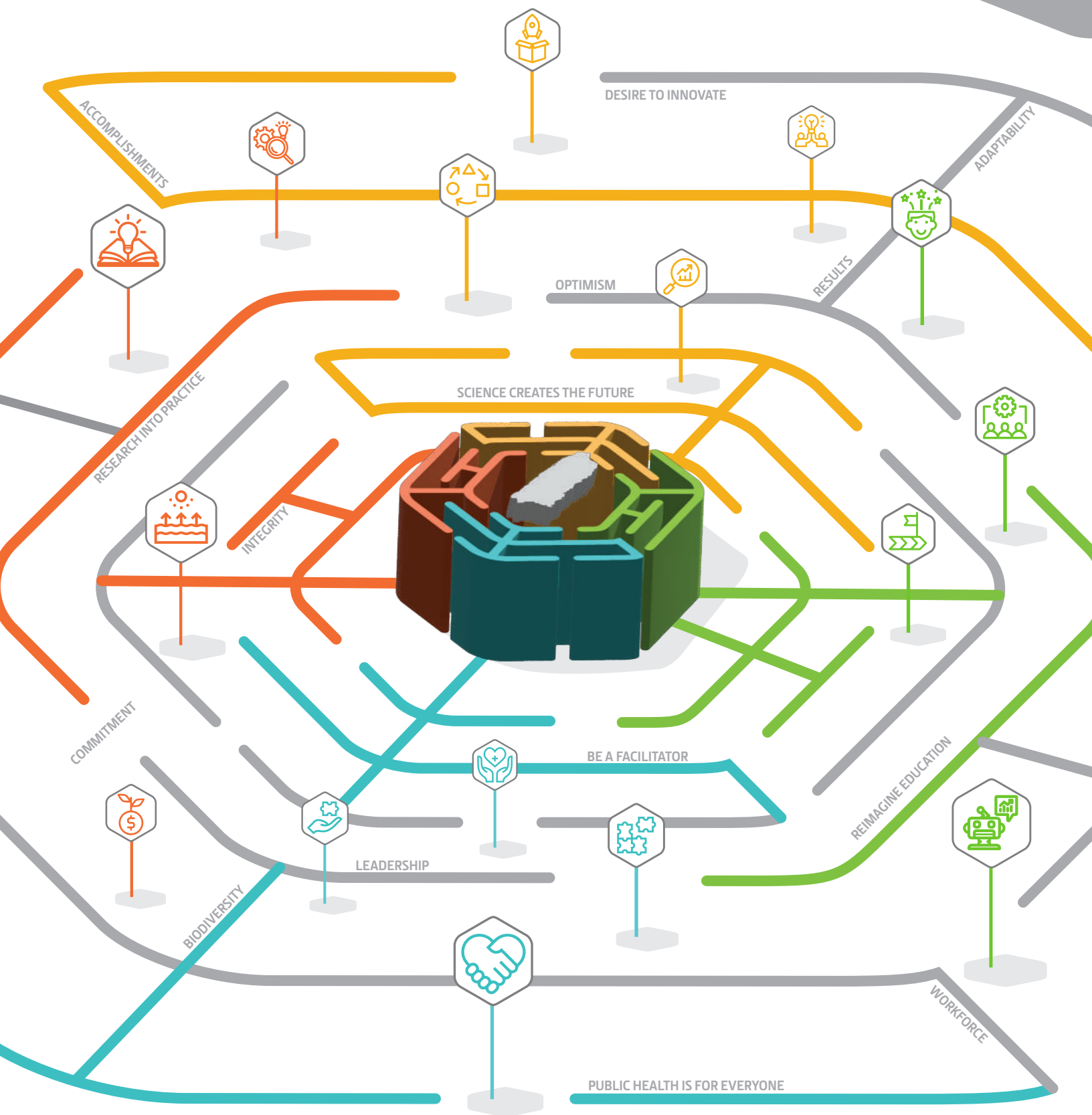




ANNUAL REPORT 2021





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

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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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WE PROMOTE INNOVATION THROUGH OUR STRATEGIC PILLARS:

RESEARCH



RESEARCH GRANTS
PROGRAM
FUNDS TO GROW



TECHNOLOGY™
TRANSFER OFFICE



Caribbean Center
for Rising Seas



CENTER FOR TROPICAL
BIODIVERSITY
A program of Puerto Rico Science, Technology & Research Trust



PRSTRT
RESEARCH
INSTITUTE



Cultural Heritage
Innovation Program



RE-GROW PR
AGRICULTURA URBANA Y RURAL

ENTREPRENEURSHIP



Colmena66
Tu Camino Empresarial



parallel¹⁸

xpand



SBIR/STTR
Federal Grants



Resiliency and
Business Innovation

PROGRESS THROUGH INNOVATION

It is through research and development (also known as R&D) that we can 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 their field providing funding mechanisms, resources, mentorship, or other means to drive innovation.

INNOVATION THAT FUELS THE ECONOMY

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.



PUBLIC HEALTH



Puerto Rico
Public Health Trust



Puerto Rico Vector
Control Unit



PRCCI
Puerto Rico Consortium
for Clinical Investigation

FOUNDATION



**STEM EDUCATION &
WORKFORCE DEVELOPMENT**



STEM
EDUCATION PROGRAM



PR READY
WORKFORCE TRAINING PROGRAM



**PR RESEARCH
& INNOVATION**
Meet-ups

Science City

CONNECTED THROUGH HEALTH

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.

PROPELLING CAPACITY FOR INNOVATION

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.



BUILDING PUERTO RICO'S INNOVATION CAPACITY

This year has proven to be one of new challenges and we have witnessed how they have impacted all the sectors where our programs operate. Despite this, and demonstrating our organizational spirit of resilience and adaptation, we have reaped great achievements as a result of our team's work. Some of them can be summarized in the following impact numbers:

RESEARCH

39

**PATENTS OBTAINED
BY RESEARCHERS**

120

**RESEARCHERS SUPPORTED
AND FUNDED**

\$37m

**ADDITIONAL EXTERNAL
GRANTS**

ENTREPRENEURSHIP

386

**TOTAL START-UPS OF
PRE18 AND P18**
for this fiscal year

15,000

**PEOPLE IMPACTED BY
COLMENA**
since 2016

\$212.4m

**COMBINED GLOBAL
REVENUES**
for the nine generation of P18

PUBLIC HEALTH

53

**TRAINED CLINICAL
RESEARCH COORDINATORS**

10,063

PHYSICIANS ENROLLED
in the Certification of Death Online Course
as of June 30, 2022

78

MUNICIPALITIES IMPACTED
by PRVCU

FOUNDATION

583

FAMILIES SERVED
by STEM program

66%

PUBLIC SCHOOL STUDENTS
impacted by STEM program

\$1.75M

FUNDING
for capacity building projects



LETTER TO STAKEHOLDERS

The P.R. Science, Technology & Research Trust is creating a better future

Welcome to the 2020-2021 Annual Report of the Puerto Rico Science, Technology & Research Trust, where we believe in creating a better future.

After the striking of Hurricane Fiona last September 2022, we stand in solidarity with all the people affected in Puerto Rico and the Caribbean. We thank everyone who has joined in the recovery efforts and reaffirm our commitment to working for the well-being of Puerto Rico. At the Trust, we have already mobilized programs, addressing the pressing needs of communities and individuals. The Puerto Rico Public Health Trust is working closely with our community's health promoters, the Puerto Rico Department of Health, and other entities to help in our most affected areas.

The Puerto Rico Vector Control Unit is delivering supplies, repellent and larvicides and doing inspections in the impacted areas. Colmena66 has reactivated the multisectoral platform called Levanta tu Negocio PR, together with the organizations and programs of the business community to support merchants and entrepreneurs affected by Hurricane Fiona. In Levanta Tu Negocio PR-Fiona business owners can access the Recovery Guide with important news and data and information regarding help available, and also participate in the survey to know how they are after the hurricane, and how they can access the help, and resources available as per their needs.

Building on the human and programmatic infrastructure that the Trust has, our team delivered strong results across all the programs in 2021-2022. Guided by our values, and our resilient culture, the PRSTRT organization saw opportunities for powerful collaboration leading innovation activities in Puerto Rico in the areas of Public Health, Research and Development, and Entrepreneurship. As most of you know, 2021 was a year full of challenges, including the continuation of the COVID-19 pandemic, impacting our work environments, market instability, and worldwide supply chain disruptions due to Russia's invasion of Ukraine, and inflation. The results that I am sharing reflect the strength of our strategies and organization.

I am especially pleased with the progress we are making with the P.R. COVID-19 Variant Genomic Surveillance Initiative under the leadership of Dr. Marcos López Casillas. This initiative, in collaboration with the PRDoH is expanding Puerto Rico's scientific



"I want to express my deepest appreciation to our dedicated and talented professionals that with their exceptional capabilities, character and expertise are devoted to advancing our strategic plan and agenda."

Luz A. Crespo, Chief Executive Officer

capacity to address the COVID-19 challenges and emergent diseases. We continue expanding and enhancing building incremental laboratory space and capabilities to address the growing needs.

This year we reviewed the PRSTRT's strategic plan and identified key areas of focus for the next three years. One key outcome of the strategic planning process was the identification of the key performance metrics for the Trust strategic pillars: Research and Development, Public Health, Entrepreneurship, and Foundation. In this summary, we highlight the main KPIs (Key Performing Metrics) of each strategic pillar.

For this fiscal year, we signed 199 Memorandums of Understanding (MOUs) with different organizations, and municipalities, including over 150 for Telemedicine and Telehealth. In terms of communications, the Trust, as an organization and brand, has gained respect and recognition as an organization of reference, with a total of \$5,188,151 million non-paid publicity. This year, the Trust was a very active organization on the main digital platforms. One of the main improvements achieved by our Design, Marketing & Communications division (DMC), under Ms. Lupe Vazquez's leadership, was the consolidation of the digital accounts, platforms, and tools with organizational licenses that facilitate marketing and outreach efforts.

RESEARCH PILLAR PROGRAMS:

As part of our research pillar, the **Puerto Rico Consortium for Clinical Investigation (PRCCI)** successfully completed its sixth year of operations on June 30th, 2021. For the year we integrated the team's new functions and team members to continue enhancing PRCCI value proposition: Business and Site Development Lead, Clinical Research Quality Manager, General Accountant & Business Specialist, Clinical Research Manager, Scientific Advisor, and Project Manager. For the year 2021,



PRCCI brought to the island more than 84 clinical trial protocols and has over 30 active clinical trials in the following areas: COVID-19, oncology, infectious diseases, pulmonology, cardiovascular, and dermatology.

PRCCI delivered two sessions for Clinical Research Coordinator training and graduated 53 professionals. In December 2021, PRCCI successfully launched the Puerto Rico Patient Registry or “Red de Pacientes de Puerto Rico” deploying a leading-edge patient registry platform for COVID-19 and other diseases.

We are achieving excellent results from our **Research Grants Program**. In September 2022, our Grants Program announced the award of an additional \$700K to 10 science and technology research projects. In total, since its inception, the Research Grants Program has awarded more than 120 research grants through its competitive and non-competitive initiatives for a total PRSTRT investment of \$13.8 million and a return on investment of over \$37 million. This year we hosted our third Forward Summit – Virtual edition, with over 20 International speakers, over 775 participants, and 48 poster sessions. At the event, the Trust presented the Bajari Prize, an institutional recognition by nomination granted by the organization to recognize exceptional scientists on the Island, to Dr. Vanessa Rivera Amills. The Research Grants Program also hosted the first AGILE cohort this year. AGILE’s mission is to increase agility in the application and execution processes of projects that are subsidized by foundations and public, private, and/or federal entities, strengthening their capacity to secure more funds in the future. This initiative provides tools to maximize funding opportunities and the execution of your compliance requirements. AGILE offers resources to help nonprofit organizations and institutions of higher education maximize funding opportunities and execute compliance requirements.

Our **Technology Transfer Office (TTO)**, in partnership with Columbia University’s accelerator program, conducted EnTRUST, a 12-week boot camp for researchers in the life sciences and their specific research projects with potential for technology transfer and commercialization. EnTRUST is an initiative of the Southeast XLeator Network (XLN). Its pilot program, Therapeutics Accelerator Program (TAP), was completed in FY2021, with projects underway during FY2022. The FY2022 program was expanded to include additional life science fields. The TTO partners with the Trust Research Grants Program have provided over \$800K in the last two years for the most promising EnTRUST projects.

Last year, over 25 disclosures were evaluated, 50% of them were by a female inventor, twenty-two (22) new patents were filed, and seven patents were issued. There are currently seventy (70) technologies under TTO management from our university partners across a variety of scientific fields. The Trust TTO was a key contributor to increasing the number of patents applications submitted that have helped to place Puerto Rico among the top 50 countries in 2020.



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



**TOTAL
AWARDED**
\$13,811,978

120
researchers

\$37,301,563
ROI

428
Students
Impacted

130
Peer-reviewed
publications

22 U.S.
Applications

14 U.S.
Patents Issued

25 New Technologies disclosed
involving 52 inventors

39 Patents
obtained by
researchers

60 Patent
applications
by researchers

417
Presentations
and abstracts

18
SBIR/STTR
proposals awarded
to funded investigators

8 Companies
founded by
grantee
researchers

8 Foreign
applications

7 Foreign
patents issued

The **Caribbean Center for Rising Seas (CCRS) Program** was launched in September of 2021. Members of its Advisory Committee were identified and met at least twice a year. The CCRS staff participated in at least four hearings presenting the Rising Sea Level topic, including presenting in CEACC public hearings on the draft Outline of the Climate Change Mitigation, Adaptation, and Resilience Plan for Puerto Rico. Personnel of the CCRS have met with six offices in the executive branch of government, with officers in the legislative branch of government (Senate and House of Representatives) to present our program and discuss collaborations and met with officers in at least three offices of the federal government in the executive branch including the White House, the Department of Commerce, and the National Oceanic and Atmospheric Administration. In terms, of Outreach, Community Engagement, and Education Agenda, the CCRS staff has impacted thousands of people with their messages.

Top 50 countries for patent applications 2020

TOP 50

		2020	Change								
1	United States	44 293	-4.1%	18	Israel	1 681	+8.8%	35	Czech Republic	205	+1.0%
2	Germany	25 954	-3.0%	19	Chinese Taipei	1 344	-15.9%	36	New Zealand	200	+11.1%
3	Japan	21 841	-1.1%	20	Ireland	970	+10.0%	37	Slovenia	165	+35.2%
4	P.R. China	13 432	+9.9%	21	Australia	958	-3.9%	38	Brazil	161	-16.1%
5	France	10 554	+3.1%	22	India	698	+8.7%	39	Hong Kong SAR (China)	156	+24.8%
6	R. Korea	9 106	+9.2%	23	Norway	646	0.0%	40	Greece	136	-3.5%
7	Switzerland	8 112	-1.9%	24	Turkey	594	+26.1%	41	Hungary	107	+10.3%
8	Netherlands	6 375	-8.2%	25	Singapore	577	+14.3%	42	Antigua and Barbuda	97	+142.5%
9	United Kingdom	5 715	-6.8%	26	Saudi Arabia	488	+34.1%	43	South Africa	89	+1.1%
10	Italy	4 600	+2.9%	27	Poland	483	+4.3%	44	United Arab Emirates	71	+65.1%
11	Sweden	4 423	+0.6%	28	Cayman Islands	458	-9.7%	45	Malta	65	+12.1%
12	Denmark	2 404	-0.5%	29	Liechtenstein	436	-0.2%	46	Cyprus	64	+33.3%
13	Belgium	2 400	-0.9%	30	Luxembourg	394	-5.1%	47	Thailand	63	-25.9%
14	Austria	2 303	-1.8%	31	Puerto Rico	290	-1.7%	48	British Virgin Islands	62	+5.1%
15	Finland	1 895	+11.1%	32	Russian Federation	264	+8.2%	49	Estonia	57	+18.8%
16	Spain	1 791	-5.0%	33	Barbados	260	+9.7%	50	Slovakia	55	+31.0%
17	Canada	1 760	-4.4%	34	Portugal	249	-8.5%				

European Patent Office 2021

- 2,679 Entrepreneurs served
- 4,612 Referrals to the Resource Network

Colmena66 is ranked among the top affiliates of the US Source Link network on key performance indicators, including number # 1 position in the number of entrepreneurs assisted through the hotline o email, and counseling hours.

I would like to highlight two significant contributions of Comena66 for this fiscal year:

(1) **Xpand**: launched in April 2022, is a program developed by Colmena66 and Parallel18, funded by Fundación Banco Popular, with the purpose of supporting innovative startups with more than three years of operation, \$500K or more in annual revenue, and with the basic infrastructure to begin their expansion process. The program seeks to impact 15 innovative second-stage startups by developing a support community where founders can connect with mentors and peers while faci-

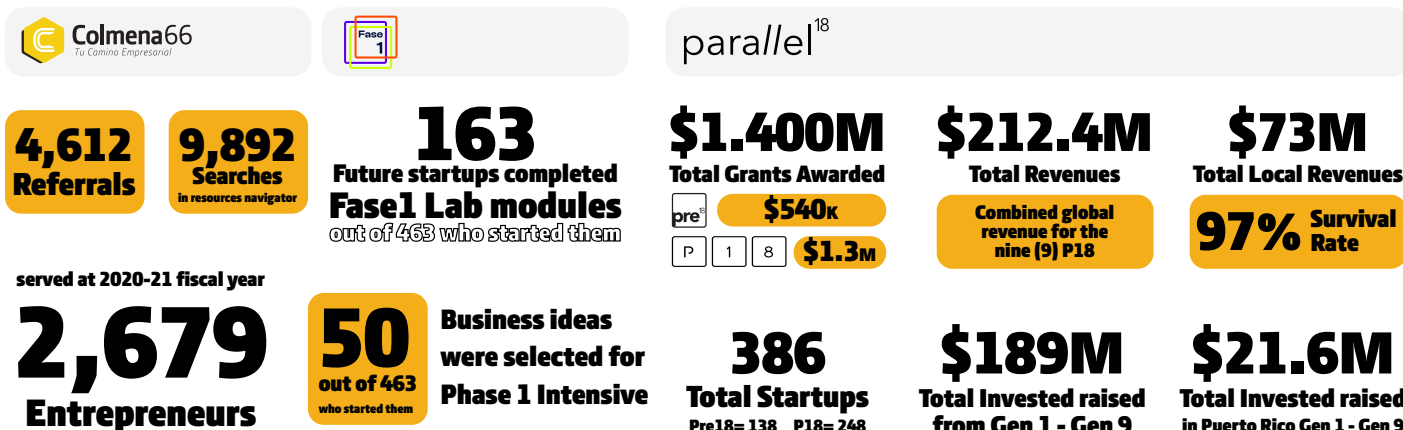
ENTREPRENEURSHIP PILLAR PROGRAMS:

Regarding our entrepreneurship pillar, Colmena66, our entrepreneurship ecosystem builder program, is fulfilling the Trust's commitment to our entrepreneurs who are the change-makers driving innovation and economic activity.

During the fiscal year 2021-2022, Colmena66 reached:

- 9,892 Searches in our Network Navigator
- 307.5 Counseling Hours
- 4,914 Interactions or counseling sessions





litating access to strategic resources partners to increase their knowledge in raising capital and market intelligence.

(2) **Colmena66 Impact Report 2021:** El Estado de la Comunidad Empresarial en Puerto Rico. This report provides visibility into the state of the entrepreneurial community, business activity, and the needs of stakeholders. The report also provides visibility of potentially actionable data to stakeholders and decision-makers in entrepreneurial support organizations, the government, and other institutions. Colmena66 is using the information so it can more accurately assess gaps in the community and direct resources to where they are needed most.

As part of our entrepreneurship pillar, this year, the Trust, in collaboration with the PR Department of Housing, launched Fase1.

Fase1 exists to address a latent need serving as a prequel to the pre18 program and helping new entrepreneurs in developing their ideas and minimum viable products (MVP) to enable their successful journey within the startup accelerator's ecosystem. With Fase1, the Trust's entrepreneurship pillar is now a complete and coordinated multi-phase path. There are two phases to the program (a) Fase1 Lab, an online entrepreneurship academy, and (b) Fase1 Intensive, an idea-concept stage incubator where we help new entrepreneurs transform their ideas into minimum viable products and meet the requirements of pre-acceleration programs. The program format is a 12-week specialized curriculum where 50 projects are selected by an external Selection Committee.

Advancing the Trust's mission to accelerate and diversify Puerto Rico's economy, we continue creating new opportunities for entrepreneurs in our innovation ecosystem. Our Parallel18 program pursues the mission of positioning Puerto Rico as an international hub for innovation and entrepreneurship and providing local startups with a global mindset and opportunities to go to market and export to international markets.

For this fiscal year, we completed Pre18 Gen 4, and we are running the special P18 Gen X. With Pre 18 Gen 4 we have graduated 138 local companies, 50 of which participated in P18. In the Pre 18 Gen 4, 50% of the founders were female. As presented in the P18 impact report for 2021-2022 some of the key performance indicators for Parallel18 are:

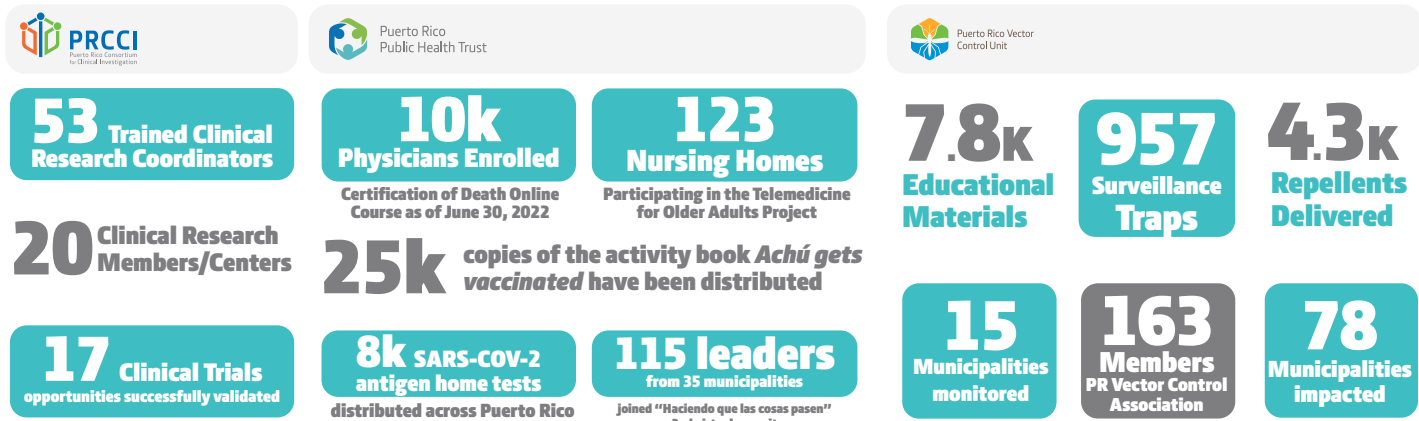
- Total Revenues = \$212M with \$73M from local PR revenues.
- 40% of foreign companies-maintained operations in PR
- Total private investment raised of \$189M with \$21.6M local capital.

This year we had four P18 alumni that had their exit: Booksloth (Bookclub), Truefaceai (Pangram), Entrename (Jeff), Transparent (OTA insight). This year some of the P18 companies enjoyed significant external investment: (a) Cleancult did their series B raise of \$25M, Kiwi raised \$3.5M, Produce raised \$1.8M, and Raincoat raised \$4.7M.

P18 Connect is our Corporate Innovation program focused on helping startups grow on the island while promoting that Puerto Rico's biggest industries become more competitive by integrating the latest innovations. For Gen9 during 2021, we hosted 26 meetings, coordinated over 110 unique interactions between corporates and startups, and closed three investment deals: Pawls, Ensemble, and Celerops.

PUBLIC HEALTH PILLAR PROGRAMS:

The **Puerto Rico Public Health Trust (PRPHT)** continues its role as a trusted advisor in the healthcare area providing education and services to the community through interventions in traditional, digital, and social media. During the year, PRPHT has strengthened its relationship with the PRDoH, while managing the COVID-19 pandemic and developing strategies for Long COVID, the new forefront of the pandemic.



As the fastest growing program of the PRSTRT, PRPHT's projects and initiatives are aimed at disaster management, communities, telemedicine, telehealth, and innovation and research, among others.

We continue expanding our Community Health Workers (CHWs) Capacity Building Project leveraging existing relationships, training resources, and best practices, to strengthen the capacity of CHWs in Puerto Rico. This year, the PRPHT received a grant from the Centers for Disease Control and Prevention (CDC) to expand and leverage the CHWs. The main goals are to improve health outcomes, including mental health and Social Determinants of Health (SDoH), the COVID-19 pandemic, and strengthen the emergency preparedness and response among underserved, medically fragile with chronic care management needs. In the next figure, I am pleased to share some of the key impact indicators from our PRPHT programs, such as 10,000 physicians enrolled on the Certification of Death online course by June 2022, 25,000 copies of the activity book *Achú gets vaccinated*, were distributed among communities, 123 nursing home participating in the Telemedicine for Older Adults project,

115 communities leaders from 35 municipalities joined the virtual summit "Haciendo que las cosas pasen".

During this fiscal year, the Puerto Rico Vector Control Unit (PRVCU) suffered a major structural transformation to become focused-on project-based operations. PRVCU now performs two main activities: vector management and community mobilization. To our knowledge, the Unit is the only vector management program with a dedicated QA specialist, dedicated to evaluating current and future processes for improvement within and across projects, identifying problems in data management, and standardizing and implementing quality controls. A significant amount of time was dedicated to staff development, including over 60 hours of staff training in diverse topics, including vector control technologies and strategies, safety procedures, communication strategies, supervisory tools, and new laboratory procedures, among others.

Surveillance efforts have been expanded to include more municipalities and programs, as presented in the chart below. At the same time, the Puerto Rico Vector Management Association



PRPHT's mission & vision, priorities and values.

Table 1: Number of AGO traps as part of the surveillance system for this period.

Municipality	Number of AGO traps	Project or purpose
Arecibo	25	Dengue Hotspot
Bayamón	202	Many positive cases
Caguas	240	DoD Project
Carolina	20	Dengue Hotspot
Cataño	10	Dengue Hotspot
Cayey	9	Municipal Support
Culebra	25	Rotary Club Project
Dorado	17	Dengue WALs
Guánica	15	Municipal Support
Guaynabo	21	Dengue Hotspot
Ponce	165	COPA Project
Sabana Grande	10	Municipal Support
San Juan	139	Many positive cases and some Hotspots
Toa Baja	49	Municipal Support
Trujillo Alto	10	Dengue Hotspot

already has 163 members from 58 municipalities. Finally, PRVCU celebrated the second Annual Convention of Vector Control on September 14-16, 2022. The event covered San Juan, Bayamón and Mayagüez.

FOUNDATION PROGRAM:

For this year 2021, our **STEM and Workforce Development Program** directly impacted, with the STEM Boxed Kit Experience, about 495 students in Puerto Rico, 65% from public school, 35% of the STEM education experiences participants are female, a 10% increase from the average from 2018-2020 Series. The STEM Education Program, in collaboration with Morehead State University, provided depth-of-knowledge workshops in physics focused on practical applications of lessons and tools for the classroom, online interactive simulations, and strategies to engage students from all levels to 30 teachers. The STEM program also implemented **Tech Saturdays at Holberton** in collaboration with Holberton

School Puerto Rico. The program served 30 juniors and seniors from around the island in an 8-week workshop focused on programming. The experiential learning opportunity included skills development in problem-solving, integration of computational thinking into design, as well as an introduction to the Python programming language.

Closing this letter, I want to invite you to read the

whole annual report so you can appreciate and enjoy the Puerto Rico Science, Technology, and Research Trust 2022 storytelling. A story that is full of commitment, innovation, and passion for excellence. The Puerto Rico Science, Technology, and Research Trust leadership, associates, and trustees are more than ever advancing the organizational mission of investing, facilitating, and building capacity to continually advance Puerto Rico's economy and its citizens' well-being through innovation-driven enterprises, science and technology, and public health.

I want to express my deepest appreciation to our dedicated and talented professionals that with their exceptional capabilities, character and expertise are devoted to advancing our strategic plan and agenda, to our outstanding board of trustees, and members of the different advisory committees that with their wisdom provide guidance to set the path to follow, and to all our donors and collaborators that believe in what do: creating a better future for all through science and innovation.



583 Families Served
495 during the fiscal year 2021-2022

More than **200k** new discretionary Long-term Funds



More than **100k** private funding for capacity-building Projects

66% Public School Students

35% Female participants

2 new certifications available for the IT sector

40 new Farmers Trained in Cocoa Agroforestry model



OUR 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.



[Salvador Moncada](#)

Salvador Moncada is a Honduran-British pharmacologist, medical scientist and professor. He is currently Research Domain Director for Cancer at the University of Manchester. He also worked at the Wellcome Research Laboratories for more than 20 years, as Director of the Wolfson Institute for Biomedical Research at University College among many other roles. He is globally recognized for his wide range of research achievements focused on inflammation, vascular biology and cell growth. He has won numerous awards from the international scientific community including a Dart/NYU Biotechnology Achievement Award, the Prince of Asturias Scientific and Technological Research Award and the Dr AH Heineken Prize for Medicine from the Royal Netherlands Academy of Arts and Science.



[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.



[Gualberto Medina](#)

Mr. Medina, a licensed 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.



[Ubaldo Córdova](#)

Córdova is a professor in UPRM of chemical engineering, a researcher and the institution's 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.



[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.



[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.



[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.



[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.



[Frances Santiago-Schwarz](#)

Santiago-Schwarz is Professor of Molecular Medicine at the Donald and Barbara Zucker School of Medicine at Hofstra/Northwell and Professor, Elmezzzi 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.



[Enrique A. Volckers Nin](#)

Völckers Nin has over 25 years of experience in technology and entrepreneurship and is appointed as Chief Innovation & Information Executive of the Government of Puerto Rico and Executive Director of the Puerto Rico Innovation & Technology Service. He has dedicated his career to the development of new businesses, focused on emerging and massive technologies. He led the development of one of the first music e-commerce stores in Puerto Rico and other outstanding services and products using digital technology like unique identity and machine learning, and artificial intelligence. He founded Neeko, the first Innovation and Collaboration Center in Puerto Rico at Sacred Heart University and has served in other executive and advocacy roles. Völckers holds a degree in Computer Programming from the University of Puerto Rico (UPRM) and in Business Administration and Marketing from the University of Puerto Rico (UPRRP).



MEET OUR EXECUTIVE TEAM

Our Executive Team provides strategic and operational leadership.



[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 Accountant 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.



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.



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).





EDUCATION AND CAPACITY BUILDING

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.

MISSION

The Trust supports and funds various programs, 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.

The Trust invested more than \$154,410.00 in science, technology, research & entrepreneurship training initiatives, including the following:

- University of Puerto Rico, Río Piedras;
- Universidad Central del Caribe;
- Engine 4;
- University of Puerto Rico, Mayaguez Campus;
- Fundación Sila Calderón;
- Holberton School;
- CIO & IT Conference;
- Women Economic Forum.



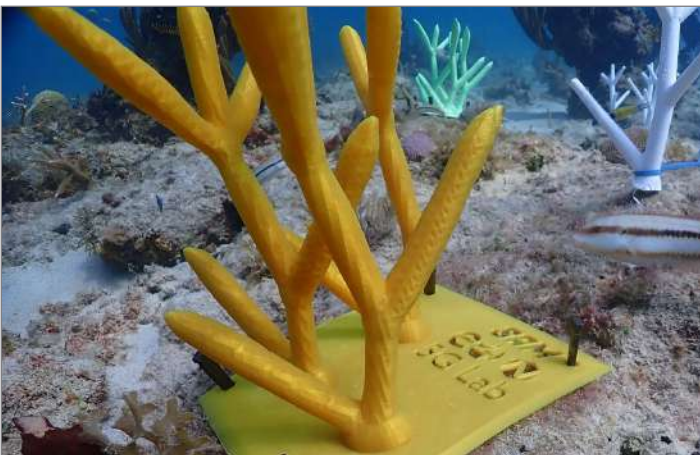
MEMORANDUMS OF UNDERSTANDING (MOUs) SIGNED AND CONCEPTUALIZED ON 2021-2022 (JULY 2020 – JUNE 2021)

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

1. MOU's de Telemedicina: 132 centros de cuidado prolongado y 45 clínicas de salud primario (USDA, CARES y HRSA)
2. Departamento de Educación
3. Departamento de Salud
4. Ciencia Puerto Rico
5. Departamento de Desarrollo Económico y Comercio
6. Municipio de San Juan
7. Universidad de Puerto Rico
8. La Liga de las Ciudades de Puerto Rico
9. Response Innovation Lab
10. NASA
11. San Juan Bautista School of Medicine
12. Rising Seas Institute, Inc
13. Information Systems Audit and Control Association (ISACA)
14. Resiliency Law Center – UPR School of Law
15. CDC Dengue Branch
16. Pathstone Corporation
17. Puerto Rico Techno Economic Corridor
18. Holberton Puerto Rico
19. Concilio de Salud Integral de Loíza, Inc.
20. Larta Institute
21. Emergent Tools
22. Municipio de Loíza
23. DigitalUndivided

SPONSORED EVENTS

The PRSTRT's mission is to invest, facilitate and build capacity to continuously advance Puerto Rico's economy and the well-being of its citizens through innovation-driven enterprises, science, research, public health, and technology. In line with our mission, we have a sponsorship policy for projects, events, and activities that educate and train under our strategic pillars of research, entrepreneurship, and public health. The process is documented on our website, where we detail which events request sponsorship for, and which are granted. From research and science summits, scholarships for coding students, and sponsorship of STEM conferences to funding 3D printing projects, the Trust sponsors over 20 events annually. Through this effort, our spokespersons also serve as speakers to select audiences and our brand stands out as a change manager at innovative events. Some of the projects sponsored this year included sponsorship for female students at Holberton school, sponsorship of the CIO & IT Conference, virtual edition, and support for Engine4 in a project to create corals in 3D printers to populate underwater spaces and encourage them to grow.

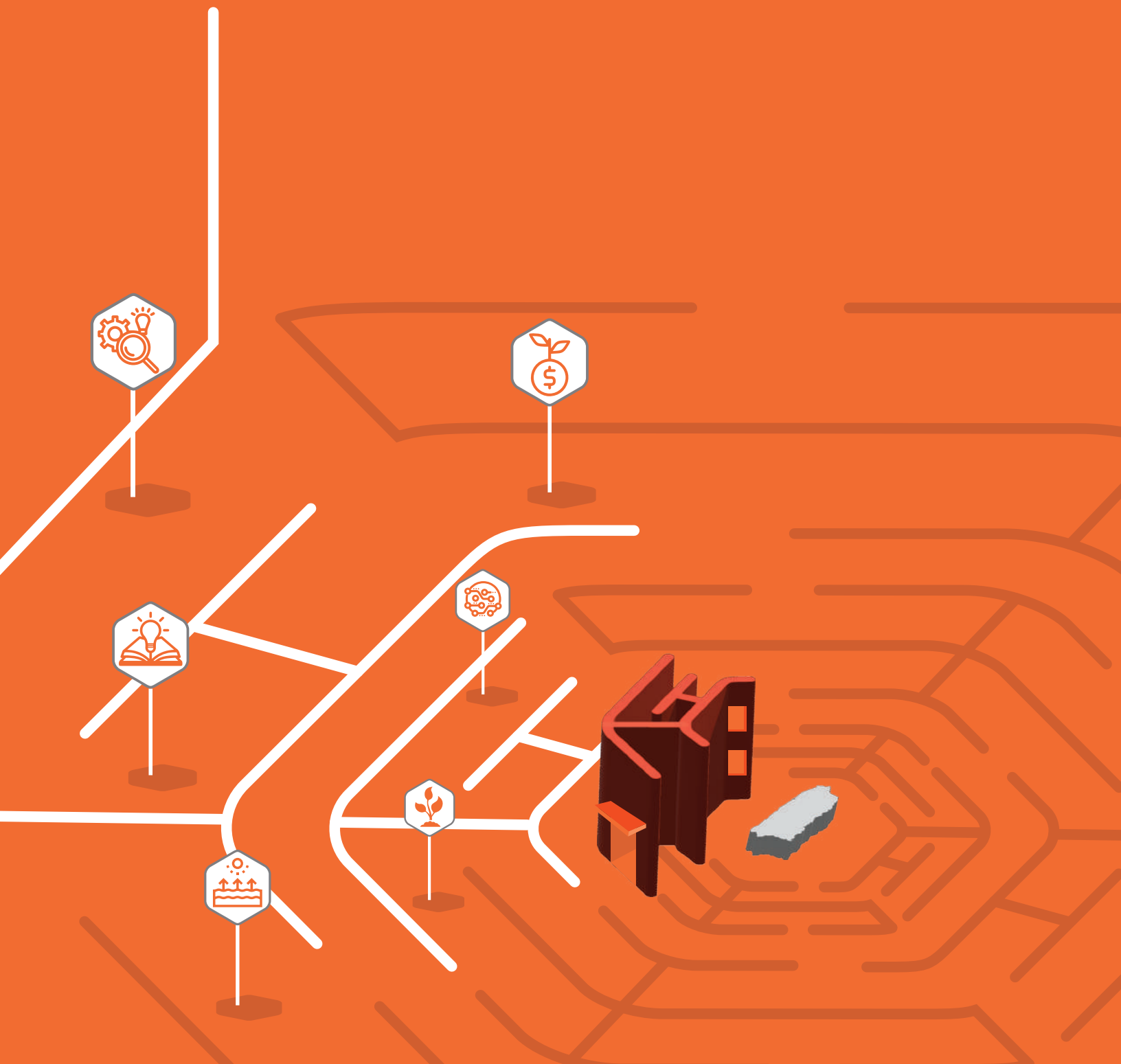


Picture 1. Holberton PRSTRT Scholarships

Picture 2. CIO & IT Leadership Virtual Conference 2021

Picture 3 and 4. Engine4 Coral 3D models

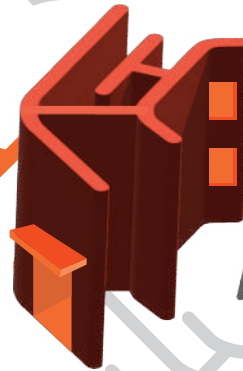
RESEARCH





RESEARCH GRANTS PROGRAM

FUNDS TO GROW





RESEARCH GRANTS PROGRAM

As part of the PRSTRT, 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.

Presently, there are no other peer-reviewed funding mechanisms available to researchers in Puerto Rico that encompass opportunities for junior, mid-level and senior researchers representing a broad range of disciplines. In total, since its inception, the Research Grants Program has awarded more than 120 research grants through its competitive initiatives for a total investment by The Trust of \$13.8 million with a return of investment of over \$37.3 million.

OUR MISSION

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 builds the knowledge economy, fuels innovation, and empowers Puerto Rican scientists and entrepreneurs.

OUR VALUES



RESEARCHER
FOCUSED



AGILE



COOPERATIVE



ADAPTABLE



FACILITATOR

PROGRAM DIRECTOR



Andreica Maldonado has managed the Research Grants Program since 2017. As a “change agent,” she brings together the scientific community, government agencies and officials and research stakeholders to promote the development of innovation in Puerto Rico. Among other key roles delivering high performing results, her vast and diversified experience includes working at Parallel18 as a Startup Executive and at Rutgers, the State University of New Jersey’s Center for Leadership and Management. She also has experience in working with disparate community cohorts, including seniors, women and adolescents, in New Jersey, Massachusetts and Puerto Rico. Her skills and experience are rounded by her passion for entrepreneurship, innovation, science and challenging the status quo.





PROGRAM IMPACT METRICS

120

Programatic Awards

\$13,811,978

Grants Awarded

\$37,301,563

ROI

8

**Founded
Companies**

417

**Abstracts &
Presentations**

18

**Awarded SBIR/STTR
Proposals**



RESEARCH GRANTS

P R O G R A M

FUNDS TO GROW

428

**Students
Impacted**

130

Publications

39

Patents

60

**Patent
Applications**

STRATEGIC SECTORS:



Aerospace



Agriculture



Biotechnology and Natural Sciences



**Clean Technologies and/or
Renewable Energy**



Electronics



Clinical Trials



Environmental Sciences



Medical Devices



Conservation Sciences

CURRENT GRANTEES (ALL)

From July 2021 until June 2022, the grantees reported the following achievements:

Students Impacted

73 undergraduate students (for a total of 129 since funds were awarded)

46 graduate students (for a total of 99 since funds were awarded)

Thesis and Dissertations

As a result of the funding provided by the Research Grants Program, **three (3) undergraduate thesis, four (4) MS thesis, and five (5) PhD dissertations** were completed. Also, **one (1) MS thesis, and three (3) PhD dissertations** are in progress.

External Funding

Since July 2021, the total amount of external funding secured that the active grantees reported is **\$4,179,891 for a total of \$9,001,889** (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.

Publications

Since July 2021, our grantees have published in the following peer reviewed journals:

ARG – 20 new peer-reviewed publications (for a total of 36 publications since funds were awarded)

CRG – 11 new peer-reviewed (for a total of 21 publications since funds were awarded)

FUNDING MECHANISMS

From July 2021 until June 2022, the grantees reported the following achievements:

ADVANCED RESEARCH (ARG)



Solicited proposal mechanism with the goal of providing 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.

Learn more: <https://prsciencetrust.org/advanced/>

CATALYZER RESEARCH (CRG)



The CRG enhances the competitiveness of Puerto Rico's 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 the R&D project to strengthen its position to obtain the grant and (3) secure reagents, laboratory materials, collaborations, or additional technical training necessary for the proposed goals. Up to \$70K. Learn more: <https://prsciencetrust.org/catalyzer/>

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



1-to-1 matching funds for Phase I & II SBIR/STTR proposals: to promote and increase commercialization of research. Match up to \$100,000 for Phase I and up to \$200,00 for Phase II.

Learn more: <https://prsciencetrust.org/sbir-sttr/>

CDTI GRANT



This call will allow 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.

Learn more: <https://prsciencetrust.org/advanced/>



CATALYZER RESEARCH GRANTS PROGRAM

CATALYZER GRANTS CALL PEER REVIEW PROCESS

The Catalyzer Research Grants opened an RFP (Request for Proposal) in January 2022, in alignment with the Trust's mission to advance research in Puerto Rico. The program has a rigorous peer review process; it's goal is to assess the scientific merit of grant applications in a fair, independent, expert-driven, and free from inappropriate influences, so that the Trust can fund the most promising research or development work. During the peer review process, the Research Grants Program team sent approximately 85 invitations to selected subject matter experts (SMEs). A total of 37 qualified reviewers, based on

scientific and technical qualifications, were recruited from the United States, Latin America, and Europe, and completed the evaluation.

Each application was assigned three primary reviewers. Reviewers were asked to score the applications utilizing the following six criteria: Approach and Technical Merit, Innovation, Significance, Investigators, Environment and Collaboration, and Budget Justification. After all the evaluations were completed, the Research Grants Program team scheduled the scientific panels. Each panel meeting lasted 3 to 4 hours and evaluated approximately 10 proposals. A total of 3 scientific panel discussions were conducted.

