entrepreneurial Motivations



Personal Situations



Main Business Obstacles



Revisiting our 2021 Ecosystem Gap Analysis & Recommendations



The future of Puerto Rico's entrepreneurial ecosystem holds significant potential for growth and development. However, several key challenges need to be addressed to unlock this potential fully. To achieve this, in our 2021 Status Report of the Entrepreneurial Community in Puerto Rico, we shared a set of recommendations and highlighted some of the work being done in the ecosystem to address the issues.

Our recommendations were to:

- **Understand the entrepreneurial ecosystem through data**
  - Understand the entrepreneurial ecosystem's baseline
  - Catalogue and convene a full network of entrepreneurship support organizations
  - Define shared goals and metrics to facilitate tracking and decision-making
- **Reduce barriers to entrepreneurship**
  - Increase access to entrepreneurial education
  - Increase access to capital
  - Streamline regulatory and permit processes to start a business
  - Leverage community resources and partners to drive and promote economic development strategies
- **Promote a strong entrepreneurial culture**
  - Promote the truth about entrepreneurship
  - Promote a strong growth mindset
  - Promote high standards and accountability
  - Promote entrepreneurship as a tool for equitable and inclusive social and economic development
  - Promote a collaborative community spirit

In our conversations with community stakeholders, and the entrepreneurs and resource partners interviewed for this report, we were able to see how our data reflects the everyday work of our community and reiterates the importance of these recommendations to advance equitable and inclusive economic development.

In terms of what is being done to understand the ecosystem, at Colmena66 we are updating our resource network mapping and continuously increasing the number of partners. With our surveys we are gaining insight into the struggles entrepreneurs and organizations alike face and our annual report aims to complement existing data sources in the ecosystem and aid decision-making. **There is still a need to define ecosystem-wide metrics and the methodologies in order to effectively track them**.

When it comes to reducing barriers, entrepreneurial education is crucial. We observed in our data that 70% of ESOs are incorporating mentoring and capacity building in their programs. Particularly, Echar Pa'Lante has undertaken the important task of addressing the issue of transforming Puerto Rico's education system to foster entrepreneurship and build the necessary skills so that our workforce is highly competent in business and innovation, and able to compete globally. They've reached critical mass educating K-16 educators and will now be moving to implement additional strategies to further the vision of Puerto Rico becoming the Enterprising Island.

Revisiting our 2021 Ecosystem Gap Analysis & Recommendations

Likewise, access to capital is the top issue businesses face, evidenced by the financing alternatives used, the impact of inflation and socio-economic effects at an individual level. CDVCA began its work in Puerto Rico addressing issues of access to capital with the Puerto Rico Fund for Growth investment fund that to date has deployed $46M on the island. They are also not just preparing businesses to access capital, but they are educating potential investors. We saw in our sample that, collectively, the community deployed over $19M to entrepreneurs (and an additional $72M by government agencies) in 2022. Yet, there is still a significantly large gap regarding this topic, concerning both the availability of funds and the preparedness of entrepreneurs.

To further reduce barriers there is still a lot of opportunity to consolidate and streamline regulatory and bureaucratic processes for businesses. This is an issue the community perceives needs improvement, as 66% of entrepreneurs and 74% of resource partners disagree that Puerto Rico's regulatory framework encourages business formation. We also observe that government and community stakeholders can leverage ecosystem platforms even more to reach the people that need their support and to achieve their programmatic impact goals. This is evidenced by the fact that over 30% of organizations reported lacking service and event visibility. We believe most people in Puerto Rico don't yet know about the work being done to support entrepreneurship.

Regarding entrepreneurial culture, every person impacted is helping create the shift. Using UPR i+c's work as an example, they saw an opportunity to take innovations in academia and turn them into successful businesses, as in the case of Insu Health Design. They have developed an incubator, certifications, and have gone on to create courses that are now part of the university's academic offering. Efforts like what Echar Pa'Lante is doing aim to deeply transform the culture in the long term, educating the educators that will foster future generations of entrepreneurs and transform schools, universities, and municipalities into enterprising communities. Across these efforts and many more, entrepreneurship is regarded as a valuable tool to address socio-economic disparities and improve our society's well-being. There are opportunities to foster the export capacity of Puerto Rican businesses so we can tap into global opportunities, generate wealth, and contribute to the island's economic prosperity. This represents a shared vision of outward growth and inward reconstruction.

Addressing these challenges and seizing opportunities for growth will shape the future of Puerto Rico's entrepreneurial ecosystem. By fostering an enabling environment, nurturing collaboration, promoting diversity, and embracing innovation, Puerto Rico has the potential to become a thriving hub of entrepreneurship and economic resilience. This collective approach not only enhances the support available to entrepreneurs but also fosters a sense of unity and shared responsibility within the ecosystem.



Colmena66
Tu Camino Empresarial

Pollinating Puerto Rico Together

Your contribution will support the hive to continue having an inclusive, equitable, and accessible business ecosystem in Puerto Rico where everyone, regardless of their demographics and socioeconomic status, can make their idea an economic reality for themselves and their families.

Thanks to you, Puerto Rico can continue to position itself as a globally recognized hub of innovation and entrepreneurship.

Bee part of the Hive!

Scan or click. Your donation will enhance our programs and services




WeAreTheTRUST

We connect you
with the right resource
at the right time.

Colmena66
Tu Camino Empresarial

CONTACT US AT:

787.525-4111 / info@colmena66.com

A PROGRAM OF Puerto Rico Science, Technology & Research Trust

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A program of the: Puerto Rico Science, Technology & Research Trust

parallel[18] IMPACT REPORT

2022



ABOUT THIS REPORT

Parallel18 started in 2016 as part of an initiative of the **Puerto Rico Science Technology and Research Trust** to support the island's economy by promoting a diverse ecosystem. Since then, 394 startups have been impacted by our funding, mentorship, business connections, business resources and investment opportunities. Our program serves as an innovation hub for startups in all stages of development; promoting a local scene where investors land, entrepreneurs meet, and emerging and fully developed markets link up.

This 6th Impact Report of parallel18 presents the results of the **Gen. X of the international acceleration curriculum P18 and the fourth cohort of the local pre-acceleration program: pre18.** A total of **35** local and international companies completed the programs between January and December 2022.

This document also captures data about the **application round for pre18's Gen. 5**, updates on the cumulative data of all startup alumni and our subprograms' initiatives and achievements.

The information was collected through exit surveys at the end of the program (for Gen. X and Gen.4), P18 alumni surveys from Gen. 1 through Gen. 9, pre18 alumni surveys from Gen. 1 through Gen. 3 and additional data gathered by the parallel18 team.

ABOUT US

parallel18

Parallel18 is a top-level, performance-driven international innovation hub focused on providing funding, mentorship, business connections, and investment to underrepresented founders around the globe. The program is part of the Puerto Rico Science, Technology, and Research Trust, a private non-profit organization created with the goal of maximizing Puerto Rico's participation and creation of jobs in the global knowledge economy by promoting investment and financing of science and technology research development.

Our mission is to support your entrepreneurial journey while working to position Puerto Rico as a unique hub for innovative businesses and technology.

Puerto Rico
Science, Technology
& Research Trust

The Puerto Rico Science, Technology, and Research Trust (PRSTRT), as described in Act 214, is a nonprofit organization created in 2004 to promote the participation and creation of jobs in the Island in the global knowledge economy by promoting investment and the financing of research and development of science and technology. The PRSTRT invests, facilitates, and builds capacity to continually advance Puerto Rico's economy and its citizens' well-being through innovation-driven enterprises, science and technology, and its industrial base.

Their mission is to invest, facilitate and build capacity to continually advance Puerto Rico's economy and its citizens' well-being through innovation-driven enterprises, science and technology and its industrial base.

A **transformative** year for parallel[18]

As key leaders of Puerto Rico's innovative ecosystem, our organization continues to evolve. This past year, **Héctor Jirau, Ph.D.** joined the team as the Operations and Investment Director, with a clear mission: keep positioning parallel18 as a strong and robust innovation international hub for startups to thrive and continue their journey towards scalability and success.

In 2022, the parallel18 team underwent significant transformations aimed at enhancing its contribution to the entrepreneurial ecosystem. First, **Natasha Martínez** was promoted to Program Manager and we welcomed **Yessica Fontánez** who is now a startup executive for the Operations Team. With these changes, the team aims to keep strengthening the program with a data-driven curriculum where startups receive what they need according to the cohort's needs and industry mix.

On the other hand, **Adriana Pérez** was promoted to Investment Manager of parallel18 Ventures. The subprogram continues growing and evolving while offering connections, access to capital and support in their road towards scalability.

Through this transformation, our objective is to continue providing support to local and international startups by introducing fresh areas of expertise, skills, and innovative ideas that have the potential to enhance growth and scalability in their highly inventive solutions. Simultaneously, we aim to position **Puerto Rico** as a thriving innovation hub within the global entrepreneurship ecosystem.

Meet the TEAM

As of 2023



Héctor Jirau, PhD
Executive Director



Natasha Martínez
Operations Manager



Adriana Pérez
Investment Manager



Menchu Agüeros
Outreach Manager



Lissa Barreras
Marketing Manager



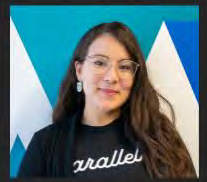
Alexandra Espinal
Business Development Manager



Sylmarie Díaz
Operations Manager Xpand



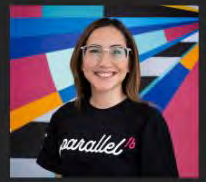
Augusto Suárez
Lead Designer



Yessica Fontánez
Startup Executive



Daliana Colón
Startup Executive



Mineiry Ramos
Operations Coordinator

HOW WE DO IT ?