THE RESEARCH GRANTS PROGRAM, RECEIVED 31 FULL PROPOSALS FOR THE CRG IN THE FOLLOWING STRATEGIC SECTORS:



Aerospace (1)



Biotechnology and Natural Sciences (18)



Clean Technologies and/or Renewable Energy (3)



Environmental Sciences (4)



Information and Communications Technology (1)



Medical Devices (2)



Other (2)

Gender

- Female (17)
- Male (14)

Type of Application

- New submission to a federal grant (27)
 - Junior faculty seeking to secure their first grants (16)
 - PI's with a successful track record embarking in a new research topic (11)
- Resubmission to a federal grant (4)

Institutions

- Ana G. Méndez University - Gurabo Campus (1)
- Ponce Health Sciences University (3)
- Pontificia Universidad Católica de Puerto Rico - Ponce Campus (1)
- Universidad Central del Caribe (2)
- University of Puerto Rico - Humacao Campus (1)
- University of Puerto Rico - Mayaguez Campus (10)
- University of Puerto Rico - Medical Sciences Campus (6)
- University of Puerto Rico - Ponce Campus
- University of Puerto Rico - Río Piedras Campus (5)

THE FOLLOWING 10 PROJECTS WERE RECOMMENDED FOR FUNDING:

We are also proud to announce that 80% of this current cohort are female researchers.

Grantee	Institution:	Project Title	Strategic Sector
Andres Cecchini , PhD	University of Puerto Rico - Mayaguez Campus	Design Optimization of Innovative Multi - material 3D- printed Sandwich Structures with Enhanced Fatigue Strength and Damage Tolerance for Aerospace Applications	Aerospace
Bianca A. Torres Hernández, PhD	University of Puerto Rico - Medical Sciences Campus	Characterization of Gut Microbiome and its association with inflammatory cytokines in Puerto Rican individuals diagnosed with mental illness	Biotechnology and Life Sciences
Carla Restrepo , PhD	University of Puerto Rico - Rio Piedras Campus	Landsliding and rhizobiota link the short- and long-term carbon cycles: A "multi-omic" approach	Environmental Sciences
Catalina I. Villamil ,PhD	Universidad Central del Caribe	Assessing estimates of evolution from phenotypic integration: relationship of genotype to phenotype in the vertebral column	Biotechnology and Life Sciences
Darlene Santiago ,PhD	University of Puerto Rico - Medical Sciences Campus	Refining a buprenorphine precision medicine approach for the opioid use emergency in PR	Medical Sciences
Imilce A. Rodriguez-Fernandez, PhD	University of Puerto Rico - Rio Piedras Campus	Probiotics, metabolome, and the gut -brain axis in health and aging	Biotechnology and Life Sciences
Joselyn Del Pilar Albaladejo, PhD	University of Puerto Rico - Mayaguez Campus	Strategic Solvothermal Synthesis Design for the Preparation of Spinel -based Catalytic Materials	Clean Technologies /Renewable Energy
Julie Dutil , PhD	Ponce Research Institute	Leveraging existing large datasets to study the role of mitochondrial heteroplasmy in breast cancer risk and health disparities	Biotechnology and Life Sciences
Magaly Martinez-Ferrer, PhD	University of Puerto Rico - Medical Sciences Campus	Synthesis of andrographolide derivatives and its activities in prostate cancer	Biotechnology and Life Sciences
Umberto Ciri, PhD	University of Puerto Rico - Mayaguez Campus	Development of a virtual environment for offshore wind energy acceleration	Clean Technologies /Renewable Energy





SUPPORT TO OTHER TRUST PROGRAMS

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.

ACT 60

The 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 2021, a total of 99 incentive applications have been received. If approved, this will represent over 3.7 million in tax incentives for researchers.

For fiscal year 2021, 39% of the Act 60 tax incentive applicants are female researchers and 61% male.

THERAPEUTICS ACCELERATOR PROGRAM (TAP)

The Trust's Technology Transfer Office launched the EnTRUST Program with a pre-application call for topics. For approved topics, the research team was required to participate in a thirteen (13) week Lab-to-Market, Life Sciences program in cooperation with Columbia University from January through April 2022; submit a Proposal; and present Proposal highlights at a Pitch Day. Six (6) Proposals and six (6) Pitch Day presentations were evaluated and ranked by a group of experts. The Grants Program assisted in the application and review process as well as in the financing of half of the selected projects.

FORWARD RESEARCH & INNOVATION SUMMIT

With the mission of promoting innovation in science and technology, the Trust held the third edition of the Forward Research and Innovation Summit ("The Summit"). The Summit was celebrated virtually through an IA platform on December 10, 2021, and focused on artificial intelligence in order to accelerate scientific and technological activity on the Island. Thanks to the efforts of our team, colleagues and partners, the event was free of charge enabling the exchange of knowledge between the local and international scientific and technological community.



Institution	Act 60 Applications	Incentive Requested
UPR-RP	3	\$ 48,273.00
UPR-MSU	10	\$ 368,667.75
UPR-M	60	\$ 2,381,166.28
UPR-H	9	\$ 209,211.25
UCC	2	\$ 5,307.52
PHSU	15	\$ 715,955.42
Total	99	\$ 3,728,581.22

The event proved to be a huge success!



Over 20 locally and internationally speakers



775 registered participants



Poster Session which showcased 48 projects



This year's keynote speaker was Dr. Cynthia Rudin, Professor and Director of the Predictive Analytics Lab at Duke University. Dr. Rudin received the 2021 Squirrel AI 2021 award, given by the Association for the Advancement of Artificial Intelligence, for her work in

the field of interpretable and transparent AI systems in real-world deployments, and her advocacy for these features in areas such as social justice and medical diagnostics. This award is the most prestigious award in the field of Artificial Intelligence.

BAJARÍ Outstanding Researcher Award

In addition, the Trust presented the Bajarí Prize, an institutional recognition by nomination granted by the organization to recognize exceptional scientists on the Island. To be eligible for this award, the evaluation committee sought a scientist with an outstanding track record in the following areas: leadership, an exemplary academic and research trajectory and having social impact. The committee determined that Dr. Vanessa Rivera Amill possessed the qualities to achieve this distinction. Dr. Rivera Amill is a Professor and Associate Dean of the Doctoral Program in Biomedical Sciences at Ponce Health Sciences University. She is also the Scientific Director of Inno Diagnostics and Principal Investigator on several scientific grants.



BEACON: A CENTRALIZED PLATFORM OF RESEARCH

Beacon is a platform that provides a better understanding of 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.

Benefits

- A centralized platform for collecting, analyzing, and reporting on all academic and research activities in Puerto Rico.
- Improved data and tools enabling assessment of research strengths and planning for growth.
- More than 200 hundred users in Puerto Rico
- Increases collaborations between public and private Academic Institutions, researchers, companies and/or potential investors.
- Automatic claiming to reduce the number of times users needs to confirm publications.

BEACON

Powered by:  RESEARCH GRANTS PROGRAM  TECHNOLOGY TRANSFER OFFICE  Puerto Rico Science, Technology & Research Trust

Everyday, BEACON searches online bibliographic databases automatically to find new publications and output data for each researcher from the following online bibliographic databases:

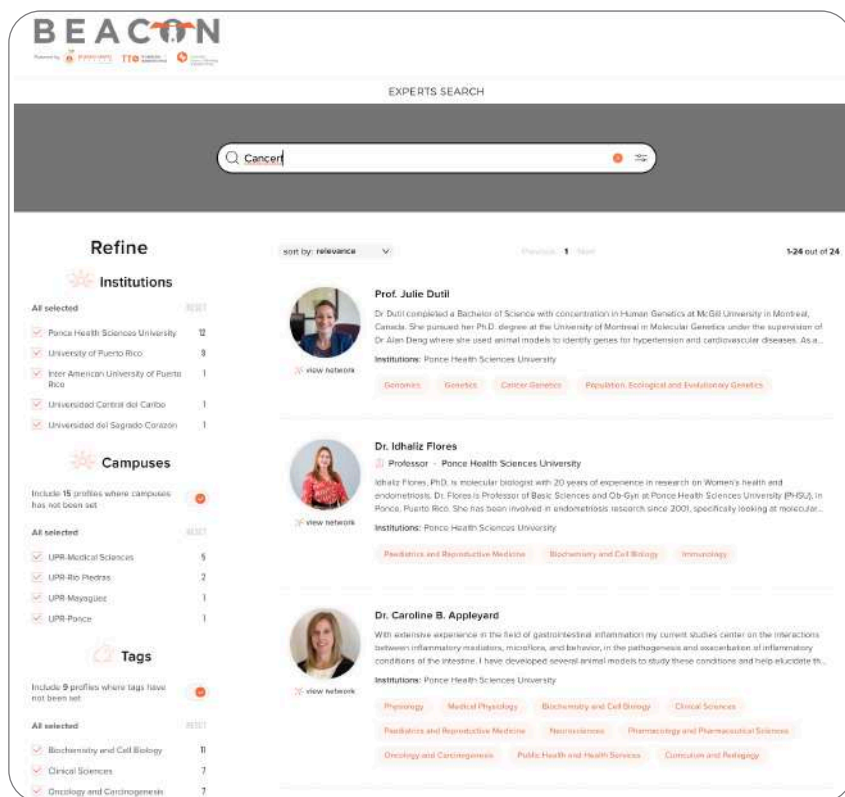
- arXiv
- CiNii EN
- CrossRef
- DBLP
- Scopus
- Europe PubMed Central
- ORCID
- PubMed
- RePEc
- SSRN
- Web of Science



BEACON has a separate page that allows potential collaborators and the general public to search for researchers by entering names, research keywords, and disciplines.

How will we continue to promote BEACON?

- Contact by email the active grantees of our program and encourage them to fill out their profiles and tell them that it is part of their commitment to our program.
- Make several groups of non-Grantees and contact them in a progressive way.
- Schedule demos.
- Prepare posts explaining the features of the platform
- Develop short guides for users and upload them to our website.
- Conduct an user survey.



AGILE: PROFESSIONAL DEVELOPMENT FOR GRANT MANAGEMENT

Nonprofits play a critical role in fostering civic engagement and leadership. They also drive economic growth and strengthen our communities, as well as in the development of research and innovation.

Why is it important?

Over the years, many Institutions of Higher Education (IHE) and nonprofits in Puerto Rico, have faced many challenges, including, harsh budget cuts and have reduced or eliminated continuing education, memberships with related associations, and professional development. These conditions threaten their ability to maximize the opportunities available at the PRSTRT and hinder Puerto Rico's economic development in the short-, mid-, and long-term.

These challenges include the field of Research Administration (Grantsmanship, Sponsored Programs, Grants Management) activities across all levels of the IHEs, an area that is crucial



AGILE

A program of the:



RESEARCH GRANTS
PRSTRT



Puerto Rico
Science, Technology
& Research Trust

Access to the Grantsmanship Investment Leading to Excellence

to further research and investigation. Today's universities, research and research capacity are often used as measures of success and prestige (Connell, 2005; Hazelkorn, 2004; Lombardi, 2013; Nash & Wright, 2013; National Research Council, 2012).

AGILE's mission is to increase agility in the application and execution processes of projects that are subsidized by foundations, public, private and/or federal entities, strengthening their capacity to secure more funds in the future.

This initiative provides tools to maximize funding opportunities and the execution of your compliance requirements. AGILE offers resources to help nonprofit organizations and institutions of higher education maximize funding opportunities and execute compliance requirements. This is considering the numerous private and federal funding opportunities and the importance for professionals in this sector to stay updated



on grant management issues. Through these initiatives, it is expected to increase the agility of the application process, improve project execution, and strengthen the capacity to secure future

Learn more about this initiative:

Some of the focus areas are:

- The governance of grants and other federal financial assistance
- Phases of the grant management life cycle
- Internal controls to prevent fraud, waste and abuse of funds
- Learning the role and responsibilities of auditors and auditees

"In Puerto Rico, the number of people who are professionals in grants management is limited. With AGILE, we want to increase training opportunities and train a new generation of professionals who have the tools to manage funds following the highest standards." - Andreica Maldonado, director of the Research Grants Program.



The first AGILE training initiative was held on May 10th and 11th of 2022. This was a Grants Management Body of Knowledge (GMBok) virtual training offered by the National Grants Management Association (NGMA).

This training was targeted to individuals associated with grants management either in management, administration, proposal writing, or accounting, funding and/or compliance aspects. Examples: Grant Specialist, Grant Manager, Grant Administrator, Grant Writer, Grant Financial Officer, among others.

This course helped participants to:

Gain a thorough understanding of the grant management lifecycle.

- Become familiar with the new risk assessment before funds are awarded.
- Learn about the new mandatory certifications and declarations.
- Be familiar with the changes in procurement rules.
- Recognize the increased responsibilities in managing their sub-awardees.
- Understand audit requirements, among other

Results



How will AGILE continue to provide support:

The program will promote focus groups, outreach activities, community engagement, brain tanks and meeting sessions to approach the topics associated with the grantsmanship and research & development community challenges and its potential solutions in Puerto Rico.

AGILE will continue offering continues education, capacity building certifications and trainings through local and national level associations.

The program will create, in coordination with the IHE's, a students' program to help enable and promote a new generation of Grant Managers and Research Administrators.

AGILE will be upgraded and relaunched by January 2023.

Some opinions from the participants:



“The training was comprehensive and very useful to be able to grasp or refresh the grant management guidelines. This type of training is essential to increase the capacity in PR to have competent professionals in the management of grants. Likewise, to be able to bring capital and increase efforts to address needs in PR.”



“Excellent opportunity for new administrators and to remember topics that, by nature of the jobs, we may not have worked on.”



“I realized a lot of important things in grant management that I didn’t know. Without a doubt, our bible will be 2 CFR Part 200. It’s fascinating.”

FUTURE PLANS

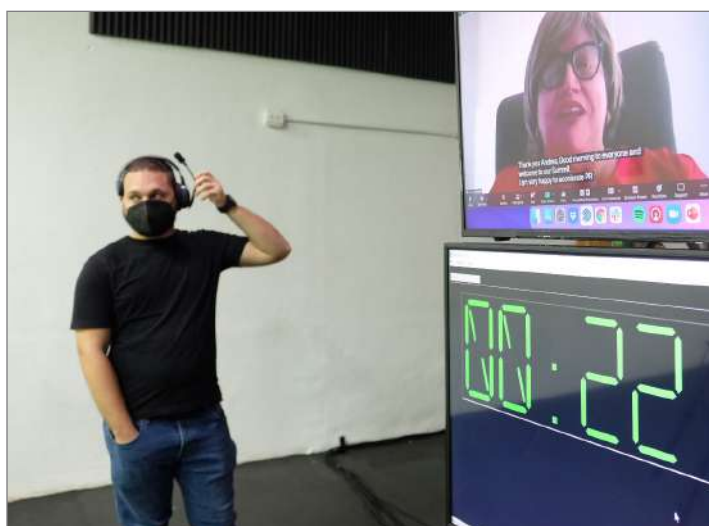
- The Research Grants Program will continue providing support to its grantees and the scientific community on the island.
- We will continue to work Beacon and outreach activities for the scientific community.
- The Program will continue with its AGILE initiatives.
- The Program will continue providing support with the SBIR/STTR efforts.
- The Program will explore new funding mechanisms to continue supporting the local scientific community.



From left to right: Grace Rendón, Grant Specialist; Andreica Maldonado, Program Director; Luis González, Grant Strategist.



The Puerto Rico Science, Technology, and Research Trust (PRSTRT), through the Research Grants Program, held an information session together with the *Centro de Desarrollo Tecnológico e Industrial de España* (CDTI) and the Department of Economic Development and Commerce (DDEC) to guide entities in Puerto Rico and Spain on financing opportunities for technological and innovative projects that are mutually beneficial.



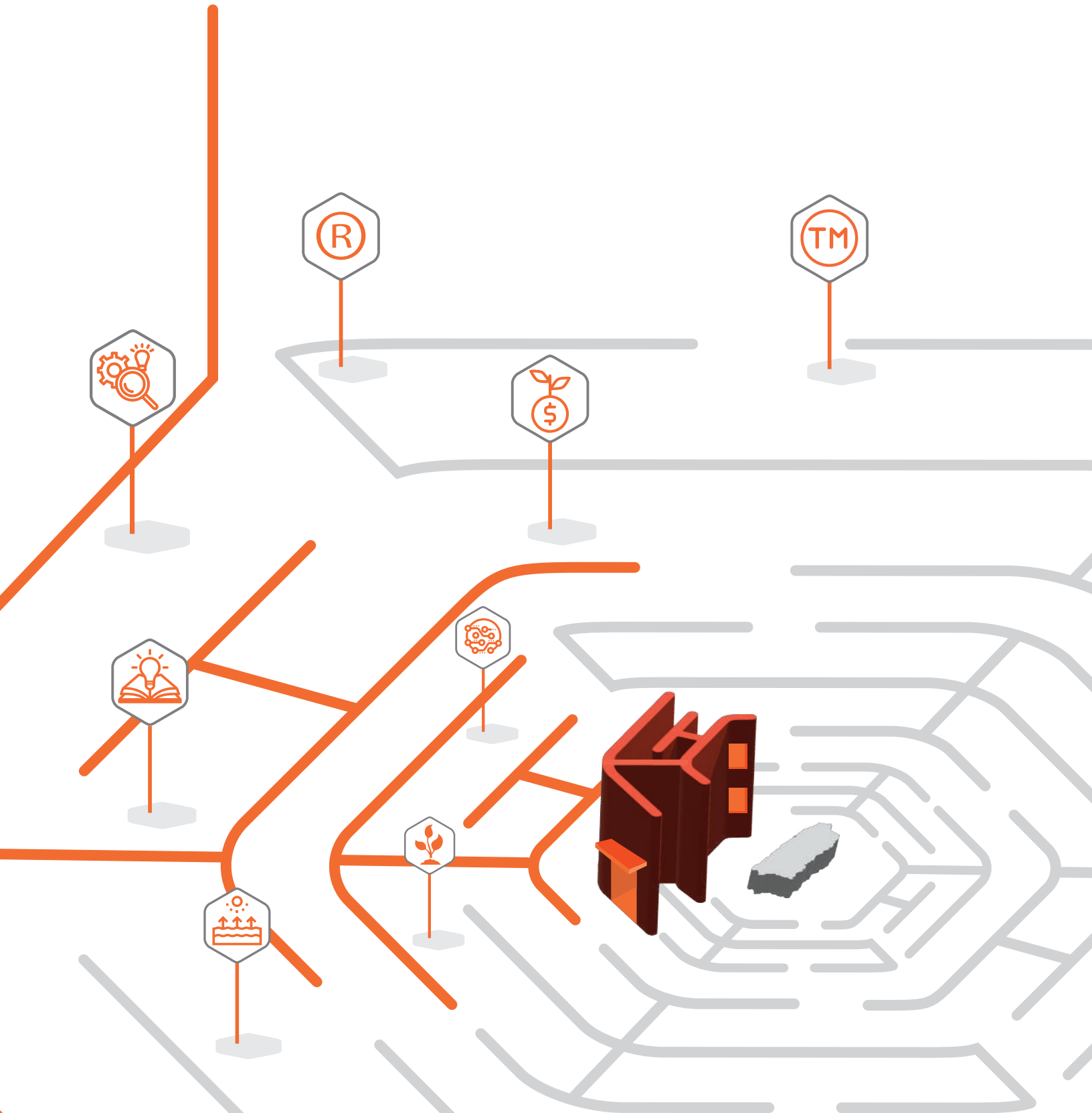
Forward Summit. The Puerto Rico Science, Technology and Research Trust presented the "Forward Summit". Luci Crespo, The Principal Officer of the FCTI, was connected to the internet.



Forward Summit. From the left, moderator Sebastián Vidal with Jesús R. Bernardy Rodríguez, Rafael Esparra y Raúl Negrón Otero.



TT TECHNOLOGY TM TRANSFER OFFICE



TECHNOLOGY TRANSFER OFFICE

The Technology Transfer Office (TTO) improves Puerto Rico's innovation ecosystem by partnering with universities to support scientists and researchers in order to provide best-of-class knowledge/technology transfer services to promote opportunities for collaborations with existing companies or start-ups.

MISSION AND VISION

The TTO's mission is to identify, evaluate, protect, market, and transfer the most promising research discoveries and intellectual property (IP) from Puerto Rico's universities, companies, and researchers to the private sector for commercialization and to benefit the public.

The TTO's vision is 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.

PROGRAM DIRECTOR

David L. Gulley, PhD, RTTP, CLP

Dr. Gulley is founding Director of the TTO which was established in 2017 at the Puerto Rico Science, Technology, and Research Trust. The TTO is a regional tech transfer office serving the island's public and private universities, which includes 13 campuses and 4 medical schools. From 1989-2012 he served at the University of Illinois as Associate Vice President, Technology and Economic Development, and Assistant Vice Chancellor for Research at Chicago. From 2012-2015 he led an AUTM (Association of University Technology Managers) engagement in Chile to establish and reinforce 21 TTOs. He has been a member of LES (Licensing Executives Society) and AUTM for more than 25 years, serving on the AUTM board and currently as Chair of International Strategy overseeing strategic alliances and 9 regional committees across the globe. He is past Chair of the Certified Licensing Professionals, Inc. and he was a founding member of the ATTP (Alliance of Technology Transfer Professionals), representing AUTM, and serves on the RTTP (Registered Technology Transfer Professional) Peer Review Committee. Dr. Gulley holds undergraduate and graduate degrees from Southern Illinois University and a graduate degree from Virginia Tech and is a Registered Technology Transfer Professional (RTTP) and a Certified Licensing Professional (CLP).





ACCOMPLISHMENTS

Advancing Promising Discoveries

Inventions disclosed to the TTO are typically very early-stage, too early to interest a commercial partner. In addition to protecting intellectual property for promising discoveries, the TTO pursues ways to develop and de-risk those technologies.

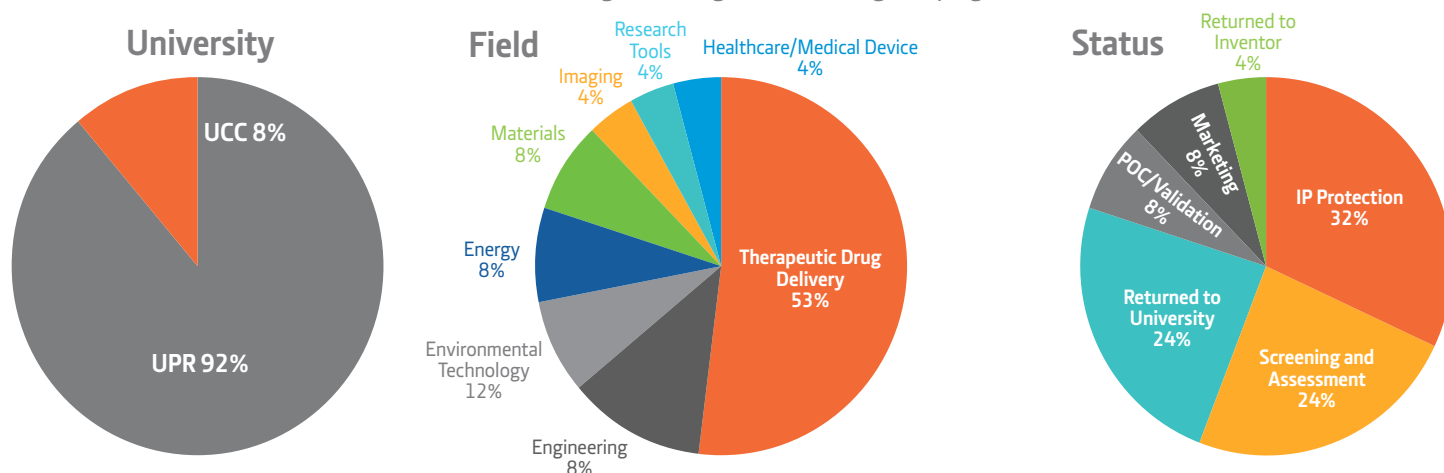
Under a partnership with Columbia University's accelerator programs EnTRUST offers a 12-week bootcamp for researchers in the life sciences and their specific research projects with potential for technology transfer and commercialization. EnTRUST is an initiative of the XLN. The pilot program, Therapeutics Accelerator Program (TAP), was completed in FY2021, with projects underway during FY2022. The FY2022 program was expanded to include additional life science fields. The TTO partners with the Trust Research Grants Program to provide funding for the most promising EnTRUST projects.

	FY2021	FY2022
Universities	3	5
Teams	8	10
Researchers	13	14
Awards	7	4
Total Awarded	\$525k	\$300k

TECHNOLOGY TRANSFER METRICS

Invention Disclosures

Researchers from our partner institutions can conveniently disclose their inventions to the TTO using our online Inventor Portal. Invention disclosures trigger the technology transfer process and deploy the TTO's resources to identify, evaluate, protect, market, and transfer inventions from labs to the market. Inventors are asked to describe the invention in lay terms, emphasizing what problems are solved and who is likely to benefit. We enquire about the stage of development, whether there have been public disclosures, and if there are plans to publish the experimental results. Supporting documents that describe the invention in detail, such as manuscript drafts, can be uploaded to the portal. Finally, inventors are asked to list companies that might have approached them interested in their research and that could serve as targets during our marketing campaigns.



Inventor Profile: Fifty-two (52) inventors were involved in the twenty-five (25) new invention disclosures.

33 (63%)
MALE

19 (37%)
FEMALE

33 (63%)
FIRST TIME DISCLOSING
TO TTO

31 (60%)
PRIOR PATENT/PATENT
APPLICATION

21 (40%)
PRINCIPAL
INVESTIGATOR
29% FEMALE
71% MALE

21 (40%)
STUDENT
48% FEMALE
52% MALE

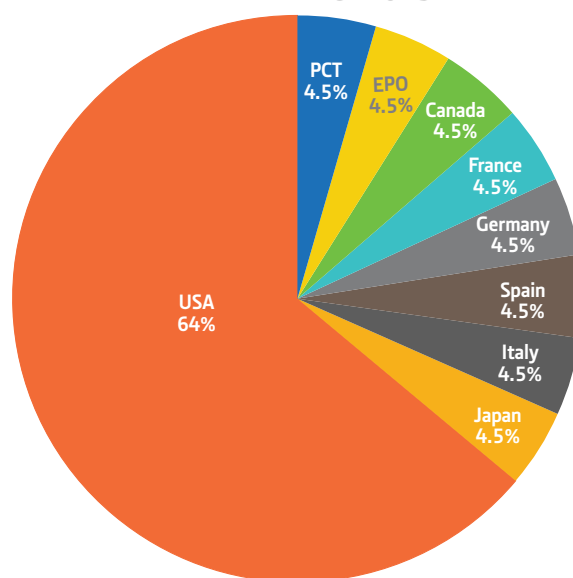
Evaluation/Screening: 26

After an invention disclosure is approved, it is sequentially assigned a technology identification number, and the TTO begins its evaluation process ("screening"). The screening includes a technical review, stage of development determination based on Technology Readiness Levels, a patentability analysis of the invention, and its potential in the market. Along with multiple tools, the TTO uses PatSnap, an IP analytics and business intelligence platform that gathers and filters information from hundreds of data sources around the globe, supporting evaluation and decision-making in a targeted and strategic manner. After the screening process and reporting, a set of recommendations are provided to the inventor(s) and the University.

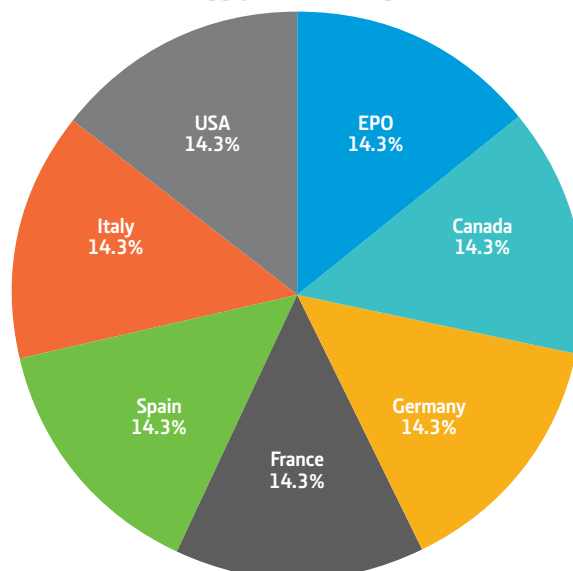
Intellectual Property Protection:

PATENT APPLICATIONS	
New Filing	22
US	14
Foreign	8
Office Actions	13
Allowed	1
Issued	7
US	1
Foreign	6

PATENT APPLICATIONS



ISSUED PATENTS





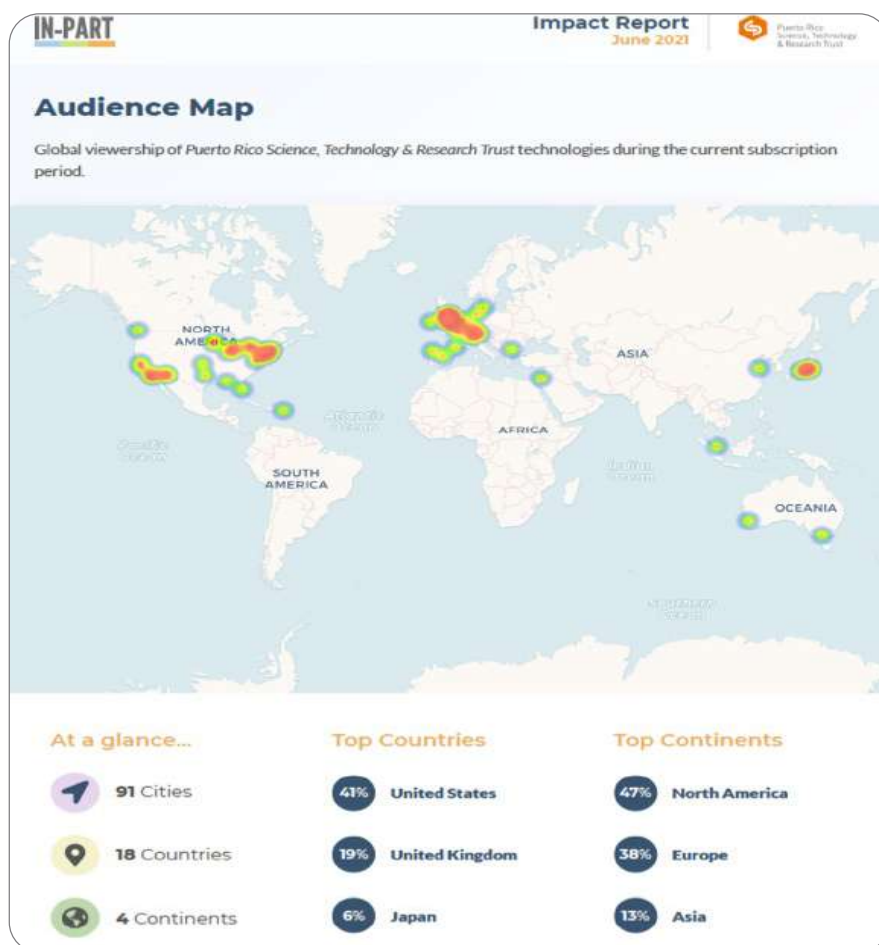
MARKETING

IN-PART connects university research assets and R&D companies in two ways. First, it is a digital partnering platform for 250+ research institutes/universities that promote their inventions and discoveries to over 5,500 R&D companies in the network. Second, Discovery is an open innovation platform that allows corporate R&D teams to leverage the university network. This is the TTO's major marketing platform, and our technologies are exposed to major R&D companies around the globe.

TRANSFER

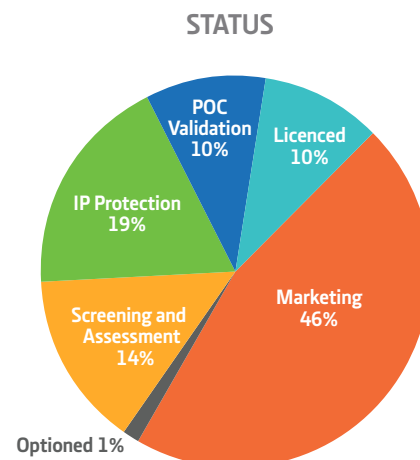
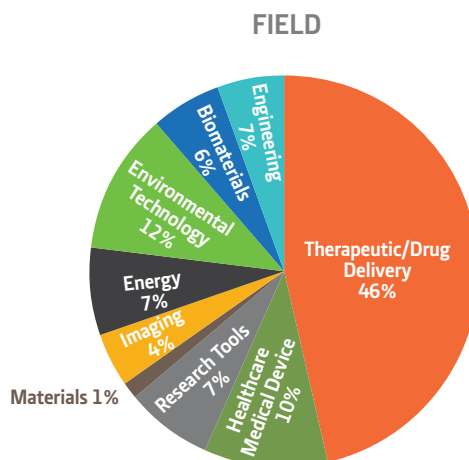
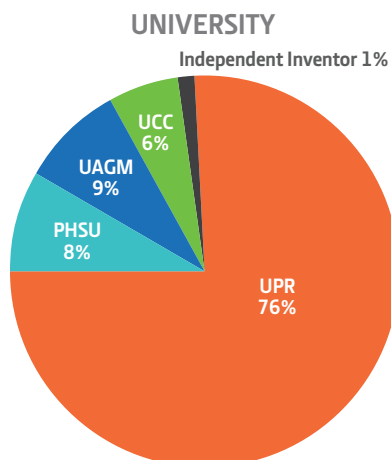
The TTO uses best practices and template agreements when engaging potential partners. These include NDA/CDAs, Options, Licenses, and a variety of model agreements used by universities across the U.S.

AGREEMENTS		
NDA/CDA	1	
Option	1	
License	3	
MIMAA	18	



PORTFOLIO

There are currently seventy (70) technologies under TTO management from our university partners across a variety of scientific fields. As technologies continue their successful development, they advance toward commercialization.



FUTURE PLANS

Southeast Accelerator Network (XLN)

The XLN is supported under a NIH NIGMS federal grant involving a consortium of more than 24 institutions in the Southeast IDeA region.

- EnTRUST will offer the Life Sciences Bootcamp in cooperation with Columbia University from January through May 2023 and expand the fields to include medical devices.
- The XLN's primary partners were awarded the first phase of \$3.25 million award for an I-RED (IDeA Regional Entrepreneurship Development Program) which will enhance the portfolio of entrepreneurial and commercialization products offered to biomedical researchers and innovators interested in bringing promising biomedical technologies from the bench to the marketplace. The Trust TTO serves as Lead for Puerto Rico in the XLN.

U.S. National Initiatives

- The 2022 U.S. CHIPS and Science Act established a technology, innovation, and partnerships (TIP) directorate at the National Science Foundation. The Act has a key provision titled "Planning and Capacity Building Awards" (Sec. 10391), which will provide support for technology transfer capacity building. The TTO will explore this opportunity with its academic partners.
- The TTO is leading an effort to build partnerships and pursue an NSF Engine regional development opportunity focused upon the biopharmaceutical industry and plan for a "Discovery to Product" ecosystem.

TOTAL ACTIVE PORTFOLIO IN FY 2022

127
Inventors

40
US Patent
Applications

11
PCTs

7
US Patents

15
Foreign Patent
Applications
(including validations)

32
Existing University
Patents
Under TTO Management

10
Foreign Patents

39
Being Marketed

10
Option Agreements

9
Licences

3
Start-ups
Operational

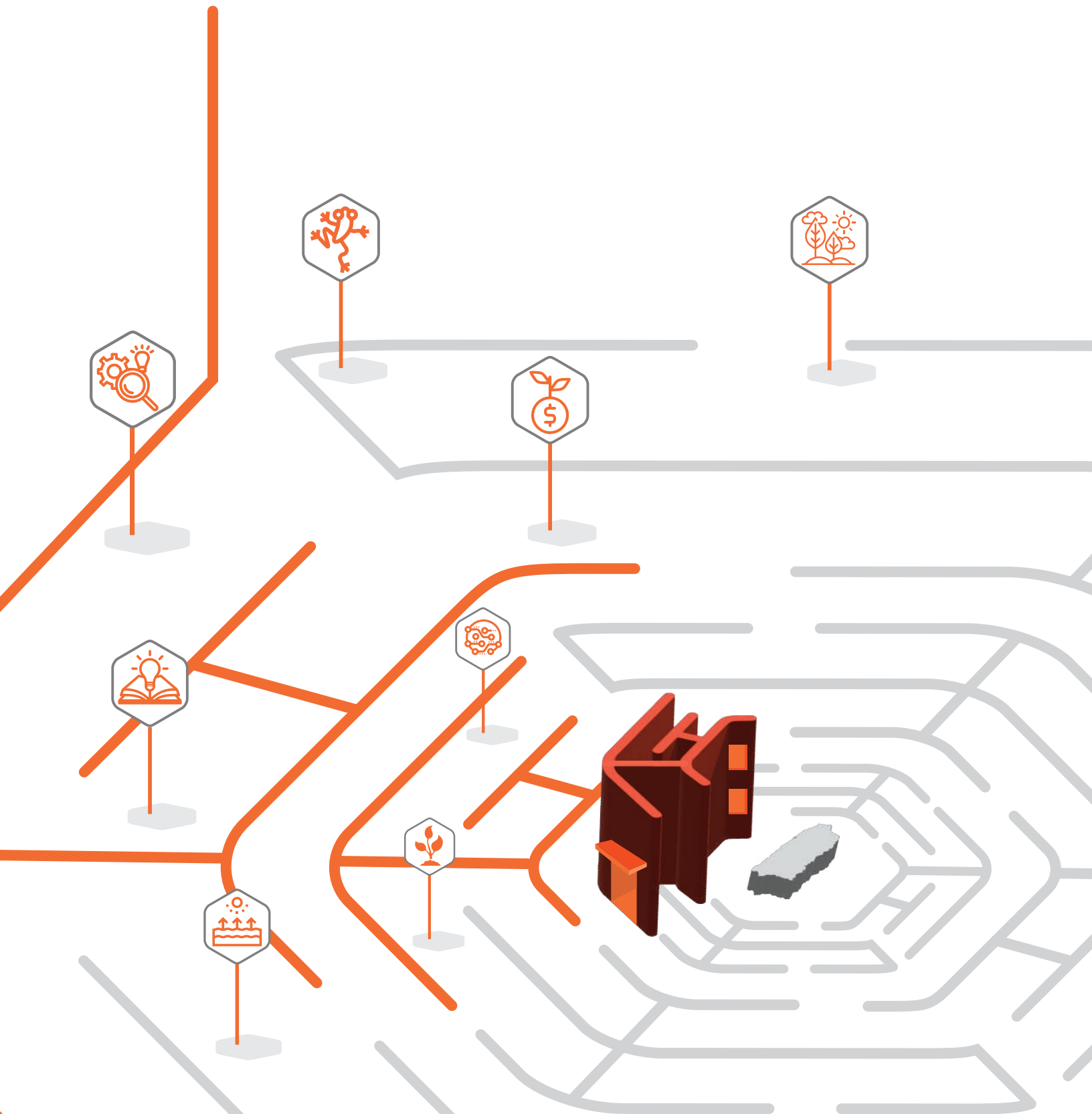
9
MTA

6
CDA/NDA



CENTER FOR TROPICAL BIODIVERSITY

A program of Puerto Rico Science, Technology & Research Trust



CENTER FOR TROPICAL BIODIVERSITY

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.

MISSION AND VISION

The mission of the Center is to contribute to the advancement of basic and applied research associated with the preservation and intelligent utilization of biodiversity resources. Puerto Rico is the home of diverse natural ecosystems and possesses advanced infrastructure for scientific research: the makings of a regional leader in biodiversity research and commercialization.

PROGRAM DIRECTOR



Dr. Abel Baerga-Ortiz directs the Center for Tropical Biodiversity at the Trust for the advancement of products derived from our rich ecosystems. Dr. Baerga-Ortiz also leads other research developments that seeks the identification of bacterial genes in the gut microbiota linked to intestinal disorders, the development

of methods to enhance the synthesis of fats and oils in bacteria, and optimization of vaccine production. He holds a bachelor's degree in chemistry from the University of Puerto Rico (UPR-PR) and a Ph.D. in Chemistry from the University of California San Diego (UCSD). After a 3-year postdoctoral fellowship in the United Kingdom, he joined a small start-up biotech company for the development of biosensor technology for diagnostics. In 2007, he joined the faculty at the UPR School of Medicine, where he teaches courses on protein chemistry, enzymes, biopharmaceutical processes and research ethics. Dr. Baerga also teaches courses for continuing education and professional development in the areas of biotechnology and protein analysis.

OUR MAIN GOAL

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.

The CTB was established precisely to provide legal and regulatory guidelines under which our local ecosystems can be explored for scientific or economic benefit and protected to ensure sustainable use of the biodiversity resources. Additionally, the CTB coordinates efforts to develop natural compounds as products for a variety of applications.

ACHIEVEMENTS FOR 2021-22

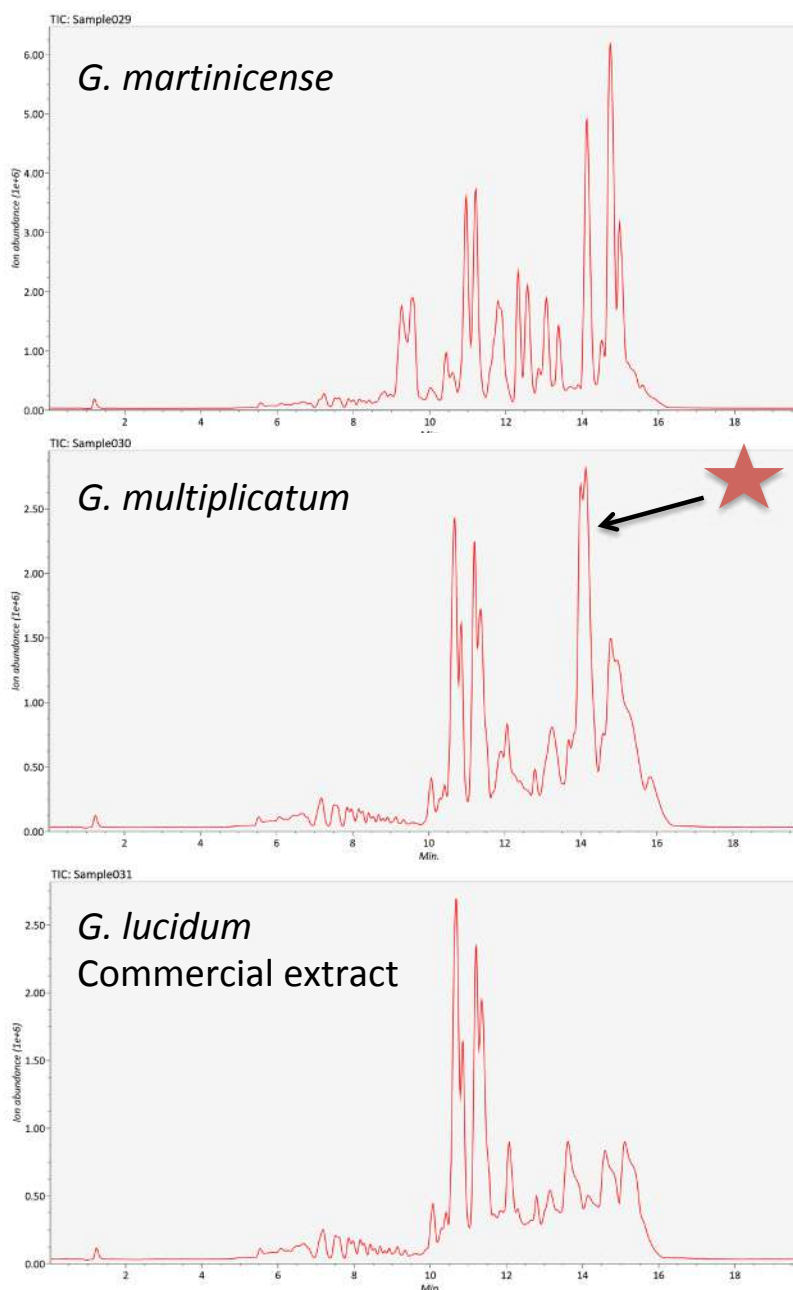
As the CTB strives to bridge biological diversity with economic development, we report several areas of impact during the past year:

1) Support for entrepreneurial activities in the natural products sector.

Last year, we reported the successful collaboration with **Huerto Rico Inc.**, an agrotech company dedicated to the cultivation of edible mushrooms. Part of the company's mission is to also develop medicinal mushrooms to be used as nutritional supplements. Toward this end, the company has identified Caribbean species of *Ganoderma* mushrooms, which have been in use in Asian traditional medicine for the prevention and treatment of certain cancers, including pancreatic and prostate cancer. Although the Asian variants of *Ganoderma* have been used and studied extensively for their therapeutic potential, **Huerto Rico** specializes in mushrooms that are endemic to the Caribbean. Recently, the company received SBIR Phase I funding with the help of numerous PRSTRT programs including the CTB, whose contribution was the identification of novel compounds in their strains of *Ganoderma* mushrooms.

The CTB has also supported other companies with interests in the natural products sector. The agrotech company Scientia Naturam LLC is developing cultivation methods for a number of medicinal plants capable of producing compounds that have





Huerto Rico Inc. is an agrotech company dedicated the cultivation of mushrooms including medicinal Ganoderma mushrooms. The CTB has helped the company secure SBIR Phase I funding from USDA, through the identification of previously undescribed components of Ganoderma. Efforts are underway to cultivate the endemic Ganoderma species which are expected to contain new mixtures of ergosterols and ganoderic acids.

been historically and traditionally used for the treatment and prevention of certain types of cancer. The CTB has been engaged to help with the benchmarking of new analytical methods for the detection of active ingredients in live plant tissue. These new methods, which are proprietary to Scientia Naturam, will need to be validated by comparison with existing methodologies which the CTB can easily provide. During this past year, the CTB supported a Phase I SBIR submission to the USDA that was unfortunately, not funded. The CTB will continue to provide su-

pport to Scientia Naturam in their efforts to secure Phase I SBIR funding.

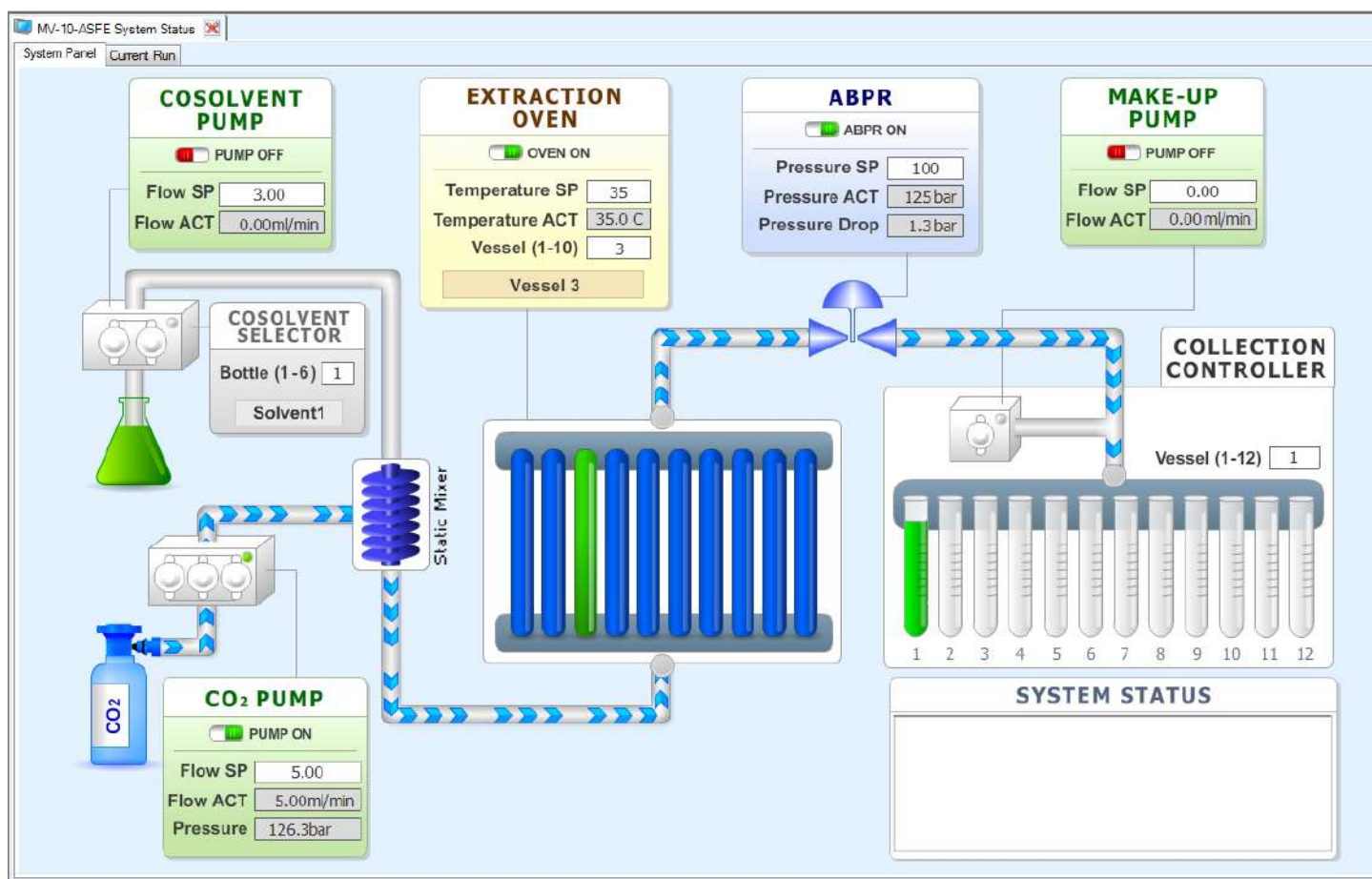
In the medicinal cannabis sector, the CTB has teamed up with Curana, a local company specializing in the production of medical cannabis products. The purpose of the work is to understand the chemical profile of hops flower (*Humulus lupulus*) and its incorporation into existing formulations for topical creams or for aromatherapy. Hops is a climbing vine belonging to the genus *Humulus*. Besides its use in beer making, where it results in complex and bitter flavors, hops has also been used traditionally as a sedative or for the relief of anxiety. In North American traditional medicines, the Cherokee used hops as a sedative, anti-rheumatic, analgesic, gynecological aid for breast and womb problems, and kidney and urinary aid for "gravel" and inflamed kidneys. The Delaware used hops against earache and toothache. The Navajo used it for coughs and cold, and the Dakota for wound healing and against gastrointestinal disturbances. Furthermore, in Ayurvedic medicine, hops have been recommended for restlessness associated with nervous tension, headache, and indigestion; its actions are reported as sedative, hypnotic, and antibacterial. The CTB is using supercritical CO₂ technology for the fractionation of hops extracts and for the identification of key ingredients for new formulations.

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



The technique known as 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's Luis Prieto for the identification of clinical strains of *E. coli*.

The quick identification of bacteria is important for numerous reasons: (i) it helps to document microbial biodiversity in rich environments, (ii) it helps to identify species of bacteria that could be the source of important natural products such as antibiotics and antifungals and (iii) it can help in the rapid identification of pathogens in the case of outbreaks. Historically, the identification of bacteria has been a laborious process involving the isolation of cells and the careful observation through



a microscope. With the advent of new methods for DNA sequencing entire microbial populations could be examined through their ribosomal RNA genes (16S for prokaryotes and 18S for eukaryotes). This automated process greatly enhanced the identification of numerous species of microorganisms. However, the level of conservation of the 16S rRNA genes only allows to approximate or to estimate taxonomy to the level of genus.

Today, the gold standard for the rapid identification of bacteria 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 bacteria and other microorganisms down to species, sub-species and strains. The method relies on the exact mass of well-defined protein markers that are unique to each bacterial strain. Its use has proven highly valuable for the identification of bacterial pathogens in clinical settings and is currently being optimized for the analysis of antibiotic-producing microbes found in the environment.

Until 2019, Puerto Rico had no dedicated MALDI-ToF systems for microbial identification. That year, the Puerto Rico Department of Health acquired a Bruker MALDI-ToF System for



Curana Care Inc. is a company dedicated to the production of products based on Cannabis sativa (or Cannabis indica). The CTB is helping Curana analyze the chemistry of ingredients for their formulations. Shown here is the use of MV-10 Supercritical CO₂ for the separation of hops (*Humulus lupulus*).

the identification of pathogens. However, even by the DOH's own admission, this MALDI-ToF system is rarely used for these purposes since their personnel has been totally diverted to perform tasks related to the Covid-19 pandemic.

Recently, the UPR Molecular Sciences Research Center acquired a top-of-the-line MALDI-ToF system manufactured by Shimadzu. This system has been fully validated by the company and CTB personnel have been fully trained for its use. The CTB is currently in the process of running some test samples for the identification of laboratory-based bacteria. The long-term goal

is to establish a facility for common use 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 DNA sequencing, resulting in a faster, cheaper discovery of species likely to produce antibiotics. or antifungals.

3) Raising awareness of a massive sea urchin die-off in the Caribbean.

Earlier in 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.



Long-spined sea urchin *Diadema antillarum*. Encounters with sick or dead urchins (bottom right) are becoming frequent among divers. Photo courtesy of Sociedad Ambiente Marino.

This is not the first event of massive mortality of this sea urchin. In 1984, roughly 95% of individuals of the species were wiped out, resulting in the functional extinction of the species. Although the cause of death has not been determined, it has always been assumed to be an infectious disease which follows dynamic similar to that of human diseases. This time around, a team of researchers has been assembled by Sociedad Ambiente Marino, the University of Puerto Rico and the Department of Natural and Environmental Resources.

In collaboration with Lupe Vázquez, Chief Communications Officer, we were able to write and submit 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.

4) Pre-proposal submitted 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 the DoD which is titled: Proteomic-scale strategies for the rapid identification of function in natural extracts with a total budget of \$2,991,860 over 5 years. Despite our efforts to find out the current status of the proposal and its evaluation, we have been unsuccessful in finding out whether the proposal has been evaluated by the DoD panel.

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 pre-proposal submitted to DTRA aims to screen locally sourced natural product extracts and detect their binding to human proteins displayed on a human proteome array made by CDI Laboratories in Mayaguez, PR. The idea is to identify not only the natural product made by plants and fungi, but also the human proteins and pathways that the natural chemical interferes with. This project will be in collaboration with CDI Laboratories with numerous researchers including those from the UPR School of Pharmacy, Humacao Campus, and the Interamerican University.

5) NatPORT visits the Meeting of the American Society of Pharmacognosy in Charleston, South Carolina.

Last year we reported the creation of the first online repository for the structure and activities of natural chemical compounds found and isolated in the Caribbean. The prototype of the searchable NatPORT was made available to local researchers of natural products and has been populated with over 400 compounds of known structure and origin, all sourced in Puerto Rico.

During the summer 2022, prior to its release, we made NatPORT available to attendants of 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



Center for Tropical Biodiversity, a program from the Puerto Rico Science, Technology and Research Trust

Luis A. Prieto-Costas¹, Sebastián Sagardía², Matías Cafaro³, & Abel J. Baerga-Ortiz^{1,4}. ¹Center for Tropical Biodiversity, Puerto Rico Science, Technology and Research Trust, San Juan, Puerto Rico. ²Huerto Rico LLC, Bayamón, Puerto Rico. ³Department of Biology, University of Puerto Rico, Mayagüez Campus, Mayagüez, Puerto Rico. ⁴Department of Biochemistry, University of Puerto Rico, Medical Sciences Campus, San Juan, Puerto Rico.



Abstract

Puerto Rico is the site of numerous biodiversity research efforts aimed at delineating the interactions between organisms and their tropical environment. The Puerto Rico Science, Technology and Research Trust has established a Center for Tropical Biodiversity (CTB), focused on the protection of biodiversity resources of the island, as well as sharing benefits that arise from commercial development of these assets. Herein, we will present projects developed by the CTB. Among them, is the creation of the Natural Product Repository of Caribbean Natural Products, whose goal is to document natural products and biodiversity from across the Caribbean and to promote collaboration among researchers in the region. We also collaborate with local company Huerto Rico for the development of therapeutic products from Puerto Rican *Ganoderma* mushrooms. Furthermore, we have engaged with research efforts from the University of Puerto Rico toward the discovery of new natural products. For instance, we are identifying metabolites from termite-associated *Streptomyces* found in the dry forest ecosystems of Puerto Rico. These collaborations enabled us to develop untargeted LC/MS methods to construct molecular networks for these Caribbean species using our facilities that include high-end mass spectrometry and NMR instrumentation.

Goals

Over the last century, perhaps even longer, Puerto Rico has enjoyed a rich tradition of scientific research centered on its 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 environment.



Figure 1. Examples of Puerto Rico's rich biodiversity.

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.

The Center for Tropical Biodiversity and Bioprospecting has been established to guide the diverse efforts in these fields toward:

- A legal framework to protect biodiversity resources and the sharing of any benefits arising from biodiversity.
- A strategy for the establishment of a searchable, curated collection of either biological specimens or environmental genomic data.
- A database to enable the sharing of such information on biological data collections.
- The identification of existing bio-prospecting initiatives with high probabilities of commercial advancement.
- The establishment of links with analogous efforts in the Caribbean region.

Facilities/Core Instrumentation

Our laboratory is located in an advanced research facility that houses researchers from multiple universities and start-up companies. The Molecular Sciences Research Center contains instrumentation essential for natural product research. Among these, we have access to an ultra-high performance liquid chromatography with quadrupole time-of-flight mass spectrometry (Waters UPLC-Qtof G2-S), a supercritical fluid extractor (Waters MV-10 ASFE System) and an ultra performance convergence chromatography with triple quadrupole mass spectrometry (UPC²-TQD).

Waters UPLC-Qtof G2-S is a high-resolution mass spectrometer, essential for the development of molecular networks of secondary metabolites. Currently, we are using this instrument to construct molecular networks via GNPS for local grown *Ganoderma* mushrooms and termite-associated streptomycetes from El Bosque Seco de Guánica, at the south of Puerto Rico.

MV-10 is a supercritical fluid extractor that uses supercritical CO₂ to separate bioactive components of a matrix (e.g., *Humulus lupulus*). To complement the supercritical fluid extractor, the UPC²-Xevo TQD uses supercritical CO₂ to separate components of an extract. Equipped with a TQD, this instrument are currently being used for the determinations of bioactive compounds in biological matrices.



Figure 2. Common laboratory instruments of the Center for Tropical Biodiversity.

Projects

1. Natural Products Online Repository (NatPORT, www.natport.org)

The Center for Tropical Biodiversity developed the Natural Product Online Repository (NatPORT) as a catalog of natural compounds isolated from biological and environmental samples from the Caribbean region. Each entry contains the chemical structure, biological activity and source organism for each compound. It also contains the contact information of the scientists and institutions that house each compound. We are confident that this online resource will promote collaborative research as well as the development of new products in the Caribbean region.



Figure 3. Snapshot of the NatPORT interface and compounds section. Login and navigate the website (www.natport.org) through the homepage (A). From homepage, the compound database can be accessed through (B) compounds section. Search the Caribbean related compounds by name, bioactivity, researcher (contact), formula, molecular weight, species, and genus. Each entry has the research article DOI to study the isolation, bioactivity, or characterization. Currently, the database is being updated with natural products from several Puerto Rican researchers.

2. Determination of chemical profile of native *Ganoderma* mushrooms

Ganoderma mushrooms, also known as Reishi or Lingzhi, are known for their medicinal properties. Secondary metabolites such as ganoderic acids, lanostane-type triterpenes, are responsible for their bioactivity. The Center of Tropical Biodiversity, in collaboration with Puerto Rican agricultural startup Huerto Rico, is developing a workflow for the determination of the chemical profile of different *Ganoderma* mushroom strains. Here we show the initial work towards the determination of the chemical profile of a local strain of *Ganoderma multispicatum*. These studies will result in the identification of novel metabolites responsible of the bioactivity.

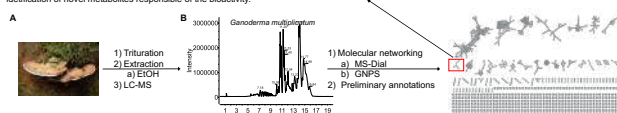


Figure 4. Preliminary workflow of the study of the chemical profile of *Ganoderma* mushrooms. (A) Image of a *Ganoderma* mushroom. These mushrooms are granulated with a blender. Afterwards, the metabolic profile of the seen through UPLC-MS. (B) Chromatogram of the ethanol extract of *Ganoderma multispicatum*. These results are processed through MS Dial and the Global Natural Product Social Molecular Network to make a molecular network to help with the annotation of secondary metabolites. (C) Molecular network with emphasis (red square) on possible ganoderic acids. These preliminary annotations are based on the common MS transitions of ganoderic acids (i.e., dehydratation, decarboxylation).

Future Work

- **NatPort**
 - Expand the database towards researchers from Puerto Rico and the Caribbean
- **Chemical profile of *Ganoderma* mushrooms**
 - Standardize the workflow to identify known or novel metabolites
 - Construction of molecular networks for various strains of *Ganoderma* mushrooms.
- **Other projects**
 - Determination of chemical profile on termite-base streptomycetes from El Bosque Seco de Guánica
 - Quantification of α - and β -acids from various extraction protocols of *Humulus lupulus* with UPC²-Xevo TQD.

Acknowledgements

We would like to thank The Puerto Rico Science Trust and Micael Jiménez for the development of NatPort website. We would like to thank Grecia M. Torres-Borges for her great contribution in the populating of the website. Thanks to Huerto Rico for their contribution of material for the *Ganoderma* mushroom project. Jeffrey Manero for the initial work in this project, and Dr. Eduardo Caro and Mari Torres for their ideas and help creating the molecular networks.

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.

poster session. He also presented the capabilities of NatPORT, which users found to be an important resource to catalogue natural products in the Caribbean. A finalized version of NatPORT will be available to companies and other ventures searching for lead compounds for development. The CTB will refer to the Technology Transfer Office (TTO) any interested company or venture, for licensing or material sharing opportunities.

FUTURE DIRECTIONS:

1) Develop the MALDI-ToF platform for the identification of novel human pathogens.

During the course of conversations with key personnel at the Department of Health and at the PR Medical Center (ASEM) Clinical Laboratory, we identified that 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.

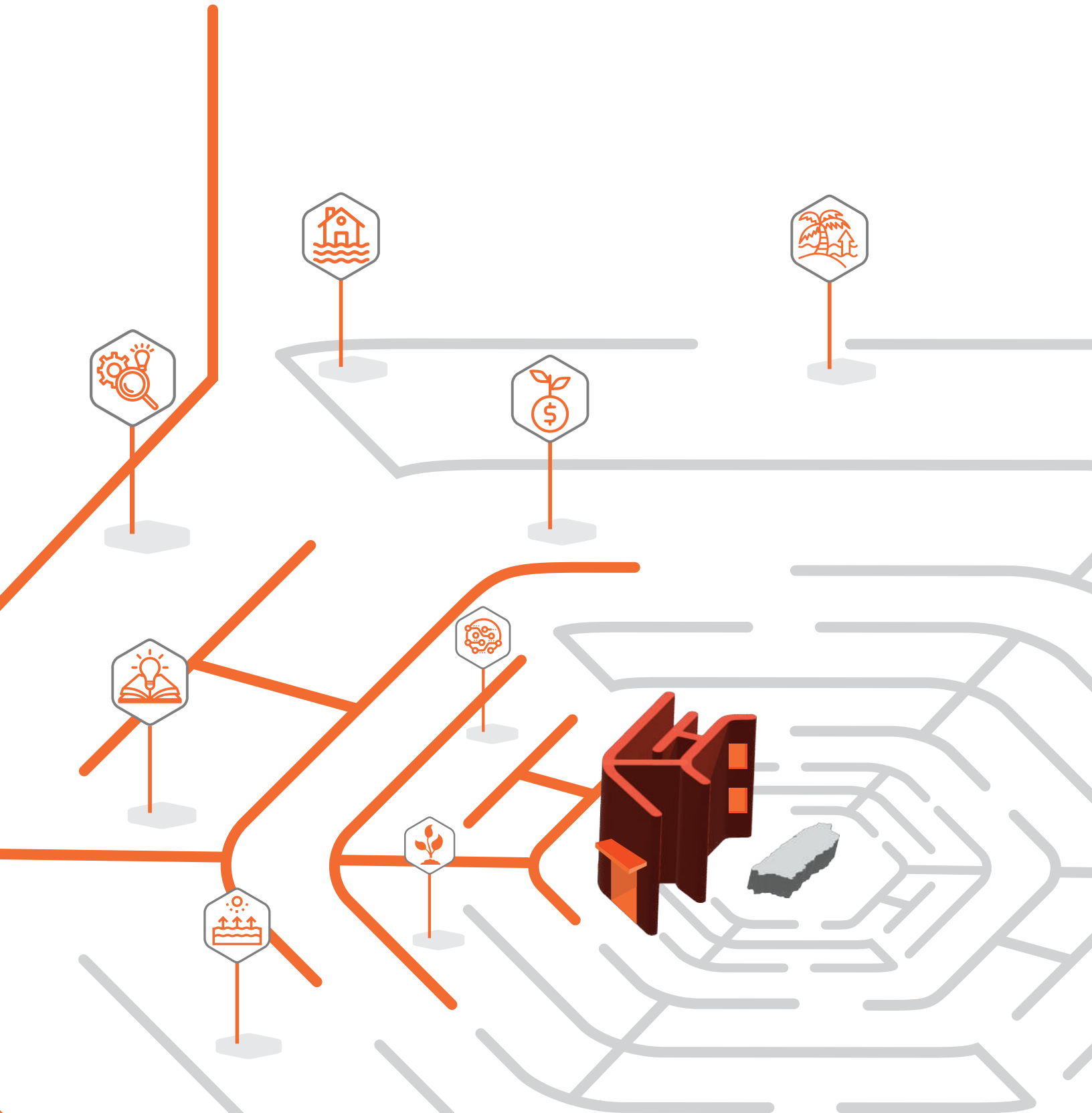
2) Providing assistance to Scientia Naturam LLC in a new SBIR re-submission.

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.





Caribbean Center for Rising Seas



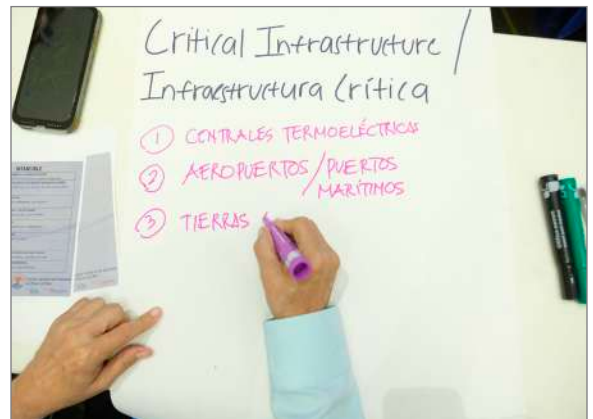
CARIBBEAN CENTER FOR RISING SEAS

The Caribbean Center for Rising Seas (“CCRS”) was launched 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 arguably unstoppable effect of this crisis. This is an issue that will have a historically unprecedented impact on generations into the future. The plan is for Puerto Rico to become a model for an adaptation approach in the Caribbean region and elsewhere. The CCRS has been created under the direction and leadership of John Englander, leading oceanographic expert on sea level rise and president of the Rising Seas Institute, another non-profit organization.



MISSION

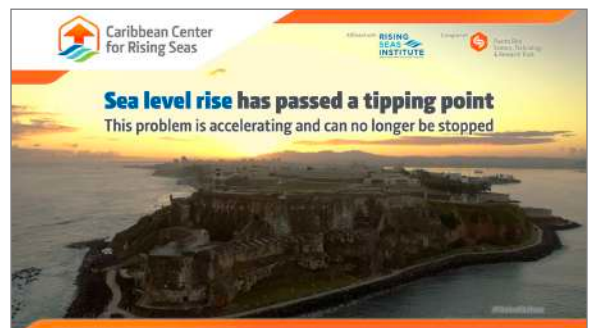
Preparing Puerto Rico and the Caribbean to adapt and thrive in the new era of increasing flood risk from storms, tides, and sea level rise. This new program of the Puerto Rico Science Trust will further establish Puerto Rico’s leadership and stature as a center of excellence and innovation. The comparable 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.



VISION

The Center’s vision focuses on “resiliency + adaptation”, promoting design guidelines and best practices for the built environment to better prepare communities for increased flooding. The vision entails four primary areas of focus: Creating Safe Advanced Flood Estimates (SAFE™); working with the built-environment professions; establishing a policy center for smart building codes; and doing outreach to promote 100-year flood-safe communities as an investment in a sustainable future.

We need to establish a critical perspective on resiliency that is realistic and paves the way for adaptation. We will engage in a process of building awareness that sustainable practices and technology will not stop sea level rise. The center will be the coordinator of the Trust’s vision regarding climate change as a source of information, a reference point about resilience and adaptation. The center should not be confused for a decision maker but a trustworthy source of information. The center sees itself as a leader and guide in establishing priorities of research, development, and recommending smart public agency policy. We will bring people together to think about the implications of sea level rise and the possibilities for adaptation in the future.





ACHIEVEMENTS DURING PAST FISCAL YEAR

Program Launch

The Caribbean Center for Rising Seas Program was launched in September of 2021.

PROGRAM DIRECTOR



John Englander, is an oceanographer, multi-book author, and international speaker on climate change and Sea Level Rise (SLR). Located in Boca Raton, FL, John frequently travels for both science and business.

Multiple expeditions to Greenland and Antarctica have showed John, first hand, the devastating effects of melting ice on land reaching the sea. These expeditions, coupled with his broad science background in both oceanography and geology give him a unique perspective on planet ecology.

And the grave dangers we face from climate change, severe weather events, and unstoppable sea level rise.

ADVISORY COMMITTEE

The Advisory Committee for the Caribbean Center for Rising Seas was onboarded and consists of:

- Antonio J. Colorado 'Tito' lawyer, entrepreneur, and former Puerto Rico Resident Commissioner;
- Dr. Tim Fox, CEng FIMechE; Lead author "Rising Seas: The Engineering Challenge" report November 2019
- Dr. Gredia Huerta Montañez, MD, FAAP, pediatrician, researcher, director of Clinicians for Climate Action Puerto Rico chapter, and current or former member of, among others, CDC, EPA, PR Dept. of Health advisory committees;
- Ex officio: Juan Alicea PE, president of the Colegio de Ingenieros y Agrimensores de Puerto Rico vía Executive Director Erasto García Pérez, PE;
- Ex officio: Arq. Margarita Frontera Muñoz, president of the Colegio de Arquitectos y Arquitectos Paisajistas de Puerto Rico.

COLLABORATION WITH RISING SEAS INSTITUTE



The Caribbean Center for Rising Seas has actively liaised with the Rising Seas Institute (www.risingseasinstitute.org) collaborating on the development of educational materials, receiving regular updates on the most up-to-date science, and strategizing on the mutually shared agendas. The world-class scientists and professionals who integrate into the Institute have provided valuable advice and insight to further the CCRS mission.

MILESTONES IN RESEARCH AGENDA

- April 7, 2022 - Received all the training materials on Human Resilience from FEMA Social Services & School Branch Regional Recovery Operations to be made available through the Library of the CCRS.
- July 25, 2022 - Received official notice of the grant 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. The proposal was designed to conduct a community-based project with a community in Salinas using the NASA tools, information, and technologies to prepare the community for addressing their climate change concerns such as Sea Level Rise.
- July 28, 2022 - Prepared and submitted a proposal to the Puerto Rico Sea Grant College Program for Translating Coastal Research into Application.

MILESTONES IN LEGISLATION AND POLICY AGENDA

- February 3, 2022 - The CCRS participated in a public hearing on Senate Infrastructure Bill 665 with an official statement which was read out loud by the Program Manager, Fernando Pabón. Previous Policy and Legislative Specialist, Jhoset Burgos, collaborated and helped edit the statement.
- June 6, 2022 - the PR Senate published a report which included our recommendations. The bill is currently being evaluated by the PR House of Representatives: Transportation, Infrastructure, and Public Works Committee.
- April 29, 2022 - Policy and Legislative Specialist, Giuliana

González, and Fernando Pabón collaborated in preparing and submitting recommendations and participated of the first CEACC public hearings on the draft Outline of the Climate Change Mitigation, Adaptation, and Resilience Plan for Puerto Rico. The CCRS explained its point of view on sea level rise in Puerto Rico, and the importance of defining and integrating it into the Mitigation, Adaptation, and Resiliency Plan. The hearing has been played over 555 times.

- May 30, 2022 – The examining officer at the April public hearings presented his official report including both his selection of CCRS recommendations and its entire written statement.



MILESTONES IN PRACTICAL AGENDA

- Personnel of the CCRS have met with officers in the executive branch of government in at least 6 offices (Fortaleza, Ports Authority, Department of Economic Development and Commerce, Central Office for Reconstruction, Recovery, and Resiliency, the Department of Natural and Environmental Resources, and the Committee of Experts and Advisors on Climate Change) to present our program and discuss collaborations.
- Personnel of the CCRS have met with officers in the legislative branch of government (Senate and Chamber of Representatives) to present our program and discuss collaborations. We have presented to the Commission of Natural Resources, Environmental Affairs and Recycling and the Joint Commission on Mitigation, Adaptation, and Resiliency to Climate Change.
- Personnel of the CCRS have made contact and met with officers in municipal government to present our program and discuss collaborations.
- Personnel of the CCRS have made contact and met with officers in at least 3 offices of the federal government in the executive branch including the White House, the Department of Commerce, and the National Oceanic and Atmospheric Administration, to present our program and discuss collaborations.

MILESTONES IN OUTREACH, COMMUNITY ENGAGEMENT, AND EDUCATION AGENDA

- We have attended the following ten programs:
 - 11th Climate Change Council Summit
 - Access to Water: A Forgotten Essential Service
 - Mega Civil Friday
 - 15th Annual Star-Tides Capabilities Demonstration at George Mason University and the Pentagon
 - Seminar on Zona Costanera: Propiedad Privada vs. Interés Público organized by Asociación Interamericana de Ingeniería Sanitaria y Ciencias del Ambiente capítulo de Puerto Rico (aidis-puerto Rico)
 - “Conserva tus Playas Limpias” in Balneario Puerto Nuevo, an event organized by the House of Representatives’ Committee of Natural Resources, Environmental Affairs, and Recycling.
 - “Planificación Colaborativa para un Puerto Rico Resiliente ante el Efecto Cascada en Clima, Energía y Salud Pública” hosted by the University of Arizona Institute for Resilient Environments and Societies and the UPR.
 - Planning for a Changing Climate: Cultural Resources and Coastal Hazards Workshop held in Cuartel de Ballajá and led by the National Park Service.
 - Cumbre por la Recuperación Justa organized by Ayuda Legal PR.
 - Expo-Convention, an event by the Colegio de Ingenieros y Agrimensores de Puerto Rico. Engaged presenters who discussed climate change.
- UPR-Mayagüez hosted a major lecture by John Englander on Thursday September 16, 2021, titled “Unstoppable Rising Seas Level: The Engineering Challenge of the Century will Change Our Entire Society” over Zoom and Facebook live viewed by 953 people.
- The NASA ARSET program for small island nations asked the Executive Director, John Englander, to give the Opening Keynote of their 3-day webinar for Analyzing Natural Hazards on Small Island Nations. This is a program on which Gilberto Guevara and Annie Mustafá participated in through the Response Innovation Lab program. Englander made the case that precise sensing data is important to track the accelerating rate of SLR (sea level rise) but showed that surprisingly, it does not help to do projections about future sea level. It was very well received with some 700 participating in the call.
- March 15, 2022 - The initial meetup with the architects Encuentro de Investigación e Innovación sobre el Aumento del Nivel del Mar took place virtually. We had in attendance

130 people. It was very well received and a request for follow-up and greater discussion on this topic was voiced by several attendees. Guest panelists included Architect/Planner Pedro Cardona, Landscape Architect Tamara Orozco, and Environmental Engineer Hanna Rodríguez.

- March 23, 2022 - Participated of a Design Jury on Sea Level Rise and Caño Martín Peña 4th year design studio held at the Pontifical Catholic University of Puerto Rico in Ponce.
- April 7, 2022 - John Englander participated in the Puerto Rico Public Health Summit Panel titled Challenges of Climate Change and Sea Level Rise: Adaptation and Mitigation for the Future and Impact in the Communities.
- April 19, 2022 - John Englander participated in a panel discussion as part of the Third Climate Change in the Caribbean Conference with a presentation titled: The Science of Rising Seas to Address Climate Change Actions: Adaptation Initiatives and Opportunities
- April 23, 2022 - Fernando Pabón delivered a presentation titled Sea Level Rise as part of Expo Planeta Digital hosted by EcoExploratorio in Plaza las Américas to a diverse audience of about 50.
- May 11, 2022 - John Englander participated of the 80th anniversary commemoration of the Ports Authority creation and delivered the final keynote message to approximately 80 guests.
- June 1st, 2022 - Fernando Pabón and Gilberto Guevara participated in: Arquitectura Hoy, radio show hosted by Arch. Eliot Santos (1 hour) via Radio Universidad de Puerto Rico.
- June 2nd, 2022 - Fernando Pabón participated in: Sobre la Mesa hosted by Armando Valdés, Esq. (½ hour) via Radio Isla.
- June 3-4, 2022 - The CCRS team prepared and delivered a presentation to about 110, led a workshop attended by 76, and moderated a panel with an audience of 70 at the Annual Convention of the Colegio de Arquitectos y Arquitectos Paisajistas de Puerto Rico.
- June 2-4, 2022 - The Architecture and Sea Level Rise convention held by the Colegio de Arquitectos y Arquitectos Paisajistas de Puerto Rico (CAAPPR) was given space in the local press in the following 8 outlets: Noticel, Sin Comillas, El Post Antillano, El Nuevo Día, El Vocero, Periódico La Perla, 90 Grados, and El Adoquín Times. The



CCRS team is very thankful for all the support provided by CAAPPR president, architect Margarita Frontera and the team at the CAAPPR.

■ June 22-25, 2022 - John Englander and Fernando Pabón attended the AIA Conference on Architecture in Chicago from Wednesday 22 - Saturday 25. They led an interactive session attended by about 150 participants titled: Sea Level Rise, Unstoppable & Accelerating: A Transformational Architectural Challenge. Mention of the Trust and the Caribbean Center for Rising Seas implementation in Puerto Rico was made and both engaged audience members who ranged from private practitioners to government officers. As a result, an invitation was made to participate in the AIA Honolulu

Chapter Design and Architecture Symposium next October of 2022 (<https://dna-hawaii.com/speakers/>)

- July 2022 - Modo de Vida, a local design magazine, published a report on the events led by the CCRS In the Architecture and Sea Level Rise convention. https://issuu.com/revistamododevida/docs/mv_julio_2022_issuu

FUTURE PLANS

- Identifying an opportunity to translate to Spanish John Englander's book Moving to Higher Ground: Rising Sea Level and the Path Forward. The Science Bookshelf, 2021.
- Developing the policy center for smart building codes, performance, and safety metrics;
- Doing outreach and advocacy to promote 100-year flood-safe communities. This will involve a series of workshops and engagements with professionals to see results in terms of how buildings are designed and built;
- Positioning Puerto Rico as a model and leader for this adaptation approach in the Caribbean region and beyond:
- Engaging key players such as industry leaders and businesses in Puerto Rico and the wider Caribbean region;
- Engaging key actors in media in Puerto Rico and the wider Caribbean region positioning op-eds that contextualize current concerns with the larger challenge of rising sea levels;
- Producing a library/database of solutions and key data;
- The CCRS will seek to address the lack of consensus and specifics about how much sea level rise to plan for.
- Expanding the program's network of collaborators and advocates;

- Nurturing a collaboration framework within the PRSTRT around the topic of resiliency and adaptation to climate change;
- Establishing a course with higher education institutions in Puerto Rico through a virtual platform that is eligible for Continuing Education Credits;
- Creating Safe Advanced Flood Estimates (SAFE™);
- Working with the built-environment professions through meetup events, lectures, conferences, forums, workshops, and other activities;
- Identifying and applying for public sector funding and grant opportunities;
- Establishing short (30 yrs.), mid (50 yrs.), and long term (100 yrs.) settlement and infrastructure adaptation goals.
- The CCRS team will be working with an ad-hoc committee to coordinate and communicate about the broad scope of climate change and sea level rise issues.

PRESS APPEARANCES

Vocero, Metro, San Juan Daily Star, El Nuevo Día, National Public Radio, Radio Isla, Radio Universidad de Puerto Rico.



ORGANIZATIONS WE HAVE ENGAGED

Union of Concerned Scientists, Para La Naturaleza, Colegio de Arquitectos y Arquitectos Paisajistas de Puerto Rico, Colegio de Ingenieros y Agrimensores de Puerto Rico, Puerto Rico Builders' Association, Sociedad Puertorriqueña de Planificación, Comité de Expertos y Asesores de Cambio Climático.

ACKNOWLEDGEMENTS

Deb Stirling; Robert Corell; Guadalupe Vázquez; Yolanda Díaz, Esq.; Samuel Corchado, CAAPPR; Dr. Austin Becker; Joel Pizá, Esq.; Ernesto Díaz; Eng. Emilio Colón; José Sadurní, AIA, CAAPPR; Javier Bonnin, CAAPPR; Victor Nieto, CAAPPR; Eliot Santos, CAAPPR; Doira Díaz, Esq.; Jhoset Burgos, Esq.; Giuliana González, Esq.; Jorge Molina, Esq.; Carlos Bas, Esq.; Paulina Seguinot; Gilberto Guevara; Annie Mustafá; Gabriela Algarín; Cesar Piovanetti; Pablo Ríos; Alberto Millán; Tatiana Ortiz; Natasha Sánchez; Patricia Casaldud; Alexander Morales; Pedro Cardona, CAAPPR; Dan Lamot; Lorena Molina; Jaime Villeta; Ricardo Burgos; Maribel Pagán; Inés Alvarez de la Campa; Lizmar Morales; Eddie Varela; Gilberto Márquez; Karina Pérez; Karimar Colón; Angel de Jesús; Marieli Grant; Dr. Stephen Flynn; Dr. Kristin Raub; Angie Valencia; Dr. Juan Delet; Dr. Abel Baerga; Dr. Grayson Brown; Andreica Maldonado; Antonio Colorado, Esq.; Dr. Tim Fox; Dr. Gredia Huerta; Margarita Frontera, CAAPPR; Eng. Luz A. Crespo; Merry Manso; Gitza Más; Ada Monzón.

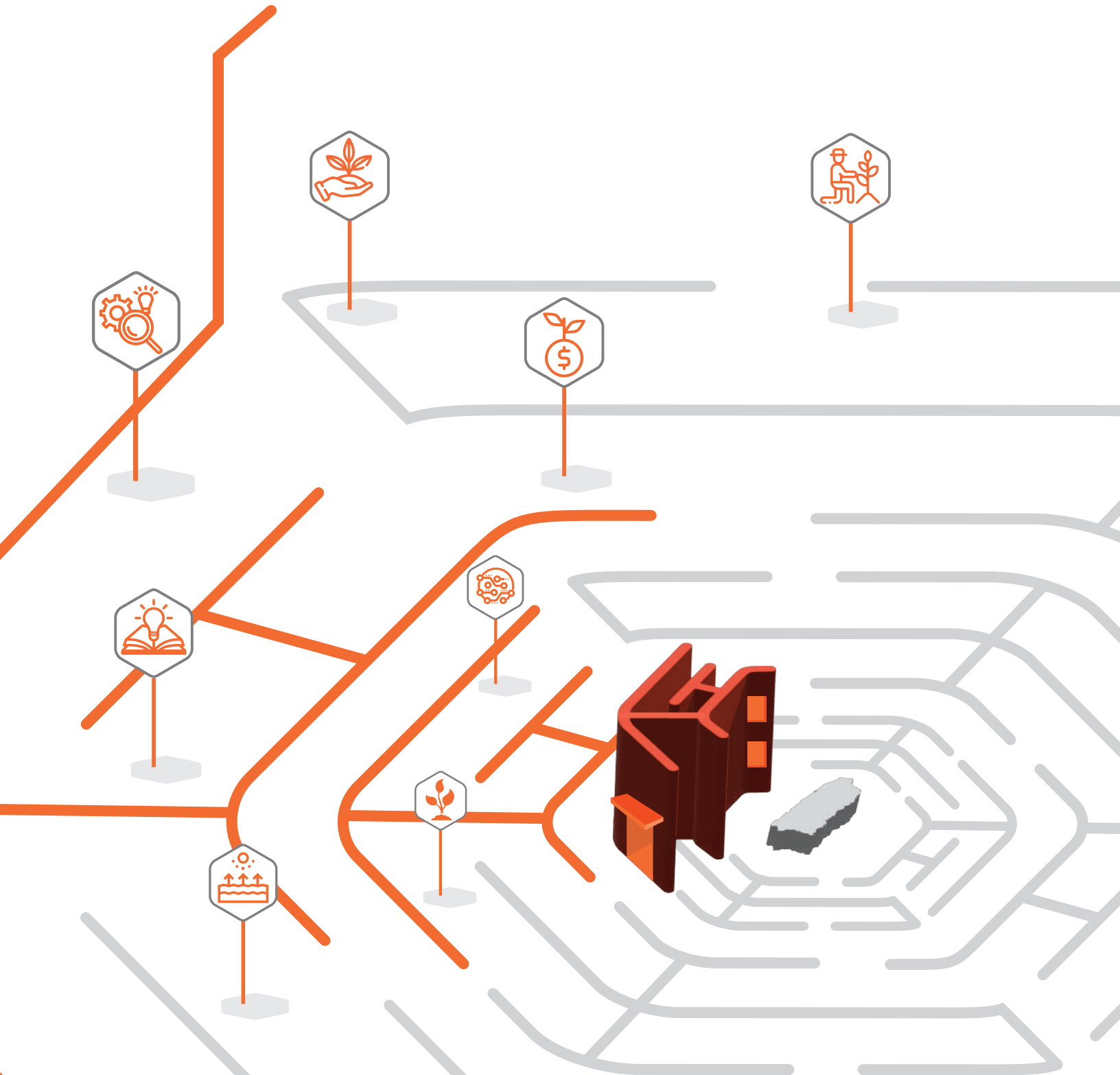
IMAGES OF PARTICIPATION AND EVENTS



AIA Conference on Architecture, Chicago with presentation titled Sea Level Rise, Unstoppable & Accelerating: A Transformational Architectural Challenge



RE-GROW PR
URBAN AND RURAL AGRICULTURE



RE-GROW PUERTO RICO

The Re-Grow Puerto Rico Urban and Rural Agriculture, with the help of federal assistance in the form of Community Development Block Grant – Disaster Recovery (CDBG-DR) grants, intends to build agricultural capacity and meet the needs created by the hurricanes in a wide variety of viable agricultural activities. The program is focused on small and medium sized farms, agricultural businesses and non-governmental organizations engaged in sustainable agricultural activities that were affected by the 2017 storms. Eligible entities may be established, restarting or start-up businesses or organizations, as defined by Program Guidelines.

The program goals are promoting and increasing food security island wide; and enhancing and expanding agricultural production related to economic revitalization and sustainable development activities. Additionally, the program has an established goal to benefit low-and-moderate income (LMI) persons.

Service area includes Puerto Rico's seventy-eight (78) municipalities.

Under the program farmers, food producers and distributors can receive grants ranging from twenty-five thousand dollars (\$25,000) up to a hundred and fifty thousand (\$150,000) for eligible costs in the form of equipment, transportation, infrastructure, land and production supplies. Grant awards are structured in a 3-tier approach, based on reported income and/or projected sales.

MISSION

RGRW exists to promote and increase food security island-wide, enhance and expand agricultural production related to economic revitalization and development activities through grants and capacity building.

VISION

A revitalized agriculture that enables producers across Puerto Rico to contribute to food security and sustainable economic growth.

PROGRAM DIRECTOR



Bárbara Rivera, former Program Director.