We nurture globally-minded startups with strong roots in their local communities and encourage the development of solutions to problems with a global outlook, providing access to exceptional resources tailored to streamline the way to their utmost potential. **We leverage Puerto Rico's advantages as a multinational business hub that offers the structures and protections of U.S. legal frameworks with cultural connections to Latin America and the Caribbean and a bilingual highly-trained workforce.**



Training and Mentorship
(pre18 12-weeks; P18 20-weeks, Xpand 16-weeks)



Connections with potential
customers and corporate partnerships in top companies.



Equity-free funding
(pre18 $20K; P18 $40k)



Guidance
A guide and methodology to track growth and structure the company for scalability.



Access to Capital
Investment and capital raising opportunities.



Community
Additional support through the Puerto Rico Science, Technology and Research Trust.

Our Programs

pre18

For Puerto Rican startups who are close to launching their innovative businesses or have recently launched.

P 1 8

Is open to founders from all over the world and targets startups already in the market, with traction and ready to scale to new markets.

parallel18 VENTURES

A subprogram focused on helping startups create a strong investment strategy while connecting them with a curated network of investors.

parallel18 CONNECT

Our Corporate Innovation subprogram has two purposes: match our startups with big local companies to promote connections that lead to business deals and provide our Corporate Partners with the tools to transform their mindset from traditional to innovative.



parallel[18]

MENTORS



Mentor's Data

With 100+ mentors, parallel18 supports entrepreneurs by making accessible hand-picked experts to share their knowledge through informative sessions and one-on-one meetings.

Here's a summary of how mentors engaged with our community from January 1st, 2022 to December 31st, 2022:

90

Events organized by parallel18 for the startups.

415

Office hours between mentor and mentee (including alumni).

68

Mentor sessions (pre18 Gen. 4 / P18 Gen. X)

9.3

Avg. Net Promoter Score out of 10 for **Mentor Sessions.**

9.8

Avg. Net Promoter Score out of 10 for **Office Hours.**

Highlighted Mentor Sessions



Neil Cohen
Get to the Point



Javier Ramírez
B2B Sales



Orlando Saez
What Conflict Taught Me About Myself, Trust and Leadership



Devin Baptiste
Unit Economics



Alyssa Dizon
Prepare your Product Team to Scale



Carlos Jiménez
SEO Strategies



Jesse Middleton
Understanding Venture Capital Investments



Cat Middleton
Understanding Venture Capital Investments



June Zhang
Customer Success



Holly Chen
Growth Marketing Strategies

Highlighted Mentor Office Hours



Stephanie Lee
Strategic advisory, capital raising, business development, and financial operations services



Pablo Croci
Branding, Storytelling, OKRs and Strategy



Orlando Saez
Angel Investing and Strategy



June Zhang
Customer Success and People-Centric Leadership



Juan Felipe Campos
Growth Hacks



Jonathan Kalan
Brand, Marketing & Communications



Jeffrey Seltzer
Strategy, Executive Management and Business Development



Gillian Morris
Project Management, Research, and Economic Analysis



Devin Baptise
Raising Capital and Unit Economics



David Binkowski
Branding, Earned and Paid Media, Digital Marketing

Mentors In-Residence

Kristin Choi



Kristin is an accomplished Operations/Business Development executive and corporate attorney with over 20 years of experience advising clients and structuring deals across industries including edtech, esports, hospitality, mobility, financial services, and REITs. As Managing Partner of DotLine, she collaborates with Venture Capital Firms and their portfolio companies to provide advisory services on go-to-market strategies and scaling, and financial planning and fundraising strategies. Kristin also runs investment syndicates to invest in startups across medtech, beauty, edtech and fintech.

Kristin holds an undergraduate degree in Political Science and Diplomacy from Yonsei University, Seoul, Korea, and a law degree from Georgetown University Law Center.

Stephanie Lee



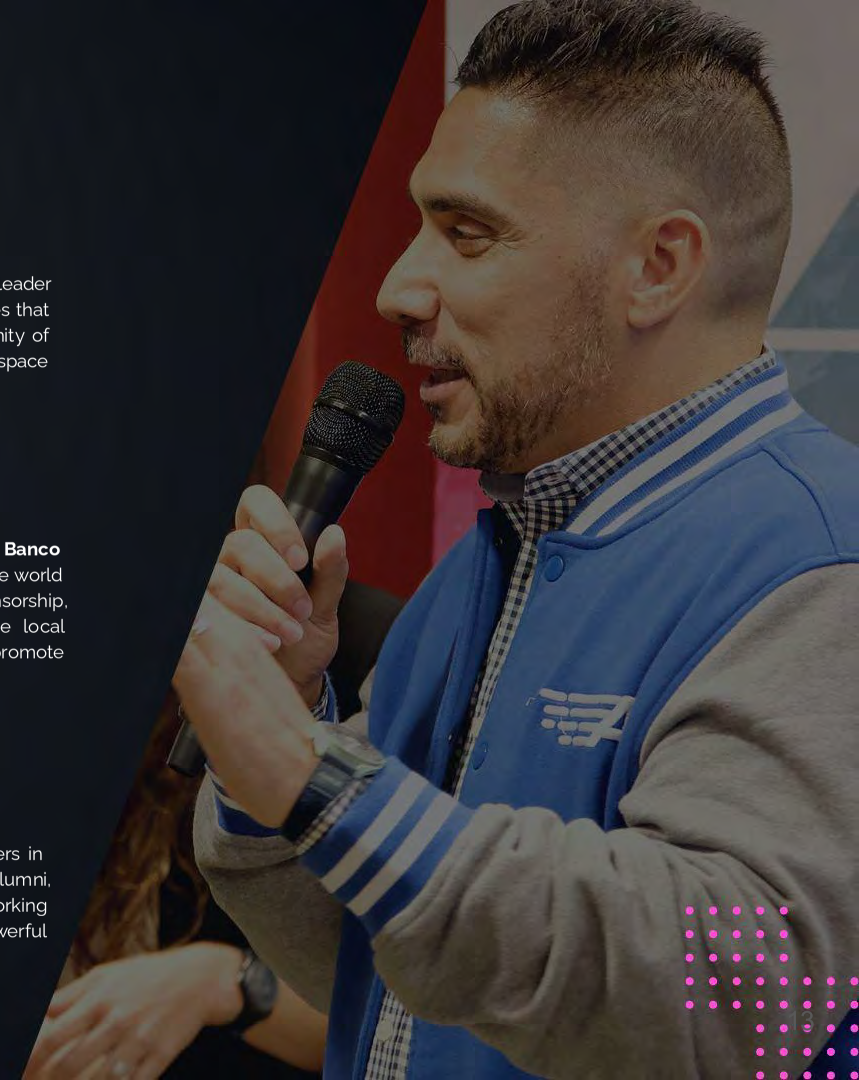
Stephanie Lee has over 25 years of financial services experience. She currently runs her own investment and consulting firm advising venture capital firms and venture-backed companies with a focus on building and scaling high-growth tech-enabled companies. She is an advisor to the TempoCap VI Fund which includes investments in Acorns, Azimo, CurrencyCloud, Dacadoo, Everledger, and Simplesurance. She was also a strategic advisor to Rakuten Capital where she sourced deals, conducted due diligence, and was a part of the investment committee. Prior to starting her own firm, she led a buyout of Leading Quality Assurance Ltd. (LQA), the world's market leader in benchmarking analysis for the luxury hospitality industry where she took the role of CFO. Stephanie's prior experience also includes HSBC, where she was the global relationship manager for some of the bank's marquee asset manager clients such as BlackRock and PIMCO, and Neuberger Berman, where she led distribution of alternative assets to fund of funds. She started her career at Lehman Brothers in the investment banking division where she was responsible for originating and executing global capital markets transactions for financial services clients. She holds an MBA from Harvard Business School and an AB from Harvard College.

Highlighted Partnerships

The Puerto Rico Science, Technology and Research Trust (PRSTRT), and parallel18, along with **Mastercard,** global leader in payments and fintech businesses, renewed the collaborative agreement that benefits the innovative businesses that are participating in our programs. With this strategic agreement, startups from our programs had the opportunity of receiving technical support and mentorships that helped them gain local and global growth, within a workspace sponsored by Mastercard.

The Puerto Rico Science, Technology and Research Trust (PRSTRT), and parallel18, along with the local bank **Banco Popular** signed a collaborative agreement to support and sponsor events in which entrepreneurs from all over the world are exposed to high-quality connections, mentoring, and networks to help them scale globally. Thanks to this sponsorship, parallel18 was able to organize and present valuable events for entrepreneurs along the globe and the local entrepreneurial community. With this collaboration, Banco Popular reiterated its commitment to promote entrepreneurship as the way to impulse and sustain the economic development of the Island.

The Puerto Rico Science, Technology and Research Trust (PRSTRT), and parallel 18, along with **Aeronet,** leaders in high-speed broadband internet in Puerto Rico, renewed the collaborative agreement that benefits all parallel18's alumni, current startups and the parallel18 team with high speed connectivity to operate from the organization's co-working space located in Santurce, Puerto Rico. With this agreement, Aeronet reiterates its commitment to become a powerful ally for startups and the local entrepreneurial community.





SUMMARY

We are closing the funding and education gap that allows entrepreneurs to quit their day jobs and dream big.

1,300+
applications (from Gen.1 through Gen.5)

138
companies have graduated from the program (from Gen.1 through Gen.4)

86%
Companies still active

$2.8M USD
in grants distributed (from Gen.1 through Gen.4)

$1.3M USD
cumulative local revenue from January 1st, 2022, to December 31st, 2022

$42.6M USD
cumulative valuation

Presented results are based on 28 pre18 alumni that completed the survey.

pre18 Gen.4

The fourth cohort of pre18 was composed of 27 Puerto Rican companies with **50% female representation**.

INDUSTRIES: e-commerce, agro-tech, fin-tech, ed-tech, and pharmaceutical among others.

$540,000 USD
in grants distributed

$26.8M USD
Estimated Gen.4 Cohort valuation

$660,000 USD
Gen.4 cumulative revenue

$2.3M USD
Total Investment raised

$1.8M USD
Total local investment raised

42
Jobs created

Presented results are based on 27 pre18ners G4 that completed the survey.