Bárbara worked for more than 15 years at the Puerto Rico Department of Economic Development and Commerce, where she supported small businesses in her role as a Federal Contracting consultant and Acting Manager of the federal Procurement Technical Assistance Center program. She also worked in the establishment of the Puerto Rico IT Cluster and has led agricultural development projects such as Recuperación Agrícola and Re-Grow Puerto Rico.

ACHIEVEMENTS

In August 2020, the PRSTRT became a subrecipient of the Puerto Rico Department of Housing (PRDoH) under agreement to manage the Re-Grow Puerto Rico program to disburse grants and provide technical assistance to small and medium agricultural businesses. This subrecipient agreement between the PRDoH and PRSTRT (2021-DR0003) was executed for a term of thirty-six months, and a total allocation of \$30,471,999.52 for the implementation and administration of the program's twenty-million dollars (\$20M) of the total budget were reserved for program grants.

During the Trust's incumbency as a subrecipient, the Re-Grow Puerto Rico program was successfully launched and many contributions were made, albeit all the many challenges encountered. During a little more than a year, the program was promoted and developed, and it awarded the 43% of designated funds to local farmers and food producers, while following all the regulatory requirements and standards applicable to the CDBG-DR funding programs.

In the next pages, we share the cumulative results and achievement of the program since August 2020 until December 2021.





PROGRAM IMPACT METRICS

TOTAL AWARDS

\$8,697,443

Total amount awarded

145

Awards

Tier 1

\$25,000 to \$50,000

98 awards

Tier 2

Up to \$100,000

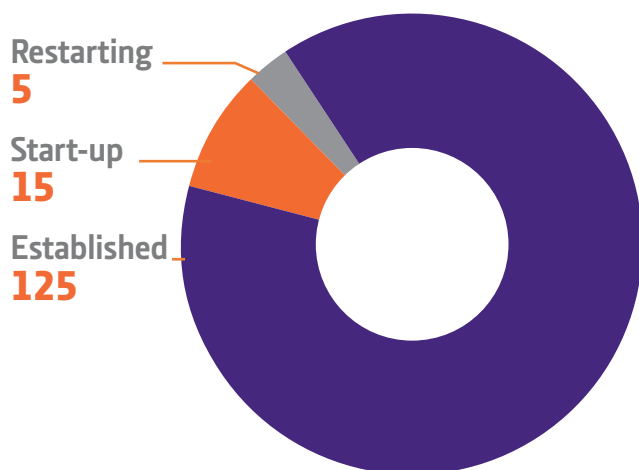
30 awards

Tier 3

Up to \$150,000

17 awards

Awardees by Status of Entity



Awardees by Type of Entity

Small farms and/or farmers	102
Fisheries and/or aquiculture	24
Agricultural microenterprises (5 employees or less)	8
Producers, manufacturers, distributors engaged in production or distribution of local food	6
Small agribusiness that support the activities and the production of small farmers and/or livestock	5

*Note: Three (3) grants were approved but pending disbursement due to PRDOH administrative decision.



57
impacted by
145 Awards

Awards by Municipality



Adjuntas	6	Canóvanas	1	Hatillo	2	Manatí	1	Rincón	4	Vega Alta	2
Aguada	6	Carolina	1	Hormigueros	1	Maricao	5	Sábana Grande	4	Vega Baja	2
Aguadilla	2	Cataño	2	Isabela	1	Maunabo	2	Salinas	1	Villalba	2
Añasco	1	Ciales	1	Jayuya	3	Mayaguez	2	San Germán	4	Yabucoa	3
Arecibo	1	Coamo	3	Juana Díaz	2	Moca	6	San Lorenzo	1	Yauco	1
Arroyo	1	Comerio	1	Lajas	3	Naguabo	1	San Sebastián	5		
Barranquitas	3	Corozal	5	Lares	9	Naranjito	1	Santa Isabel	2		
Bayamón	1	Dorado	1	Las Marías	4	Orocovis	1	Toa Alta	1		
Cabo Rojo	5	Fajardo	3	Las Piedras	1	Patillas	2	Toja Baja	3		
Camuy	10	Florida	2	Luquillo	1	Ponce	2	Utua	4		

APPLICATION INTAKE TEAM PERFORMANCE HIGHLIGHTS

Our Intake and Customer Service team, composed of 9 Specialists and 1 Manager, provided orientation, technical assistance and support to applicants and the general public throughout the performance of the program. Services included multiple and continuous interactions and communications via telephone, through the program Call Center, email and in-person (individual and groups) technical assistance at the 7 On-Site Help Centers throughout the island.

Inbound calls – 24,797 calls with 90% answer rate

All unanswered calls and voice messages were returned by Intake/Customer Service Specialist as per Program Timelines (within two (2) business days or less).

Category of Services Provided in Call Center

Category of Service Provided	Inbound and Outbound Calls
Application Intake (Assistance for completing application processes)	1,217
Application Status Follow Up (Inquiries related to status of applications through different evaluation stages)	4,547
Program Orientation (General questions or doubts about the Program)	4,747
Application Assistance (Assistance with specific parts of the application)	910
Pending document submission (Assistance to submit or follow up pending documentation)	17,760



As of November 2021, more than 9,500 emails were responded within two (2) business days or less.

In the program satisfaction survey conducted from July thru August 2021, 65% of survey participants expressed that the quality of service offered by the Help Center Personnel was Very High Quality. The 77% of survey participants Strongly Agree that the Re-Grow PR Help Center staff has extensive knowledge and experience in the field and that the staff is willing to help with all requests. 90% of survey participants expressed they were likely to recommend the services of the Help Center to other people.

616 On Site Help Center Meetings

Starting April 2021, as COVID-19 protocols permitted, the Program incorporated in-person orientation and technical assistance services in regional Help Centers. We started offering in-person assistance in San Juan at the Trust's headquarters, Camuy at the Asociación de Agricultores Camuñanos, and in San Lorenzo at the municipality Agricultural Service office. Later, additional centers were enabled in Cabo Rojo, Cayey, Jayuya and Utuado through collaborations with the University Ana G. Mendez and Utuado municipality. The Trust provided all the necessary equipment and materials, and Program staff (Intake Specialists) were assigned to each center on a weekly basis.

On Site Help Centers (April to November 2021)

Camuy	155
San Juan	119
Cabo Rojo	119
Utuado	96
Jayuya	80
San Lorenzo	35
Cayey	12
Total	616

Case Management & Underwriting Performance Highlights

The Case Management team was composed of 8 members, including 2 Agronomists, growing from 3 original members to 8 due to the high number of received applications. This team was in charge of checking and validating program eligibility requirements per applicant, making eligibility determinations and evaluate all reconsideration requests. The Case Management team also developed the Eligibility Review's SOP and general guidelines during its operation.

As of December 10, 2021, the Case Management team completed 1,917 initial eligibility reviews to assess compliance with Program Guidelines and required documentation. A total of 1,066 applications successfully completed the eligibility review process and final determination as of December 10, 2021.

A total of 222 field visits were performed by the Agronomists to assist applicants in the successful completion of their applications, and the Underwriting team's evaluation.

Underwriting Team consisted of 3 Underwriters, under the supervision and guidance of a Lead Underwriter. As of December 2021, a total of 392 applications were completed, 291 of them were recommended for award, while 106 were denied for failure to comply with one, or more, of the underwriting criteria as defined in the Program Guidelines.

Outreach & Collaborations

The program dedicated many efforts to providing information and assistance to the public and held more than 57 events, impacting more than 1,579 citizens across the island. The modalities of these events ranged to in-person, virtual and hybrid formats to comply with COVID-19 regulations.

Outreach Events by format

In-person	34
Virtual	23
Total	57



Most of these events were facilitated in collaboration with community leaders, organizations and local agencies of the agriculture and fishing sectors. In addition to these liaisons built by PRSTRT, communities who were interested in a program orientation could also request one by filling out a Re-Grow PR Tour form.

Some of the collaborators included Servicio de Extensión Agrícola, Recinto de Mayagüez, Agro-Mujer, Para La Naturaleza, Agroempresarias de Puerto Rico, Dewey College, Municipio de San Lorenzo, Fundación Bucarabón, Mercy Corps, Asociación de Farináceos del Este, Bosque Modelo, ProCafé, Unidos por Utuado, Asociación de Agricultores Camuyanos, Distrito Caribe, Operation Hope, Asociación de Agricultores de Puerto Rico, FEDEMAR, Congreso de Pescadores, among many others. One special partner was the Ana G. Méndez University, which regional facilities were made available to the program through our collaborative agreement.

The program channeled all communication efforts mainly through their proprietary outlets:

- Webpage: www.regrowpr.org
- Facebook: @ReGrowPRorg
- Instagram: @ReGrowPRorg
- YouTube: @ReGrowPRorg
- Direct Mail

As the program sole subrecipient of the program, the Trust participated in four (4) public hearings cited by the Community Agriculture Committee of the House of Representatives of Puerto Rico. The purpose of the hearings was to learn about the administration of the funds, the evaluation process, and the grant awards. They also served as forums for the advocacy and improvements to the program, and the flexibilization of requirements established by PRDOH, in favor of access to the funds. In addition to maintaining an open-door and transparency approach, the Trust facilitated the improvement of program implementation requirements and processes. Access to information regarding how the Trust managed the program, and the ongoing performance of grant awards was constantly made accessible and published through all events, proprietary channels, and public relations efforts.

FUTURE PLANS

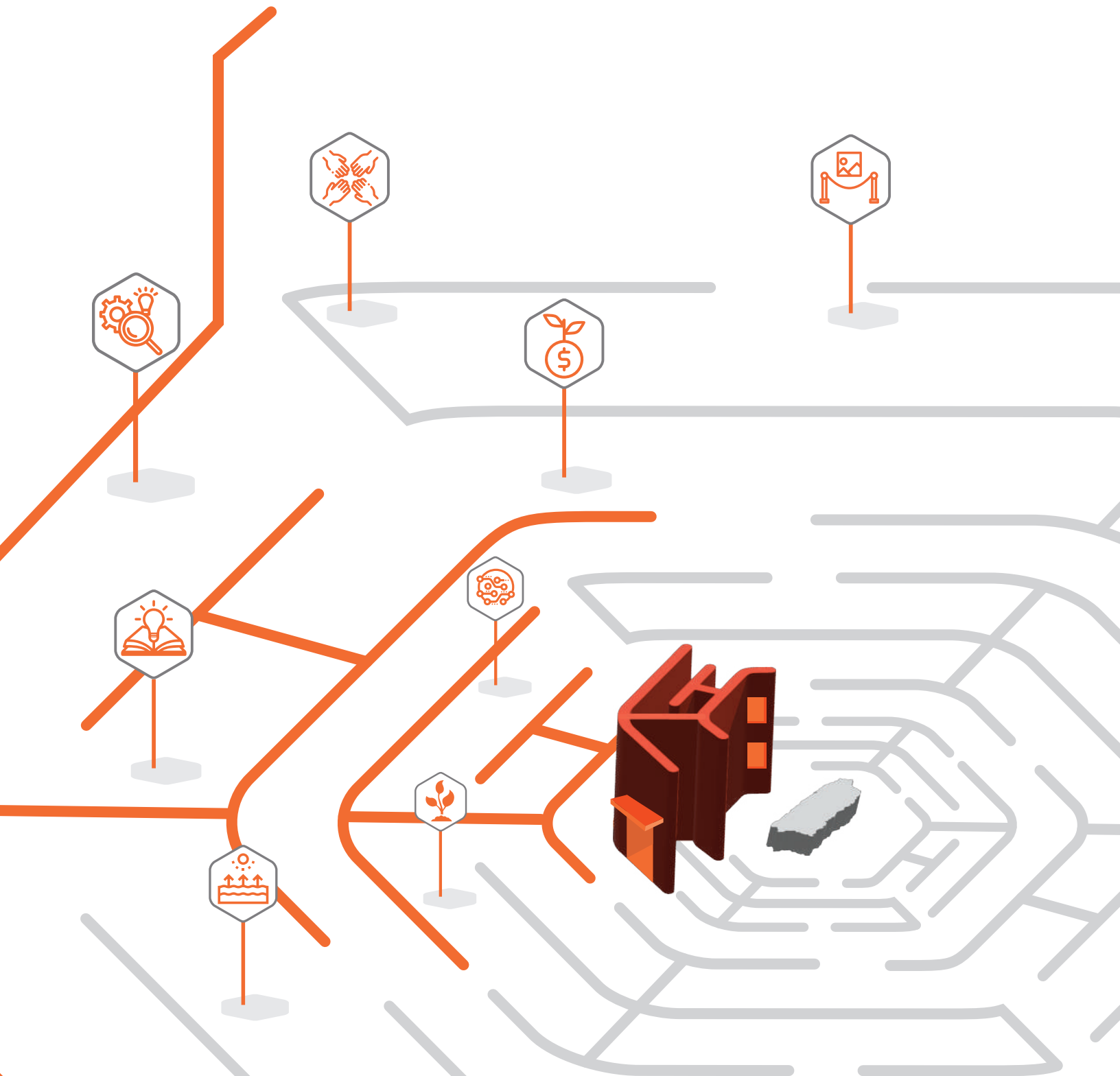
In November 2021, PRDOH signed a new subrecipient agreement with the Puerto Rico Department of Agriculture for the administration of the Re-Grow PR program. Following, the Trust and PRDoH agreed to terminate its existing subrecipient agreement. Subsequently, the Trust entered a 90-day transition process with PRDoH which led to the cease of services on February 21, 2022.

We reiterate our commitment to support the recovery and expansion of the local agricultural community towards our island's food security and farmers sustainable economic growth.





Cultural Heritage Innovation Program



CULTURAL HERITAGE INNOVATION PROGRAM

The program staff was composed of a director and two specialists.

- Program Director: Johnny Lugo Vega, PhD
- Cultural Heritage Specialist: Alitza Cardona M.A.
- Cultural Heritage Specialist: Shirley McPhaul M. A

Since 2019, CHIP's development aims to employ the "Positive Virus Model" created by the Director. The model's sustainability is addressed by employing the Sustainable Innovation in Culture Model (SIIC) shown in figure 1. This, in turn, aims to be a proposal with a holistic view, assembling within its organization innovation, technology, and research. Forecasted outcomes within this model aim to produce resiliency through the economic development of projects related to communities' self-developmental capabilities, resources, and well-being.

MISSION

To conserve, innovate and serve the community through the economic development of its historic infrastructure by means of heritage practices and technology.

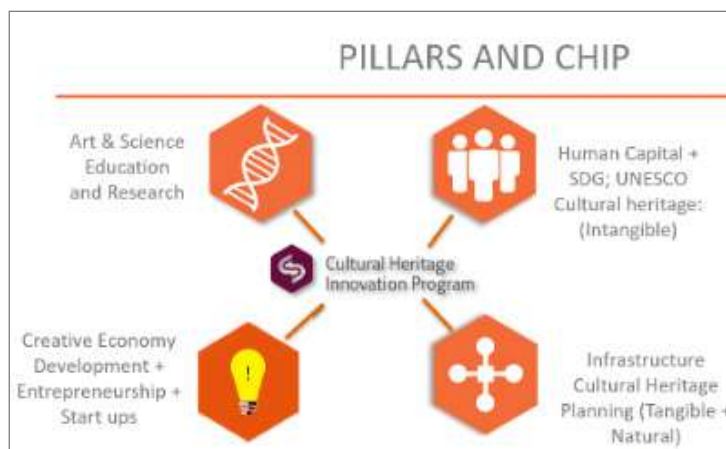
VISION

To develop and promote Puerto Rico's economic potential by means of heritage practices and performance within global institutions related to the discipline such as UNESCO and ICCROM.

PROGRAM SCHEME FOR 2021-22

For the 2021-2022 period the Cultural Heritage and Innovation Program sustained an initial phase of development by identifying partnerships and establishing collaborations with local and international creative entities. The program has maintained as a priority the conservation and development of the remains of the historical Antigua Penitenciaría Estatal (Oso Blanco) in accordance with local and state agencies requirements and regulations.

The developmental scheme of CHIP inputs an organization of research and creative projects related to "pillars" found in the SIIC model. These projects include Oso Blanco's research and multidisciplinary adaptation for the Antigua Penitenciaría Estatal's architectural and economic development, Ars Electronica 2021, and the United States Department of Agriculture. Collaborations for this period were achieved



with the Puerto Rico Tourism Company, Smithsonian's Latino Center, and renowned Argentinian Artist Joaquin Fargas. Initiatives were commenced with Oso Blanco's Sociocultural timeline independent project contract and with local startups such as Patria Tours and Materia Madura.

DEVELOPMENTS

Research

Oso Blanco's sociocultural timeline: the narrative of an innovative approach to heritage conservation enterprise in Puerto Rico.

The Oso Blanco's sociocultural timeline is an initiated Heritage Development tool, created to be employed within the Oso Blanco's Conservation, Exhibition, and Experimental Space development to further understand the historic implications of Oso Blanco in a multidisciplinary manner. In this sense, as a document, the timeline regards Heritage, not as history but as a process and a resource for innovation based on habits, values, and a collective's common goal which are subsequently inherited. The timeline is an academic product of a research exercise commenced in 2019, which aims to present Oso Blanco's historical narrative from an interdisciplinary standpoint to support an unprecedented architectural state of preservation through a framework of relational spatial dynamics and linguistics,

Antigua Penitenciaría Estatal: Oso Blanco



making use of the museum typology, as a conveying tool. The project presents a linear explanation of a maintenance solution for historical sites where the audience is an active participant in its development. The project presents the demolished State Penitentiary of Oso Blanco as an object of unprecedented historic circumstance and socioeconomic significance in Puerto Rican cultural and urban history. Considering historical information about the Penitentiary is mostly public, a qualitative methodology was employed through the assessment and interpretation of available documentation and theoretical literature as a primary source. Books regarding Oso Blanco's history and urban context published articles, journals, and legislative motions were analysed throughout the development of this timeline.

Conservation and development

During the summer of 2021, a procurement process was initiated to contract the professional services of an architect for the creation of a design for the proposed Oso Blanco Conservation and Experimental Space (OBCES). The exhibition space aimed to convey the outcomes of research through its typology by employing theoretical space relations as well as physical and scientific conservation practices to sustain the current Oso Blanco collection necessities.

Throughout the development of the concept for this conservation and exhibition space, (October 2021- April 2022) a few important processes were achieved:

- The creation of documents related to Oso Blanco's history where relational topics are addressed through space.
- The creation of an inventory of the Oso Blanco's collection where the physical necessities of each item were recorded.
- The organization of documents where Oso Blanco's history and development are detailed through photographs, Journals, and plans was collected from The University of Puerto Rico, Puerto Rican Collection, The National Library, The Archivo de Arquitectura y Construcción de la Universidad de Puerto Rico (AACUPR), The Instituto de Cultura de Puerto Rico and the State Conservation Office of Puerto Rico.
- Meetings where the identification of problems regarding the collection was addressed, clarified, and rethought.

Technology and Education

The program initiated an Augmented Reality prototype to evaluate the feasibility of incorporating Oso Blanco's research within a self-touring program adaptable using Adobe Aero, to

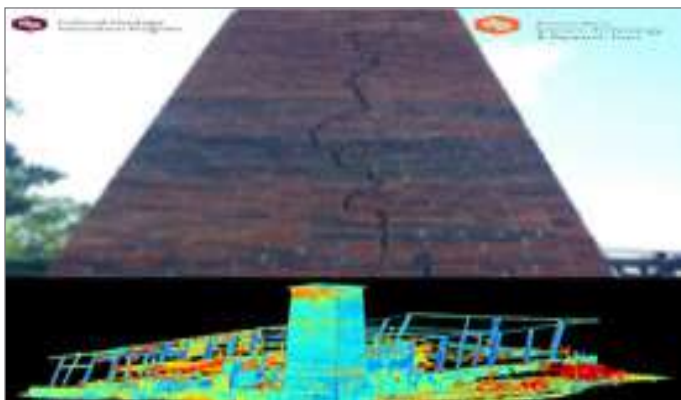
evaluate the feasibility of the incorporation of Oso Blanco's research within a self-touring program adaptable either to iPad or mobile hardware. The methodology includes taking pictures and videos of the original Oso Blanco portico and designing an AR character who could be able to teach an angle of interest regarding the Oso Blanco Socio-Cultural Timeline. It was found that, what could have been Oso Blanco's Socio-Cultural Timeline, could've been adapted to the program, promoting the accessibility of an array of audiences to showcase Oso Blanco's reframed history.

Art Science Education and Research

On September 2021, the Cultural Heritage and Innovation Program, in partnership with the Puerto Rico Tourism Company, Artist Joaquin Fargas, and UAGM, Gurabo's Campus and staff participated in Ars Electronica 2021. Titled: "A New Digital Deal", Ars Electronica 2021 is an international art technology and society festival that reunites talented people, programs, and institutions from around the world, promoting innovation towards technological and culturally oriented strategies of communications, artistic performances, and education. This year an extensive program was created and produced with the support of UAGM and Discover Puerto Rico.

Garden Puerto Rico, represented by the staff of the Puerto Rico Science and Technology's Cultural Heritage Program in partnership with Joaquin Fargas's Pulsar la Tierra Project, presented a series of lectures exploring and showcasing the efforts developed and sustained within the TRUST as well as with Puerto Rican Heritage Professionals. Virtual lectures were attended in the hundreds widely promoting the scope of research and talent of the Puerto Rican expertise and experience. Lectures, participants, and descriptions are included in the virtual program of Ars Electronica 2021.





Human Capital + SDG, UNESCO Cultural Heritage: (Intangible)

USDA, FOREST SERVICE

EL YUNQUE NATIONAL FOREST

AGREEMENT#21-PA-110881600-296

Responsibilities achieved at the end of the Project Period:

A. Provide resources, personnel, and equipment to complete Historic American Building Survey/Historic American Engineering Records (HABS/HAER) Level II documentation of the following two historic properties located at El Yunque National Forest, Rio Grande, Puerto Rico:

1. La Mina Waterfall Bridge
2. Stone House

B. Documentation of the historic properties shall be produced in accordance with the Level II of the HABS/HAER Guide for Recording Historic Sites and Structures using Computer-Aided Design (CAD). The documentation included the following:

1. Revise and enhance the existing historical written narrative for both historic properties and produce a short format documentation form (one per property) in accordance with HABS/HAER's Guidelines for Historical Reports (Level II).
2. Produce architectural level scale drawings of La Mina Bridge in CAD in accordance with HABS/HAER's Level II documentation specifications.
3. Produced architectural level scale drawings of Stone House's exterior and interior (plans, sections, elevations, and details) in CAD in accordance with HABS Level II specifications.
4. Document both historic properties using digital photographs in .tiff or .raw format with proper narrative description in the accompanying log.

5. Document both properties via photogrammetric measurements and 3D scanning images. Documentation shall capture the properties' exterior and interior, sections, elevations, and some relevant details).



6. Produce a 3D model in 3D scanning format of both properties using drone image capture methods.

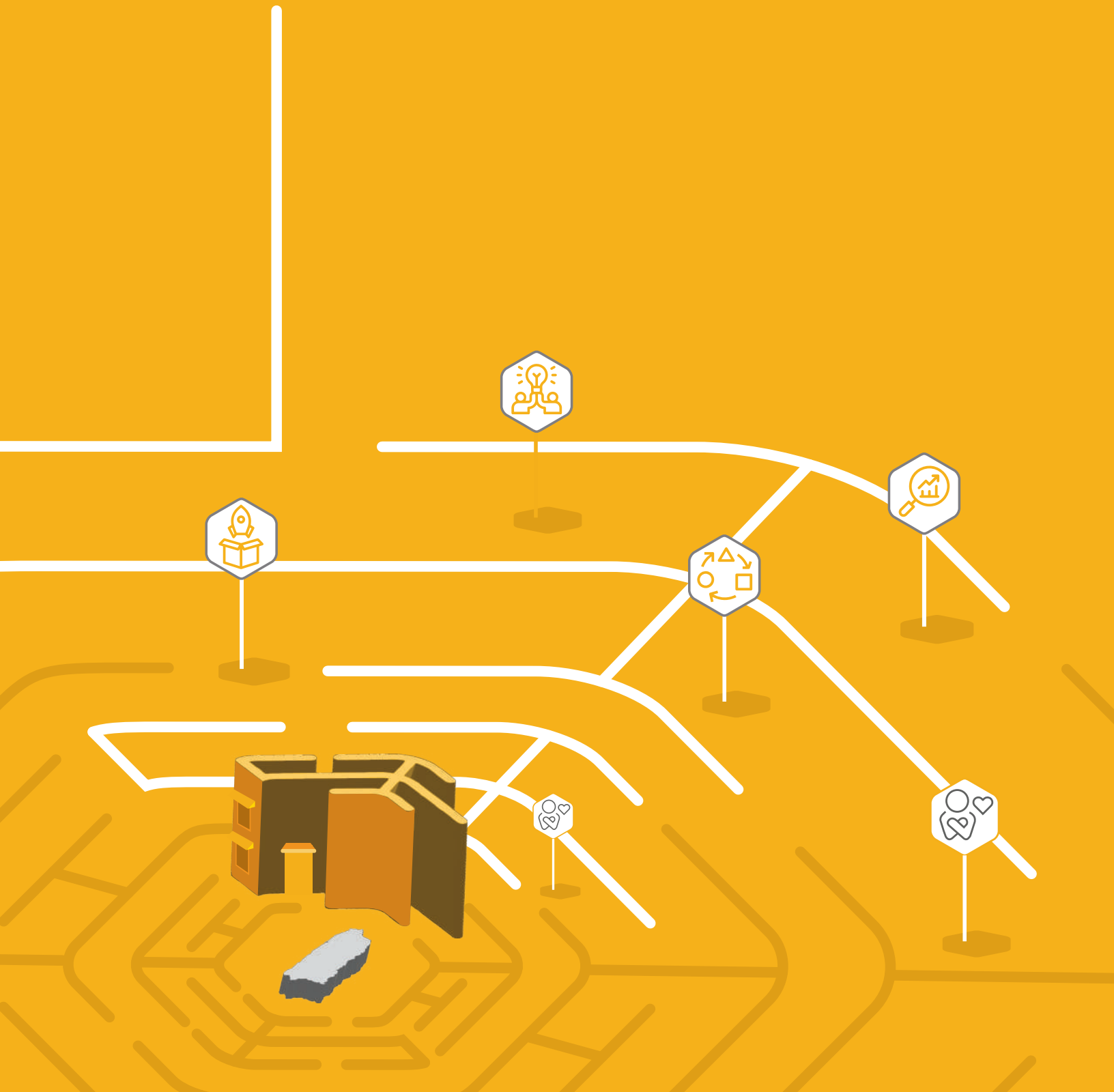


7. Produce a short documentary of the work and proceedings to be shared between the U.S. Forest Service and the CHIP-PRSTR.

8. Produce an architectural narrative description of each one of the historic properties documented.

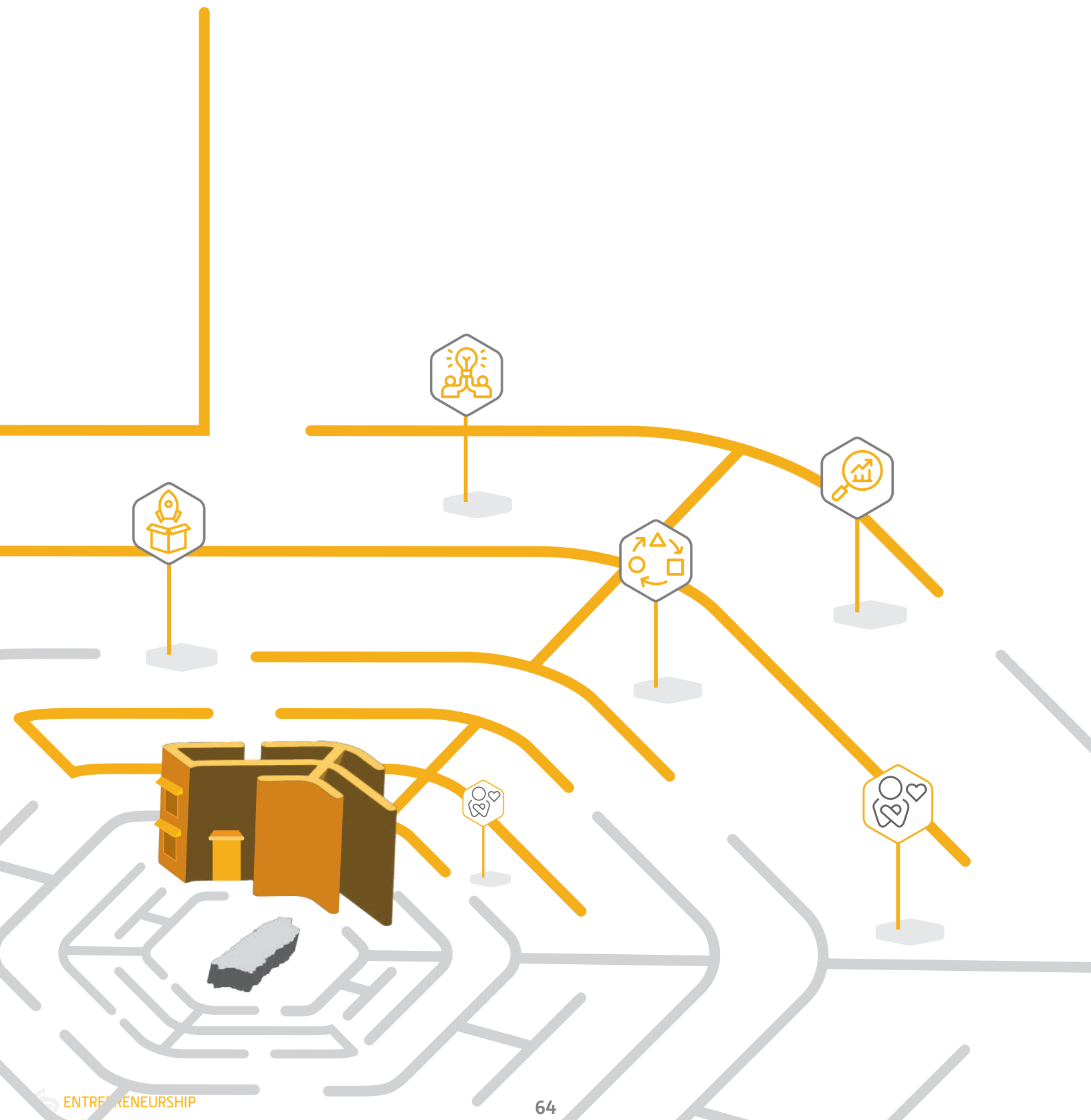
C. Deliver to the U.S. Forest Service, in digital format, all final documentation of the two properties described above.

ENTREPRENEURSHIP





Colmena66
Tu Camino Empresarial





COLMENA66

Colmena66 facilitates entrepreneurship. We connect entrepreneurs with the right resources at the right time so that they can start or grow a successful business in Puerto Rico.

Colmena66 fosters connections and develops action plans to enable entrepreneurs to reach their goals. We help entrepreneurs identify and find answers to any business question they have. We are the only organization in Puerto Rico that works with all types of businesses, at any stage. One of our key strengths is that Colmena66 identifies and analyzes gaps in the entrepreneurial ecosystem and works hand in hand with the Entrepreneurial Resource Network to address them.

OUR MISSION

Everyone in Puerto Rico can start and grow a successful business.

OUR VISION

Colmena66 facilitates entrepreneurship by connecting and building the entrepreneurial community.

PROGRAM DIRECTOR



[Denisse Rodríguez](#) is an ecosystem builder and social entrepreneur, working at the intersection of economic and community development. She founded and leads Colmena66, an award-winning program which makes entrepreneurship easier by connecting entrepreneurs with the vital, just-in-time, on-the-ground resources they need to accelerate their ideas and turn those into sustainable businesses that create jobs. Through entrepreneur-led economic development strategies, Denisse works to strengthen a cohesive and vibrant entrepreneurial ecosystem in Puerto Rico.

Denisse began her career at Goldman Sachs' Investment Banking Division in New York City. She was recognized by the World Economic Forum as a Global Shaper, and was selected as an Ideas Fellow of the Aspen Institute.





A MESSAGE FROM OUR TEAM

Entrepreneurs are at the center of everything we do. They are the makers, the doers, the dreamers who find solutions to society's problems, taking calculated risks to create something of value where there was none before. Entrepreneurs are the lifeblood of our communities, they start and grow new businesses, turn their talents and hobbies into side hustles and create the products and services we proudly support by buying local. They chase their dreams. They feed their families. They create jobs. They drive economies and shape the world.

In large part, the success of entrepreneurs also comes from those around them. Each month, 3 out of every 1,000 people in the United States will start a business, taking on a great deal of risk. The remaining 997 people constitute the community and we play a substantial role in the entrepreneurs' success. We can take control of our economic destiny by supporting our entrepreneurs. A thriving entrepreneurial ecosystem requires more than just entrepreneurs and that's why we build ecosystems, the communities for entrepreneurs.

Ecosystem building is at the intersection of economic and community development and entrepreneurs thrive when an ecosystem that allows for the fast flow of talent, information and resources helps them quickly find what they need at each stage of growth. As ecosystem builders, we are creating the invisible infrastructure to support entrepreneurs, including access ramps to the ecosystem so that anyone can participate, grow and thrive.

We appreciate your collaboration and contributions during the past five years, and we are eager to begin this next phase together!



[Denisse Rodríguez](#)

Executive Director



[Nackira Castro](#)

Lead Creative Designer



[Samuel Merced](#)

Program Manager



[Paola Maldonado](#)

Entrepreneurship Strategist



[Natalia Alicea](#)

Marketing Strategist



[Noriana Meléndez](#)

Community and Content Specialist



[Gian Ortiz](#)

Business Development Specialist



[Bridgette Padilla](#)

Entrepreneurship Strategist



[Nadya Solá](#)

Entrepreneurship Strategist



[Ibanaliz Santoni](#)

Entrepreneurship Strategist

ACHIEVEMENTS FOR FISCAL YEAR 2021 - 2022



Throughout the years, Colmena66 has consistently improved its offering and ranking among the top SourceLink® Affiliates. Puerto Rico's entrepreneurship ecosystem is quickly becoming a great example of equitable and inclusive entrepreneur-led economic development for other regions across the United States.

Year	Searches Using Resource Navigator	Affiliates Using Sourcelink Pro	Counselling Hours	Network Strength
2021	#6	#1	#1	#5
2020	#2	#1	#1	#4
2019	#2	#4	#4	#5
2018	#9	#4	#3	#6
2017	#9	#14	#15	#7

DURING THE FISCAL YEAR 2021-2022 WE REACHED:

9,892
Searches in our
Network Navigator

4,914
Interactions or Counseling Sessions

2,679
Entrepreneurs Served

307.5
Counseling Hours

4,612
Referrals to the Resource Network



SOCIAL MEDIA METRICS

Over the years, we have built a robust communications platform to reach entrepreneurs where they are. Likewise, our partners achieve remarkable results by leveraging our platform to support their outreach strategies.

facebook

20k+
Followers

Instagram

7k+
Followers

twitter

1k+
Followers

LinkedIn

1k+
Followers

OUR TOP CONTENT



“BOLETÍN EMPRESARIAL: ESTIMULO CRIOLLO”

The “Boletín Empresarial” is a series of posts used to research and explain in simple terms the business aid the Government was offering in response to the pandemic. With a total of 24,419 people reached, 26,970 impressions, and 2,659 organic interactions, the first post managed to impact, educate and mobilize the business community so that they could request help on time. Likewise, the guide created by the Puerto Rico Fiscal Agency and Financial Advisory Authority (AAFAF) and shared by us had a total of 786 downloads by our community.



“PICA ALANTE CON COLMENA66”

“Pica Alante con Colmena66” is a short 6-video series to promote economic incentives and federal aid the government offers to businesses. The series is available free and on-demand on our [website](#), [YouTube](#) channel and [Facebook](#) page, already garnering over 7,500 views.



“MOTÍVATE A EMPENDER”

Event with the Municipality of San Juan for women entrepreneurs to learn about existing resources and success stories.



INFO SESSION “ACÉRCATE AL GRANT”

This session lead by Jahannie Torres with Andreica Maldonado, Director of the Research Grant program and Dr. Juan Figueroa of the SBIR/STTR Federal Grants program guided and clarified doubts about the “Acércate al Grant” program for applicants.

COLMENA66 IS AN AWARD-WINNING PROGRAM

SBIR: GROWTH ACCELERATOR FUND COMPETITION 2021



In collaboration with Parallel18, we won the SBA Growth Accelerator Fund Competition and received \$50,000 for the efforts of Parallel18 offering entrepreneurs from all over the world access to high-quality business training, networks, and funding to drive their global scalability.

ECOSYSTEM BUILDING LEADERSHIP PROJECT LED BY INBIA AND FUNDED BY KAUFFMAN FOUNDATION

Ecosystem Building Leadership Project led by InBIA and funded by Kauffman Foundation Building Leadership Project together with the leadership of Denisse Rodríguez, our executive director. This collaborative initiative aims to advance the field of ecosystem building.



"Como miembro del grupo asesor, me honra tener la oportunidad de integrar a Puerto Rico en este proyecto que se propone transformar la manera en que las comunidades apoyamos a nuestros emprendedores de manera equitativa e inclusiva."

- Denisse Rodríguez,
Directora Ejecutiva,
Colmena66

"Photo quote: "As a member of the advisory board, it is an honor to have the opportunity to integrate Puerto Rico in this project (Ecosystem Building Leadership Project led by InBIA) that intends a transformation in the way communities support our entrepreneurs in an equitable and inclusive manner."

OUR INITIATIVES

RESOURCE PARTNER MEETUPS

Designed to foster collaborations, share resources among partners and strengthen relationships within the ecosystem, we convene our resource partners and other ecosystem stakeholders in our Network Meetups. These spaces allow us to outline challenges, develop initiatives, and work together to address areas of opportunity to better serve our entrepreneurs and continue to grow.

During the 2021-2022 fiscal year, we held 4 network meetups. For 2021, we shared entrepreneurial data and results from our 2020 Impact Report in July and in October we got together to celebrate the ecosystem's efforts to recover from the pandemic. In February of 2022 we kicked-off the new year giving partners the opportunity to share their new initiatives for the year. In March, we held a conversation with Dr. Dell Gines, Lead Community Development Advisor for the Federal Reserve Bank of Kansas City to speak about developing an inclusive entrepreneurship ecosystem in Puerto Rico.

In addition to these meetups, we support a community of practice with initiatives that foster peer learning and connections among practitioners. These initiatives include a biweekly newsletter to help facilitate knowledge sharing and online groups for the community to continue the conversations.

"Designed to foster collaborations, share resources among partners and strengthen relationships within the ecosystem, we convene our resource partners and other ecosystem stakeholders in our Network Meetups. These spaces allow us to outline challenges, develop initiatives, and work together to address areas of opportunity to better serve our entrepreneurs and continue to grow."



ACÉRCATE AL GRANT

Fideicomiso para Ciencia,
Tecnología e Investigación
de Puerto RicoColmena66
Tu Camino Empresarialparallel¹⁸

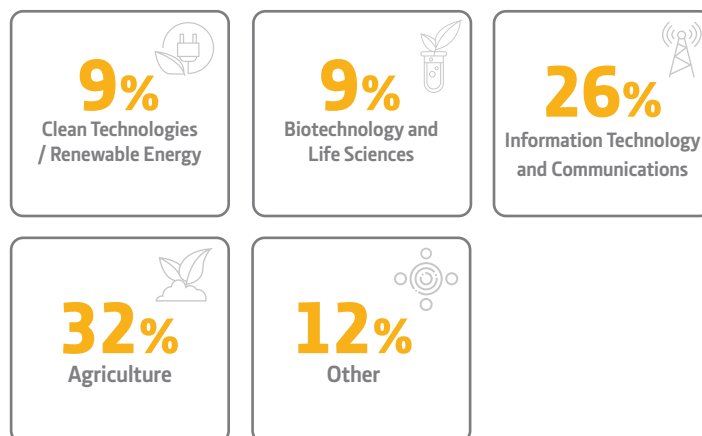
Funded through the SBA Growth Accelerator Fund Competition award, “Acércate al Grant” is a Phase 0 type program in which innovative small businesses receive expert technical assistance and support from grant writers to develop their SBIR/STTR proposals. These efforts aim to increase their success in accessing America’s largest seed fund.

In 2021, we launched the very first edition to serve 14 entrepreneurs in their proposal development process. Through this effort, 6 proposals were submitted. Huerto Rico, an agribusiness working with edible mushrooms, and Dr. Michelle Martínez, an expert in natural products research and experimental therapeutics from the Universidad Central del Caribe – School of Medicine, were awarded \$175,000 by the USDA to conduct research on a potential cancer treatment stemming from a mushroom species they identified.

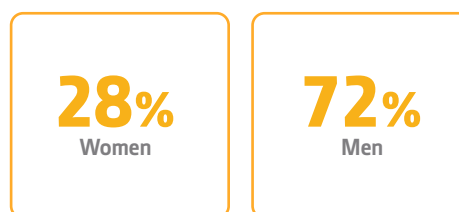
RESULTS | MARCH 2022



INDUSTRIES



GENDER



GRANTEE | HUERTO RICO



After the passing of Hurricane Maria in 2017, Sebastián Sagardía realized the critical lack of food security in Puerto Rico. After conducting market research and analysis, gourmet and medicinal mushrooms were listed as one of the best opportunities to tackle locally. Thus, he began to study and practice how to grow them. Founded in 2019, [Huerto Rico](#) helps people create unforgettable meals by sustainably producing delicious and nutritious ingredients.

As part of their work with mushrooms and with the help of collaborators, a native and endemic “Reishi” species was identified. They are collaborating with Dr. Michelle Martínez, an expert in natural products research and experimental therapeutics from the Universidad Central del Caribe - School of Medicine to research and test the viability and effectiveness of these new species against aggressive subtypes of breast cancer. Through the *Acércate al Grant* program from Colmena66, Parallel18 and Research Grants Programs, all part of the Puerto Rico Science, Technology and Research Trust, they were awarded for an SBIR proposal with USDA to receive R&D funding to complete their research and bring the product to market.

Image: Sebastián Sagardía, founder of Huerto Rico



BORICUA ENTREPRENEUR FEST 2021



Boricua Entrepreneur Fest is where the bees gather to learn, celebrate and connect to grow. This is Puerto Rico's largest, most inclusive, and equitable entrepreneurship education and celebration event. Designed for SMEs to celebrate, educate, and connect with the help they need to start, grow, create jobs, and strengthen the local economy. This event is for all audiences: entrepreneurs at all stages of business development, of all industries and sizes, the diaspora, the academic community, mentors, the public sector, financial institutions, investors, and business support organizations, among others. Through a complete digital experience, participants had access to business connections, one-on-one networking sessions, group mentoring spaces, and 6 educational "labs" where experienced entrepreneurs and resource partners share their knowledge on starting and growing a business.

806
Participants

3.3hrs
Connected On Average

99%
Of Participants

Would participate again in the Boricua Emprénde Fest

15hrs
Of Content

Available free and on-demand on our [YouTube channel](#)

"Boricua Entrepreneur Fest is where the bees gather to learn, celebrate and connect to grow".



BE Fest participants reviews

SPONSORS

TRIPLE-S

POPULAR

GRUPO FERRÉ RANGEL
SOCIAL INNOVATION

Jennifer Hopp
@Hopp.vc



XPAND



Xpand is a program developed by Colmena66 and Parallel18, funded by Fundación Banco Popular, with the purpose of supporting innovative startups with more than 3 years of operation, \$500k or more in annual revenue, and with the basic infrastructure to begin their expansion process. The program seeks to impact 15 innovative second-stage startups by developing a support community where founders can connect with mentors and peers, while facilitating access to strategic resources partners to increase their knowledge in raising capital and market intelligence.