Gen.4 Startups























































Gen.5 Application Round

223 open applications

93 submitted applications

42% conversion rate*

Top Industries:

- E-Commerce
- Edu-Tech
- Enterprise
- HR Tech

Demographics :

- 58% Males
- **40% Females**
- 2% non-binary

*Ratio between draft and submitted applications





P 1 8

SUMMARY



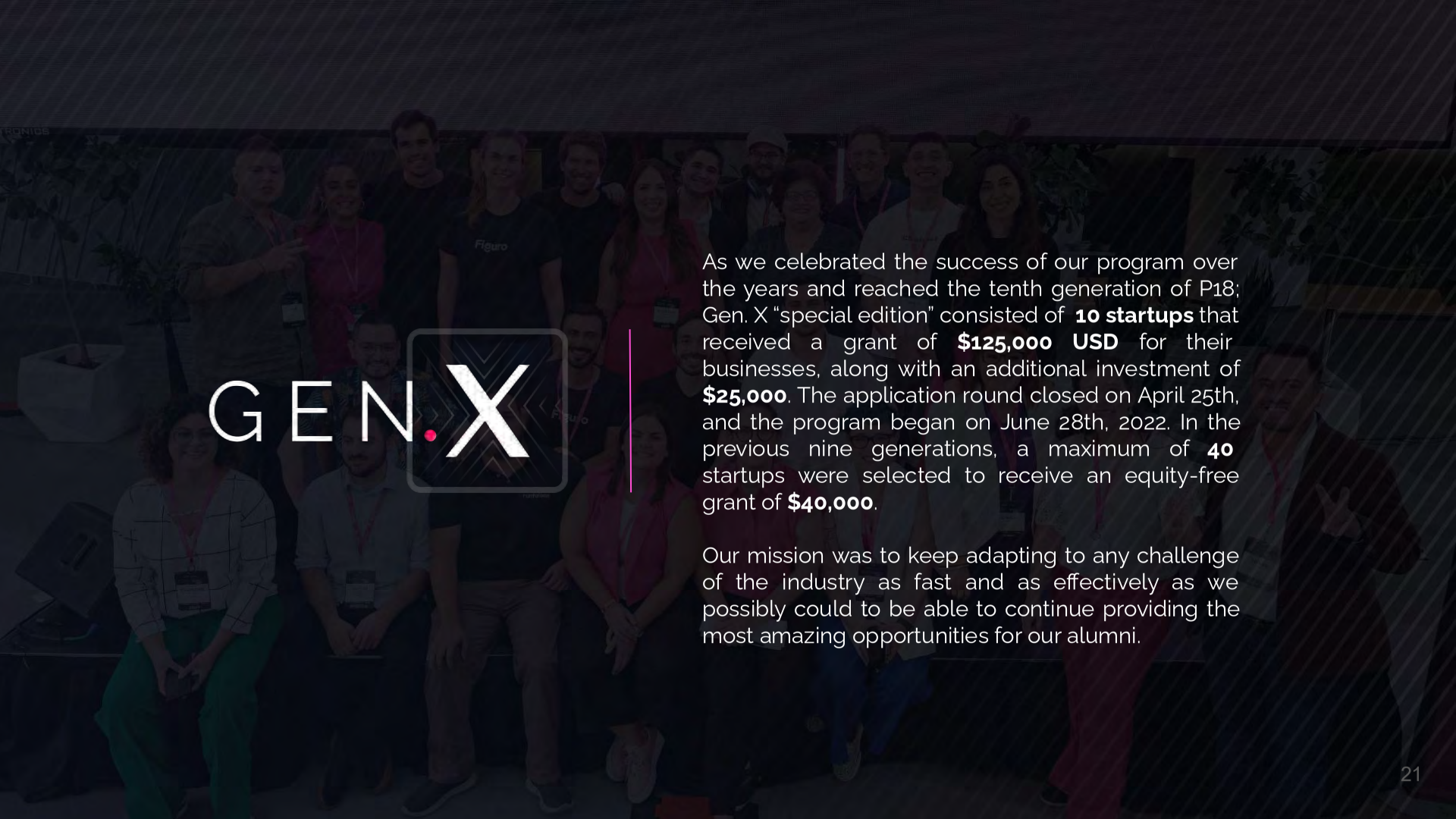
8,500+
applications (Gen.1 through Gen.X)

256
companies have graduated from the program (Gen.1 through Gen.X)

$144.8M USD
cumulative valuation

$10.9M USD
in grants distributed

ⓘ Presented results are based on 40 P18ners that completed the survey.



GEN.X

As we celebrated the success of our program over the years and reached the tenth generation of P18; Gen. X "special edition" consisted of **10 startups** that received a grant of **$125,000 USD** for their businesses, along with an additional investment of **$25,000**. The application round closed on April 25th, and the program began on June 28th, 2022. In the previous nine generations, a maximum of **40** startups were selected to receive an equity-free grant of **$40,000**.

Our mission was to keep adapting to any challenge of the industry as fast and as effectively as we possibly could to be able to continue providing the most amazing opportunities for our alumni.

GEN.X

These numbers represent what happened during the program. Gen. X went through the program from June 2022 through November 2022 and 8 startups successfully finished the curriculum.

$1M USD
in equity-free grant funding distributed

Grants distributed for Gen.X were **increased by 2.1x** compared to Gen. 9 totalizing **$125,000 per startup.**

$42.1M USD
Cumulative valuation

$317k USD
Cumulative global revenue (June - December 2022)

$110.5K USD
Cumulative local revenue (June - December 2022)

$961K USD
Global investment raised by GenX alumni during the program

$245K USD
Local Investment raised by GenX alumni during the program

ⓘ Presented results are based on all P18ners Gen. X that completed the survey.

GEN.X Startups

abacrop

Channel

eSponsor

Figuro

Lank

RED ATLAS

runfalcon

Wihom

Cumulative Results

P18 Gen.1 - Gen.X

The following data shows the cumulative of all P18 startups dating from April 2016 to December 2022.

854
employees hired

74.7%
Companies still active

REVENUE

US **$237,721,730** global
($212,497,028.81 last Year)

US **$80,753,923** in Puerto Rico
($73,037,872.31 last Year)

INVESTMENT

US **$210M**
Total investment raised
($189M reported last Year)

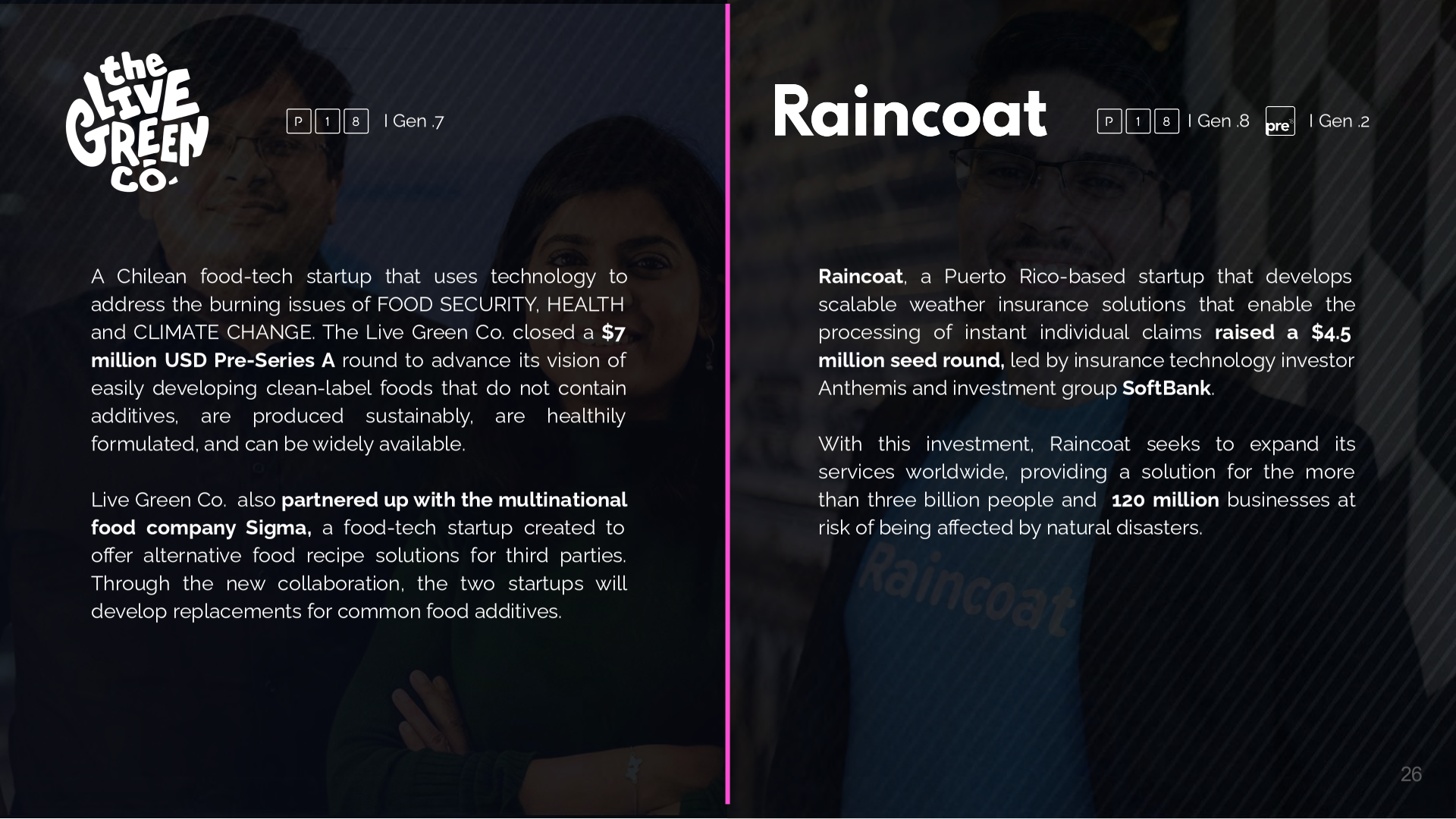
US **$33.1M**
Total investment raised in Puerto Rico
($21.6M reported last Year)

Note that these metrics may be understated as they were estimated from 40 P18 Alumni (Gen. 1-X) that completed the Impact Report survey.