Xpand Community members and representatives from Banco Popular during launch event at Popular Center in April.



Colmena66's team during launch event at Popular Center.

MEMBERS OF THE COMMUNITY

- | | | |
|-------------------|---------------------|---------------|
| ■ PProduce | ■ ED Digital | ■ Vaca Negra |
| ■ STRAIN | ■ Skootel | ■ Pawls |
| ■ BrainHi | ■ Libros 787 | ■ Join a Join |
| ■ Aseguratec | ■ Jetson | |
| ■ UVA! | ■ Gopanza | |
| ■ Threshold.world | ■ Brands of America | |
| ■ Tasty Smart | ■ Dame un Bite | |

ACHIEVEMENTS

The program launched in April 2022, with eight members in the community. **We are proud to share that within the first two months the community grew to seventeen members, reaching the desired number of startups we seek to impact in record time.** As part of our efforts to forge a support community for second-stage companies, our program is actively engaging business support organizations to coordinate events and facilitate access to resources.

ROUNDTABLES

Xpand is facilitating a safe space for mentors and founders to come together for a monthly group mentoring session, where members can share their obstacles, and work alongside mentors and peers to overcome these obstacles and continue to grow.

COMMUNITY NETWORKING EVENTS

Apart from organizing a monthly roundtable, Xpand has been organizing networking events to facilitate connections among founders of second-stage companies. Networking events are designed with the objective of strengthening ties among key players in the later stages of business development such as founders of innovative companies, experienced mentors, and business support organizations that specialize in growth. For the first two networking events, we collaborated with Endeavor Puerto Rico and Skootel, also members of the Xpand community.

WHAT WE WANT TO ACHIEVE MOVING FORWARD

Increase knowledge on exporting and fundraising, by facilitating access to resources and mentors for 15-20 second stage companies seeking to expand their markets, while creating a safe space for solution driven discussions to tackle common barriers among community members, such as:

SCALING

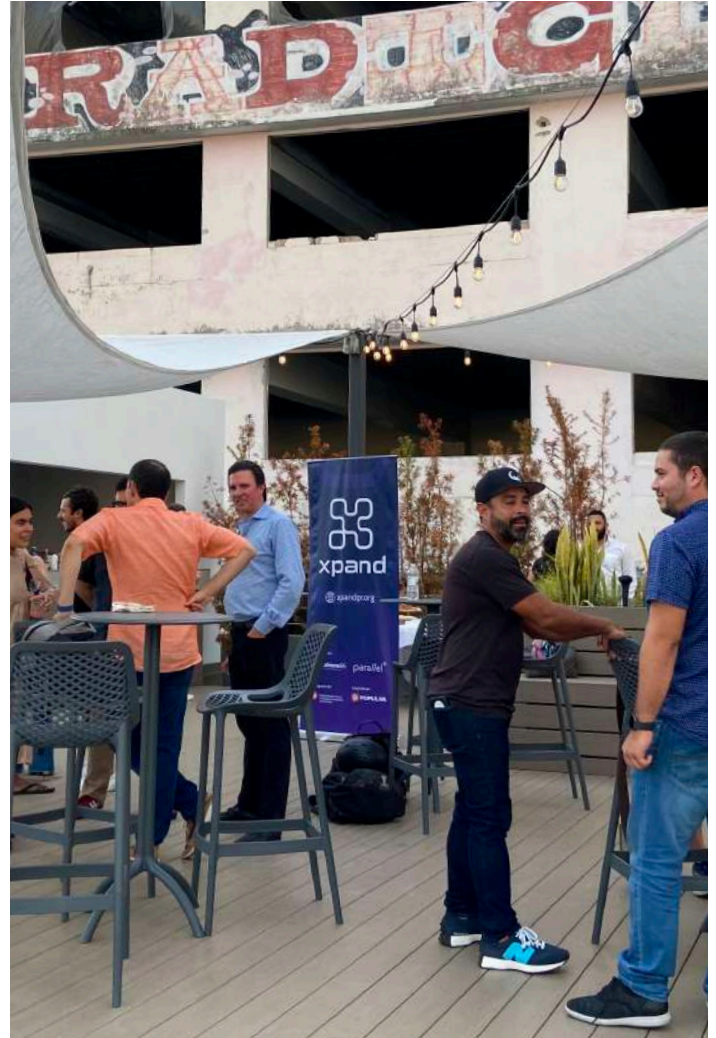
- Market Intelligence
- International Markets Guidance
- Export Strategy
- Product Development

INVESTMENT

- Pitch Deck
- Fundraising Strategy
- Relationship Management
- Investor Network



Panel with members of the Puerto Rico's District Export Council on exporting products and services during Xpand Networking Plus+ event in July.



Xpand Networking event with members of the Xpand Community and Endeavors Puerto Rico in June.

MEDIA MENTIONS





LUNCH & LEARN WITH THE SAN JUAN MUNICIPAL GOVERNMENT

This event series is a collaborative effort of the Municipality of San Juan and Colmena66 with the purpose of educating, fostering valuable connections and providing knowledge of support resources offered by the Municipality of San Juan, Colmena66 and the Business Support Network.

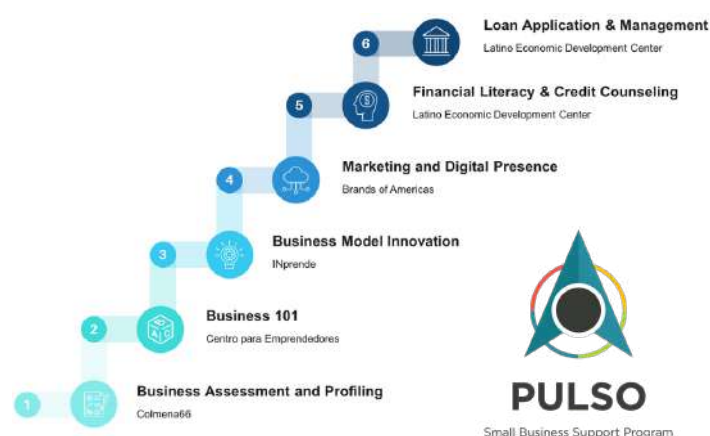
On March 24th, 2022, we held the first San Juan Lunch & Learn for women interested in starting their businesses in San Juan. We had the participation of Tommie Hernández from Sirena Patterns, Carla Bauzá from OGMA Language, and Lourimer Rodríguez from HR2GO, 3 businesswomen who shared their learnings and accomplishments to motivate and share tools with attendees.



First *San Juan Lunch & Learn* for women interested in starting their businesses in San Juan with Tommie Hernández, Carla Bauzá and Lourimer Rodríguez.

PULSO - SBA COMMUNITY NAVIGATORS PILOT PROGRAM WITH FOUNDATION FOR PUERTO RICO

Funded by the SBA's Community Navigator Pilot Program and led by Foundation for Puerto Rico, "Pulso" is an innovative multi-stage business development model, through which 150 eligible businesses will complete specific deliverables after each stage to continue to the following one. As they continue through the program businesses work on enhancing their business model, financial literacy, and capacity.



Pulso | Program Design

BUSINESS BASICS



ALBA ENID BURGOS ANAYA
Gerente de Operaciones, Fase 1



TOMMIE HERNÁNDEZ
Creative Director de
Tommie Hernández



LOURIMER RODRÍGUEZ
SHRM-CP | Founder, HR2GO



CARLA BAUZÁ LÓPEZ
President & CEO de OGMA
Language Studio, Inc.

Colmena66 develops and implements comprehensive marketing and outreach campaigns in close collaboration with the lead organization to reach a diverse base of entrepreneurs and established businesses in the program's impact area. Colmena66 is the first stage participants go through to complete their initial business assessment and receive a personalized action plan to help them prepare for the following stages.

For this program's first cohort, we held 4 outreach events including 2 digital events and 2 in person workshops: Position your Business with Marketing and Innovation and Financing and Access to Capital Opportunities for Small Business, all 10 municipalities in the project scope were reached through our campaigns, and 50 businesses completed their assessment and profiling.

For the second cohort we held a virtual info session and 2 outreach events, entrepreneurs in the region participated in the Boost your Agribusiness workshop in June. In this phase, 50 more entrepreneurs will be completing the multistage model to enhance their businesses.



Status Report of Puerto Rico's Entrepreneurial Community

IMPACT REPORT 2021

A program of:



Puerto Rico
Science, Technology
& Research Trust

Powered by:



STATUS REPORT OF PUERTO RICO'S ENTREPRENEURIAL COMMUNITY 2021

Aware of the need for entrepreneurship data in Puerto Rico, Colmena66 developed its annual surveys seeking to provide visibility about the state of the entrepreneurial community, business activity and the needs of stakeholders. The main purpose of these surveys is to help provide actionable data to stakeholders and decision-makers in entrepreneurial support organizations, government, and other institutions. We seek to aid in the discussions by providing valuable insights that can help Puerto Rico benchmark its progress and effectively communicate advancements in our community. With this data we can more accurately assess gaps in the community and direct resources to where they are needed most. Additionally, it can help continue promoting Puerto Rico as a top destination for business and investment both locally and internationally.

IN 2021 WE SURVEYED OUR MAIN AUDIENCES: ENTREPRENEURS AND RESOURCE PARTNERS, SEEKING TO ANSWER 4 GUIDING QUESTIONS:

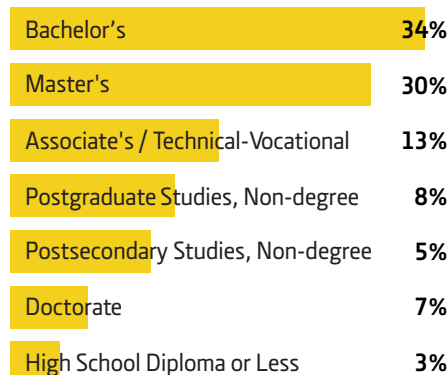
- Who is starting and growing businesses in Puerto Rico?
- What kinds of businesses do we have?
- What is the impact of these businesses?
- What do we have to work on as an ecosystem?

OUR FINDINGS

WHO IS STARTING AND GROWING BUSINESSES IN PUERTO RICO?

In our survey sample, women are the most represented group at 69%. Most of these respondents are between the ages of 25 and 54 years old (79%). They have a high level of education, with most participants completing bachelor's and master's degrees. In terms of race, 3/10 respondents identified as black or Afro-Caribbean while 5/10 respondents identified as white.

Education level



Black or Afro-Caribbean



White



No response / Other

These entrepreneurs are motivated to start a business mainly because they seek independence, to follow a passion or flexibility.

Motivation to start a business

Be my own boss, independent or have control of my future 34%

Follow a passion 30%

More flexibility that allows for work-life balance 13%

Create something to leave to future generations 8%

Take advantage of a business opportunity 5%



WHAT KINDS OF BUSINESSES DO WE HAVE?

The most represented industries in our sample were Retail, Agribusiness, Creative Industries, Education and Health. Most of these entrepreneurs mentioned that their businesses were in the earlier stages of development and have been generating sales for less than 3 years.

25%

Idea

32%

Existence | Infancy

27%

Early growth

10%

Expansion

5%

Maturity

1%

Decline



TIME GENERATING SALES

41%

No sales yet

24%

Under 1 year

19%

1-3 years

8%

4 to 10 years

8%

Over 10 years



Colmena66 convened the community and hosted a Network Meetup to share insights and stories about the report. Participants received an in depth presentation of the data and recommendations to continue improving the entrepreneurial ecosystem and two discussion panels.

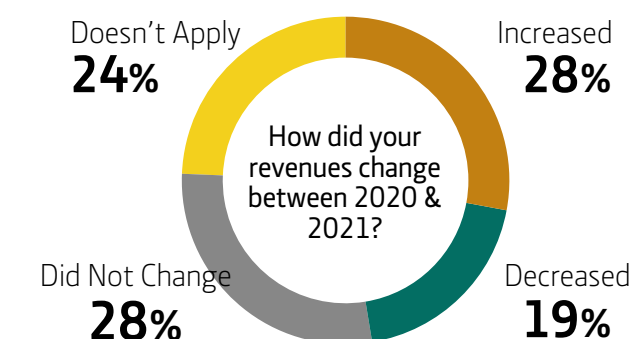
11% of our sample had not yet registered their business. Of these, 63% were already generating sales, indicating that approximately 7% of the sample was operating informally at the time of the survey.

WHAT IS THE IMPACT OF THESE BUSINESSES?

Most of these businesses generate under \$10,000 annually. When looking at how their revenue changed from 2020 to 2021, 28% say there was an increase while 19% say there was a decrease. In terms of employment, 63% are self-employed and 31% employ between 1 – 5 people.

Business annual revenue

\$0	29%
\$1 - \$10,000	39%
\$10,001 - \$50,000	19%
\$50,001 - \$100,000	7%
\$100,001 - \$250,000	4%
\$250,001 - \$500,000	0%
\$500,001 o más	2%



When it comes to these businesses' reach, 66% are not currently exporting. Another 24% of these is reaching the US market and only 10% are reaching international markets outside the US.

WHAT DO WE HAVE TO WORK ON AS AN ECOSYSTEM?

To answer this question, we looked at what respondents expressed were their most pressing needs across different aspects of their business development.

When asked about knowledge areas, entrepreneurs show a great lack in knowledge about incentives relating to exporting (13%). It is important to note how only 18% of businesses planning to enter the US market and 14% of those planning to enter international markets know about export incentives.

What topics do entrepreneurs know about?

Labor force incentives	37%
Conferences or markets in which to sell my product	35%
E-commerce platforms	35%
Client discovery process	34%
Email marketing platforms	30%
Young entrepreneur incentives	29%
Creative industry incentives	20%
Channels where to post job openings	20%
Renewable energy incentives	16%
Export Incentives	13%

These entrepreneurs expressed that the main obstacles they face in their business are business plan development, access to capital, and marketing & sales.

Obstacles to business development?

Business Plan Development	40%
Financing Availability	38%
Marketing & Sales	28%
Work Team (Talent)	15%
Administration (Accounting, Human Resources, etc)	15%



With access to capital, we learned that 83% of our sample are using Personal Savings to finance their business. Meanwhile, only 6% are accessing capital through Traditional Bank Loans.

Which financing alternatives have you used to fund your business?

Personal Savings	83%
Personal Credit Cards	20%
Friends & Family	20%
Personal Stimulus Checks	9%
PPP Loans	8%
Federal Loans	8%
Incubation Programs	7%
Investors	7%
Traditional Bank Loans	6%
Business Credit Cards	6%

“With access to capital, we learned that 83% of our sample are using Personal Savings to finance their business.”

Types of capital provided

SBA Loans	47%
Venture Capital	47%
Loans	41%
Grants	41%
Seed Capital	29%
Private Equity	24%
Angel Investment	18%

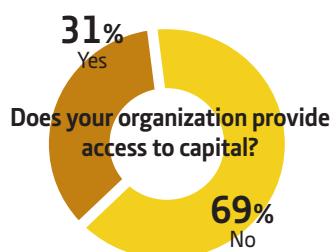
When we asked resource partners about the obstacles entrepreneurs face when accessing capital, they expressed that entrepreneurs are too early in their business lifecycle, they lack adequate projections, or they are missing their business plan.

Top 5 obstacles companies faced when accessing capital

Too Early In Business Lifecycle	71%
Lack of Adequate Projections	53%
Missing Business Plan	35%
Business has no revenue	29%
Accounting is not up to date	29%

LOOKING AT THE ACCESS TO CAPITAL GAP FROM THE LENS OF OUR RESOURCE PARTNERS WE LEARNED THAT:

31% of resource partners offer access to capital, mainly SBA Loans, Venture Capital, Traditional Loans and Grants.



Our Business Development Specialist, Gian Ortiz, presenting the data of the Status of the Entrepreneurial Community and recommendations to our Resource Partners.

ECOSYSTEM GAP ANALYSIS & RECOMMENDATIONS: FOSTERING AN ECONOMIC STRATEGY FOR PUERTO RICO THROUGH EQUITABLE AND INCLUSIVE ENTREPRENEUR- LED ECONOMIC DEVELOPMENT

Through our work as a system integrator and researching the entrepreneurship ecosystem's gaps, we have designed a set of recommendations for decision makers in state and federal government agencies, foundations, industry experts, entrepreneurs, entrepreneurship support organizations, academia, investors, and others that can build upon existing efforts to continue fostering the growth of Puerto Rico's entrepreneurial ecosystem.

UNDERSTAND THE ENTREPRENEURIAL ECOSYSTEM THROUGH DATA

- Understand the current state of the business community from the perspectives of entrepreneurs and support organizations to address gaps.
- Define common goals and metrics to monitor collective efforts of the business support network and facilitate decision-making.

REDUCE BARRIERS TO ENTREPRENEURSHIP

- Increase access to business education and access to capital.
- Streamline processes to start a business, sustain operations, and manage regulatory compliance.

PROMOTE A STRONG ENTREPRENEURIAL CULTURE

- Approach entrepreneurship as an economic development tool with significant implications on the lives of the people involved.
- Maintain standards that foster growth, quality, and collaboration.

Learn more about our annual survey and ecosystem recommendations by reading the complete [Status Report of Puerto Rico's Entrepreneurial Community 2021](#). You'll find deeper insights into the obstacles that entrepreneurs face and segmented information of interest groups such as women and Afro-Caribbeans.

LOOKING FORWARD



For the next fiscal year, as Colmena66 continues to strengthen and hone current initiatives, our plans are to meet our 3-year strategic goals in Business Development, related to funding and organizational development; Entrepreneurship Strategy, increasing service speed and maintaining a high level of satisfaction; Communications & Marketing, redesigning our website, increasing brand awareness and reaching more entrepreneurs outside of the San Juan Metropolitan area; Data, rethinking our data collection strategies with a more comprehensive approach and defining metrics to monitor the ecosystem's progress; and Innovation, increasing awareness and resources to support the Trust's SBIR/STTR related efforts.

We will be launching our annual survey for 2022 to continue developing our Status Report of Puerto Rico's Entrepreneurial Community while approaching decision makers and other important stakeholders to provide data and insights that can facilitate their work.

Boricua Empeñe Fest 2022 will be celebrated in-person at the Puerto Rico Convention Center on December 6, 2022, where we will have a knowledge packed agenda with expert speakers and panelists from the ecosystem to educate and foster connections for entrepreneurs of all stages and industries.

In collaboration with Foundation for Puerto Rico, Colmena66 will continue supporting the SBA Community Navigators Pilot Program to implement outreach campaigns and serve entrepreneurs in the first stage of the program. This effort will continue through the 1st quarter of 2023 with the goal of having served 150 participants.

With the high-growth community we have been able to engage through Xpand, we seek to continue supporting these entrepreneurs with scaling and investment. Ensuring they can address their challenges to grow their businesses.



SBIR/STTR Federal Grants





FEDERAL GRANTS SBIR/STTR

The Small Business Innovation Research (SBIR) and the Small Business Technology Transfer (STTR) are highly competitive, three-phase programs. These phases aim to encourage domestic small businesses to engage in Federal Research/Research and Development (R/R&D) with the potential for commercialization. From now on we will refer to both components of the program as just SBIR.

SBIR/STTR IN PUERTO RICO

The Trust is the coordinating entity of SBIR-related activities in Puerto Rico. It assists all qualified small businesses, researchers, and individuals in accessing these federal funding opportunities. The Trust's SBIR Program team consists of the Program Director and two experienced SBIR Grant Writing under contract who are subject matter and SBIR experts. The team works with the candidates sharing program intricacies, evaluating their ideas' level of innovation, and challenges to prove commercial viability, how to position its presentation to make the proposal competitive, and therefore increasing the probability of being funded.

PROGRAM SUPPORT & GOAL

The program enables small businesses to explore their technological potential and provides the incentive to profit from their commercialization. Including qualified small businesses in Puerto Rico's R&D arena stimulates high-tech innovation, and the Island increases entrepreneurial activities while meeting research and development needs. It supports the commercialization of innovative technologies-based concepts from entrepreneurs and researchers considering taking these concepts to the market. It also promotes scientific excellence and technological innovation through proposal development support and providing additional funds to enhance the reach of funds provided by the Federal SBIR program supporting critical American priorities to build a strong national economy. Our program's goals are to stimulate technological innovation while creating jobs and contributing to Puerto Rico's economy.

APPLICANTS & GRANTEES

The Trust's support includes the development and submission of proposals, but it does not include the writing of these proposals, instead, it leads the applicants through the process of positioning their innovation and writing a competitive proposal to the agencies that best fit their technologies. While developing the proposals, the applicants learn how to avoid programmatic and other mistakes that can get their proposals rejected without a review based on the technical and commercial merits. Competitive proposals consist of writing to the solicitation and the reviewers, not to themselves or other groups. Puerto Rico's successful SBIR Program grantees have created a mentor network where awardees share their experiences developing proposals and managing awards. It is expected that after this process, the applicants will have a good understanding and experience in developing competitive SBIR proposals.



THE THREE PHASES OF SBIR/STTR



*NATIONAL CANCER INSTITUTE (NCI)

OUR MISSION

To support scientific excellence, technological innovation, research and development, and commercialization of the results of these efforts with the support of federal agencies, their investments, and the Puerto Rico Science, Technology & Research support and, in critical priorities to build a strong Puerto Rico economy.

OUR 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, and the retention of locally educated talent.

PROGRAM DIRECTOR



Trust community.

[Dr. Juan E. Figueroa](#) is an Entrepreneurship Advisor and Associated Researcher and is responsible for working with researchers and innovators to transform the results of their research and ideas into product concepts with high potential for commercial success. He also works in the search for research and commercialization funds from private and government sources for the

SBIR FY22 PERFORMANCE & ACTIVITY REPORT

In FY22 we reviewed and evaluated over 50 entrepreneurs/companies/researchers with potential innovative concepts/technologies. Some of these inquiries turned into potential SBIR applications several months after the initial contact. Since most small businesses have limited resources, it is challenging for them to dedicate a percentage of their time to proposal preparation especially ones that require a high level of technical expertise, but lack writing experience/knowledge. Several other companies presented commercial concepts that were not a good fit for SBIR. In cases like these, we suggested and worked with them to identify technologies, innovations, and partners that could enhance their product concepts and get new revenue opportunities. The team periodically contacts these companies to gauge their level of interest and availability.

The SBIR team made follow-up calls to those companies that showed good ideas, and interest, and were receptive to exploring innovations. When possible, the Trust identified researchers and entrepreneurs as potential SBIR partners.

Table 1. shows four different FY22 awardees from four different agencies. It also shows two funded SBIR phases, Phase I and Phase II, award amounts, and matching funds for three of them; the fourth one, Resynth has not completed the requirements needed before entering the Matching Funds Agreement. Of the four agencies funding these companies, NASA awards have been the more challenging to win awards. Two of NASA's characteristics that now have made it difficult to get funded are, 1) the agency wants innovative technologies that address their program's needs, not just innovative technologies, 2) the small

Table 1. Trust SBIR Program FY22 Performance Data

PR-BASED SBIR/STTR AWARDEES	AGENCY	SBIR/STTR FUNDS	MATCHING FUNDS	CONTRIBUTION TO THE PUERTO RICO ECONOMY	PHASE
Ensemble Consultancy	NASA	\$749,995	\$200,000	\$949,995	Phase 2
LifeGene	NIH	\$399,998	\$100,000	\$499,998	Phase 1
Resynth ^[1]	NSF	\$255,172		\$255,172	Phase 1
Huerto Rico	USDA	\$175,000	\$100,000	\$275,000	Phase 1
		\$1,580,165	\$400,000	\$1,980,165	4

^[1] Resynth has not submitted all the required documentation therefore the agreement is not in place yet and no matching funds have been allocated.

market for the products they may buy making it not a good business proposition to those companies that want to create wealth. Some technologies have applications in the market, but the outcome of Phase II does not fit the open for the most part.

Table 1. shows two companies, Resynth and Huerto Rico whose positive results are directly related to working with the Trust team for an extended time. Resynth took 359 days from the first contact to an award. Huerto Rico was a collaboration between the company, Central Caribe University, and the Trust. The other two SBIR awardee companies, Ensemble Consultancy, and LifeGene, both Phase IIs, have Principal Investigators experienced in writing successful SBIR proposals and our support was not in positioning and writing the proposal but guiding them through the Matching Funds Agreement process. Both these companies started their earlier programs development on the mainland and decided Puerto Rico offers support to enhance their financial situations with matching funds as one of the incentives.

These four companies have brought a total of \$1,580,165 to Puerto Rico. With the \$400,000 allocated by the Trust from our Matching Funds Program the total contribution to the Puerto Rico economy becomes \$1,980,165.

The Trust has been successful in creating SBIR awareness in Puerto Rico and the mainland, but we need more companies. This awareness and past awardees have created a support network that complements our team's efforts. It can be said that the Matching Funds Program has been key in stimulating local companies and attracting companies to Puerto Rico to take advantage of the services and support the Trust provides.

FY	# AWARDS	SIZE AWARDS	MATHING FUNDS	CONTRIBUTION TO PUERTO RICO
FY16	1	\$150,000	\$ -	\$150,000
FY17	3	\$673,000	\$300,000	\$973,916
FY18	4	\$895,549	\$400,000	\$1,295,549
FY19	5	\$2,113,241	\$400,000	\$2,513,241
FY20	6	\$3,466,362	\$800,000	\$4,266,362
FY21	2	\$274,998	\$149,998	\$424,996
FY22	4	\$1,580,165	\$400,000	\$1,980,165
FY23	3	\$2,406,000	\$200,000	\$2,606,000
	28	\$11,560,231	\$2,649,998	\$14,210,229
Average Eight Years	3.5	\$1,445,029	\$331,250	\$1,776,279

Table 2. Performance in # Awards by FY Year Since FY15

Table 2 shows the number of awards, their size in dollars, matching funds, and the total contribution to the Puerto Rico economy. The bottom row shows the average of each item over the last eight fiscal years; 3.5 awards, \$1,445,029 award size, \$331,250 matching funds, and \$1,776,279 contribution to the economy.

We consider FY20 as the baseline numbers to measure improvement for our program: 1) six awards, 2) \$3,466,362 from awards, and 3) \$800,000 for matching funds. This translates to a total of \$4,266,362 per year for the Puerto Rico economy.



Figure 2. Performance in # Awards by Calendar Year Since 2015

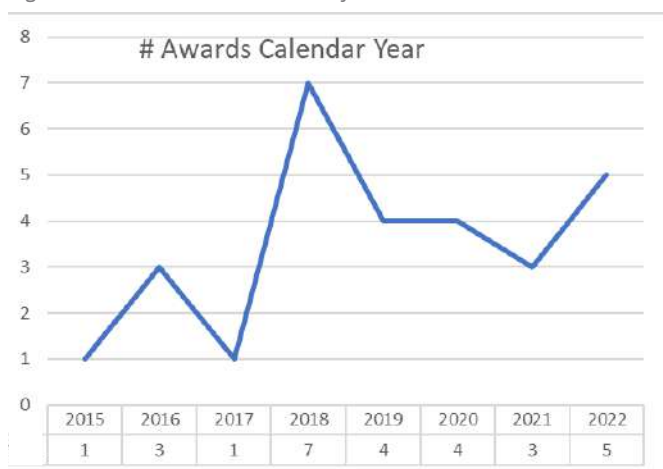
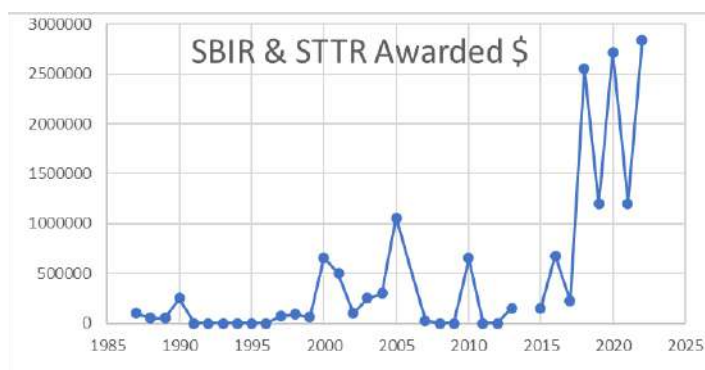


Figure 2 shows performance in a number of awards per CY from CY15 to CY22. The Trust started leading the SBIR program in Puerto Rico in CY15. The table shows the number of awards dropped in CY20 and CY21 due to the low number of applicants. The rise in the number of awards in CY21 and CY22 (positive slope) is a result of a higher level of outreach activities, particularly Colmena66's "Acércate Al Grant" program. We can conclude that increasing the outreach activities by adding direct contact with candidates through entrepreneurs and associations such as The Puerto Rico Manufacturers Association and Puerto Rico Medical Devices Association, to name a couple, will increase access to potential candidates and therefore more awards.

Figure 3. Performance in Awards \$ and number of awards by Fiscal Year Since FY16 to the current FY23 year.



Since the award for Protein Dynamic Solutions, Inc. (NSF) was granted on 12/31/2015 it falls into the FY16 group. It also shows we have not had a zero awards year as the previous data shows for 1984 to 2014 per figure 4.

Figure 4. Puerto Rico SBIR Performance CY1984 to CY2022

SBIR/STTR Awards Historical View

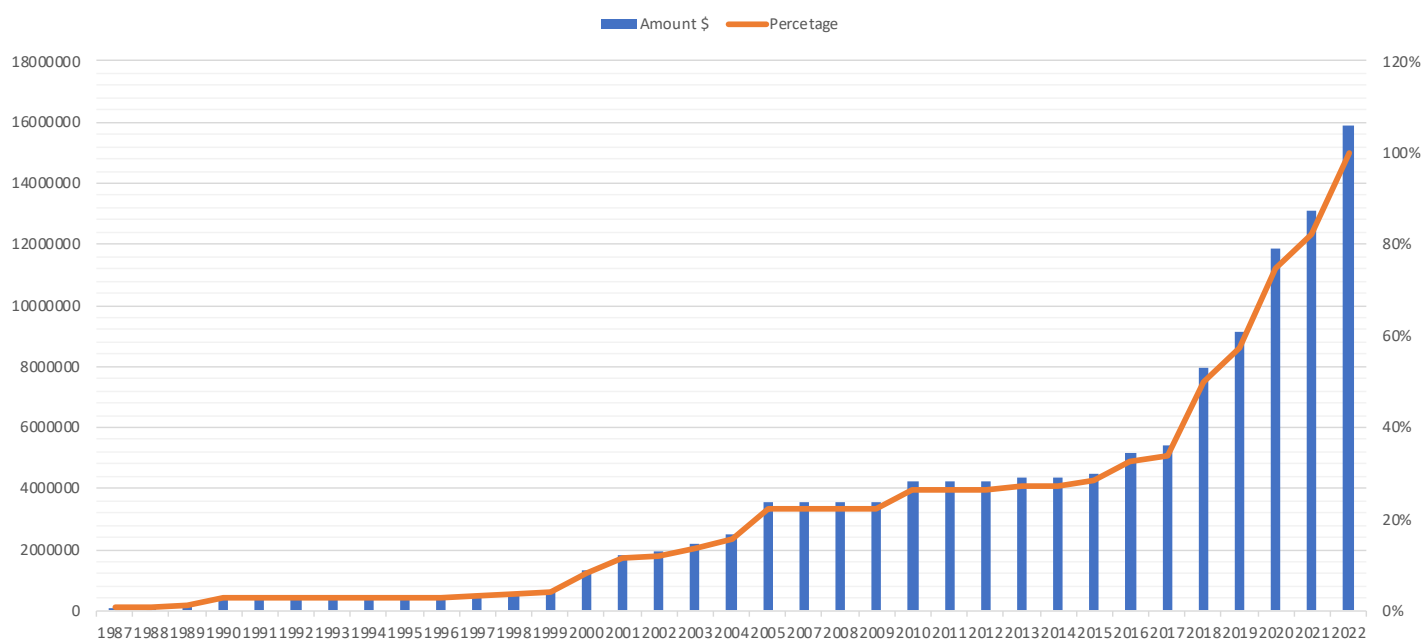


Figure 4 shows the absence of awards gaps in a calendar year after the Trust started leading this program for Puerto Rico. This was not the case for the 1984-2014 CY period. During this period Figure, 4 shows five instances where there were no SBIR awardees: 1996, 2006, 208-2009, 2011-2012, and 2014. This shows the importance of outreach and constant support for entrepreneurs, professors and small businesses by the Trust yields positive results.

ABOUT FY22 AWARDEES



ENSEMBLE CONSULTANCY – NASA

They are digital innovation orchestrators.

In the rapidly changing 21st century, organizations demand a flexible approach to problem-solving and getting work done. In collaboration with world-class partners, they deliver a global community of ideation, design, software, and hardware engineering talent to meet the unique and complex needs of US government agencies, non-profits, and enterprise clients.

Their process generates, cultivates, and delivers high-quality, cutting-edge ideas, design concepts, UX/UI assets, web applications, technical solutions, and hardware manufacturing prototypes. This enables Ensemble to offer custom solutions quickly, affordably, and with high reliability.



LIFEGENE BIOMARKS – NIH

LifeGene's precision methylation kits will revolutionize cervical cancer screening. They are developing a non-invasive, streamlined solution for cervical cancer screening and prevention that uses a panel of precision epigenetic markers to identify aggressive cervical disease before a colposcopy-driven biopsy is prescribed. The result? Better prevention, at a lower cost.

Mission

LifeGene BioMarks, Inc.'s mission is to inspire communities and individuals to take control of their health & well-being through innovative DNA tools for the early detection of cancer.

Vision

Better quality of life for everyone, everywhere.

- CervicalMethDx Test
- OralMethDx Test
- GastricMethDx Test



RESYNTH – NSF

Mission

To improve the quality and efficiency of hydrocarbon fuels while decreasing their overall carbon footprint as a result of their consumption.

Vision

We believe that growth and progress can move forward without compromising the environment, while sustainability technologies reach their full potential.



HUERTO RICO – USDA

Huerto Rico, LLC is an agricultural startup located in Puerto Rico that specializes in the production of gourmet mushrooms for the local restaurant market with a special emphasis on research and development of new mushroom products based on understudied, tropical mushroom species. Huerto Rico's fungi library holds dozens of mushroom strains, which are either native or endemic to the island, most of which have not been observed locally before or are completely new. The team has identified six native species of *Ganoderma* spp.; one of these species is a novel endemic strain, which has never been described in the literature. For this new species, the team has suggested the name *Ganoderma puertoricensis*, and the work is currently being prepared for publication and disclosure of this new species in collaboration with Dr. Robert Blanchette from the Department of Plant Pathology at the University of Minnesota.

This company worked with Caribbean Central University, a Trust technology transfer partner.



COOPERATION WITH OTHER PROGRAMS

The success the SBIR program has had so far would have not been possible without the contribution of key research and entrepreneurship programs at the Trust.

THE SBIR PROGRAM WORKS CLOSELY WITH THREE PROGRAMS

parallel¹⁸

P18 has been a strong supporter of the SBIR program by providing access to their clients and sharing those that may be close to an SBIR opportunity.

Breakdown of the referrals

- 21 documented referrals
- 9 documented active
- 12 dormant
- 4 awards
- Some companies do not mention their relationship with P18 and therefore are not registered in the database



Colmena66
Tu Camino Empresarial

This program has worked the closest and is a major contributor to the SBIR efforts. This is the list of activities they conduct with the SBIR program or for the SBIR program. This company worked with Caribbean Central University, a Trust technology transfer partner.

- Outreach to their community highlighting the SBIR program.
- Working with the SBIR team on workshops.
- Sharing news and opportunities with the SBIR program and their community.
- **27 registered referrals**
 - a. 14 from the “Acércate Al Grant” program
 - b. Many referrals contact Program Director directly without attributing to Colmena66.
 - c. Leading the SBIR Committee which consists of several organizations connected to SBIR:

■ UPUPR	■ Guayacán
■ UPRM	■ DDEC
■ SBA	■ Research Grants Program
■ SBTDC	■ Others



RESEARCH GRANTS
PROGRAM
FUNDS TO GROW

This program has access to researchers and professors with leading-edge science and technology efforts. There were 33 documented referrals throughout the life of the SBIR and Grants programs.

- Other contacts have not been documented due to being short phone calls due to the concepts/companies not compatible and/or ready for SBIR.
- Some of the contacts were known to the SBIR program but it was through the Grants program that their SBIR interests became known.
- Of those 33 seven proposals were submitted and 2 of those obtained awards; MBQPHARMA and Huerto Rico.

ANOTHER CHALLENGE

We are also facing a high mortality rate for Phase II applications due to non-competitive proposals and a lack of submissions. To start taking on this issue, we have partnered with Larta Institute, a non-profit organization that accelerates entrepreneurship and innovation. They will support the improvement of the commercialization plans through Phase I and Phase II. Our participating companies can present competitive proposals that besides having compelling innovations, also present compelling business plans for submission and execution.

The federal government supports these efforts with a program named Technical and Business Assistance (TABA) which provides up to ~\$6,500 for the Phase I candidates to cover Larta’s expenses in Phase I and up to ~\$50,000 for Phase II. These are federal funds and neither the applicants nor the Trust contributes to these efforts financially. We will engage with Larta and the applicant early on to ensure the applicants are using this program to their advantage.

To achieve significant growth in the number of proposals we need to bring companies from the mainland, mainly from the diaspora, as well as Latin America. We have started developing relationships with Mexico and Colombia. We have started the process to formalize the relationship with the University of Querétaro in Mexico and are close to securing the signature from Querétaro on an MOU document. A Colombian company registered in Puerto Rico for a few years is moving its operations and bringing R&D plus manufacturing to the island. This company has several products and concepts and will bring more companies from Colombia to work with our scientists and engineers to improve their products, and develop new ones while strengthening their research, all of which could lead to more SBIR submissions and awards for Puerto Rico.



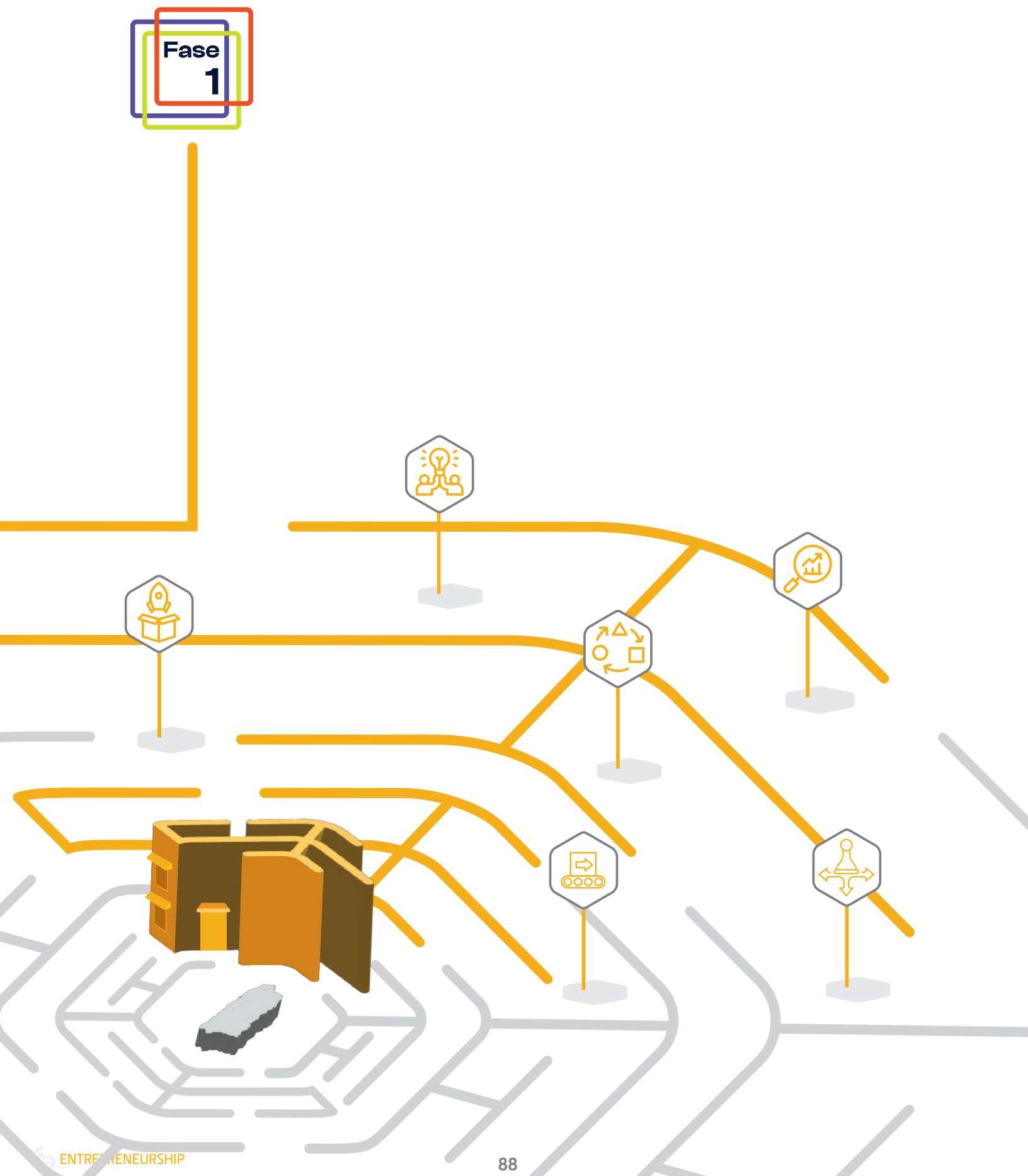
MOVING FORWARD

CURRENT GOALS:

- Increase the awards average higher than 3.5 awards per year
 1. By increasing the pipeline.
 2. Continuing the outreach activities
- Increase awareness of federal funds availability through SBIR (Press releases, Radio and TV interviews, Papers, Targeted groups presentations, among other efforts).
- Establish and support an enhanced version of program an enhanced version of the *Acércate Al Grant*.
- It brought 14 new candidates and two awards
- We need more candidates, starting with doubling this number
- Target specific organizations and people that could use federal funds to improve their product lines and/or start new products based on innovative technologies and applications.
- Direct engagement with these groups by Program Director and other collaborators
- Bring, from the diaspora, entrepreneurs, their companies, and their innovations to Puerto Rico
- Attract entrepreneurs, companies, and their innovation from the mainland to Puerto Rico
- Attract foreign companies, entrepreneurs, and their innovative technologies to Puerto Rico starting with those from LATAM.
- Close with the companies we are working on from Mexico and Colombia. Learn from the experience and target more companies from those countries and new ones. Established a process for future interactions.



SBIR/STTR
Federal Grants





FASE 1

Puerto Rico's long-term recovery and reconstruction efforts depend mostly on the capacity to build and strengthen our local economy for a better future. In order to succeed, it is essential to facilitate, encourage and drive the generation of new businesses and startups that can improve and support the island ecosystems and capabilities to support local communities, industry sectors, and businesses while enabling a sustainable growth towards a scaling, ample and strong economy. Within this framework and aspiration, Fase1 was designed and launched in November 2021 by the Trust. The program is also part of the Small Business Incubators and Accelerators Program and funded by the Community Development Block Grant for Disaster Recovery (CDBG-DR) program administered by the Puerto Rico Department of Housing.

Fase1 exists to address a latent need serving as a prequel to the pre18 program and helping new entrepreneurs in developing their ideas and minimum viable products (MVP) to enable their successful journey within the startups accelerator's ecosystem. With Fase1 the Trust's entrepreneurship pillar is now a complete and coordinated multi-phase path.



MISSION & VISION

Fase1 is a training and incubation program with the objective of making innovative entrepreneurship accessible to all potential entrepreneurs in Puerto Rico by catalyzing idea-stage ventures into successful startups.

PROGRAM DIRECTOR

[Bárbara I. Rivera Chinae](#)



Bárbara worked for more than 15 years at the PR Department of Economic Development and Commerce, where she supported small businesses in her role as a Federal Contracting consultant and Acting

Manager of the federal Procurement Technical Assistance Center program. She also worked in the establishment of the Puerto Rico IT Cluster and has led agricultural development projects such as Recuperación Agrícola and Re-Grow Puerto Rico.