Highlighted STORIES

We guide our Alumni along the path of success with valuable tools that encourage them to innovate and find solutions to local and global challenges. **Three hundred and ninety six** companies later, we can say that we are witnessing the results of that effort.

Here we share some highlights of #P18alumni that have knocked-it out of the park.



P 1 8 I Gen .7

A Chilean food-tech startup that uses technology to address the burning issues of FOOD SECURITY, HEALTH and CLIMATE CHANGE. The Live Green Co. closed a **$7 million USD Pre-Series A** round to advance its vision of easily developing clean-label foods that do not contain additives, are produced sustainably, are healthily formulated, and can be widely available.

Live Green Co. also **partnered up with the multinational food company Sigma,** a food-tech startup created to offer alternative food recipe solutions for third parties. Through the new collaboration, the two startups will develop replacements for common food additives.

Raincoat

P 1 8 I Gen .8 pre I Gen .2

Raincoat, a Puerto Rico-based startup that develops scalable weather insurance solutions that enable the processing of instant individual claims **raised a $4.5 million seed round,** led by insurance technology investor Anthemis and investment group **SoftBank**.

With this investment, Raincoat seeks to expand its services worldwide, providing a solution for the more than three billion people and **120 million** businesses at risk of being affected by natural disasters.

uxcam P18 I Gen .2

Uxcam is the single source of truth for mobile app users providing session recordings to help companies understand customer behavior on their mobile apps. **Uxcam raised a $5 million USD Seed round** led by **Headline**, the backer of analytics giants **Segment** and **SEMrush**. Participants in the round include **Adjacent VC**, **Blinkist** co-founder Tobias Balling & Sebastian Schleicher, **Staffbase** co-founder Martin Bohringe, ex-CMO of **Contentful** Chris Schangen, CEO at **OwnBackup** Sam Gutman, co-founder/CEO of Podimo Morten Strunge.

With this investment, Uxcam is one step closer to making every app experience in the world a positive and effortless experience.

RED ATLAS P18 I Gen .X pre I Gen .4

RED Atlas, a Puerto Rico-based startup, is Latin America's leader in Real Estate data, news, and insight. Using the power of technology, Red Atlas connects real estate professionals to accurate information on properties and property markets helping them to make faster and smarter decisions.

Red Atlas, acquired Finco in addition to closing $1.2 million in its seed round. Finco is a Colombian platform that appraises real estate online, valuing square footage by area or price appreciation over time, with an analytics algorithm developed by its own team, . The fusion will consolidate Finco's technology allowing clients in Puerto Rico and the United States to have more accurate property valuations and enrich general information.

agtools™ DATA DRIVEN

P 1 8 I Gen .7

Agtools, a Puerto Rico-based startup, is a worldwide SaaS platform that gathers real-time government and institutional data for over **500** specialty crops and commodities. A platform built for agribusiness operators, this startup helps operators make faster, more informed decisions that help them increase profits and reduce food waste in their supply chain.

In 2022, Agtools successfully secured funding through a Convertible Note, which began in December 2021 and concluded in May 2022, totaling $900,000 .Agtools was also **one of Orange Silicon Valley's top 5 finalists on the Decarbonization Challenge!** The agrotech solution competed with 100 startups and made it to the top! The Challenge builds on Orange's commitment to reduce Greenhouse Gas (GHG) emissions on three scopes to reach its goal of Net Zero Carbon by 2040. The challenge accelerates the matchmaking process between startups, the Orange Group, and the broader ecosystem of corporations and investors.

leadsales

P 1 8 I Gen .9

Leadsales, a Mexico-based startups and CRM for WhatsApp and Social Networks that allows clients to manage all the leads in funnels. **Leadsales raised a $400,00 pre- Seed round** led by **Ulu Ventures** one of the leading investment firms in Silicon Valley.

With the investment, Leadsales will strengthen the integrations with WhatsApp, Facebook and Instagram as well as growing to **2,000** users facing the next round of seed surveys, planned for 2023. Leadsales offers solutions to their clients in **20** countries of LATAM. Europe and Asia with an average monthly growth of **15%**.

Husky powered by Nomad

P 1 8 I Gen .4

Husky, a startup specializing in international transfers to facilitate payments for Brazilians working abroad **was acquired by Nomad,** a Fintech company that focuses on simplifying Brazilians' access to a global financial lifestyle. Apart from generating additional revenue, Nomad's acquisition of Husky aims to enhance the brand's value proposition by expanding its business in terms of payments and transfers from any country worldwide.

Husky is currently enjoying a favorable market trend due to the rising demand for Brazilian professionals being hired by foreign companies. Since its establishment in 2016, the company has successfully facilitated international payments totaling **R$2.7 billion**. Furthermore, it is on track to reach the **R$3 billion** milestone within this year, representing a remarkable 300% growth compared to the total volume processed by the remittance facilitator thus far.

sales layer

P 1 8 I Gen .1

Sales Layer, a startup specialized in digital Product Information Management (PIM) solutions through its cloud-based catalog management system, **successfully closed a Series B funding round worth 24 million euros.** PeakSpan Capital, a US-based firm with headquarters in New York and San Mateo, California, joined as the lead investor in Sales Layer, providing a significant boost to the company's expansion in the Anglo-Saxon market and, particularly, in the United States.

In recent years, **Sales Layer** has established itself as a market leader in over 25 countries, ranking number one among users on platforms like G2. It has also achieved partnerships with Google Manufacturer, Amazon Vendor, BigCommerce, and Mercado Libre, as well as notable clients such as Repsol, Teka, Cepsa, Tupperware, ACCIONA, and Titanlux.



Sub-Programs
SUMMARY


parallel 18
VENTURES

parallel[18]

VENTURES

Startups have a vital role in propelling innovation, generating employment opportunities, and fostering economic expansion. Nevertheless, numerous promising startups encounter considerable obstacles in obtaining the essential funding required to fuel their progress and advancement. Parallel18 Ventures offers assistance and valuable resources to startups in their fundraising endeavors, enabling them to overcome these challenges and prosper amidst the competitive business environment. Through the provision of resources, mentorship, and access to capital, we empower startups to translate their concepts into thriving enterprises, generate employment opportunities, and make significant contributions to economic development.

$3.2M

Capital deployed (Including Business Continuity Fund)

81%

Portfolio Companies Still Active
Including Business Continuity Fund

Total Investment Raised

(Gen. 1 - Gen. X; since company's inception)

$24,824,800 ⓘ

Business Continuity Fund Portfolio Raised (29 startups)

$48,979,000 ⓘ

Matching Fund Portfolio Raised (34 startups)

ⓘ Presented results are based on all P18ners from Gen.1-10 that completed the survey.
Companies still active rates are estimated based on the Department of State filings and reasonable assumptions on the company's continuous operations.

MATCHING FUND

37
Investments Deployed

47%
Puerto Rican Companies

82%
Companies Still Active

SERIES A FUNDING:

BOXPOWER · OUTSITE · WISBOO

SEED FUNDING:

vozy · the Live Green Co.

Business Continuity Fund

34
Investments Deployed

32%
Puerto Rican Companies

94%
Companies Still Active

ACQUISITIONS:

istopro · booksloth · Husky powered by Nomad · Transparent

Companies still active rates are estimated based on the Department of State filings and reasonable assumptions on the company's continuous operations.

Ventures 2022 Snapshot

29
Office hours with Gen.X & Gen. 4 startups

15
Venture Classes Offered

5
Investor reverse pitches

28
Participants in the **INVESTOR EDUCATION PROGRAM**

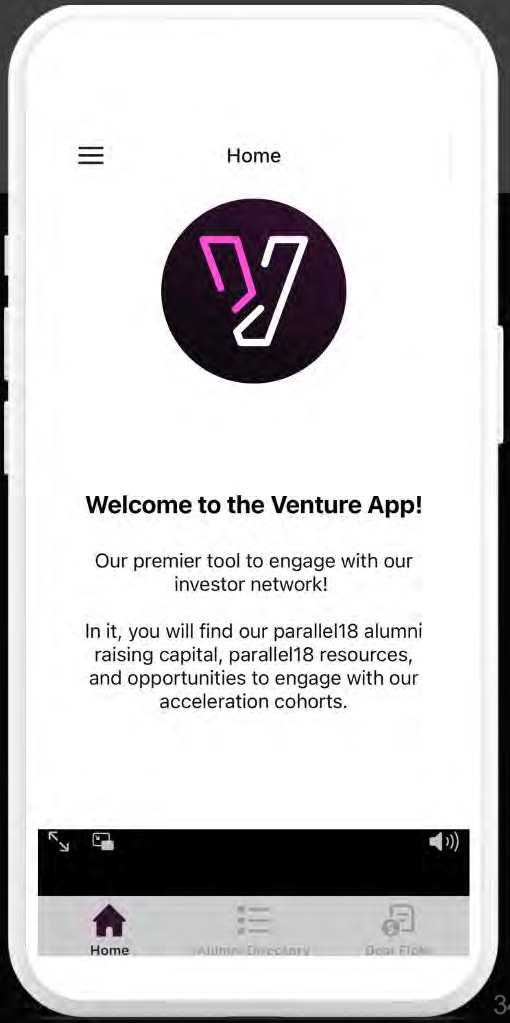
11
Speakers for the **INVESTOR EDUCATION PROGRAM**

6
Weeks of training for **INVESTOR EDUCATION PROGRAM**

VENTURES APP

76
Registered Users

24
Investment Deals Posted



parallel[18] | VENTURES

SUMMIT

Raising money is not an easy task. Founders need a clear company strategy and amplifying their options to identify the right investors. This is exactly what parallel18 Ventures does: offer our startups mentorship, connections to our investor database, and support on the road to raise capital.

This year, during the Investor Summit Event, startups presented their fundraising pitches and showcased their products. Also, the Ventures App was launched as a demo version for potential investors to connect with parallel18's startups that are actively raising capital.

30 Startups **Participated**

20 Investors in-person

23 Remote Investors

73 Attendees

"The Parallel Venture Summit offers an intimate space to connect with potential investors. Through pitch presentations and a networking session, I had the opportunity to meet and establish ongoing connections with potential investors that continue to be valuable to this day."

Gustavo Lauria
CEO - DebMedia
Visiting us from Argentina

"Parallel18's Venture Summit was an incredibly well-run event that helped me connect with founders from both current and past cohorts of their accelerator program. The Gen. X DemoDay participants were clearly very well-prepared, and equipped to easily facilitate investor conversations after their presentations. The Alumni Demo Day was a great opportunity to hear updates from past P18 cohort participants. I look forward to returning for future P18 Venture Summits!"

Jamie Rodota
Senior Director of Strategy
Revolution's **Rise of the Rest** Seed Fund
Visiting us from Washington DC


parallel 18
CONNECT

parallel18 | CONNECT

As a program, we aim for the growth of our startups, and a highly effective approach to achieve this is by facilitating connections with prominent local and international corporations. By linking #parallel18Startups with these companies, we provide them with valuable business opportunities that allow them to establish a strong presence on the island and expand their operations both domestically and internationally. Collaborating with established companies not only enhances the visibility and credibility of our startups but also opens doors to potential partnerships, investments, and market expansion. **Through these connections, startups can leverage the expertise, resources, and market access of these larger enterprises to accelerate their growth trajectory.**

34

Connections between startups and corporate partners

25

Office Hours with P18 Gen. X & Pre18 Gen. 4 startups

6

Industry events with parallel18's startups presence

HIGHLIGHTED CONNECTIONS

RED ATLAS  POPULAR

Parallel18 Connect continues to support the startup Red Atlas from Pre18 Gen. 4 in mediating an agreement with Banco Popular de Puerto Rico to enhance the development of their platform.

Med-Fly  AEROSTAR AIRPORT HOLDINGS LLC

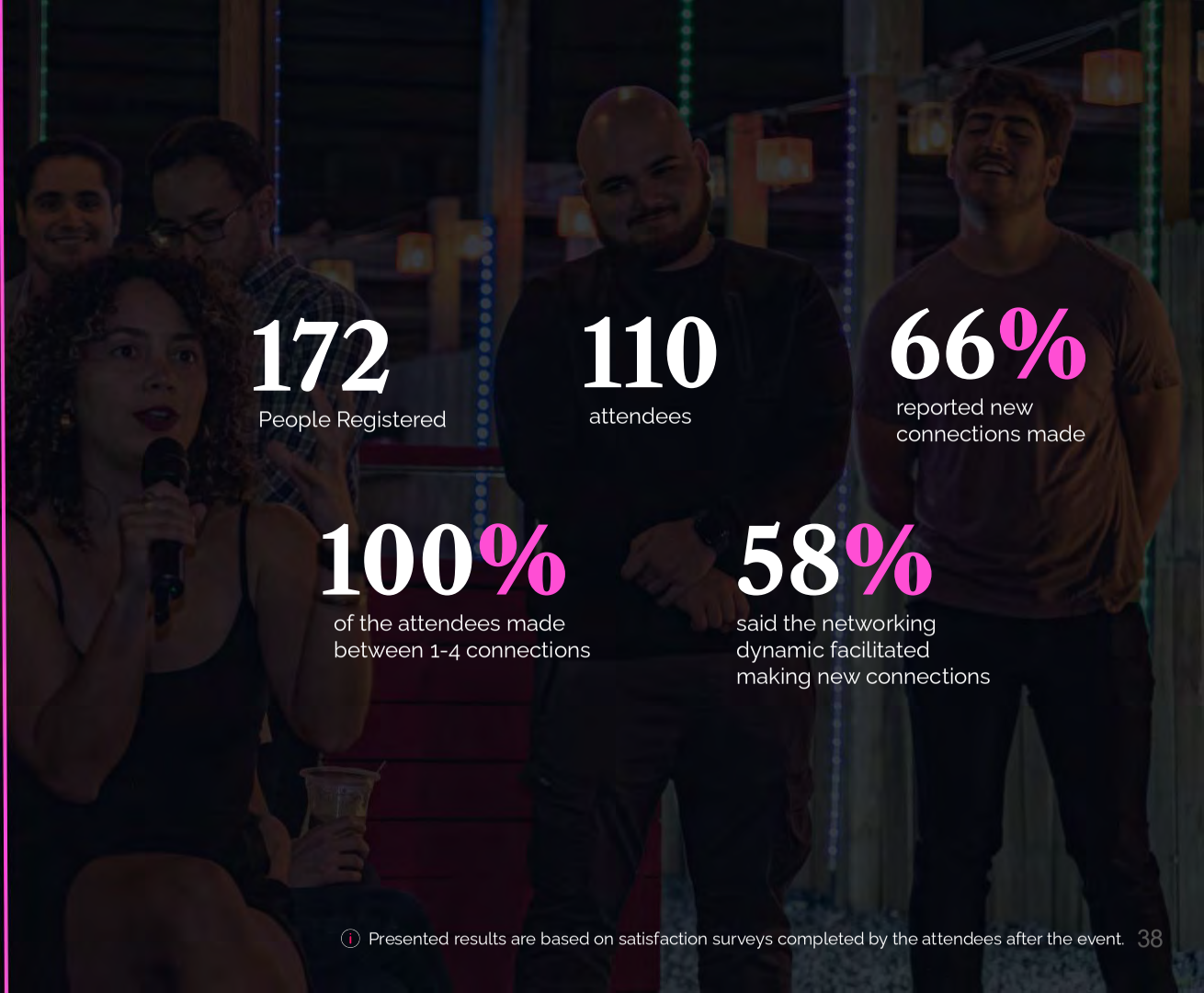
Parallel18 Connect has successfully initiated an agreement between the Pre18 Gen. 4 startup, MedFly and Aerostar Airport Holding. We are currently in the negotiation process and providing support in mediating these potential agreements.

parallel[18]

CONNECT Industry Meetup

During 2022, parallel18 connect, launched its **"Industry Meetups", the first parallel18 Connect networking event** with the purpose of reactivating networking efforts between students, alumni, mentors, corporate partners, investors and the business ecosystem in general.

Parallel18 Industry Meetups, aims to foster meaningful relationships and facilitate mutually beneficial collaborations. This events, also serve as platforms where startups can showcase their innovative products, services, or ideas to potential corporate partners who possess the resources, expertise, and market reach to support their growth and success.



172
People Registered

110
attendees

66%
reported new connections made

100%
of the attendees made between 1-4 connections

58%
said the networking dynamic facilitated making new connections

ⓘ Presented results are based on satisfaction surveys completed by the attendees after the event.

Meet Some of our **PARTNERS**

parallel[18] | CONNECT
































































GiveBack

GiveBack

Paralell18 entrepreneurs are very diverse, some are new to the startup world, while for others it might be their second (third or fourth) rodeo. Each one of them have skills, industry or professional knowledge and experiences that can be helpful to peers, students and other entrepreneurs. Each parallel18 participant is required to support the local community through specific engagements. On each of the programs (pre18 and P18), startups are required to make it to 18 points. Give back engagements must be related to technology, innovation or entrepreneurship, and should accelerate the startup ecosystem in Puerto Rico.

Gen.4

57.25
Giveback Hours

1,164
People Impacted

GEN.X

44
Giveback Hours

468
People Impacted

Cumulative Results:

P18 Gen.1 - Gen.X
P18 Gen.1 - Gen.4

35,815
People Impacted

GIVEBACK PARTNERS

Universidad de Puerto Rico
SAGRADO Universidad del Sagrado Corazón
Holberton PUERTO RICO
Universidad Interamericana de Puerto Rico
c3tec
enactus
UtahStateUniversity
Departamento de Desarrollo Económico y Comercio DDEC
Fase 1

TALENT

program

TALENT program

Parallel18 has built a database of local talent interested in joining the technology, innovation & entrepreneurial ecosystem, and looking to gain professional experience with our companies. We welcome college Juniors, Seniors, recent graduates and postgraduate students from all disciplines, along with freelancers and professionals and present their profiles and resumes to the more than **390** startups that have participated from one of our programs. The main goal is to provide employment opportunities to local professionals while making the recruitment process easier for startup founders.

ACTIVE PROFILES DEC. 2022

1,410

14% increase compared to 2021 (1,238 profiles)

NEW PROFILES IN 2022

173

9% increase compared to 2021 (159 profiles)

ALUMNUS USED THE APP

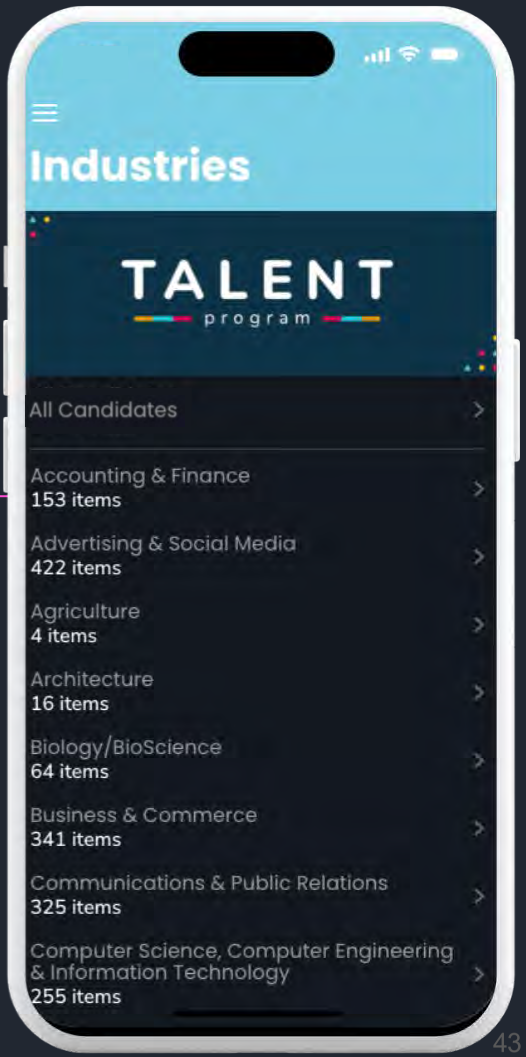
11

HIRING INTERVIEWS

19

TALENT HIRES

3





Positioning in THE NEWS

$419,991

NON-PAID PUBLICITY VALUE

936,256

TOTAL IMPRESSIONS

118

TOTAL APPEARANCES


PARALLEL 18: WHERE STARTUPS COME TO THRIVE


NEGOCIOS/29

EL NUEVO DÍA • elnuevodia.com

VIERNES
5 de agosto de 2022

Parallel18 divulga los logros obtenidos durante el año 2021

La aceleradora también destacó algunas historias de éxito de empresas que han sido adquiridas o levantado capital sustancial

SHARON MINELLI PÉREZ
sharon.minelli@mail.com
twitter: @sharonminelli

$212.5

MILLONES:
Total de ingresos acumulados que han reportado las empresas egresadas de PI8 entre 2016 y 2021.