PROGRAM DESCRIPTION

TWO-PHASE APPROACH



Lab

Fase1 Lab, an online entrepreneurship academy marks the kick-off of the program with 3 initial training modules, and 1 additional module launched later in June this year, for a total of 4 active modules.

Module #1 Entrepreneurship Fundamentals

Module #2 Idea Generation

Module #3 Market Validation

Module #4 Markets & Competitors

Our modules are composed of approximately 15 short videos divided by topics of interest and developed with content from technical resources, startups and mentors. More training modules will be developed and added on a regular basis.



Intensive

Fase1 Intensive, an idea-concept stage incubator where we help new entrepreneurs transform their ideas into minimum viable products and meet the requirements of pre-acceleration programs. The program format is a 12-week specialized curriculum where 50 projects are selected by an external Selection Committee.

Our goal is that the **top 30 projects** that complete the curriculum and a minimum viable product will be **fast tracked to the pre18** Selection Committee evaluation for the next call of applications.

PROGRAM BENEFITS

Fase1 Lab

- Accessible at all times
- 4 Modules available, more to be added
- 100% online
- 100% flexible
- Startup Executive assistance
- Free of charge
- Spanish content

Fase1 Intensive

- Occurs once a year
- 12-weeks curriculum on Saturdays
- Mentorship sessions
- Branding development
- Business registration assistance
- Pre18 fast track evaluation

FASE1 ACHIEVEMENTS

Commencing in 2020, the Trust identified an opportunity to continue strengthening the entrepreneurship pillar by submitting a proposal to the Notice of Funding Availability (NOFA) under the Small Business Incubators and Accelerators Program, to support the Puerto Rico's scalable and sustainable recovery. The Trust was selected as one of the subrecipients of this funding, along with other +30 non-profit organizations to run a new incubator or accelerator that could help increase the number of business generation on the island. The main purpose of creating Fase1 was filling an important gap in the existing entrepreneurial ecosystem to increase pipeline of startups and expand the type of solutions entrepreneurs propose and build resiliency in communities by maximizing talent potential.

During the last fiscal year, Fase1 was designed, developed and started with the Fase1 Lab launch in November 2021. Since then, the program began its outreach and marketing campaigns to promote program benefits and establish program awareness. Most of our efforts are aligned to the program key performance indicators defined by the SBIA program and included in the executed subrecipient agreement. These indicators define Fase1's main metrics.

TIMELINE



FASE1 LAB

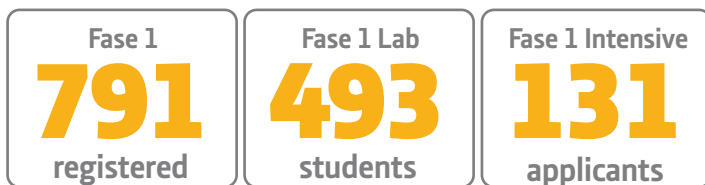
We have developed a total of 4 training modules for Fase1 Lab: Fundamentals of Entrepreneurship, Generating Ideas, Idea Validation and Market and Competitors. Currently, we have four hundred sixty-three (463) entrepreneurs taking our educational videos and one hundred sixty (160) have completed the first three (3) modules.

FASE1 INTENSIVE

We launched our first generation of our incubation program, Fase1 Intensive. Our program received one hundred thirty-one (131) applications. From the applications we received, fifty-one percent (51%) were from the metropolitan area and represent thirty-six (36) cities. In addition, sixty-three percent (63%) are women and fifty-eight percent (58%) are considered Low- and Moderate-Income persons. Lastly, fifty-two percent (52%) of the applicants consider themselves in the idea stage and need help developing their business.

Fase1 Intensive officially selected fifty (50) ideas to begin our incubation program. These participants represent seventeen (17) cities, sixty percent (60%) are women and fifty-four percent (54%) are considered LMI.

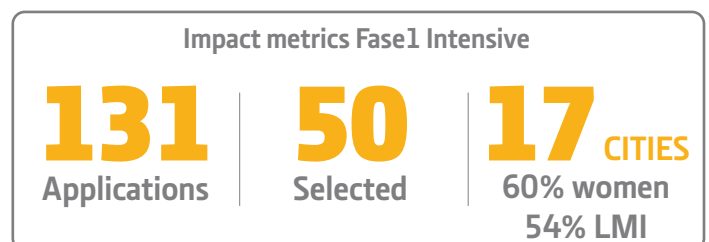
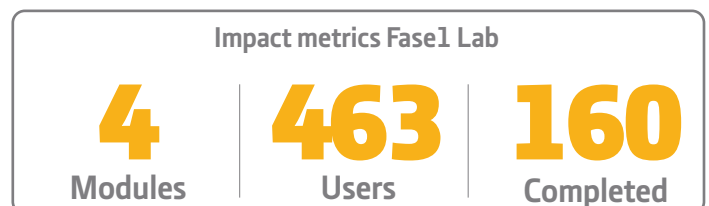
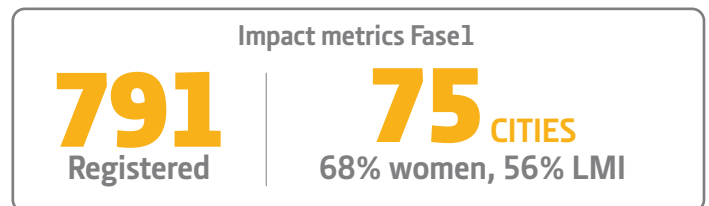
FASE1 IMPACT METRICS AND ACHIEVEMENTS



During our first year, our efforts to offer accessible education for entrepreneurs and incubate their ideas have generated impressive results. A total of seven hundred ninety-one (791) interested participants have registered for Fase1 and completed our online form to become part of the community. 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-two percent (42%), less than half were from the metropolitan area. In addition, sixty-eight percent (68%) of the registered participants are women and fifty-six percent (56%) are considered Low and Moderate Income (LMI) persons.

METRICS AS OF JULY 31ST, 2022





OUTREACH AND COLLABORATIONS

Fase1 has worked together and collaborated with numerous entities, programs and universities to create an impact in the entrepreneurial ecosystem. Engaging in outreach efforts and collaborations has given us an opportunity to present the benefits and opportunities offered by our program.

Some of the entities we have collaborated and outreached during last year include Enactus Puerto Rico, Fundación Sila M. Calderón, Departamento del Desarrollo y Comercio office of Ponce municipality (P11), and our sister programs Colmena66 and Parallel18, among many others. We collaborate by presenting our program, communicating the benefits of Fase1, and inviting Puerto Rican startup panels to share their experience and inspire future entrepreneurs.

Other outreach efforts and collaborations include schools and universities. We have received invitations from Universidad de Puerto Rico, Universidad Interamericana de Puerto Rico and Escuela Superior Pedro Falú Orellano de Río Grande to present our program as an opportunity for students to extend their knowledge of entrepreneurship. In addition, we have participated in the Ruta CDBG-DR tour across Puerto Rico, visiting different parts of the island to promote the accessibility of entrepreneurial education. These outreach efforts and collaborations have helped increase awareness of our program and impact more entrepreneurs.


Fase1 has also engaged in outreach efforts to promote the numerous opportunities offered by our program. We have created dynamic activities such as: “Fase1 Info Sessions”, “Fase1 Applicathon” and “Fase1 Lab Marathon”. The purpose of these activities is to inform entrepreneurs about our program, help participants fill out their applications for our incubator Intensive and create an interactive way to watch and learn with our educational videos related to entrepreneurial topics.

Mentoring is an essential part of the entrepreneurial journey and being part of an enriched networks of partners and startups that the Trust has built through its previous programs have permitted us to reach out to unique and diverse pool of mentors. We have engaged **over 30 local and international mentors** to enable mentoring sessions for the Intensive participants.

Some of our mentors are Grupo Guayacán, awakenR, ED Digital, Seriously Creative, Venture Well, Permisos SOS, Arco Financiero, Google for Startups, Microsoft Puerto Rico, CleverGap, Ferraiuoli, Outcome Project, Tasty, Healthy Woe, Maestros Express, Buzzy, Don Rifa, Mojito Dating, Spawn Camp, Produce and Raincoat. Also, we have engaged most of P18 Gen X startups such as e-Sponsor, Chanel, Wihom and Figuro, Abacrop, among others.



MEDIA MENTIONS



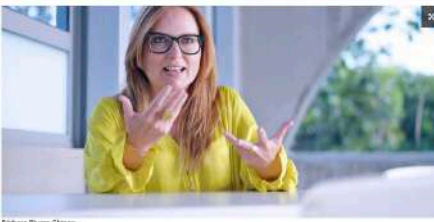
For everyone the an MCS health

Economy Financial District Retail Tourism & Transportation Biz Views

Fase1 launches 1st open call of its business incubation program

Contributor April 20, 2022

Share this



Dafne Rivero-Chaves

Fase1, the program propelled by the Puerto Rico Science, Technology, and Research Trust has launched the open call for Intensive, the second part of its business incubation program.

This second stage known as Fase1 Intensive, opens space so that up to 50 entrepreneurs that completed the Fase1 Lab modules can go through a 12-week curriculum and develop a "minimum viable product" or MVP of their business idea.

Participants will be granted space to build their prototype, support to register and incorporate their business, and develop their brands, among others, during the program. In addition, the hybrid curriculum will include group sessions and mentorship with local and international experts.

As part of the benefits, the best 30 ranked projects who complete the program with a successful MVP will get a direct pass to pre1B's next selection committee, organizers said.

Fase1 Intensive, which is also part of the Puerto Rico Department of Housing's Small Business



Economy Financial District Retail Tourism & Transportation Biz Views

Puerto Rico Science Trust launches free entrepreneurship incubator

Contributor November 17, 2021

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¿Para quién es Fase1?

The initiative seeks to expand access to business education on the island through short courses that cover the basics of entrepreneurship, such as its fundamentals, idea generation, and market validation.

The Puerto Rico Science, Technology, and Research Trust announced the launch of its new initiative, **Fase1**, a free virtual program that offers educational modules with short courses on entrepreneurship.

The program, which is also part of the Puerto Rico Housing Department's Small Business Incubators and Accelerators Program, under the CDBG-DR funding program, will be divided into two parts. The first, **Fase1 Lab**, will provide online modules and is designed for anyone who wants to learn how to develop a successful, innovative, and scalable business.

Once participants complete the modules, they will have the opportunity to apply to Fase1 Intensive. The second stage is a free incubation program that will occur once a year and will accept up to 50 entrepreneurs who completed Fase1 Lab to go through a 12-week curriculum where they will have the



HOME BANCA ECONOMÍA GOBIERNO TECNOLOGÍA

FASE1, UNA INCUBADORA GRATUITA

November 16, 2021 0

Por redacción de Sin Comillas

El Fideicomiso para Ciencia, Tecnología e Investigación de Puerto Rico (FCTIPR) anunció el lanzamiento de su nuevo programa, **Fase1**, un programa virtual gratuito que ofrece módulos educativos con cursos cortos sobre emprendimiento. La iniciativa busca ampliar el acceso a la educación empresarial.



El equipo de Fase1. (Foto suministrada)

El programa, que también forma parte del Programa de Incubadoras y Aceleradoras de Pequeñas Empresas del Departamento de la Vivienda de Puerto Rico, bajo el programa de fondos CDBG-DR, se dividirá en dos etapas. La primera, **Fase1 Lab**, proporcionará módulos en línea y está diseñada para que cualquier persona aprenda sobre cómo desarrollar una empresa exitosa, innovadora y escalable.

Una vez los participantes completan los módulos, tendrán la oportunidad de solicitar a Fase1 Intensive. Esta segunda etapa es un programa de incubación gratuito que ocurrirá una vez al año y que abre espacio para que hasta 50 emprendedores que hayan completado los



Locales Nacionales Opinión Negocios Salud Educación Entretenimiento

Breaking News



Insights

FCTIPR Lanza La Incubadora Gratuita Fase1

November 16, 2021

91 SHARES

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La iniciativa busca ampliar el acceso a la educación empresarial en la isla mediante cursos cortos que cubren los básicos del emprendimiento como sus fundamentos, generación de ideas y validación de mercado.

El Fideicomiso para Ciencia, Tecnología e Investigación de Puerto Rico (FCTIPR) anunció el lanzamiento de su nuevo programa, **Fase1**, un programa virtual gratuito que ofrece módulos educativos con cursos cortos sobre emprendimiento. Para participar en el programa, los interesados solo tienen que llenar el formulario en www.fase1.org.



HOME ENTRETENIMIENTO CONOCES A ESTILOS DE VIDA GOBIERNO

INSTAGRAM: MAGAZINE-PR EVENTOS SOCIALES

Fase1 lanza la primera convocatoria de su incubadora

2022-04-10 Comunicaciones Locales, Noticias 0



El programa ofrece un currículo estructurado para desarrollar la versión básica viable de su idea de negocio, libre de costo.

San Juan, Puerto Rico – Fase1, el programa impulsado por el Fideicomiso para Ciencia, Tecnología e Investigación de Puerto Rico (FCTIPR) anunció la convocatoria de Intensive, la segunda parte de su incubadora de negocios.

Esta segunda etapa conocida como Fase1 Intensive, abre espacio para que hasta 50 emprendedores que hayan completado los módulos de Fase1 Lab, puedan pasar por un currículo de 12 semanas y preparar la versión mínima viable de su idea de negocio. Los participantes recibirán un espacio para prototipar, apoyo con el registro e incorporación de su negocio.



HOME ENTRETENIMIENTO CONOCES A ESTILOS DE VIDA GOBIERNO

INSTAGRAM: MAGAZINE-PR EVENTOS SOCIALES

FCTIPR lanza la incubadora gratuita Fase1

2021-11-17 Comunicaciones Historia, Tecnología 0



La iniciativa busca ampliar el acceso a la educación empresarial en la isla mediante cursos cortos que cubren los básicos del emprendimiento como sus fundamentos, generación de ideas y validación de mercado.

San Juan, Puerto Rico – El Fideicomiso para Ciencia, Tecnología e Investigación de Puerto Rico (FCTIPR) anunció el lanzamiento de su nuevo programa, **Fase1**, un programa virtual gratuito que ofrece módulos educativos con cursos cortos sobre emprendimiento. Para participar en el programa, los interesados solo tienen que llenar el formulario en www.fase1.org.

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MEET OUR TEAM



Bárbara I. Rivera Chinaa

Program Director

Mariela J. Maldonado Martínez

Startup Executive

Bianca M. Corujo Agosto

Operations Manager



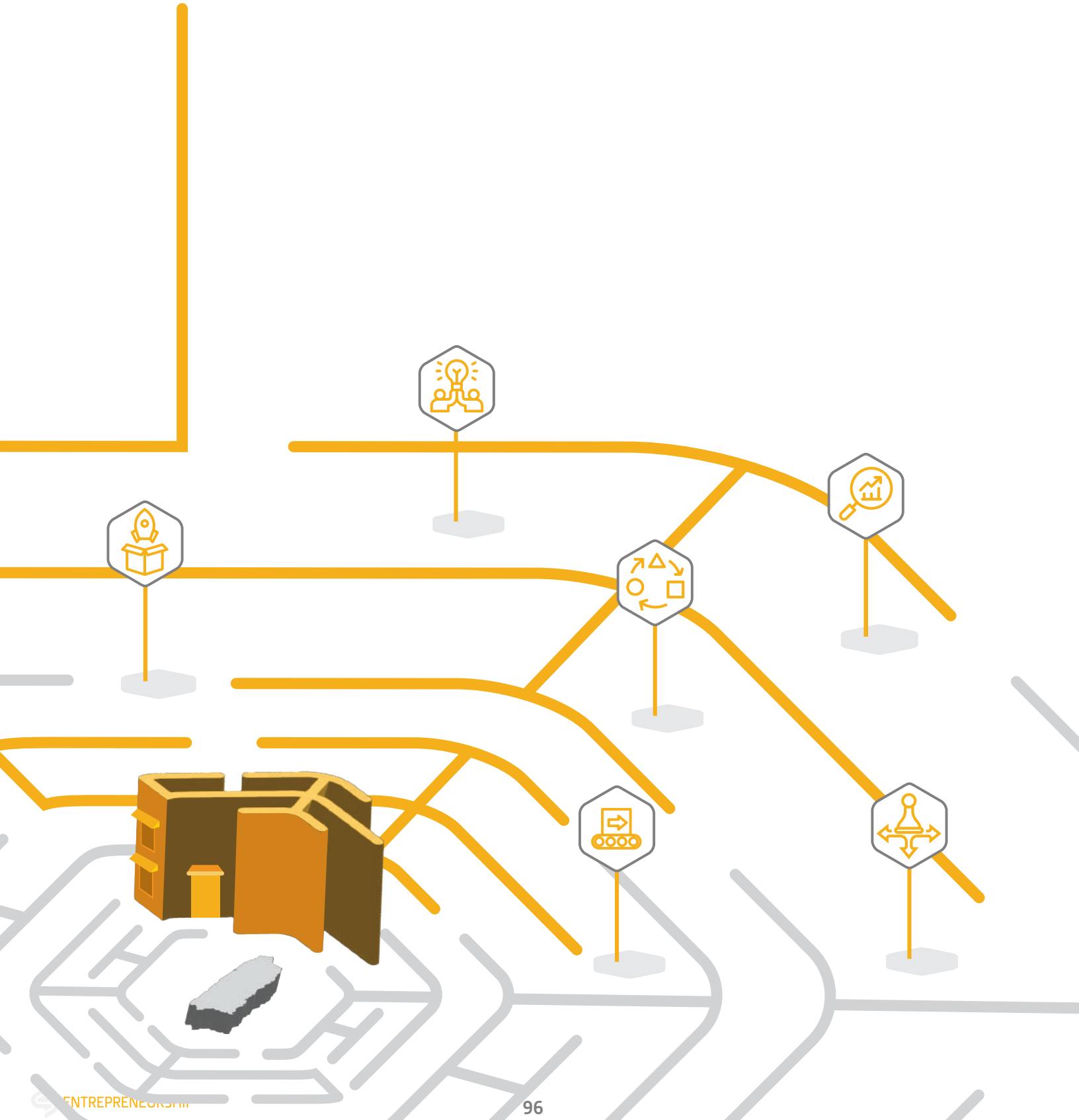
FUTURE PLANS

Fase1 just finished its first year and is just starting the second year of performance. To continue supporting new entrepreneurs and enable more startups generation here are key action items to focused on to achieve the program goals and contribute to a sustainable and continuous growth.

- Build and maintain collaborations with strategic partners and mentors to continue developing and enhancing our networks.
- Conduct outreach and promotion efforts in new communities integrating new groups. One goal of the program is to recruit and assist low-and-moderate income persons and other minority and disadvantaged groups.
- Create and develop more training modules for Fase1 online academy. Also, add modules for targeted industries.
- Continue adding resources to our Intensive incubator, strengthening collaborations and adding additional tools and support services to program participants.
- Gather information from participants on their improvement in business capacities and skills, and future needs to continue supporting their development.
- Revise and develop the program standard operating procedures and keep up with program compliance requirements.



parallel¹⁸



parallel¹⁸

PARALLEL 18

Parallel18 is a top-level, performance-driven international startup program with a social mission: to offer entrepreneurs from all over the world access to high-quality business training, funding, and networks to help them scale globally while positioning Puerto Rico as a unique hub for innovative businesses and technology.

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 that can reach the world. Our mission is to support founders' entrepreneurial journey while working to position Puerto Rico as a unique hub for innovative business and technology.

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.



OPERATIONS AND INVESTMENT DIRECTOR

[Dr. Héctor Jirau](#) holds a B.S. in Cell & Molecular Biology, an M.S. in Financial Engineering, and a Ph.D. in Biochemistry. He has been nominated and received numerous awards and received recognition from federal institutions, holding a fellowship grant from the National Institute

of Health (NIH) for four consecutive years. He has served as an Associate at Unity Growth Fund, a private equity firm, leading their investor relations efforts for their Pre-IPO marketplace. Afterward, he served as the investment fund manager and today as the Director of Operations and Investments of parallel18, a renowned global accelerator.





WE PROVIDE

- Training and mentorship (pre18 12 weeks; P18 20 weeks)
- A guide and methodology to track growth and structure the company for scalability.
- Equity-free funding (pre18 \$20K; P18 \$40k)
- Connections with potential customers in top companies
- Investment opportunities
- 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

During the six (6) years and nine completed (9) generations and one generation in the process of the P18 program, parallel18 has received more than nine thousand (9,000) applications from over seventy (70) countries, with two hundred forty-eight (248) companies graduated from the program, a very competitive acceptance rate of only five percent (5%). Among these, one hundred twelve (112) have Puerto Rican founders, and one hundred thirty-six (136) are foreign, a local representation of forty-five percent (45%) of the overall companies that have participated.

For pre18, during its four years (4) and four (4) generations, we have received one thousand seventy-nine (1,079) applications from Puerto Rican entrepreneurs with developed concepts or prototypes. These efforts (from Gen.1 and Gen. 4) led to fifty (50) Puerto Rican companies being selected for P18, demonstrating the quality and caliber of the pre18 pipeline that competed to join our international accelerator. In addition, the pre-acceleration program celebrated its fourth cohort, Gen. 4, from January through April 2021. Twenty-seven (27) startups completed the program in industries such as agrotech, e-commerce, SaaS, education, healthcare, biotechnology, real estate, and fintech, among others. Fifty percent (50%) of the cohort had female representation.

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

The latest data informs that the total overall revenue generated by P18 Gen. 9 companies was twenty-five million two hundred thousand dollars (U.S. \$25,200,000) for a total combined global revenue for the nine (9) cohorts of two hundred twelve million four hundred ninety-seven thousand twenty-eight dollars (the U.S. \$212,497,028).

For the first time in almost two (2) years, Gen. 9 was the first cohort to perform in a blended format. Thirty-five (35) startups were admitted to the program, of which twenty-two (22) were local (63%). The program distributed one million, four hundred thousand dollars in grants (the U.S. \$1,400,000).

9,000 applications from over
70 countries

45% local representation

27
startups

50%
female representation

\$25,200,000
total combined global revenue

22
local startup

\$1,400,000
Grant Distributed

GIVEBACK PROGRAM

GiveBack To foster the interest in 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. In addition, 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 empowerment mechanisms. Last year, both P18 Gen. 9 and pre18 Gen. 4 invested fourteen thousand four hundred eighty-two (14,482) in Giveback hours and impacted three thousand nine hundred ninety-four (3,994) college students from universities in Puerto Rico and the United States, such as the University of Puerto Rico, Universidad Interamericana (Metro and Ponce Campus), Universidad del Sagrado Corazón, Holberton School, Vanderbilt University, Cleveland State University, and Utah State University.

TALENT PROGRAM

TALENT On the other hand, last year, we revamped and launched our Talent Program, and we have great news to share. Our Talent database accepts highly motivated undergrad students, recent graduates, and freelancers from all disciplines who seek to contribute their talent to the island's ecosystem. In addition, 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 the ability to contact candidates directly through the App now, we can accommodate the companies' hiring needs by providing a friendly, easy-to-use talent pool with interested candidates. Since the relaunching of the App, we have received more than two hundred eighty-nine (289) new profiles; this represents a 78% increase. Furthermore, twenty-four (24) startups from both programs (Gen. 9 and Gen. 4) have used the App, fifty-nine (59) candidates were interviewed, and ten (10) were hired.

A SEAT AT THE TABLE



A Seat at The Table (ASAT) virtual session started as an initiative to address the issue of women constantly looking for a seat at the table, especially regarding raising investment.

Last year, we changed this narrative by offering the space for our entrepreneurs to express themselves about the barriers that underrepresented founders face daily, not only when raising investment but also when pitching their solutions. The sessions were broadcast through the YouTube and Facebook platforms of parallel18.





PRIDE MONTH - LGBTQI+ INCLUSION IN ENTREPRENEURSHIP: A CONVERSATION ON THE INCLUSION OF THE ENTREPRENEURIAL ECOSYSTEM.

This edition of the series ASAT highlighted four queer entrepreneurs that were part of our programs and led successful businesses. The conversation was moderated by Camille Padilla Dalmau, founder of the media platform '9 Millones' (pre18, Gen. 3), and the panelists were Ana María Hernández from Equal Love (pre18, Gen. 3), Omar Negrón from Remora (pre18, Gen. 3), and Daniel Bedolla from Excited (P18, Gen. 4). Each participant talked about the recent gaps of inequality that the LGBTQI+ community has in the entrepreneurial ecosystem and how they've surpassed these challenges.

WOMEN'S HERITAGE MONTH- FROM LATINAS TO LATINAS: A SPACE TO DISCUSS HOW WE CAN ACHIEVE GENDER EQUALITY IN DIFFERENT INDUSTRIES.

This edition of ASAT highlighted three Latina entrepreneurs from P18 Gen. 8 and Gen. 9. The conversation was moderated by Virgginia Buccioni-Hillman, co-founder of HireLlama (now Awana - P18, Gen. 9), and the panelists were Lorena Martínez, founder of Tale+ (pre18, Gen. 3 and P18, Gen. 9) and Jonelie Vélez, co-founder of Tasty Smart (P18, Gen. 8). In the virtual space, each participant talked, from their perspectives, about gender inequality in their fields and how to find the right tools to tackle the issue towards a more inclusive and equitable ecosystem.

A Seat at the Table PRESENTS

parallel¹⁸

LGBTQ+ Inclusion in Entrepreneurship
A conversation on inclusion of the entrepreneurial ecosystem.

MODERATOR

PANELISTS

Camille Padilla
9 Millones

Ana María Hernández
Equal Love

Omar Negrón
Remora

Daniel Bedolla
Excited

When?
Friday, June 25th

Time?
12:30pm
(AST/UTC-4)

Live on
YouTube
@parallel18



A Seat at the Table **HISPANIC HERITAGE MONTH EDITION**

De latinas para latinas
Herramientas para lograr la equidad

MODERADOR

PANELISTAS

Virgginia Buccioni-Hillman
COO & Co-Founder
of HireLlama

Lorena Martinez
Founder of TALE+

Jonelie Vélez
Founder of TastySmart

¿Cuándo?
viernes, 15 de octubre
12:00pm (AST/UTC-4)

¿Dónde?
YouTube
EN VIVO

OUR SUBPROGRAMS

parallel¹⁸ VENTURES

Parallel18 Ventures' portfolio continues to thrive. Our portfolio holds an 85% survival rate over the course of six years and our companies have raised a total of \$52,258,636 in private capital investments. Moreover, we are happy to report that we have made follow-on investments in two of our companies, Quiena Wealth Management and Vozy; three of our companies have been acquired: Booksloth, Listopro, and Transparent; and all our current Gen. X companies become part of our portfolio after Demo Day via a SAFE investment.

We have scaled our participation with parallel18 programs to build a more robust venture capital education and resources presence. During P18 Gen. 9, we began this process by offering four (4) office hours weekly and hosting an international investor week aside from our regular sessions during the curriculum.

For pre18 Gen. 4, we maintained our regular office hours and learning sessions and added active participation during the companies' pitch practices. Most recently, thanks to the learnings of Gen. 9 and pre18 Gen.4, we kicked off Gen. X with a full vertical of venture capital curriculum that holds weekly venture classes with industry experts, weekly reverse pitch sessions with investors in our network, and strategic one-on-one (1:1) meetings with the companies in our cohort.

We also actively participated as guests at investor events in the United States, such as South by Southwest and Miami Tech week. Moreover, we sent three of our pre18 companies to Black Tech Week, with the conference paying for their attendance tickets.

In terms of our Investor Network, we have continued to grow our investor network by building thoughtful relationships with funds that meet the criteria of our parallel18 alums. Simultaneously, we have strengthened our relationship with local players such as Endeavor, Unlock Capital, Invest Puerto Rico, and others to ensure the entire ecosystem is working toward getting our founders more access to funding.

parallel¹⁸ CONNECT

As a program, we know that business connections are the key to companies' growth. Parallel18 Connect supports our startups by introducing possible business opportunities to begin or continue their journey to scale outside their original markets. The mission of the sub-program was re-designed by introducing startups with local business connections and international ones to generate a global mindset and support our mission of helping our startups to scale globally. Once our Gen. 9 #p18ners joined the program, the Business Development team started looking for fits with our current and potential corporate partners.

On the other hand, with our Parallel18 Connect program, we've also focused on providing business connections to our startups while at the same time helping Puerto Rico's corporate ecosystem innovate. This program 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 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 P18 Gen. 9, 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:

- Paws and Plaza Provision - PAWLS products will sell all over Puerto Rico by partnering with Plaza Provision as their exclusive distributor. Pawls will have a product presence in all Walmart supermarket stores.



- Ensemble Space Labs and CelerOps - Both Gen. 9 alumni! Celerops will automate the process of downloading scientific data that Ensemble can use for their visualizations. The data comes from agencies such as NOAA, NASA, and Arecibo Radio Telescope.
- CelerOps and Liberty Mutual - With this partnership, Celerops will automate processes and 480 tables for Liberty Mutual Insurance.

On the other hand, with pre18 Gen. 4, we accomplished six (6) meetings with startups and our corporate partners. We oversee and follow up on these new relations and meetings, and hopefully, we will have agreements soon.

In terms of public ,412.00 in non-paid publicity advertising value with four million three hundred ninety-seven thousand two hundred fifty-two (4,397,252) impressions and one hundred thirty-five (135) appearances.

FUTURE PLANS

P18 GEN. X WILL BE ONE FOR THE BOOKS!

In May 2022, parallel18 opened calls for the P18 Gen. X, special edition. As we commemorate the success of our program over the years and have reached the tenth generation of P18, Gen. X consists of only the best ten startups that will receive a grant of USD \$125,000 for their business plus an investment of \$25,000 via a SAFE. The application round closed on April 25, and the program started on June 28, 2022.

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 to provide the most amazing opportunities for participants and alums. Therefore, at parallel18, we will:

- Increase and strengthen the investment opportunities in Puerto Rico with events and education to keep doing our part to fortify raising capital on the island.
- Focus on the community to strengthen relationships with partners, mentors, and investors to boost the startup's growth.
- And as always, KEEP PROMOTING INCLUSIVE ENTREPRENEURSHIP!

\$125,000

grants distributed

\$25,000

of investment via SAFE

We are halfway through the program, and the cohort comprises startups from Puerto Rico, Colombia, and Chile. Three of the startups come from pre18 Gen. 4, which demonstrates the maturity and preparation of the companies and that they already come with a more competitive and aggressive mindset for the market. In addition, for the first time in 28 months, this cohort will be working in an in-person format. We are expecting to have our DemoDay on November 9.

For pre18 Gen. 5, we plan to open a call for local startups on September 12. On this occasion, we will be increasing the grant to \$25,000. We aim for the local entrepreneurship ecosystem (organizations, universities, associations, and the diaspora) and hope to receive many applications. The pre-acceleration program will be starting in January 2023.

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, alums, 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. We look forward to expanding our efforts in unattended gaps in the ecosystem, developing tools to assist our alums, providing on-time connections and resources to our community, and delivering a world-class program to parallel18 founders.

The Parallel18 Ventures team continues to meet the Trust's strategic goals and institutional commitments from federal grants provided by CDFI and EDA it manages, including developing a proposal to launch a venture capital fund affiliated with the Trust that will closely collaborate with parallel18. This initiative, which would significantly increase the investing capacity of Parallel18 Ventures and provide the potential for return of investment for the Trust and external investors, is in the final stages of approval by the Board of Trustees of the organization.

More local capital and investments in startups with operational and commercial ties to Puerto Rico are needed to support our startup ecosystem further. Therefore, 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 bringing international access to capital for our founders and having an international presence.

With the success of parallel18 alum companies not in our portfolio as Produce, Raincoat, and Kiwi Credit, we are eager to increase our resources and support for parallel18 alum companies that are raising capital. To make this happen, we are enabling a parallel18 Venture App, where our network can see the live deals of our parallel18 alums community and invite them to visit their startup ecosystems. Concurrently, we plan to continue strengthening our current parallel18 Ventures Curriculum, focusing on enabling parallel18 alumni to be investment-ready.

To make sure Puerto Ricans are benefiting from the success of the Puerto Rico startup ecosystem, we will be launching an Investor Education Program curriculum covering best practices for engaging in startup ecosystems, doing due diligence, and managing deal flow. This will allow us to expand access to the capital by locals for locals.

Lastly, we hope to continue to host events such as our quarterly "How to Invest in Startups" Investor Reverse Pitch Sessions and strive to relaunch our annual venture summit this year, connecting our companies with our Investor Network.





MEET OUR TEAM



[Dr. Héctor Jirau](#)

Operations & Investment Director



[Lissa Barreras](#)

Marketing Manager



[Natasha Martínez](#)

Program Manager



[Sylmarie Díaz](#)

Startup Executive



[Mónica Rocafort](#)

Business Development Manager



[Yessica Fontáñez](#)

Startup Executive



[Adriana Pérez](#)

Investment Manager



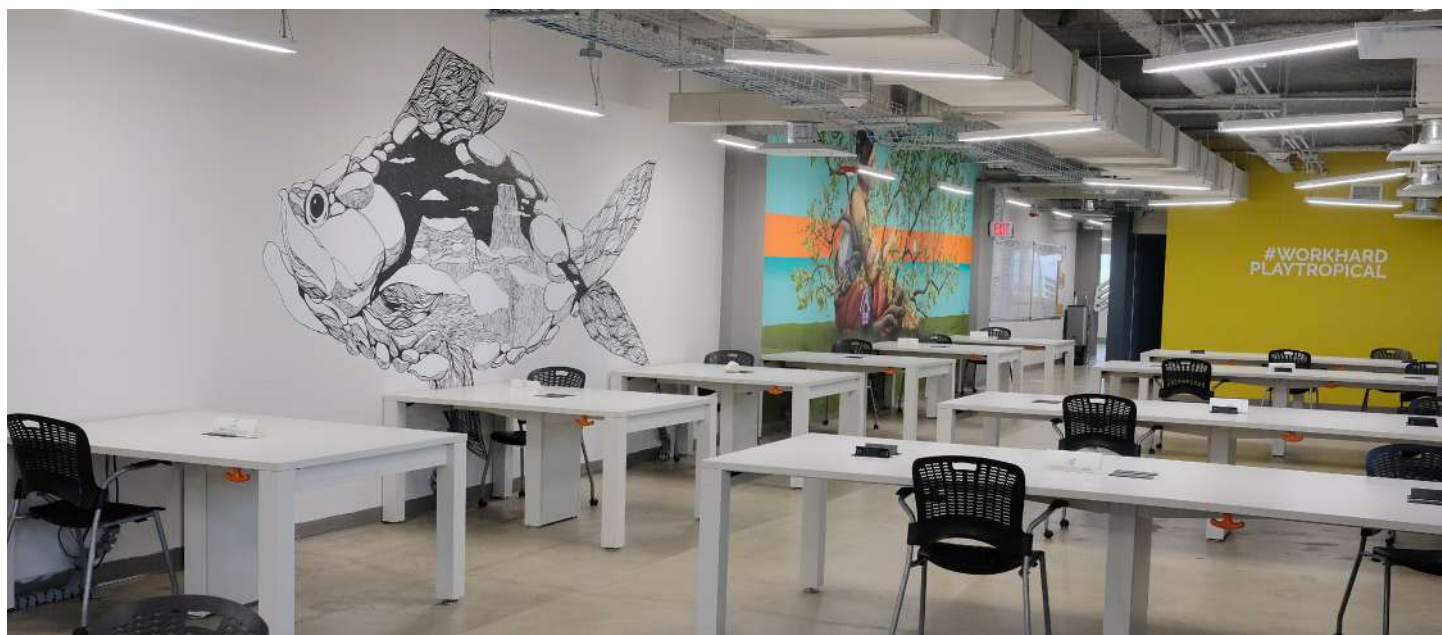
[Allison Martínez](#)

Communications Specialist



[Menchu Agüeros](#)

Outreach Manager

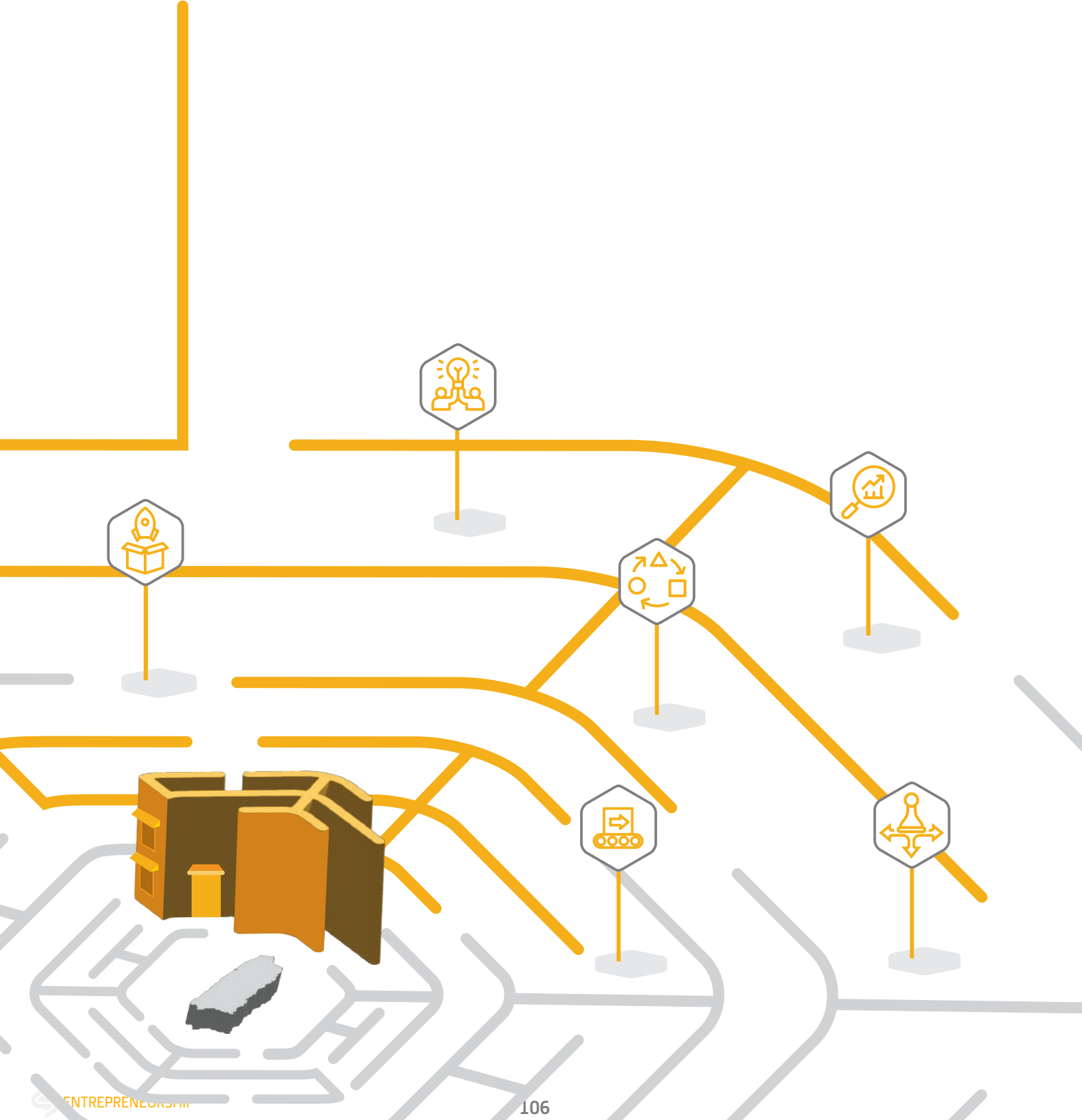


COLLABORATORS THIS PAST YEAR





Resiliency and Business Innovation





Resiliency and Business Innovation

RESILIENCY AND BUSINESS INNOVATION (RBI) PROJECT

MISSION & VISION

Our mission is to enhance Puerto Rico's economic development through nurturing technically innovative entrepreneurial efforts while also developing products encouraging disaster resiliency for Puerto Rico.

Our Vision is to provide guidance, business, and resiliency training, to businesses in Puerto Rico after Hurricane Maria. Providing mentoring through collaboration with partner institutions of higher education to conduct proof-of-concept research targeted to businesses, especially for technologically based businesses and entrepreneurs needing proof-of-concept for innovative technology development that are an outgrowth of that disaster.



MANAGER

Annie Mustafá

is an accomplished New Business Innovation Development Leader and Relationship Builder with over 20 years of professional experience in startup projects, international corporations, private sector, NGO's, academia, local and federal government in Puerto Rico and the United States. In June 2020. She was the recipient of the PR Chamber of Commerce President's Special Recognition Award, for serving as a bridge between the act 20/22/60 and the local business community as President of the Act 20/22/60 Special Committee of the PRCC.

DIRECTOR

Gilberto Guevara

has led multidisciplinary and multinational Emergency Response teams in the Americas and Asia. He has over 35 years of work experience in the humanitarian work as part of the American Red Cross and FEMA. He now leads efforts to create energy resiliency through innovations, technologies, and alternative energy sources and is a strategic advisor to the Caribbean Center for Rising Seas at the Trust. Mr. Guevara is an Entrepreneurship and International Business doctoral candidate at the Interamerican University of Puerto Rico with an MBA in International Commerce and Finance and a bachelor's degree in finance from the UPR-RP.



PROGRAM DESCRIPTION

The Resiliency and Business Innovation Program (RBI) was an EDA i6 grantee, part of the Puerto Rico Science, Technology and Research Trust (PRSTRT) that operated from April 2019 until April 31st, 2022. The main goal of the program was to build a model for the mainland and the world on how to create innovation and economic opportunities after local disasters. RBI successfully partnered with institutions of higher education, other nonprofit organizations, professionals, and business associations to promote the identification of innovative practices to foster and create a resilient business community in Puerto Rico. The research element in the model was augmented by the inclusion of the Grillo project, a Clinton Global Initiative (CGI) sponsored project, to improve the algorithms to provide early warning during earthquakes. The installation of the sensors that are connected to the scientists in Grillo in Mexico also provide the data collected to the Puerto Rico Seismic Network within the University of Puerto Rico, Mayagüez.

ACHIEVEMENTS

RBI provided business resiliency training; research support in documenting resiliency industry practices; development of proof-of-concept; educational support to businesses on resiliency methods and concepts; assistance in soliciting Small Business Innovation Research (SBIR) in our underserved community benefited 4,343 businesses and individuals mentored and nurtured by RBI.

RBI overcame many challenges, including earthquakes that disrupted all aspects of life in Puerto Rico, the global COVID pandemic that lingers and will be with us for the years to come. Challenges were the opportunity to document business resilience and teach and practice the kind of adaptability lessons learned and determination needed for communities, businesses, families, and individuals to face adversity, striving not only to survive but to thrive.

The implementation of project goals, objectives, and activities were accomplished, despite the need to adapt to an almost entirely virtual operation with face-to-face activities replaced by Zoom and other communication platforms for virtual meetings, and educational sessions in March 2020. The program goal to build the model was achieved by creating the business resilience courses to be delivered by the alliance of entrepreneurial mentors and practitioners organized by Banco Popular under

its flagship Strategic program of Echar Pa'Lante (EPL). EPL is a decade old program with significant achievements having trained and educated over 10,000 public school teachers and over 1,000 school administrators and university faculty on the modules prepared by different universities in the United States. RBI contracted with George Mason University (GMU) to develop the two resilience for businesses modules, delivered through EPL to the over 300 university professors and business practitioners in the cluster to become part of the ongoing training of the entrepreneurial mentors, trainers, and coaches in Puerto Rico. The complement to the model of innovation and resilience training, RBI issued Requests for Proposals (RFPs) to University of Puerto Rico business researchers to investigate issues pertinent to business resilience and sustainable practices in Puerto Rico.