Las 35 compañías de la generación 9 (G9) de Parallel18 (PI8) obtuvieron $25.2 millones en ingresos y levantaron $6.7 millones en capital, informó ayer la gerente del programa **Natasha Martínez**.

Mientras, el tercer grupo del programa preparatorio pre18 (G3), compuesto por 40 empresas incipientes puertorriqueñas, consiguió levantar "$255,000 en capital y obtener $3.5 millones en ganancias acumulativas", detalló Martínez.

La gerente del programa adscrito al Fideicomiso de Ciencia, Tecnología e Investigación (FCT) de Puerto Rico presentó los resultados durante la sesión informativa que se celebró ayer para divulgar el informe de impacto de PI8 para el 2021.

Martínez también destacó que Puerto Rico captó $2% o $13.3 millones de los $25.2 millones de ingresos generados por la G9 de la aceleradora. Y, del capital recaudado por las empresas mientras participaban de PI8, 53.7% se levantó localmente.

De forma acumulativa, el informe de impacto indica que, entre abril de 2016 y diciembre 2021, empresas egresadas de PI8 han reportado 620 contrataciones, $225.5 millones en ingresos, de los cuales $73 millones se han retenido en Puerto Rico; y $189 millones en inversión de capital de riesgo, de los cuales $21.6 millones han salido del ecosistema local.

Por su parte, **Héctor Jirau**, director de Operaciones e Inversión de pi8, destacó varios casos de éxito. En materia de adquisiciones recordó que Bookaloth fue comprada por BookClub; TrueFace por Pangiam; Entrenarme por Jeff; y Transparent por OTA Insight. De estos cuatro casos, solo Bookaloth, fundada por **Lincy Ayala** y **Xiomara Figueroa**, era local.

En materia de capital, la empresa de productos sostenibles de limpieza Cleancult completó una serie B de $25 millones. Cleancult figura entre las empresas internacionales que han mantenido operaciones en Puerto Rico, donde ubica 55% de su equipo.

Mientras, PRodute recibió una inyección de capital de $1.8 millones, liderada por Semillero Partners; y Kiwi Financial otra de $3.5 millones liderada por Morro Ventures.

Otro de los componentes de la aceleradora es la iniciativa Pi8 Connect, que se enfoca en lograr reuniones y conexiones entre startups participantes y empresas establecidas en Puerto Rico.

Sobre Pi8 Connect, la gerente de desarrollo de negocio **Mónica Rocafort** adelantó que la meta inmediata es expandir el alcance a firmas fuera de Puerto Rico para reforzar el enfoque en que las startups deben apelar a mercados globales.

Entretanto, Rocafort celebró los acuerdos a los que llegaron empresas como parte de las gestiones de Pi8 Connect. En el caso de Pi8, Pawls consiguió una distribución exclusiva con Plaza Provision, además de ganar el Open Call para negocios locales de la multinacional Walmart. Mientras, Celeripa cerró un acuerdo de negocio con Liberty Mutual Insurance y estableció una alianza con Ensemble Labs.

En el grupo de pre18, Vital alcanzó un acuerdo con Supermax; DonRifa con Puma Energy; y Pinta obtuvo un pacto de descuento en envíos a Estados Unidos con la empresa de logística UPS.

Por su parte, el principal oficial financiero del Fideicomiso, **Gilberto Márquez**, actualizó las cifras de los dos fondos que se manejan en el brazo de inversión de la aceleradora, llamado Pi8 Ventures. Entre el fondo de pareo, que requiere que la empresa levante al menos $75,000 por su cuenta, y el fondo de continuidad de negocio que lanzaron para extender ayuda durante la crisis de la pandemia, el CFO indicó que se han invertido $2.6 millones.

En el caso del pareo, las 29 empresas participantes han levantado $22.4 millones.

Pi8 actualmente está en el ciclo de aceleración 10, que han llamado su Gen X. Para marcar el momento, solo escogieron 30 empresas, todas latinoamericanas y cada una recibe $250,000 en subvención, en lugar de los $40,000 usuales.

Con un grupo tan reducido, Martínez reconoció que "hemos visto que hemos podido enfocar los esfuerzos más, buscarle mentores específicos". Sin embargo, Rocarfort no prevé que se replique la fórmula a futuro.

Desde la izquierda, Rocafort, Márquez y Martínez, parte del equipo a cargo de Pi8.

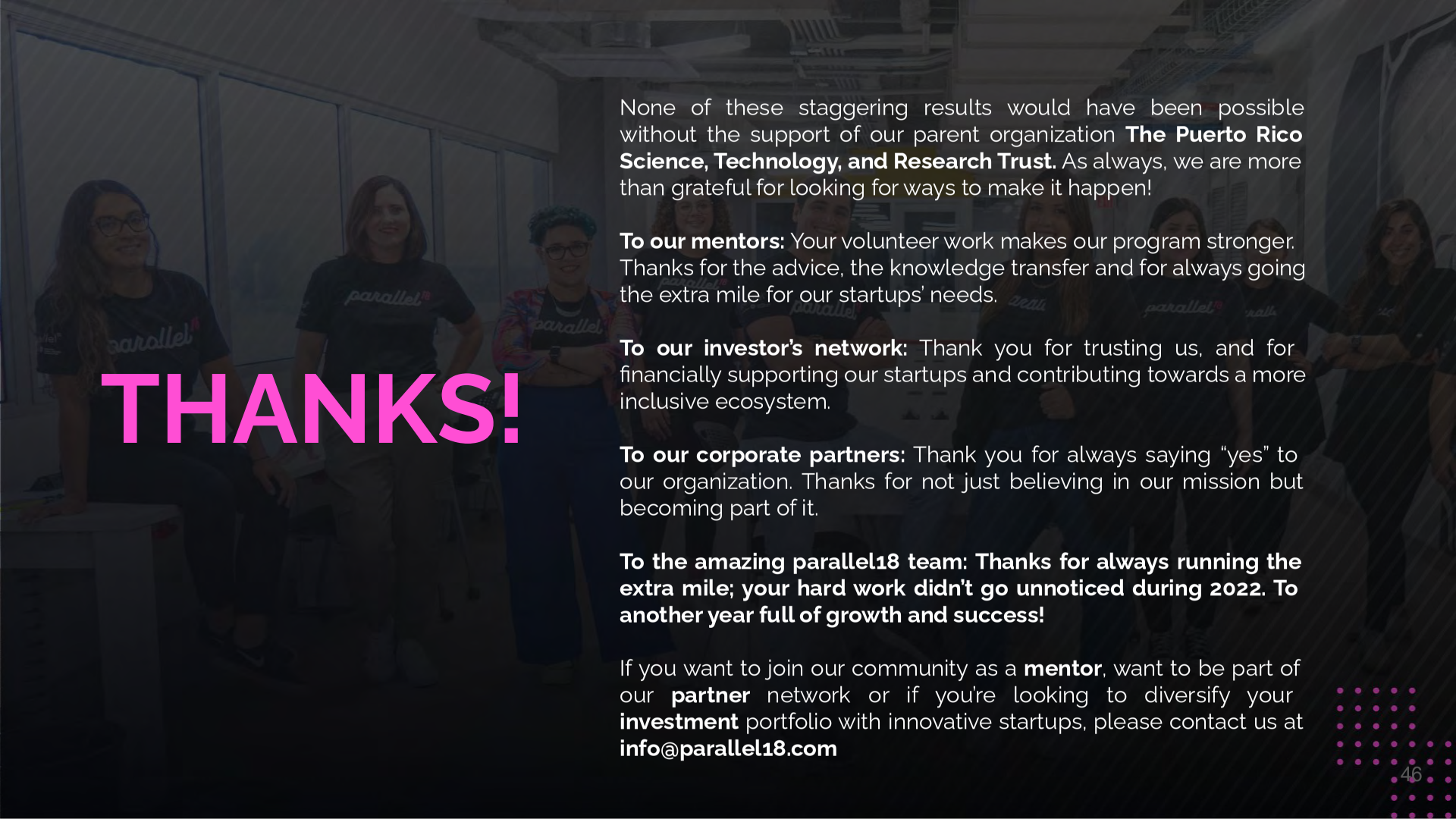
What's Next?

xpand ***becomes a post-acceleration program and joins parallel18, closing the gap in the acceleration cycle for startups.***

The program aims to support up to **20** technology and innovative companies from Puerto Rico each year, specifically in their path to scalability, targeting **3+** year businesses working to achieve revenues of $250,000 (USD) or more in the next year. Xpand will be actively looking for candidates around the island with the goal of increasing geographic access to the program's benefits.