4,200+ businesses and individuals mentored

Trained and educated over

10,000
public school teachers

1,000
School Administrators
and University Faculty

RBI community impact through collaboration, businesses support towards capacity building, training, research, and technical assistance is a cumulative total as businesses were provided support, referrals, and technical assistance in an ongoing basis.

Throughout the implementation of the project, RBI principals provided a living example of the importance of resiliency in an increasingly uncertain world. The practice of resiliency requires the ability to see and comprehend the root goals and objects while retaining the ability to adapt to a changing reality. Gilberto Guevara, Director of the provided direct guidance along with Annie Mustafá-Ramos as the RBI Project Manager, both responsible for the RBI compliance with the goals for implementation. Annie Mustafa-Ramos brought her strong networking contacts that ensured success of an innovative concept within the Puerto Rican Commonwealth business community.

Annie's networking helped create partnerships with key organizations that included the PR Chamber of Commerce, the PR Manufacturers Association, PR College of Engineer's and Surveyors, the PR IT Cluster, the Builders Association, Echar Pa'Lante and the Made in Puerto Rico Association, private university business schools, Foundation for Puerto Rico, PRIMEX, and key municipal economic development offices. RBI assisted in the creation of MOUs between the PR Manufacturers Associations and the PR Chamber of Commerce and t (PRSTRT).

The resiliency tools and lessons created by RBI will continue to benefit Puerto Rico as those materials remain available to businesses, organizations, public officials and the population-at-large through online resources and continued use by project partners. The benefits of the educational materials developed by RBI are not limited to Puerto Rico. Resiliency concepts apply globally as climate change, public health concerns, and political and social instability continue to affect the entire planet.

By helping build a resilient business model for Puerto Rican entrepreneurs, RBI was able to impact businesses, organizations, and university programs that supported businesses through collaboration, capacity building, mentoring, training, research, and technical assistance. RBI certified business coaches and mentors provided entrepreneurial programs with the tools to help businesses create their resiliency plans.

4,343+
PEOPLE AND BUSINESS
benefited from the products
and services offered by RBI

Over 4,343 people and businesses benefited from the products and services offered by RBI, including training, research, webinars, technical support, mentoring, and business concept reviews in the three years since the inception of the program. These are the results for RBI interventions in the last year of the program:

RBI IN NUMBERS	FY2021	TOTAL
Business concepts reviewed	2	50
Technical assistance meetings	30	151
# of entrepreneurs participating in the program	35	54
Total # of mentoring & coaching sessions	23	43
SBIR award applications supported	12	12
New product launch	2	2
Resiliency Training Sessions	46	406
Number of Research	6	6
Marketing Efforts	0	481
Other Participation Impact	911 ¹	17,659 ²

1 Online Training and Seminars with Seismic Network, and PRIMEX

2 Facebook views during the Global Entrepreneurship Week seminars offered November 2022 (as of 11/14/2022)



MILESTONES

I. BUILDING A RESILIENT BUSINESS COMMUNITY THROUGH EDUCATION

The RBI project was part PRSTRT's effort to lead the way in creating educational programs. A series of free educational materials, workshops, and seminars were a key tool from the very beginning and will still be available at the PRSTR website for free access by interested institutions, businesses and individuals.

BUILDING A RESILIENT BUSINESS COMMUNITY THROUGH EDUCATION & RESEARCH

One of the main purposes and strongest contributions RBI makes to Puerto Rico's economy and to general resiliency on the Island involves educational programs nurturing a solid and resilient business community. A major contribution was a comprehensive curriculum created in partnership with George Mason University. Participating Faculty were: Dr. Linton Wells II, Executive Advisor to the Center for Resilient and Sustainable Communities at GMU, founder of the TIDES Project and the global STAR-TIDES knowledge-sharing network; Dr. J.P. Auffret, Associate Director of the Center for Assurance Research and Engineering in the Volgenau School of Engineering, director, research partnerships in the School of Business at GMU, and previous director of the executive degree programs in the George Mason School of Business and Bob Rogers was #250 of Inc Magazine's Top 500 rankings of the fastest-growing privately held companies in the United States.

A certificate of participation and a Digital Badge from RBI, the Center for Resilient and Sustainable Communities (C-RASC) at GMU and Echar Pa'Lante, were issued to those that completed the courses and passed a short quiz.

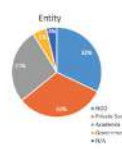
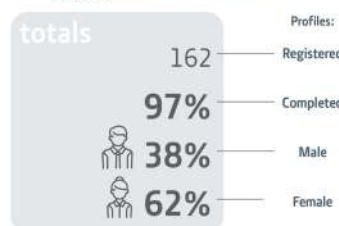


The two courses were created to provide education on resiliency methods and concepts as all of Puerto Rico continues to rebuild from natural disasters resulting in economic hardships and hurdles. One of the courses was aimed at Entrepreneur Support Practitioners and the other aimed at businesses.

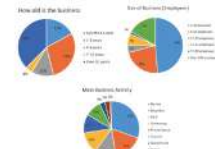
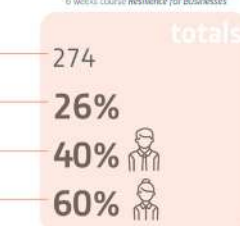
Digital materials were handed to participants and all the lessons were recorded and are available in the RBI website www.rbipr.org.



G2 Building a Resilient Business Community: A Course for Support Practitioners



G3 Creating a Resilience Plan: A Course for Businesses



June 15th - 17th, 2021

Transitions in the Post Covid 19 Environment"

The free, three-day online course was created with GMU and Echar Pa' Lante. Designed for senior business leaders and academics who provide direct support to business owners and operators, and entrepreneurs. Each session was two and a half hours long, in English, for a total of seven and a half hours. Participating Faculty were Dr. Linton Wells II, J.P. Auffret, and Bob Rogers. A total of 117 people registered, and about 50% of the people connected to the course. Twenty-four people completed the learning assessment and were awarded a certificate and a digital badge.

November 9th - 12th, 2021

"Global Entrepreneurship Week 2021"

Once again, RBI had a very important role in the Island at the Global Entrepreneurship Week and with six conferences, a network event with Uncommon Entrepreneurs and participation at the Be Fest. RBI coordinated more activities than any other organization for the second year in a row with a total of eight activities. All events were free of charge, and videos of the sessions are available at Fideicomiso TV and at Global Entrepreneurship Week 2021 - Puerto Rico Science, Technology & Research Trust (prsciencetrust.org).

Activities also included the participation of a prominent Canadian businesswoman, who shared the lessons she learned after selling her company, going bankrupt, acquiring it again and positioning it among "Canada's 50 Best Managed Private Companies". During the week, RBI also presented the collaboration stories behind the Puerto Rican company Dame un Bite as well as the success stories, including overcoming adversity, of Puerto Ricans Chris Agront, Founder of Jet Trades; and MichaelAngelo Angleró, Founder of Tradery Labs, in the Cryptocurrencies and Blockchain sector.

November 8th.

"Using Innovation to Build Nature Base Solutions for Communities and Businesses".

Offered by Moein Nodeh, the founder, CEO, and Rafael Rabassa III, Lead Architect at Biotonomy and Head of Business Development, where they spoke about technological and construction innovations in making eco-friendly housing.

November 8th.

"The New Seismic Faults of Puerto Rico".

With the participation of Ms. Christa Von Hillebrandt-Andrade, Manager of the Caribbean Office of the International Tsunami Information Center, Dr. Víctor Huérfano, Director of the PR Seismic Network and Dr. José Martínez Cruzado, Director of the Strong Movement Program, of the University of Puerto Rico, Mayagüez Campus, it was discussed the importance of updating the Seismic Map of Puerto Rico, the difficulty of updating it, its implications for infrastructure development and how it would affect the current building code.

November 9th.

"Cryptocurrencies and Blockchain: Reality or Science Fiction?"

Two young Puerto Ricans, Chris Agront, Founder of Jet Trades and Michael Angelo Angleró, Co-Founder of Tradery Labs, who have stood out in the field of cryptocurrencies and blockchain in Puerto Rico and worldwide.

November 10th.

"Partnering for Success: Alliances Between Boricua Entrepreneurs and Act 20/22/60 Investors"

The session involved a conversation with the founders and investors of the company Dame un Bite, José Ortiz and Dave Watkins, where they shared why many business partnerships fail and why Dame Un Bite has succeeded; the economic, pandemic, and cultural challenges, and their point of view on how to encourage more collaborative commercial investments on the Island.

November 10th.

"Embracing Change: Lessons Learned After Plans A, B and C Fail".

Last Resiliency training offered by George Mason University with participation of Margaret Hachey, recognized in the "10 of the Top 100 Women business owners in Canada." The workshop consisted of the presentation of studies and cases involving companies whose initial plans and strategies failed, some of which adapted to a changing business and technological environment to become successful, as well as the accounts of some companies that did not eventually become successful.



November 10th.

“Uncommon EntrePREneurs Networking Event”.

A presential Networking event held at Ostra Cosa, in Old San Juan, to meet like-minded entrepreneurs.

November 11th.

Participation of the RBI in the “Panal Expo”, in the **Boricua Emprende Fest**. Largest, most inclusive, and accessible annual business education and celebration event in Puerto Rico.

November 12th.

“My Resilience Backpack: Tools and Resources for a Business Resilience Plan”.

A workshop to help companies and non-profit entities create their resilience plan, using the “PRACTICAL MANUAL ON BUSINESS RESILIENCE”.

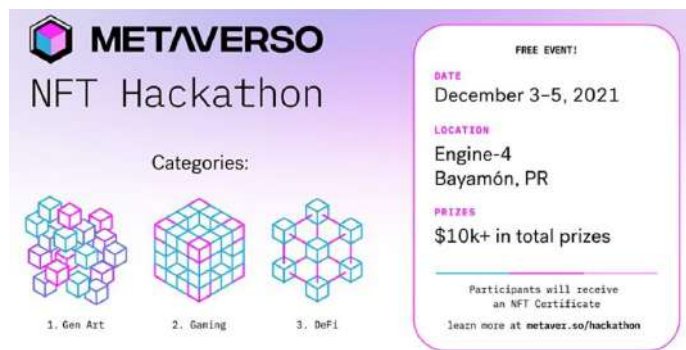
Almost 1,000 people participated in the different conferences during the week. Because events were recorded, they have been shared in different social media platforms. As of November 14th, the **“The New Seismic Faults of Puerto Rico”** has been viewed more than 17,000 times, an indication of the strong RBI’s impact over the last 2 years.

December 3rd

10th Blockchain Week, San Juan

RBI sponsored two activities that promoted innovation and technology during the celebration of the Blockchain Week in PR. The sponsorship included the RBI logo in marketing materials, use of banners, participation tickets and the opportunity to speak about the RBI. RBI promoted the transferability of these technologies for brick-and-mortar business.

The Metaverso Hackathon was held December 3rd - 5th. The activity promoted innovation in the areas of Technology and Innovation. It allowed attendees and participants of all ages to know and enter the world of blockchain technology and non-fungible tokens through workshops and a weekend hackathon. All projects are available at <https://metaverso-hackathon.devpost.com/project-gallery>



Limitless Crypto was held December 10th and was the premiere crypto currency conference for the crypto elite, world leaders, innovators, investors, influencers, funds, and market makers from all around the World. The event focused on Defi, NFTs, blockchain and decentralized apps. Around 200 people attended the conference. Speakers included finance experts, lawyers, and a former Puerto Rico Economic Development Secretary. As one of the sponsors, we were able to impact and support the new technology and innovation community that’s being develop in the Island.

RBI also supported AFAE (Alumni of the School of Business of the University of Puerto Rico, Rio Piedras campus) to host online conferences broadcasted from the Puerto Rico Science, Technology and Research Trust facilities on Disaster Recover and resiliency. These recordings are available in the Trust TV channel and the RBI web page.

GREEN ENERGY TRUST

Program Director, Gilberto Guevara, participated in the 5th Annual Solar Energy Storage Association (SESA) Summit in August.

FUNDERS

Program Manager Gilberto Guevara, participated in several meetings and conversations with potential funders, including Rockefeller and Belmont Group from Uruguay. The main topics of interest for these two funders are in energy resilience and climate change issues. The Belmont Group merges European funding agencies with US Government Agencies.

II. RESEARCH AND PROTOTYPING BUILDING A RESILIENT BUSINESS COMMUNITY

The program released additional request for proposal (RFP) for qualified researchers for proof-of-concept from the University of Puerto Rico. The releases of the findings was not completed due to the end of the RBI project and the absence of the No-Cost extension from EDA. The results are published in the RBI webpage, and they were shared with EP for further diffusion and sharing with the business clusters. The RFPs supported resilience-based research as an effort to support local researchers. RBI sponsored two rounds of RFPs during the life of the program. The selected awardees were supported with \$5,000 grants to support their research.

In a second RFP at the end of June 2021, the researcher projects focused on resilience and innovation in business.

The winning projects were:

Two projects were selected and awarded
\$6,000 each

1. “Building a Food Supply Chain Resilient Interconnected Model when Critical Infrastructure Collapses: a case study of highly vulnerable remote rural municipality in Puerto Rico” by Dr. Karen Orenco from the University of Puerto Rico.

2. “What Role for Puerto Rico in America’s Supply Chains? New Integrated Database Product for Resilient Manufacturing Supply Chains” by Dr. Maribel Aponte, also from the University of Puerto Rico.

GRILLO PR: AN EARTHQUAKE EARLY WARNING SYSTEM



REQUEST FOR PROPOSALS FOR RESEARCH PROJECTS

The Resiliency and Business Innovation (RBI) Project, an Economic Development Agency (EDA) project, under the Puerto Rico Science, Technology and Research Trust (PRSTR) is looking for local researchers interested in conducting research in one of the following thematic areas:

1. Best practices used by a company, an industry sector or a community that can serve as a model to replicate.
2. The development of products and/or concepts which improve resilience following a disaster and has the potential for commercialization.

Although projects may emphasize technology and science, research will also be considered on social, political, and economic factors that can enhance business resilience. Preference will be given to proof-of-concept research for goods or services that could support business development and commercialization with the ability to generate jobs.

Grant Amount: Funding is \$5,000 per project, for up to 8 grants, and can be allocated for materials, travel expenses, and salaries or stipends. THIS GRANT DOES NOT ALLOW

Deadline and Submission: All proposals must be completed by 5 p.m. on Saturday, February 29, 2020, using the following portal: <https://challenges.com/apply/2019>. Awards will be announced on March 15th, 2020. The research will be completed by June 15th, 2020.

Eligibility: This proposal is open to qualified researchers with a Master's or Ph.D. currently affiliated with a university or an organization in the private sector and current according to the criteria listed below.

Proposal Evaluation Process and Criteria

Applications will be reviewed by qualified external reviewers with experience in the private sector and current according to the criteria listed below.

Evaluation Criteria

1. Does the proposed research apply to potential products or services that enhance resilience to a disaster?
2. Is the research plan clear and achievable?



REQUEST FOR PROPOSALS FOR BUSINESS RESILIENCE RESEARCH PROJECTS

PROPOSAL DEADLINE
TUESDAY, JUNE 15TH, 2021

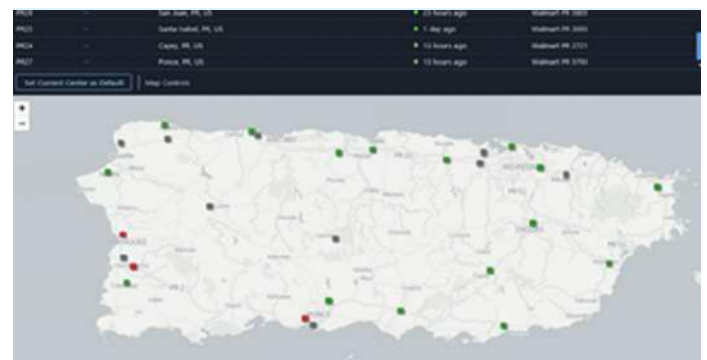
MAXIMUM GRANT
\$6,000 PER PROJECT

RBI partnered with GRILLO on a special project to create an Earthquake Early Warning System in the Caribbean using seismic sensors in key buildings around PR. Similar systems are already operating in Mexico and Chile. With the leadership of the RBI program, the project was sponsored and backed by IBM, the Clinton Global Foundation, and la Red Sísmica de PR. A special announcement about the project was given by President Bill Clinton at the virtual Clinton Global Foundation annual activity on May 25th, 2021.



Grillo PR post: “Puerto Rico was the first Caribbean island where earthquake sensors were installed with the Grillo PR project”

Ninety sensors are being installed in companies from diverse industries of different sizes around PR to gather the seismic information that is being stored in AWS cloud platform and available as Open Data for researchers and institutions of higher learning. One sensor per company is installed. The data is analyzed by Grillo Scientists in Mexico and the Puerto Rico Seismic Network to improve the algorithms that will produce a more accurate Early Warning System (EWS).





UPR - 3D Metal Printing

RBI is supporting the faculty of Industrial Engineering (ININ for its abbreviation in Spanish) from the UPR RUM to assess pending actions to achieve the setup of the DoD sponsored metal additive printing facility that can be used for printing medical devices, aerospace devices and other metal-based instruments. A meeting was sponsored with the Material Characterization Center (MCC) to explain the process to setup a ININ as a University Enterprise. This model of University Enterprise will ensure sustainability for the ININ operations. RBI continues to work with the UPR in the installation and commercialization of the additive printing facilities to service the business and industry while providing a specialized training for undergraduate and graduate students.

ENERGY RESILIENCY

Following Hurricanes Irma, Maria, and the seismic events, PRIMEX and other industry-based associations have ascertained that the biggest risk to the economic base in Puerto Rico is the energy resilience. Major metropolitan areas experience brown outs and black out daily where affected consumers are in double digits. RBI has maintained presence and ongoing communication with ACONER, SESA and other alternative energy industry associations and leaders to promote and support the availability of alternative energy resources for businesses. RBI promoted the engagement of Savings and Loan (S&L) Cooperatives to include financing products for PV installations. RBI supports the Director of Energy Policy from the Department of Economic Development and Commerce DDEC in rolling out grants and funding opportunities to outfit business with photovoltaic systems to ensure their energy resilience.

ENACTUS

The RBI sponsored the Enactus Challenge competition in June 2021, related to Business Resilience and Innovation. This was the first annual competition where students needed to create a project in response to a particular need. The Resiliency challenge consisted of a research/prototype conducted by a student and supervised by a professor from a local university and business mentor, who participated at one of the RBI resilience courses and had a Resilient Certificate from the RBI program. The winner, Ninoshka Arroyo Valentin from the University of Puerto Rico, Mayaguez Campus, created a Resilience Plan for the agro-company Ricura Caribeña, under the supervision of Dr. Patricia Valentin Castillo, she presented her project and received a \$5k award.

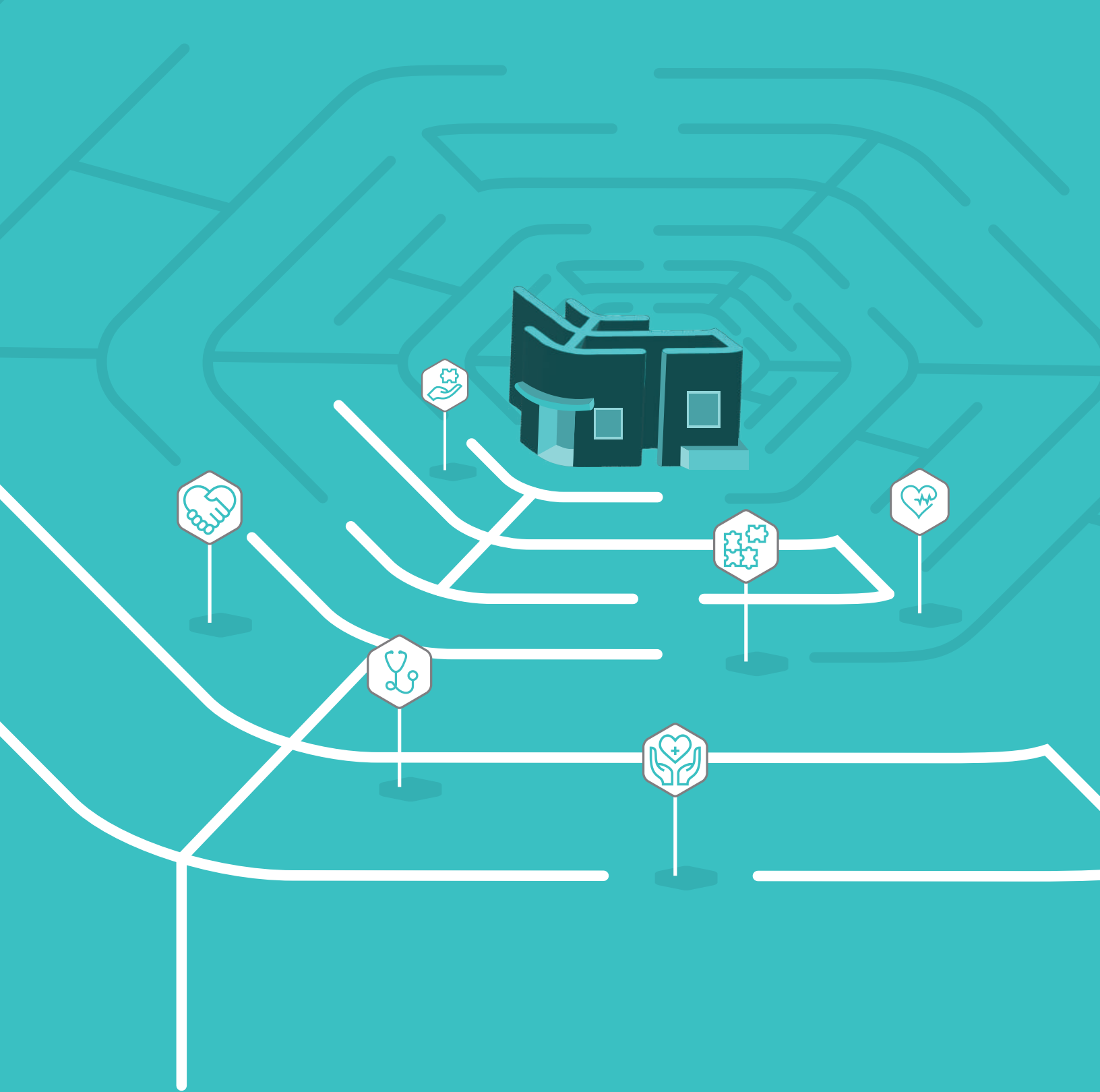
UPR- RESILIENCY LAW CENTER

The UPR Resiliency Law Center (UPR-RLC) is a two-part initiative to shift the balance of power to local communities in order to ensure that disaster recovery and rebuilding in Puerto Rico is effective, fair, and resilient while developing legal techniques to fight climate change, train students and lawyers in their use, providing counseling, legal representation and education to individuals and leaders of communities affected by natural disasters and climate change, and by establishing an advocacy center for disaster recovery and climate change awareness. RBI has leveraged the relationship to refer clients in need of the services of the UPR-RLC in achieving the goal of registering to compete with Federal Disaster Recovery contracts that are typically awarded to national vendors. The Center of the New Economy (CNE) findings are that less than 45 of all aid delivered in the aftermath of declared disaster is done by local businesses under contract by the Federal Agencies.

CLIENT SUCCESS STORIES

- **Assisted Solutions X LLC** in bringing a manufacturing line of masks to the Island in response to the pandemic. Ongoing assistance included guiding them through the process and working closely with PRIDCO, a customs broker firm, the PR Manufactures Association, and the new Task Force created to bring manufacturing to the Island.
- **Assisted Brands of Puerto Rico** to extend their business line due to the emergency and working closely with the Compañía de Comercio y Exportación and the US Department of Commerce.
- **Assisted Dame Un Bite** to expand their business line that includes food delivery and grocery/medicine pickup.
- **Linked business with special requests (Relmagina, True Value, Iglesia de Jesucristo El Caballero de la Cruz)** submitted to RBI by connecting them with government agencies, NGOs and other private entities due to the earthquake emergency.
- **Worked closely with Caguas City and Kevane Grant Thornton** to develop a video conference about resiliency for businesses due to the emergency.
- **Homelife, Inc** (parent company of Belt and Road, and X Solutions) focused on multiple efforts under a parent company. This included development of a harvester able to reap crops on steep terrain through the subsidiary through Homelife, Inc.
- **Footprint**, a nonprofit organization, developed a mobile solar power systems for use in response to national disasters. Although Footprint did not have a system at the time to send to earthquake affected areas, they were able to partner with Danosa, a for profit roofing company, that had a mobile solar system available. Danosa provided the equipment while Footprint provided technicians to deliver and operate the system. **RBI facilitated connection between Footprint and Danosa.** RBI had an established relationship with Danosa because of advisement concerning possible grant support for a new roofing product they are in the process of developing.
- **GRILLO** - As both a client and a collaborator, the Grillo Company's presence in Puerto Rico and throughout the Caribbean was enhanced as **RBI provided support for the implementation** of Grillo's earthquake early warning system.
- **NUVANT**, a manufacturer of equipment to rehabilitate hybrid car batteries, was aided by RBI. They have 52 worldwide repair shops, and RBI to establish an outlet for repair of hybrid car batteries at a local Toyota dealership.
- **CELEROPS** - implements Robotic Process Automation (RPA) and Artificial Intelligence (AI) to help accounting firms and financial institutions speed up their processes and reduce their costs. This automation reduces the time of a process from 8 hours to 20 minutes reducing costs to the businesses by 80%. The Program Manager connected CelerOps with the Colegio de Certified Public Accountants (CPAs) who hosted a seminar about AI to manage the accounting processes and services.
- **Met and collaborated with PRIMEX and SBA** to promote the resilience tools developed.
- **Participation in the Annual Convention of the Puerto Rico Builder's Association** to promote the RBI tools available and the services with SMEs and mentors.
- Lauren Casio from **ABARTIS Health provided consultation services** in the development of data base recovery protocols. These protocols would be included in the Resilient plans as a tool for local businesses. Lauren was referred by RBI to the School of Medicine where she presented a course on Clinical Informatics in Medicine.
- **Connected with the International Economic Development Council**, an EDA grantee, to assist in the delivery of training and service to Puerto Rico and USVI businesses given the COVID travel restrictions.

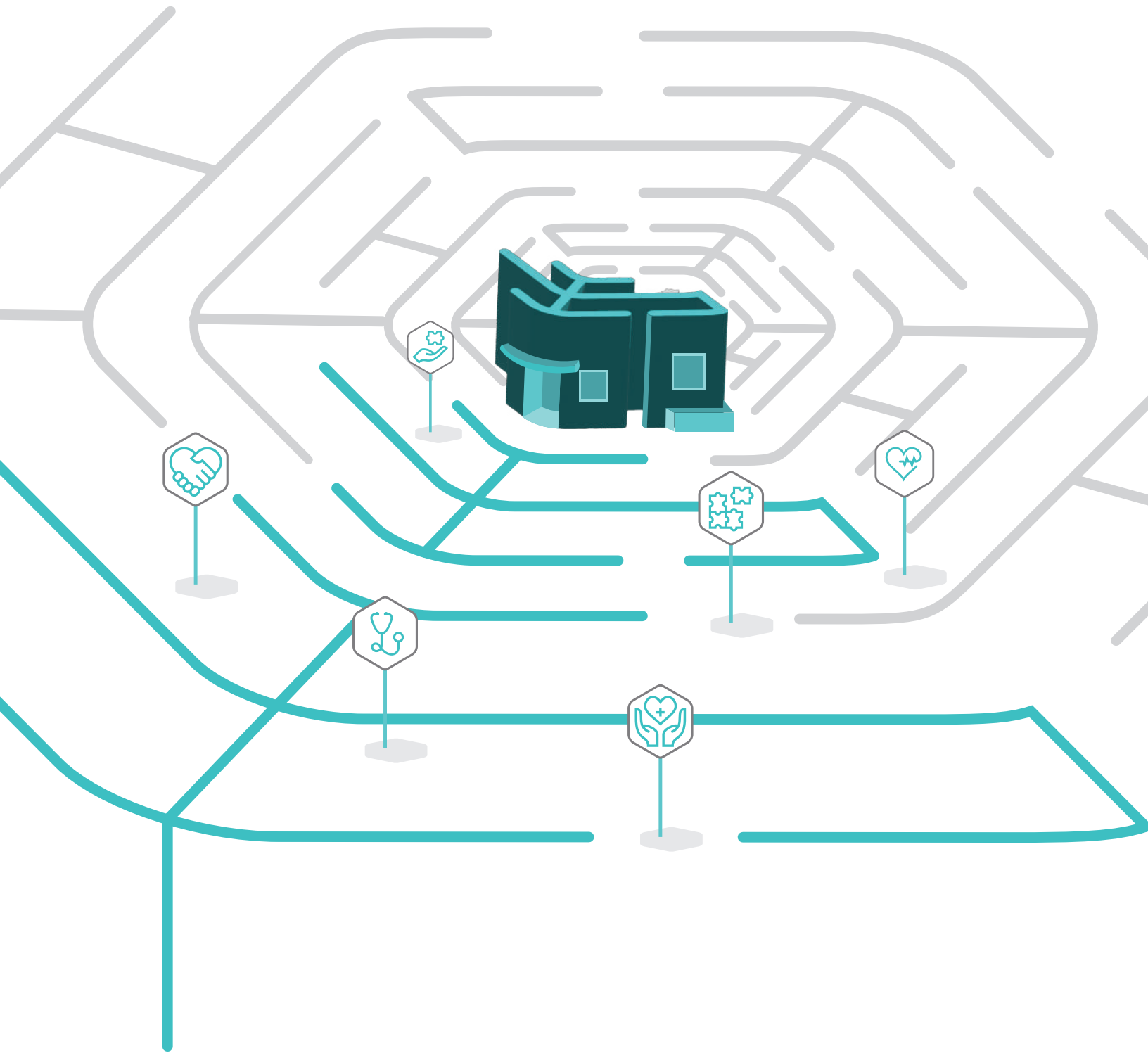




PUBLIC HEALTH

PUERTO RICO SCIENCE, TECHNOLOGY & RESEARCH TRUST





Puerto Rico
Public Health Trust



Puerto Rico Public Health Trust

PUERTO RICO PUBLIC HEALTH TRUST

The Puerto Rico Science, Technology and Research Trust (PRSTRT) was designated as a public health institute in 2017 and thereafter it established the Puerto Rico Public Health Trust (PRPHT), which is the fastest growing program due to its organizational identity of promoting public health in the communities of Puerto Rico, including in the diaspora. It has divisions targeted at community engagement, disaster management, telemedicine, telehealth, and innovation and research, among others. The purpose is to promote healthy lifestyles and improve the health and well-being of the population through health promotion and protection programs, as well as disease prevention.

From its inception, the PRPHT has been awarded over \$47 million dollars in grants from federal agencies, private foundations, and collaborations with the Puerto Rico Department of Health (PRDoH). This has supported the recruitment of over 65 employees and consultants that are essential components of the work we do.

In the last few years, the PRPHT has developed credibility among the public, academia and the media allowing us to educate the community through interventions in traditional, digital, and social media. Our rapid execution on core issues has strengthened the relationship with the PRDoH, while managing the COVID-19 pandemic and developing strategies for prolonged COVID, the new forefront of the pandemic. In addition, the PRPHT has collaborated with private organizations and companies such as Aula en la Montaña, COSSAO, Ciencia Puerto Rico, Mercy Corps, Banco Popular de Puerto Rico, Mc Donald's, among others; with the aim of prevention and education about the pandemic, minimizing rumors about the virus, and promoting vaccination.

PROGRAM DIRECTOR

[Marianyoly Ortiz Ortiz, Ph.D.](#)



Dr. Ortiz has a bachelor's degree in Microbiology from the University of Puerto Rico in Mayagüez and a Doctorate in Environmental Sciences and Microbiology from the University of Arizona. Besides her scientific training, she completed Dodd short courses as well as international vector control workshops.





Our efforts have resulted in the development of educational activity books that have reached over 20,000 children, distribution of more than 10,000 facemask and hand sanitizers and recruitment of over 2,000 participants for our research projects. Collaboration with the PRDoH also provided over 8,000 SARS-CoV-2 home tests to families with limited access and the establishment of the largest laboratory capacity in Puerto Rico to sequence the SARS-CoV-2 variants. Likewise, the pandemic showed the need to have technology to enable continued care under emergency situations, and therefore we have distributed over 150 telemedicine equipment and training to nursing homes and local clinics. We have provided training to over 10,000 physicians and addressed more than 150 technical assistance requests.

We have also created and hosted for its second year the Puerto Rico Public Health Summit, the largest public health event of the archipelago. This year we were honored to have a diverse group of local, national, and international speakers discussing the topic: Advancing Public Health in Puerto Rico: Creating Healthy Communities. More than 250 participated in the two-day summit.

The PRPHT continues to work with consultants, academics, scientists, epidemiologists, and public health experts to align the strategies of its divisions and services, considering current situations and anticipating future public health challenges to offer evidence-based solutions to the communities in Puerto Rico.

OUR MISSION

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

OUR VISION

Achieve sustainable health equity in Puerto Rican communities and improve their quality of life through innovation, collaboration, and community engagement.

IMPACT METRICS

20,000+

children reached with Achú books

10,000+

facemasks distributed

10,000

physicians trained

150

telemedicine
equipment distributed

10,000+

hand sanitizers distributed

PRIORITIES:

The Puerto Rico Public Health Trust (PRPHT) priorities are to improve public health capacity, systems, and outcomes by fostering innovation, leveraging resources, and building partnerships to improve the public's health.

- Emergency Preparedness, Recovery and Response
- Chronic Disease: diabetes, obesity, etc.
- Opioid Epidemic
- Climate Change
- Health Equity
- Mental Health

DIVISIONS AND ACCOMPLISHMENTS

COMMUNITY ENGAGEMENT

The Community Engagement Division works to promote the health of the communities of Puerto Rico, with the participation of the citizens it serves.

EDUCATION ACHÚ 4

In 2020, with the start of the pandemic, we launched the first edition of the activity book Achú, to educate children about the Covid-19 prevention measures. This year we launched the fourth edition of the book series, *Achú gets vaccinated*. It addresses the concerns of children and their parents regarding COVID-19 vaccination. The book gathered recommendations from the students of the Escuela Pública Alianza Cacica Yuíza, in Loíza. It exemplifies the children's vision and imagination and provides tools to understand the vaccination's stress. It provides parents the information to make an informed vaccination decision. The book was created by Arnaldo Cruz and the Community Engagement Team (CET). It launched on November 18, 2021, in print and digital formats. 20,000 copies have been delivered to communities, schools, and organizations in the Puerto Rican archipelago.

FACE MASKS

The CET has delivered protective equipment to communities in need. More than 10,000 face masks and hand sanitizer have been delivered. We have participated in health fairs and Coviveos of the PRDoH talking about COVID-19 prevention and promoting vaccination.

COMMUNITY MAPPINGS

As part of the Research Division grant, Rapid Acceleration of Diagnostics-Underserved Populations RADxUP project, the community engagement team with community leadership and PRSTRT IT support staff developed a community census tool that geolocates residences, churches, businesses, recreational facilities, and other organizations and structures in the community. Residents took a survey that included sociodemographic questions of family structure, health status, access to health services, perception of their community, COVID-19, and food

security. These questions were validated by community leaders and tailored to the communities. The goal is to leverage the community profile mapping technology to engage and empower residents to identify and advocate for changes that contribute to social and health disparities in their communities. The mapping of the Parcelas Suárez in Loíza is being done by community leaders and research assistants and 84.2% of the residences have been surveyed. The Parcelas Suárez's Community Mapping dashboard link is: <https://bit.ly/CensoComunitarioLoiza>

JÓVENES HACIENDO QUE LAS COSAS PASEN

This was a virtual summit for the youth, highlighting the importance of including them in the discussions and decisions in their communities. It brought together 30+ youth and teens from various community organizations around the archipelago. The discussion focused on: gender equity, education, economic development, environmental conservation, climate change, COVID 19 and vaccination.

COMUNIDADES HACIENDO QUE LAS COSAS PASEN VIRTUAL SUMMIT

On March 4, 2022, the CET in collaboration with *Naguabo Somos Todos* celebrated the second virtual Summit. Community leaders (115) from 35 municipalities throughout the archipelago participated in public health discussion about: community development, self-care, collective care, and environmental topics. Some discussions were on health, business, environment, agriculture, and education. The Summit provided a space where community leaders, organizations and others could connect and discuss the needs, challenges, and achievements of many ongoing community-based projects in Puerto Rico. Through this event we were able to:

- Highlight more than 60 projects and community leaders working on social determinants of health.
- Strengthen First Summit networks and create new connections, through a [map of contacts](#).
- Promote alliances of similar interest topics. The PRPHT will support these new networks.
- Develop five key groups: education, entrepreneurship, health, environment and agriculture.

The future goal is that the community leaders and groups developed in the Summit will become community-led think tanks with coordination and education tools provided by the CED to impact and create policy in Puerto Rico. See the map of contacts and summit's story map in the following link: <https://bit.ly/SegundaCumbreComunidad>



ACTIVANDO LA MONTAÑA

Peñuelas was started in January 2022 and is funded by the Angel Ramos Foundation. This project is a collaboration with Impacto Juventud and its program Aula en la Montaña. It groups 20 children and teenagers from El Rucio community in Peñuelas. We reinforced the components of wellness, physical activity, nutrition, agro-ecology, and photo-voice to the agenda of Aula en la Montaña. Seven (7) teenagers from the project are being trained as community health promoters in the areas of community organization, citizen participation and leadership. The goal is for these teenagers to become agents of change in their community by influencing their families and neighbors to make decisions that benefit their health.

COMMUNITY HEALTH WORKERS (CHW)

Our Community Health Workers (CHWs) Capacity Building Project leverages existing relationships, training resources and best practices, to strengthen the capacity of CHWs in Puerto Rico. This project was initially funded by Medtronic in 2019. In a collaboration with the PRDoH, the PRPHT received a grant from the Centers for Disease Control and Prevention (CDC) to expand and leverage the CHWs. Our main goals are to improve health outcomes, including mental health and Social Determinants of Health (SDoH), COVID-19 pandemic and strengthen emergency preparedness and response among underserved, medically fragile with chronic care management needs.

CHW INITIATIVES FUNDED BY MEDTRONIC

As part of our efforts during the third year, 19 CHWs in six municipalities (Cataño, Humacao, Juncos, Loiza, Ponce & Villalba) are facilitating access and connection for patients with their health care teams or social services coordinators at the participating health clinics. These CHWs will receive training to upgrade contents and attend to new needs identified in communities. **A total of 1,300 patients have been recruited and had at least one interaction with a CHW during the last quarter.** To evaluate these efforts, five focus groups and 15 interviews were conducted within the clinic's health-care teams to learn from their experiences with CHW teams work and integration.

These focus groups identified best practices and areas of improvement that will allow the development of a clear pathway for practice transformation as the clinics integrate CHW services. The project also aims to include program

participants in developing the community action plans. Information collected and shared by the communities will strengthen collaborations pursued with municipal offices and agencies responsible for addressing PRDoH conditions. A resource catalog is also under development and will help patients navigate within each municipality towards health and social services available in the region and receiving individual emergency plans for each participant recruited by the program.

CHW INITIATIVES FUNDED BY CDC

This project aims to expand the reach of CHWs to additional municipalities across the archipelago. **Eight (8) CHWs have been hired** encompassing the municipalities of Añasco, La-Jas, Ponce, Naguabo, Culebra and Utuado. A plan to hire 28 additional CHWs has been developed to ensure at least one CHW is deployed in all seven health regions in Puerto Rico. Through these CHWs we will be able to increase access and to strengthen capacity and skills for COVID-19 response and future emergency response needs. This is a collaboration with PRDoH community based organizations, community leaders and other agencies. **The CHWs have received more than 35 training courses about COVID-19, vaccinations, HIPAA, and other public health topics.** CHWs are implementing activities to reduce barriers to access in general.

DISSEMINATION AND PERSONNEL TRAINING

- **The Rumor Tracker** – community-based approach to address information gaps and misinformation on **#COVID-19** project carried out in collaboration with Mercy Corps, Ciencia en tus Manos, and CienciaPR was selected as one of the **World Health Organization (WHO)** 20 featured initiatives. https://cdn.who.int/case-studies-1/cs13_rumourtracking.pdf
- **PR Public Health Summit** – Our Rachel Millán Rodríguez, Gabriela A. Algarín Zayas in collaboration with Dr. Julieanne Miranda Bermúdez from the **Puerto Rico Vector Control Unit**, participated in a panel about the community pillar of the PRSTRT. Aida Judith from Taller Salud talked of being trained by the PRPHT as a Community Health Worker, and her collaboration in Taller Salud programs.
- **10 Skills for life** – In April we received a visit from Prof. Iván Chahín who trained the community team in 10 skills for life, a proposal of the WHO for community health workers.
- The **NNPHI Rising Star Award** was bestowed on **Ms. Gabriela Algarín Zayas** as a promising leader in the field of public health, who embodies the spirit of NNPHI's mission and vision.



"Comunidades haciendo que las cosas pasen" Virtual summit.



Enlace Comunitario



Enlace Comunitario in Loíza

IMPACT METRICS

25,000 COPIES

of the activity book Achú gets vaccinated have been distributed

8,000

SARS-COV-2 antigen home tests distributed across Puerto Rico

10,000

face masks & 10,000 hand sanitizers have been distributed in the communities

115

leaders from 35 municipalities joined "Comunidades haciendo que las cosas pasen" 2nd virtual summit.

1,300

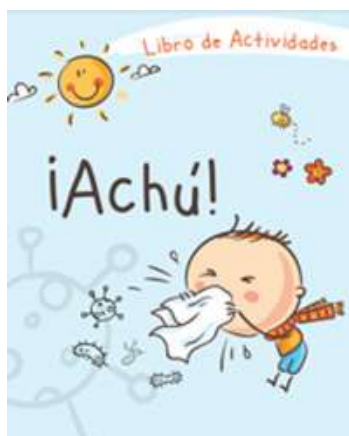
patients recruited by CHW from the Medtronic funded project

27

CHWs in all have been hired by the FQHCs and the PRPHT

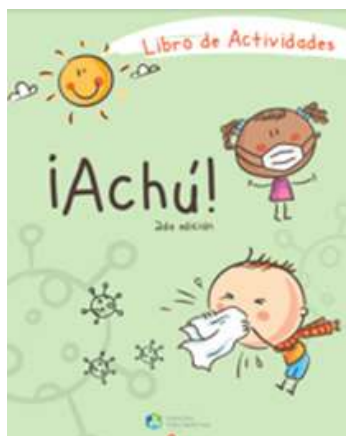
30+

youth and teens participated in the young community leaders summit



Achú 1

Education and prevention



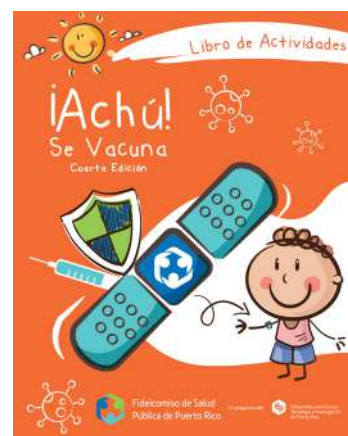
Achú 2

Promotes proper face masks use in children 2 years and older.



Achú 3

Explains prevention measures



Achú 4

Promotes vaccination in children



Community Health Workers in action





Puerto Rico Public Health Summit 2022



CARIBBEAN ALL HAZARDS

The All-hazards Division is the evolution of the Puerto Rico Hurricane Response Hub program. It continues to support first responders in training and education as well as increasing its reach with climate change initiatives, the Elderly Telemedicine Project and suicide prevention in collaboration with the Suicide Prevention Commission of the Department of Health of Puerto Rico, among others.