With the funding from Banco Popular and the support of Colmena66, Xpand will support growth-stage innovative startups from Puerto Rico that are ready to expand towards a sustainable growth and scale to new markets. The program seeks to combine Banco Popular's capabilities and resources with the domain expertise, scaffold, and community of parallel18's network of **+600** investors and **+75** corporate partners, while leveraging other programs from the Puerto Rico Science, Technology and Research Trust entrepreneurship pillar programs, such as Colmena66.

The first application round for Xpand launched in February 2023, offering a strong support network through the Parallel18 Ventures subprogram, access to our corporate partners network, specialized mentorship tailored by parallel18's mentors-in-residence, more than **1,300** domain knowledge experts available through parallel18's Talent App for the cohort's talent acquisition needs and free access to parallel18's coworking space and its perks program (**85+** perks valued at **$170k** (USD)), among others.



THANKS!

None of these staggering results would have been possible without the support of our parent organization **The Puerto Rico Science, Technology, and Research Trust.** As always, we are more than grateful for looking for ways to make it happen!

To our mentors: Your volunteer work makes our program stronger. Thanks for the advice, the knowledge transfer and for always going the extra mile for our startups' needs.

To our investor's network: Thank you for trusting us, and for financially supporting our startups and contributing towards a more inclusive ecosystem.

To our corporate partners: Thank you for always saying "yes" to our organization. Thanks for not just believing in our mission but becoming part of it.

To the amazing parallel18 team: Thanks for always running the extra mile; your hard work didn't go unnoticed during 2022. To another year full of growth and success!

If you want to join our community as a **mentor**, want to be part of our **partner** network or if you're looking to diversify your **investment** portfolio with innovative startups, please contact us at **info@parallel18.com**


#WeAreTheTrust

APPENDIX

Gen.1

P 1 8


quo
BUREA
BUSCA · REDIME · AHORRA
Campodata
ChallengeBox
clickypass
Crediyo
ebrolis
E-Farm
GasolinaMóvil
inbify
MailLift
Handwritten Letter Service for Sales Professionals
SAMYROAD
SCS
SCHOOL CLIMATE SOLUTIONS
SPACE RHINO
GAMES
stellup
Talentank
TREE TO TUB
HARVEST YOUR SOAP
UAV-IQ
PRECISION AGRICULTURE
ushery
VESO
SUNNE
CLEANTECH
LAB
MEMORY
PALACE
ehumanlife
CINEMAD
EAT YOUR
COFFEE
NINETEENTH
AMENDMENT
PAIR
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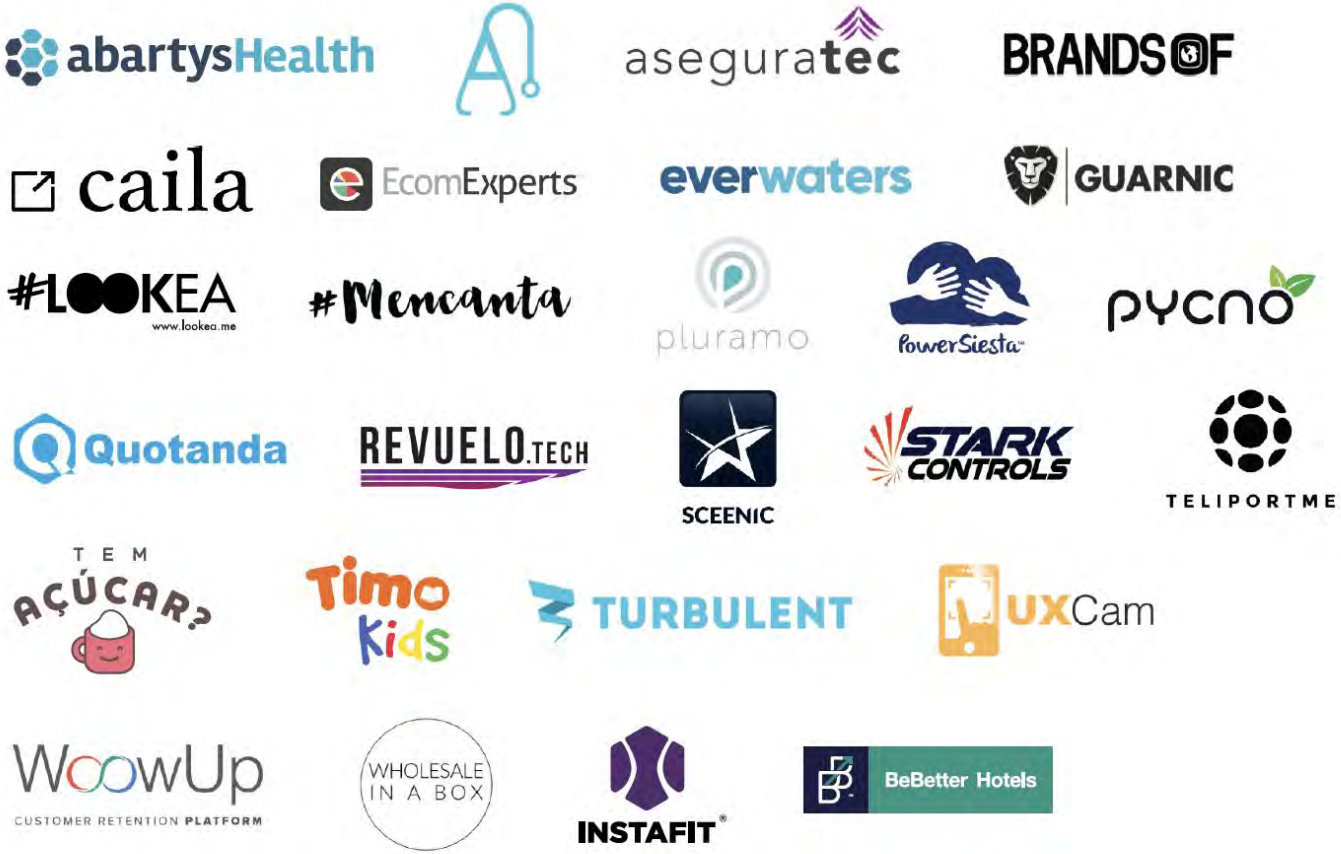
Gen.2

P 1 8


abartysHealth
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caila
EcomExperts
everwaters
GUARNIC
#LOOKEA
www.lookea.me
#Mencanta
pluramo
PowerSiesta
pycno
Quotanda
REVUELO.TECH
SCEENIC
STARK CONTROLS
TELIPORTME
TEM AÇÚCAR?
Timo Kids
TURBULENT
UXCam
WoowUp
CUSTOMER RETENTION PLATFORM
WHOLESALE IN A BOX
INSTAFIT
BeBetter Hotels

Gen.3

P 1 8


360 deportes.tv
Bien Cool
Bowery
trueface
Claimbot
Cleancult
CLINC!
compra fresca pr.com
del carrito a tu puerta
CTZEN
entrenarme
body life balance
fletch
Flimper
FRESCAPESCA
MAKERSVALLEY
ENABLE GREATNESS
Global FLAVORS
GROUNDBREAKER
HoyPido
INKA
unchera
NAUSDREAM
OUTSITE
pickmystuff
transportation services
quiena
REMIDI
SOYMACHO
TRANSPARENT
Tullpi
UMBO
Weeshing
invierte en tus pasiones
Yaydoo
ZPDATUM

Gen.4

P 1 8

ARK
PARADIGM


Agranimo


ATLASWEARABLES


Awesound


backstartup


bonjour!
Ana


BrainHi


byprice.com


CAMONAPP


cloudboost


CuidaMiMascota


ENTREGA
MEDS


EVOTING


EXCITED


Host Tonight


HUSKY


ICM
HUB


omnia


PARKNET


re3D


Señor Paleta


FairCoin


StageBoom


TextualMind
Intelligent Textual Sensors


WeClub


WISBOO


woocar


workep


yuvod


UpCraftClub

Gen.5

P 1 8


Spotn
SURVEYKIWI
ADVENTURE BUCKET LIST
vozy
agro beads
SINDYK
ristcall
rendy.io
PRoduce!
booksloth
PRatian
pediidos
FLEXIO
MYSTRENGTHBOOK
monito
MOLCAJETE FOODS LLC
istopro
LiliWeds
libros
KNOWDEX
HIVECUBE
Guilty
GOPANZA
GOLAZZOS
ESNÚ
elemetrica
deb media
Dame Un Bite
CABAN SYSTEMS
Banqueteal@!

Gen.6

P 1 8


CINCO


Facturedo


PROCESSIM
LABS


DATAWIFI


Unicorn


SAVOR


PINTA
GELATO


hackmetrix


uva!


ELEGIRSEGURO.COM


OGMA
LANGUAGE STUDIO


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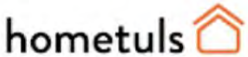
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ISLEÑAS


EDUSYNCH


YU-TRACK
ENTERPRISE


accountberry
The sweet side of accounting


enviopack


BUSSI


PR
Renewable
Solutions


Organic
POWER, LLC

Gen.7

P 1 8


ExpedienteAzul
ARVADACORP
Think inside the box
FITco
Intellitech
LINKEDAI
silabuz.com
DataScope
the LIVE GREEN CO.
alómaestro.com
alana
Syrona Women
KETEKA
FIXME
agtools
Amasar
SIRENA PATTERNS
Symmetric Health Solutions
tagshelf
nilus
FitWallet
tais
cargofive
ALAMY
LICMÁTIC_
AppLivio
ABEXUS
scraperapi
BOXPOWER
Chaty
VALET SELLER
abaxto
RONPON
OMICS GLOBAL SOLUTIONS
DELOS
LICK
MY HEALTHY WOE

Gen.8

P 1 8


OUTCOME
project


Fitverz
The fitness universe


homebase


DealerAppCenter


BARRAS
Jabón Artesanal


STRAIN


BEAUTY911


Raincoat


eventray


LabbGo

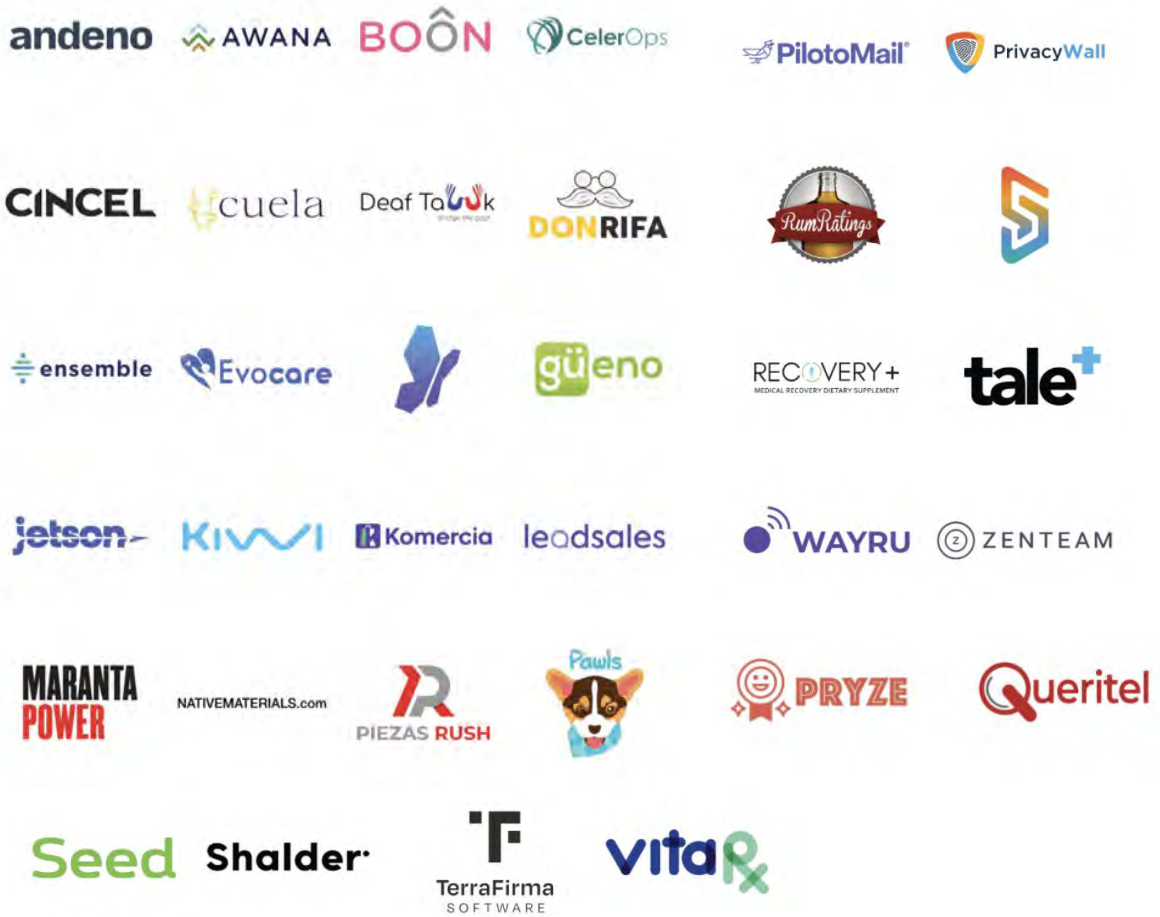

the
POP'D
shop


Tasty
smart


AI Solutions
GUARDIAN SYSTEMS

Gen.9

P 1 8


andeno
AWANA
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PrivacyWall
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Deaf Talk
DONRIFA
RumRatings
ensemble
Evocare
güeno
RECOVERY+
MEDICAL RECOVERY DIETARY SUPPLEMENT
tale+
jetson
KIWI
Komercia
leadsales
WAYRU
ZENTEAM
MARANTA POWER
NATIVEMATERIALS.com
PIEZAS RUSH
Pawls
PRYZE
Queritel
Seed
Shalder
TerraFirma
SOFTWARE
vitaRx

Gen.X

P 1 8


abacrop


Channel


eSponsor


Figuro


Lank

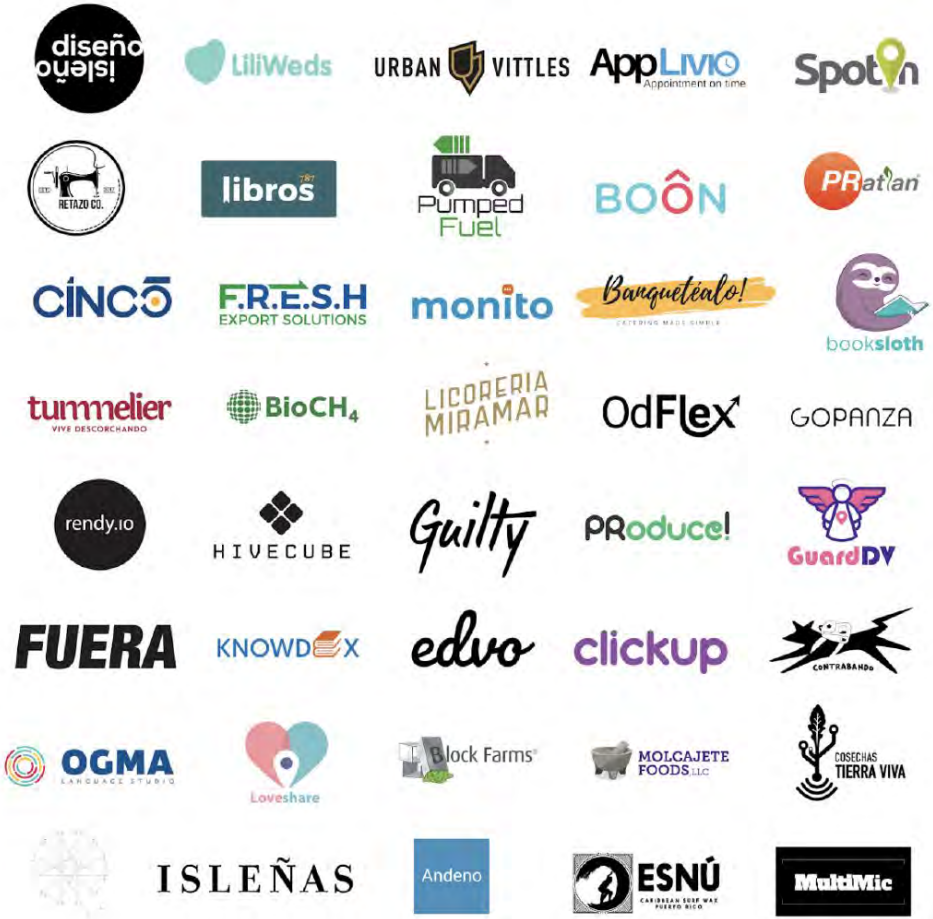

RED ATLAS


runfalcon


Wihom

Gen.1

pre18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LiliWeds
URBAN VITTLES
AppLivio
Appointment on time
Spotyn
RETAZO CO.
libros
Pumped Fuel
BOÔN
PRatlan
CINCO
F.R.E.S.H
EXPORT SOLUTIONS
monito
Banquetéalo!
booksloth
tummelier
VIVE DESCORCHANDO
BioCH4
LICORERIA MIRAMAR
OdFlex
GOPANZA
rendy.io
HIVECUBE
Guilty
PRoduce!
GuardDV
FUERA
KNOWDEX
edvo
clickup
CONTRABANDO
OGMA
LANGUAGE STUDIO
Loveshare
Block Farms
MOLCAJETE FOODS LLC
COSECHAS TIERRA VIVA
ISLEÑAS
Andeno
ESNÚ
MultiMic

Gen.2

pre18


ISLAND
BOUND


Asset Shelf
Construction Surplus Marketplace


PickUp Waste


affiBox


HUERTO
RICO


PRENTO FARMS


tais


BeanWards


papio


Beauty911


LATTUGA
ORGANICS


SIRENA
PATTERNS


Amasar


ALAMY


Synchrolog


Raincoat


PIN LATINO


CryptXLABS


FitWallet


Fitverz
The fitness universe


SHARP FOCUS


OUTCOME
project


INSU


LICK


MYDPO


MY
HEALTHY
WOE


LabbGo




ABEXUS
AI


fresH2O
solutions


WATRIC
ENERGY
RESOURCES


DELOS

Gen.3

pre18


=LOVE


9
millones


bana




CAPRONI


HALLO
HELPER


Evocare


gearprices


Löfte
NATURAL CARE


PRYZE


VIVE LA VAN
CAMPER VANS


arrecife
beachwear


cuela


POLTAGS


Seed


DONRIFA


VESTIGIUM


Little Things


SALÓN
BORICUA


Materia
Madura


MARANTA
POWER


CRANEeH
Empowering your heart health


Corewell


Patria Tours


pinta


RECOVERY+
MEDICAL RECOVERY DIETARY SUPPLEMENT


TerraFirma
SOFTWARE


Paperwork


REMORA


tale


VEOVEO
STUDIOS


VITAL


vitaRx


CACAO 360


ZEEREZ


a medias


BASED.


PilotoMail


RumRatings

Gen.4

pre[18]


assist787


PARALIAN


Channel


Divinissimo
Gelato


TEMIS


HYPERION


ESTHER


Dabb


Auditorium


enspacio


giftfully


citadoc


Candid
Society


okiedokie


buzzzy


Mente
Serena


Med-Fly


findit


SPAWN CAMP


Entre Panas


maestros
express


mojito
Dating


Ceyba


Meet Your
Finance


STREAM
TECHNOLOGIES


abacrop


RED ATLAS

Gen.5

pre18


berrify

CaribeDrones


CONSTRUYE
tu libro


dBloks




Guariké


HEALTH
4PETS


INMIGRACIÓN
VIRTUAL


JALTEA


MelioraCentrum


Mixers


MIKOKOS
ZERO WASTE PRODUCTS


ponflow


ONEGIG


oteōgō


POP


prep


quibble


QuoteCorrect




SHOPPERFIX


tuto


urbital


Upship