EFFORTS TO REDUCE COVID-19 VACCINE HESITANCY AMONG THE HEALTHCARE WORKFORCE

In a collaboration with AmeriCares. This effort was funded by the CDC. The team created a monthly ECHO (Enabling/Enhancing Community Health Outcomes) Series for Healthcare Workers on Covid-19 Vaccine and Booster Responses one Year after Immunization.

SUICIDE PREVENTION AND MENTAL HEALTH RESILIENCE POST DISASTERS AND DURING THE PANDEMIC TRAININGS

Developed and implemented these trainings in collaboration with the Commission for Suicide Prevention at the PRDoH. The two main goals were to

1. **train the community** on suicide prevention in natural disasters and create a network of volunteers who can support the community in times of crisis and
2. **train health providers** (doctors, nurses, social workers, and professional counselors) to identify signs that could trigger suicide attempts and intervene to prevent suicides.

Two online courses were created: Suicide Prevention in Disaster Situations and The Role of the Media in Suicide Prevention. The courses can be viewed here:

<https://academia.prsciencetrust.org/courses>

CERTIFICATION OF PHYSICIANS ON HOW TO COMPLETE A DEATH CERTIFICATE WITH AN EMPHASIS ON DISASTER RELATED DEATHS

A virtual online 3 credit courses developed in collaboration with Puerto Rico's five medical schools and the PRDoH, the NNPHI and the CDC. Over 10,000 physicians in Puerto Rico were requi-

red to take and pass this bilingual course of 8 modules with a 70% proficiency to renew their medical license. Physicians learned about the importance of having accurate and detailed information on deaths in disasters.

TAM - TELEMEDICINA PARA ADULTOS MAYORES

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 clinics will facilitate communication with the doctor, as well as provide equivalent services and physical examinations that are provided in a face-to-face visit. TAM 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.

IMPACT METRICS

534

health care workers
enrolled in the
AmeriCares ECHO Series

123

nursing homes participating
in the Telemedicine for
Older Adults Project (TAM)

10,063

physicians enrolled in the Certification
of Death Online Course as of June 30, 2022

1 summer intern from Medical College
of Wisconsin Global Health Fellowship

1200

have been trained/
educated in the suicide
prevention project.

123/200

contracts signed
for TAM to supply
TytoCare systems



127



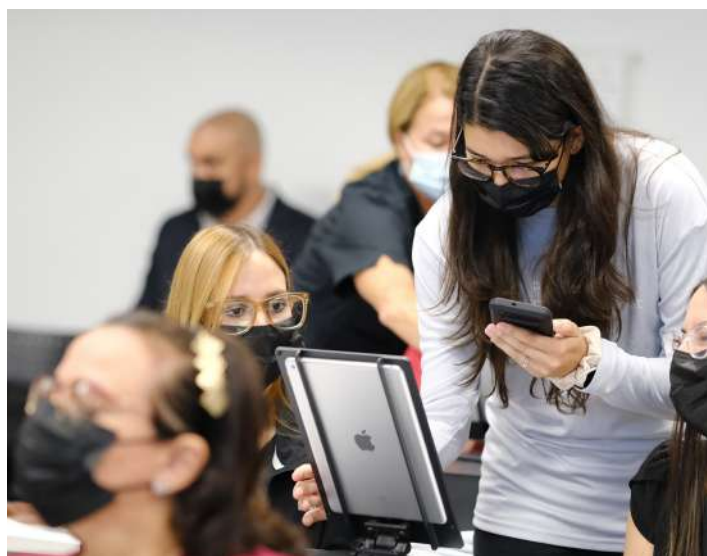
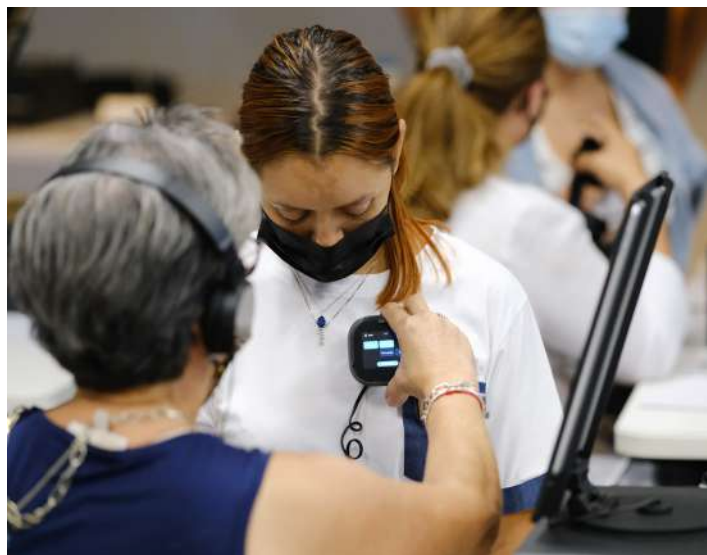
TELEMEDICINE AND TELEHEALTH

Telemedicine equipment has been distributed to 35 clinics around the archipelago supported by a US Department of Agriculture (USDA) grant. Initial assessments were conducted in each clinic to ensure they met the necessary requirements to receive the equipment and training was provided on equipment use. The projects have been complemented with a tele-mentoring initiative 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. During the first year, we were able to design a training program of five sessions each that included the following topics:

1. Long COVID at Primary Care: From Specialists Perspective,
2. Opioids Management at Primary Care,
3. Diabetes Care and Primary Care and
4. Chronic Conditions Management and Self Care (CCM & SC).

Training program for the Long Covid topic was implemented in February 2022 and completed by 189 participants. The second training program related to opioids and mental health was launched in August 2022, and the other two programs are currently under development for implementation before the end of the year. In addition, agreements with key collaborators and health centers have been established to provide training and support for the implementation of telemedicine practices.

The Caribbean Central University (CCU) and the Ponce Health Sciences University (PHSU) have agreed to join the project. In fact, the CCU is leading the Opioids training program and PHSU has been engaged to provide the training on chronic disease management. Additional efforts will be conducted with the private universities and private physicians to establish long-term support for primary care providers.



IMPACT METRICS

45

rural clinics selected
to receive Telemedicine
equipment through CARES
and USDA funds

35/45

MOUs signed for
TeleMedicine rural clinics
using Telemedik systems

356

unique participants in the 5-five
Long Covid HRSA training sessions

34/45

Telemedik systems were
distributed to rural Clinics

26/45

Facilities have been
trained in the use of the
Telemedik systems

PRPHT'S COMMUNICATIONS & MARKETING DIVISION

Our Communications and Marketing Division aims to develop and execute the program's communications strategies to achieve exposure, outreach, and awareness. In this effort we use different communication mechanisms and inclusive language aligned with the philosophy of social marketing. The purpose is to educate, inform and achieve changes in habits and behaviors about current and emerging public health issues in communities in Puerto Rico.

MEDIA RELATIONS DEVELOPMENT

We have developed a robust relationship with the media and a network of local and international journalists from radio, television, print, and digital media that have contributed to the exposure and credibility of the PRPHT program.

SOCIAL MEDIA

Since the beginning of PRPHT (2019) we have been very present in the social networks and currently the program has 5 social platforms that include:

- Facebook
- Instagram
- Twitter
- LinkedIn
- YouTube
- and TikTok

The purpose is to maximize our reach, appealing to all audiences according to their digital preference. During this process our networks have been in constant growth, and we have a loyal audience that uses us as a reference to educate themselves and learn about the latest trends in public health.

PUERTO RICO PUBLIC HEALTH SUMMIT 2022

A second edition of the event was held virtually in April 2022. Over 40 local and international keynote speakers presented to an audience of more than 250 people during the two- days event. Learn more here:

<https://prsciencetrust.org/prpht-puerto-rico-public-health-summit-2022/>

HURRICANES PREPAREDNESS GUIDE 2022

The initial development of a Hurricane Preparedness Guide was in 2020 considering the COVID-19 Pandemic. It was revised during the past two years (2021, 2022) according to the evolution of the SARS-CoV-2 virus and the CDC recommendations. Learn more here: <https://bit.ly/3o6ldtz>

SOCIAL MEDIA EVOLUTION (JUNE 2021 - JUNE 2022)

Social Network	Followers June 2021	Followers June 2022	Change
Facebook	5,700	6,869	20.51%
Instagram	1,026	1,214	18.32%
Twitter	2,653	2,895	9.12%
LinkedIn	268	797	200.75%

Fig. 4. Social Media Growth during 2021-2022.

IMPACT METRICS

50+
virtual keynote
conferences

100+
social media campaigns

100+
episodes of the "Salud al Medio Día" Facebook live
talk show

4
main social media
platforms (Facebook,
Instagram, LinkedIn and
Twitter)

900
news covered by local
media

30,000 to 80,000
people reach monthly in social media



PUERTO RICO PATIENT NETWORK

The purpose of the Puerto Rico Patient Network is to create a national patient network that will provide up-to-date data on the epidemiological characteristics of the population of Puerto Rico. The Puerto Rico COVID-19 Patient Registry is the first patient registry of this network.

THE PUERTO RICO COVID-19 PATIENT REGISTRY (PRCPR)

Is the first patient registry of this network. The purpose of the PRCPR 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 SARS-CoV-2 infection and Post-Acute COVID-19 Syndrome (PACS) in Puerto Rico.

In January and February 2022, two epidemiologists joined the team. They conducted an evaluation, together with an external consultant, of the study protocol and survey questions. They evaluated the quality, the integrity and accuracy of the data. They identified some limitations of the protocol and established an action plan to improve the study.

ACTION PLAN

To improve the participation rate in the survey:

- Revision, redesign and reduction of the questionnaire to increase participation.
- Trained our CHWs to facilitate access to the questionnaire to older adults, without knowledge of technology or Internet use.
- Creation of promotional material that was included in a Toolkit to educate our staff and participants about the COVID-19 patient registry.
- Included questions on social determinants, economics and address, to determine the profile of our participants, in order to obtain data for geocoding, studies and future projects.



PR Patient Network

TRAININGS

DACIMA - Epidemiologists Mariela Alvarado and Dr. Jose Bartolomei were trained on the DACIMA questionnaire platform. They were able to design a new survey reducing the number of questions and time to answer from 70 questions to 30 questions.

Geocoding - Epidemiologist Mariela Alvarado took a 4-day virtual training on public health disparities geocoding from Harvard TH Chan School of Public Health.

R Studio - training from the Puerto Rico Institute of Statistics.

IMPACT METRICS

605

participants were registered
in the COVID-19 Patient Registry.

12

Community Engagement
Team members were
trained in the COVID-19
Patient Registry.

8

CHWs are working
in this division.

163

followers on the Facebook page
of Red de Pacientes de Puerto Rico.

RESEARCH

The Research Division fosters high-impact research and educational collaborations with clinicians, researchers, other professionals, and communities to improve health equity and overall population health and wellbeing.

SARS-COV-2 CORRELATES OF PROTECTION IN A LATINO-ORIGIN POPULATION (NCI U01CA260541)

This is an initiative in support of the SARS-CoV-2 Serological Sciences, Sero Network. The rapid circulation and spread of this virus lead to a significant impact on the healthcare systems with an important societal disruption. We have implemented this SeroNet project in a Latino-African background population to determine the real seroprevalence to SARS-CoV-2 in Puerto Rico.

Also, we aim to study the interaction of humoral, cellular immune response, HLA background, and how they correlate with protection or severity in this population including particularly vulnerable social groups. We study in detail the antibodies neutralizing activity, T cells immunophenotypes, and cytokine profile and we integrate that data with the genetic characterization. Vulnerable populations of individuals with comorbidities such as autoimmune disease, immunosuppression, obesity, medically underserved, and cancer populations are included in the cohort.

COMMUNITY-ENGAGEMENT & RESEARCH DIVISIONS ON SARS-COV-2 TESTING IN THE US TERRITORIES (NIMHD U54MD010711)

COVID-19 Pandemic has ravaged underserved and vulnerable populations in the US, Puerto Rico (PR) and the U.S. Virgin Islands (USVI). The PRPHT Research Division received a grant in collaboration with Yale University and the PRPHT Community-engagement Division has implemented this (RADxUP). The initiative has amplified the SARS-COV-2 diagnostic testing cascade in Parcelas Suarez in Loiza, utilizing community-based assets. The longitudinal study engaged community leaders to provide SARS-COV-2 testing, quarantine and isolation support.

The enhanced diagnostic testing cascade has improved the reach, access, uptake, and effectiveness of the population of this

underserved and vulnerable beach-front community. The effort has recruited 143 of 216 goals by impacting community schools, nursing homes, and performing periodic health and educational fairs. Thousands of molecular tests have been made available to the study participants.

SARS-COV-2 TESTING AND PREVENTION IN CORRECTIONAL SETTINGS (NIDA UG1DA050072)

Correctional settings account for 39 of the 50 largest outbreaks of COVID-19 in the US to date. Transmission of the SARS-CoV-2 virus is amplified in correctional settings due to restricted access to sanitizing supplies, personal protective equipment, and diagnostic tests, close congregant living conditions, and exposure to correctional staff who unknowingly introduced the infection from the community. Incarcerated people are also more likely to die from COVID-19. There is an urgent need for the development and implementation of long-term COVID-19 testing and prevention for incarcerated populations and correctional staff. The work is relevant to public health and the mission of RADxUP given the disproportionately high rates of COVID-19 infection and mortality in prisons.

We have identified ethical and feasible solutions to administer upwards of 40,000 tests in Florida, Rhode Island, Minnesota, and Yakima County, Washington, to characterize COVID-19 incidence, disease progression, and outcomes of staff and incarcerated. Strategic partnerships with individuals with a history of incarceration and community and correctional policymakers will help identify strategies to scale repeat testing in prisons and lay the foundation for future vaccines.

PUERTO RICO SARS-COV-2 VARIANT SURVEILLANCE INITIATIVE (ARPA PRDOH-2022-DS-0299)

Genomic surveillance (GS) supports time-sensitive public health epidemiological interventions and relies on next-generation sequencing (NGS). Prompt tracking of SARS-CoV-2 variants is crucial to understand their impact on public health. We report the inception of the Puerto Rico SARS-COV-2 Variant Surveillance Initiative (PRCVSI), a local GS program to increase the PRDOH capacity to perform epidemiological surveillance (ES).



We developed an island-wide GS initiative that included:

- -80°C biorepository freezers,
- a QX ONE ddPCR from Bio-Rad for mutations of interest detection,
- two Nanopore GridION NGS systems,
- an Illumina NextSeq2000 and
- a MySeqDx system.

Initial samples were sequenced and validated by a third party. Variant results, sample management time, and turnaround times (TATs) were assessed. Throughout two Omicron surges and one Delta outbreak, we have stored more than 19,178 samples in our biorepository.

The PRCVSI has increased the archipelago's capacity from an average of 8.5 sequences/month in 2020 to over +384 sequences/week. Local sequencing control dramatically optimized TATs from 3.5 to 1.5 weeks (57% reduction). Sequencing failures dropped from 25% to $\leq 5\%$. Direct nexus with the PRDOH's ES team allows for on-the-run improvements in sample logistics, prioritization during surges, and exchange of patient information for variant reporting.

IMPACT METRICS

4,112
samples sequenced

19,178
Samples sequenced

84.2%

completion of the RadxUP community mapping in
Parcelas Suárez (Shared w/Community Engagement)

143/216

participants recruited in RadxUP study in Loíza
(Shared w/Community Engagement)

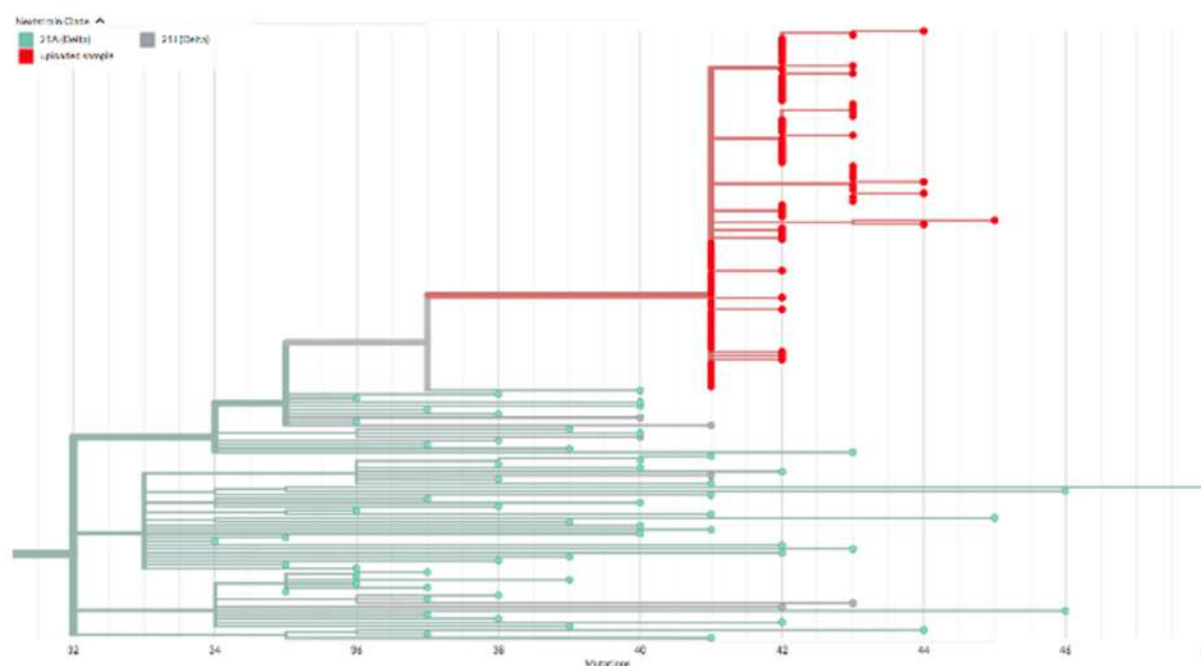


Fig. 6. Correctional facilities outbreak in PR from a Delta variant AY.25

PRPHT PUBLICATIONS

Soto-Canetti G., Garcia L., Julia A.E., Gordian E.I., Bartolomei J.A., Camareno N., **Rodriguez-Orengo J.F., Montoya-Zavala M.** "Developing a Case Investigation and Contact-Tracing System in Puerto Rico, 2020" *Am J Public Health*. 2022;112(2):223-226. <https://doi.org/10.2105/AJPH.2021.306584>

Collins, J.M., A. Polen, E. Dunn, **L. Mass**, E. Ackerson, J. Valmond, E. Morales, D. Colón-Burgos. 2022. Compound Hazards, Evacuations, and Sheltering: Evacuation Decision Making in the PreVaccine Era of the COVID-19 Pandemic in the PRVI Region. *Weather, Climate, and Society* 2022, 14(2), 451- 466. <https://doi.org/10.1175/WCAS-D-21-0134.1>

SeroNet–Figueiredo J.C., Hirsch F.R., Sariol C., Espino A., **Lopez M.**, Fernández S., Skarbinski J., et. al., *Mission, Organization, and Future Direction of the Serological Sciences Network for COVID-19 (SeroNet) Epidemiologic Cohort Studies*. Open Forum Infectious Diseases, Volume 9, Issue 6, June 2022, ofac171, <https://doi.org/10.1093/ofid/ofac171>

Cruz M.A., Garfield R., Irizarry J., Torres N.I., **Rodriguez-Rivera M.Z., Montoya-Zavala M., Maas-Cortes L., Algarín G.**, Bayleyegn T. & Funk R.H., *Assessing the living environment of persons displaced following a strong earthquake sequence in Puerto Rico, 2020 JEM in press.*

Cruz M.A., **Maas-Cortes L.**, Bui D., Zavala D.E., **Rodriguez-Orengo J.F., Jirau H., Uriz I., Montoya-Zavala M., Rodriguez-Rivera M.Z., Tirado L., Gordian E., Cruz F., Orengo-Valverde J.C., Green V., Bayleyegn T.**, "Assessing Emergency Preparedness of Households in Puerto Rico Using a Community Assessment of Public Health Emergency Response Survey, November 2020". In preparation.

ACCEPTED ABSTRACTS FOR POSTERS AND PRESENTATIONS

National Network of Public Health Institutes (NNPHI) Annual Conference May 2022 NNPHI

Algarín-Zayas G.A., Mass-Cortes L., Rodríguez M., Tirado L., Cruz A., Rodríguez-Orengo J.F., Del Río D., Vázquez M., González M., González I., *Community-based strategies to strengthen resilience to disasters: using the ECHO (Extension for Community Healthcare Outcomes) Model.*

Maas-Cortes L., Bayleyegn T., Flagg L.A., Alvarez L., Juiz-Gallego M., Zayza-Rios Y., Rodriguez G., Rodriguez O., Montoya-Zavala M., Rodriguez-Orengo J., *Research to policy: Building workforce capacity of physicians for accurate and timely certification of disaster related death, In person round table discussion.*

Torres-Zayas H., Cordero J., Velez-Vega C., Rodríguez-Orengo J.F., Fernandez-Acosta F., Miller S., Otero S., López M., Vega G., Santos A., Rivera A., Agosto L., *Strengthening Community Health Workers' Capacities: Addressing Patients' Social Determinants of Health through Public Health Programs.* Innovations in Workforce Development & Training.

Matos-Negron W., Santos-Romero G., Principe-Ramírez L., *Access to Care Services: Three Years of Experience with Telemedicine.* Telehealth.

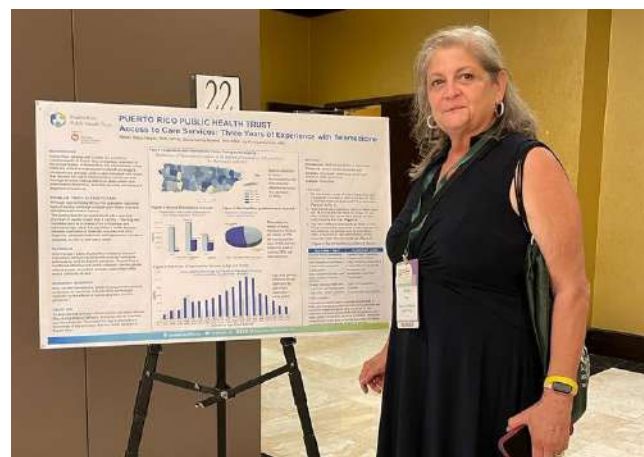
American Public Health Association (APHA) Annual Conference Nov 2021

Soto-Canetti G., Bartolomei-Diaz J.A., García L., Gordián-Rivera E.I., Juliá-Beltrán A.E., **Rodríguez-Orengo J.F., and Montoya-Zavala M.**, *Distribution of sars-cov-2 infections and factors that could influence the appearance of COVID-19 related symptoms in Puerto Rico.* PS1009.0: Epidemiology.

Soto-Canetti G., Bartolomei-Diaz J.A., García L., Gordián-Rivera E.I., Juliá-Beltrán A.E., **Rodríguez-Orengo J.F., Montoya-Zavala M.** Camareno-García N., *The experience of developing a case investigation and contact tracing system in Puerto Rico,* PS1009.0: Epidemiology.

Montoya-Zavala M., Lopez-Casillas M., Cadilla C., Colon-Ramos D., Guerrero-Medina G., Cordero J., Thompson K., Rivera-Amill V., O'Neill E., Munoz-Jordan J., Zorrilla C., Cora-Amaro L., de Socarraz M., Flores-Santiago J., Martínez Y., Martínez-Vela R., Sárraga-Oyola V., Segarra B., Toledo-Garcia I., Torres M., Valentín B., Rodríguez-Orengo J.F., *A collaborative that increased molecular testing of sars-cov-2 through a clinical laboratories taskforce in Puerto Rico.* Abstract ID: 497512, PS1031.0: Epidemiology.

Acevedo-Canabal J., Ortiz-Corrada A., Noboa C., Rodriguez-Adames J., Castro M., Melendez L., *Eliminating barriers to implement telehealth in long term care facilities in Puerto Rico.*



Wendy Matos Negrón

ORAL PRESENTATIONS

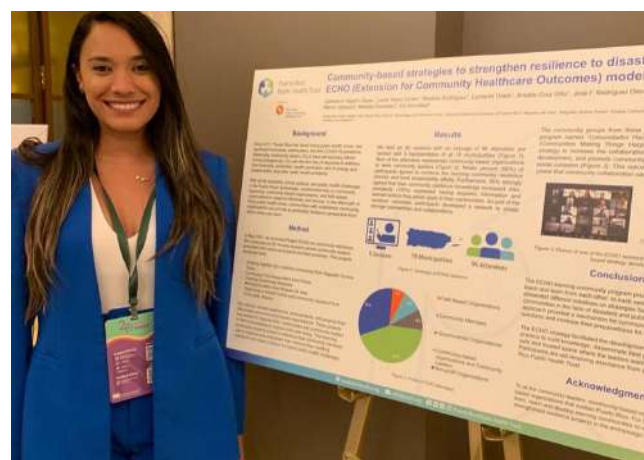
Miller S.E., Jimenez C., Rodríguez-Orengo J.F., Fajardo N., Ensign K., 3035.0 - *Effective surge response to public health staffing needs: Three organizations creating solutions for Puerto Rico.* Collaborative Efforts in Health Administration, Management, or Cross-Sector Policies That Improve Healthcare Delivery and Health Outcomes

Torres-Zayas H., Miller S., Santos-Rivera A., Fernandez-Acosta F., Cordero J., Velez-Vega C., Agosto-Arroyo L., Rosario Z., Ayala-Ortiz I., 4116.0 - *Creating a community health workers program in Puerto Rico after a disaster; Integration and collaboration.* CHW Section Roundtable: CHW Models Addressing Health Disparities

Maas-Cortes L., Bayleyegn T., Flagg L.A., Alvarez L., Juiz-Gallego M., Zayza-Rios Y., Rodriguez G., Rodriguez O., Montoya-Zavala M., Rodriguez-Orengo J., 4120.0 - *Research to policy: Building workforce capacity of physicians for accurate and timely certification of disaster related death,* In person round table discussion Health Administration.



Héctor Torres Zayas



Gabriela Algarín Zayas



FUTURE INITIATIVES

Our program plans to continue leveraging our collaborations with the media, public and private companies, faith-based groups, Non-Governmental Organizations, academia and community leaders as we develop data driven content to promote the health and well-being of all the communities of Puerto Rico.

Our efforts for the coming year will be focused on expanding our CHWs network and impact, promote the use of telemedicine and telehealth in participating clinics and nursing homes, improve the management of chronic conditions by integrating CHWs and providing training to physicians and other health professionals, and increasing our partnerships with PRDoH and other health organizations. Some of the new projects that we will be starting this coming year include:

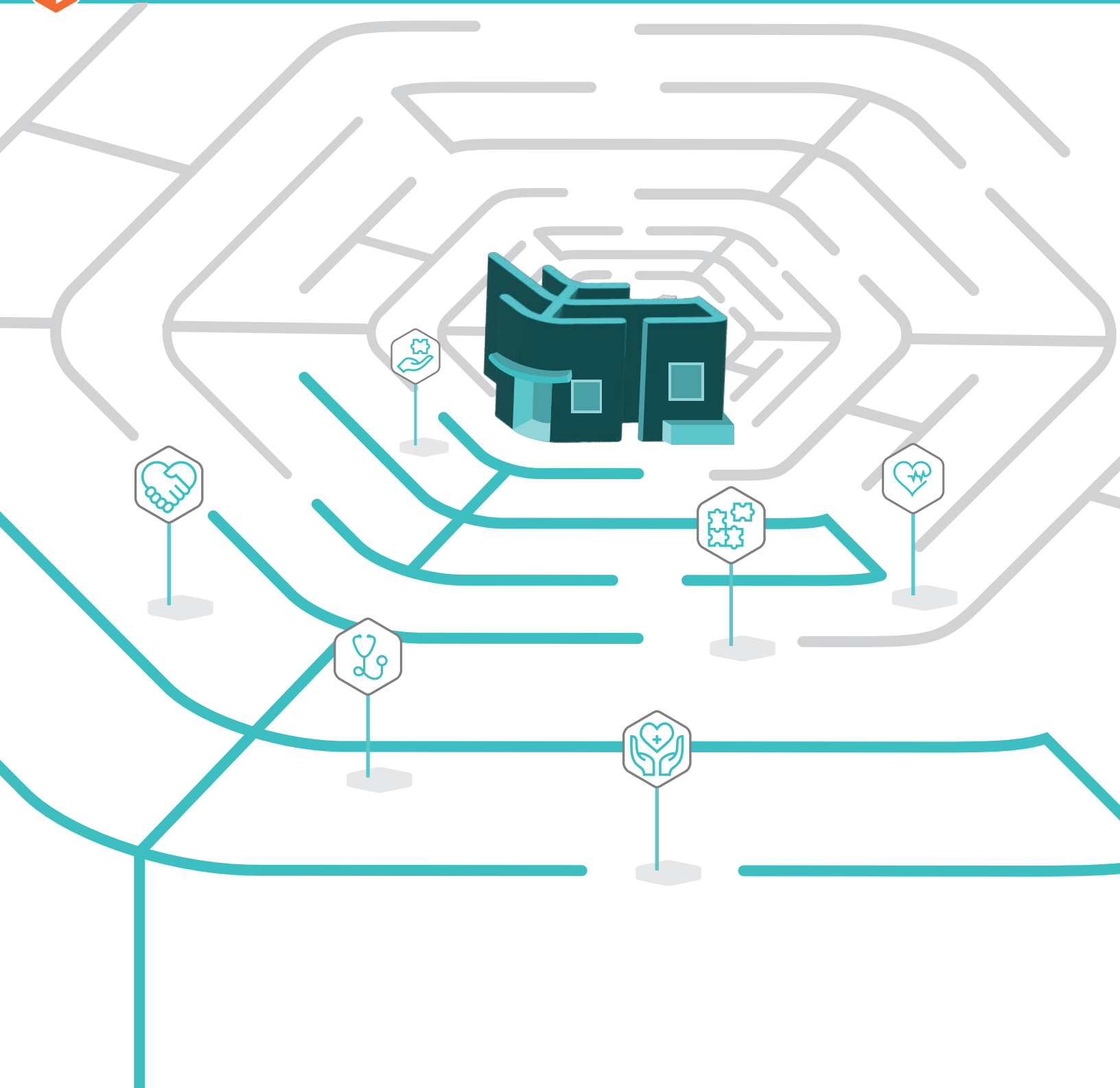
Climate change - EPA awarded a \$1,350,000 grant to conduct the project *“Community-based research to address cumulative health effects of drought on rural communities who operate drinking water aqueducts in Puerto Rico”*. The goal is to use climate change information with citizen science data and community engagement observations to understand and predict the impact of global climate change on freshwater quantity and quality for small potable water supply systems of remote populations. An understanding of the impact of climate change on pathogen survival and exposure pathways will assist local capacity building efforts to design climate resilient water distribution systems and provide recommendations to minimize pathogen exposure.

Health Promotion – “Literacy on COVID-19 Vaccination and Mental Health Project”

During June 2022, we received a \$250,000 grant from the Puerto Rico Fiscal Agency and Financial Advisory Authority (AAFAF) to increase COVID-19 vaccination and mental health literacy among students, teachers and the community in Loíza.

¡Ponte al día! – Grant of \$250,000 from the PRDoH and its Health Equity Program. Our CET will work in Naguabo, training young community health promoters to increase technological literacy and health literacy and address the issues of loneliness and isolation among older adults. We will partner with the community organization *Naguabo Somos Todos* in identifying future promoters and older adult participants.

Research - We partnered with Abartys Health LLC, a company that provides innovative, patient-centric, healthcare data management solutions and population health analytics. We are working with data scientists to transform aggregated clinical data into actionable insights, monitor patient journeys in real-time and find patients at risk to describe and study the pathophysiology of COVID-19-induced diabetes in the Puerto Rico archipelago. From this collaboration, we expect to generate preliminary data to apply for additional funding from agencies such as the National Institutes of Health (NIH).



PRCCI
Puerto Rico Consortium
for Clinical Investigation



PUERTO RICO CONSORTIUM FOR CLINICAL INVESTIGATION

Established in April 2016, PRCCI is a 501 c3, not-for-profit network of top academic and private research sites. We enhance clinical research speed and quality by driving performance and efficiencies across our **29 sites**, leveraging strategic partnerships, and establishing world-class capabilities to position Puerto Rico as the preferred location for participation of Hispanics in clinical investigation in the Caribbean.

MISSION

To improve the impact, quality, and speed of clinical research in Puerto Rico through:

1. Building a collaborative network of investigators
2. Establishing best practices for the conduct of clinical trials
3. Educating sponsors and researchers

VISION

Become the preferred partner for the promotion, enhancement, and implementation of clinical research in minority groups.



EXECUTIVE DIRECTOR

Dr. Amarilys Silva - Boschetti,
Pharm.D., BS.Pharm.

Dr. Amarilys Silva is a leader in the pharmaceutical and healthcare industry. She currently serves as the Executive Director for the PRCCI. Prior leadership positions include: Puerto Rico Medical Affairs Leader for Eli Lilly, Global Pharmacovigilance Director at Wyeth Research, PA, Professor Ad Honorem, Schools of Pharmacy (UPR and USciences, PA), President-INDUNIV Puerto Rico Health Council and Chairperson-PIA Medical Committee. She was instrumental supporting recovery efforts following hurricanes Irma and Maria. Dr. Silva holds a BSPHarm from University of PR, and a Doctor of Pharmacy from University of Florida. Completed a Master's Certificate in Six Sigma, Villanova University, PA.



ACHIEVEMENTS

INTRODUCTION

For this fiscal year, expanding the [Puerto Rico Consortium for Clinical Investigation \(PRCCI\)](#) team was a priority in the efforts to achieve more outstanding results by leveraging unique skills and specialized expertise to collaborate with the growing network of clinical sites, sponsors, and partners in the clinical research community. Integrated to the team were six new members:

- Business and Site Development Lead,
- Clinical Research Quality Manager,
- General Accountant & Business Specialist,
- Clinical Research Manager,
- Scientific Advisor,
- Project Manager.

PRCCI's new high-performing team is driven to approach opportunities introduced by the challenges of a growing network of partnerships, such as: patient recruitment and retention, standardize working procedures, increase communication and engagement with current and new clinical sites, strengthen our educational program including trainings and webinars, increase the numbers of clinical studies presented to principal investigators, and ensure onboarding and revalidation of compliant clinical sites.

OPERATIONS AND BUSINESS DEVELOPMENT

The Operations and Business Development department (OBD) has continued expanding the clinical research environment in Puerto Rico. The team counts with a Scientific Advisor (SA) who continuously monitors and navigates pharmaceutical and biotechnology companies' pipelines and ecosystems to identify opportunities in various therapeutic areas suitable to PRCCI investigators and Puerto Rico's population. The Scientific Advisor joined PRCCI in February 2022. During the past year, it has leveraged scientific knowledge, research expertise, and business acumen to bring innovation and cutting-edge clinical trials to Puerto Rico and to make them accessible to patients. During the year 2021-2022, the Scientific Advisors reviewed [5,151](#) studies in the clinical trials registry [ClinicalTrials.gov](#) and successfully validated [17](#) leads to opportunities.

IMPACT METRICS

5,151

Reviewed clinical trials studies

31

companies introduced globally

30+

active studies

53

Trained Clinical Research Coordinators

253

Webinar participants

5

participants in first Summer Internship

The SA shares scientific knowledge to educate investigators on the latest advancement in technology and molecules. During 2021-2022, the SA presented [84](#) clinical trial protocols to PRCCI's investigators. This role serves as a liaison and engages with sponsors, clinical research organizations, and investigators, forging meaningful and trusted relationships. The SA introduced PRCCI to [31](#) companies globally, including Syneos Health, Biogen, Navidea Biopharmaceuticals, Immniuc Therapeutics, Seagen, Strata Oncology, Biohaven Pharmaceuticals, and LeoPharma, to name a few.

The Operations and Business Development team continued bringing trials for this fiscal year, focusing on PRCCI's main therapeutic areas. The main areas for these studies were **oncology/hematology, respiratory, dermatology, infectious diseases, cardiology, rheumatology, and psychiatry/neurology.**

The OBD alongside their Lead and Specialist, were able to execute **16 studies** that were brought to PRCCI and contracted with our consortium sites. The OBD offered administrative support to the consortium sites including support in the site selection process. During this process, we assisted the sites with effective and expedite 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. OBD 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 **30 active studies**. This has been possible in part by the partnerships the OBD has established with different organizations. The team Lead has been directing PRCCI's overview presentation for over **30 Sponsor's/CRO's** and clinical research sites, promoting our services and giving exposure to what Puerto Rico has to offer.

The Business and Site Development Lead joined PRCCI in June 2021. Executed in a short amount of time to develop an active engagement of new clinical sites and re-engagement of existing clinical sites, oversee business relationships, and execute a tailored development plan for each one of PRCCI clinical sites, according to the site capacity, personnel, and respective needs, including but not limited to emerging opportunities in therapeutic areas. This new role was an asset in business development to build strategic plans and tactics that focus on relationship and trust building performing as the liaison among small and medium companies, government, investors, and stakeholders. Initiated important conversations for partnerships with companies such as Abbvie, Pfizer, Janssen, Merck Sharp and Dohme, and BMS. Served as representative of PRCCI in international and local meetings (MTEC meeting, local conventions, and forums) to expand PRCCI value of proposition.

PATIENT ADVOCACY

The Business and Site Development Lead performs as a Patient Advocacy point of contact to define an educational plan to submit a formal proposal to pharmaceutical companies in Puerto Rico. Established an outstanding connection with the network of the patient groups who exhibit the most prevalent chronic conditions in Puerto Rico. PRCCI achieved a successful meeting with more than 26 patient advocacy groups, with the objective of meeting the needs of these groups and expanding clinical research education to promote their participation. This collaboration leads to assisting the logistics and coordination of critical events by the recruitment of participants to educational forums.

CLINICAL RESEARCH EDUCATION PROGRAM

For a second consecutive year, **53 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. The last CRC training session included a special collaboration with PRReady Workforce Training Program; a program developed by the Puerto Rico Science, Technology and Research Trust with the mission to offer training and mentoring to unemployed or underemployed residents of Puerto Rico with low or moderate incomes. What makes this collaboration special was the opportunity to execute the CRC training to **15 participants** out of the metropolitan area and provide further exposure to the CRC training and PRCCI's services.

Raising the bar to new heights, the **first PRCCI Training Program Calendar** was created and shared with clinical research community and other readers on social media platforms. The calendar provided insight into trainings and webinars to be offered throughout the year. Requested webinars such as The Role of Woman in Clinical Research (**115 participants**), Recruitment Retention and Leadership (**75 participants**), and Legal Consideration in Clinical Trials (**63 participants**) captured the public's interest for additional webinars of relevant topics in clinical research.

53 profesional

successfully completed a 10 week/30 hours
Clinical Research Coordinator (CRC) training program.

FIRST PRCCI TRAINING PROGRAM CALENDAR WAS CREATED

115

Participants
The Role of Woman
in Clinical Research

75

Participants
Recruitment Retention
and Leadership

63

Participants
Legal Consideration
in Clinical Trials

FIRST SUMMER INTERNSHIP WAS OFFERED

5

**high school seniors
and collage
undergraduates**

5

WEEKS



Last in order of occurrence but just as important, the first Summer Internship was offered to a total of **5** high school seniors and college undergraduates. The internship was organized for a duration of **5 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 looks forward to expanding future internships to more students.

HIPAA COMPLIANCE AND SECURITY OFFICER

PRCCI continues to support the PRSTRT after the implementation of the HIPAA privacy and compliance program in 2020. The HIPAA Privacy and Compliance Officer continues monitoring activities and training for the different programs of the PRSTRT.

Starting in May 2022, the two-year training renewal process began for regular and contracted employees of all the PRSTRT programs due to recertify in the HIPAA Awareness Training for Business Associates including HIPAA Policies and Procedures of the Trust.

A new record information management procedure was set up to keep track of onboarding and active employees required to participate in the HIPAA training to ensure compliance.

QUALITY

PRCCI's Quality Department partnered with each of our **>20 site members** to take quality to the next level. PRCCI's Quality Department provided our diverse roster of site member's quality support individually based on their specific needs to assure their internal quality processes were operating optimally. Our commitment was to promote Good Clinical Practice (GCP) compliance, operational excellence and best practices while assisting the site members to adapt to the evolutionary environment of clinical research. The goals achieved through our dedicated work during this year resulted in **100% compliance** revalidated member sites and new validated sites.

NETWORKING INITIATIVES

PUERTO RICO COVID-19 PATIENT REGISTRY

Launch: December 17th, 2021

The Puerto Rico COVID-19 Patient Registry was launched by PRCCI in December 2021 as part of the Puerto Rico Science, Technology & Research Trust Patients Network. After launching the project, the Registry was acquired and managed by the Puerto Rico Public Health Trust. The primary objective of the Registry was to collect information of COVID-19 patients related to their demographic information, health status, signs and symptoms, vaccination status, long-COVID, and safety measures. After registration, participants could also receive general COVID-19 educational information, clinical trials participation information and up to date scientific data related to the pandemic in Puerto Rico. The COVID-19 Patient Registry was created using a HIPAA compliant platform to ensure safety and privacy. The project was reviewed and approved by a local IRB and included an informed consent form for all participants.

BIO 2022

June 12-16 (San Diego, California)

During BIO 2022 International Convention, PRCCI had the opportunity of connecting with worldwide companies that are part of the clinical research industry and expand the PRCCI international reach. Our organization was showcased as the largest clinical research network in Puerto Rico and the Caribbean and was able to connect with colleagues that might be interested in different areas of PRCCI, such as: training and education program, clinical trial development in PR, quality assessments, recruitment and retention, patient advocacy, etc. Clinical trials industry is linked to many other basic sciences fields and biotechnology. As technology continues evolving, clinical research development becomes more and more relevant. Many companies around the world want and need to include diverse populations in their trials, Puerto Rico is a preferred hub not only for ensuring diversity but also for doing business. Representation is key to collecting quality and successful data and PRCCI acts as the lead for all these foreign organizations and companies that are interested in conducting research on the island while assuring quality and participation. BIO 2022 gave Puerto Rico and PRCCI the opportunity of standing out and many collaborations will be held thanks to this convention.

COMMUNICATIONS OUTREACH

Since late 2021, we started our transition towards direct to industry networking efforts. Our communications' initiatives are driven to highly targeted, non-paid media exposure around our expanded participation in clinical investigation, healthcare, and patient groups' annual events. This has facilitated further direct access to key audiences and enriched PRCCI's non-paid targeted media exposure.

The active participation of PRCCI's Executive Director, Dr. Amarilys Silva-Boschetti, PharmD, BSPHarm. in such diverse forums is directed to increase awareness of PRCCI's mission, achievements and contributions to PR's clinical investigation ecosystem. Furthermore, the exposure brings to light the challenges in the clinical research environment brought on by the Covid-19 Pandemic, new and innovative medicines on the horizon, the importance of Hispanic representation in the clinical studies and the opportunities available for those healthcare professionals interested in exploring the clinical research field among others. Below are some examples of PRCCI's in person and virtual participation as speaker and media exposure:

Pharmaceutical Industry Association of Puerto Rico (PIA) Annual Meeting 2022 "Levering Disruption to Accelerate Innovation: The Puerto Rico Consortium for Clinical Investigation Experience," May 6, 2022

"Medicina y Salud Pública" specialized magazine <https://medicinaysaludpublica.com/noticias/covid-19/dra-boschetti-la-pandemia-fue-la-oportunidad-de-evolucion-para-los-estudios-clinicos-en-puerto-rico/14470>

Article in Website, June 10, 2022

Digital Interview with Dra. Amarilys Silva Boschetti <https://www.youtube.com/watch?v=xR-zCW7Qm4I>

You Tube, June 10, 2022





SOCIAL MEDIA

Aligned with PRCCI's communications outreach efforts, our social media strategy also shifted focusing on developing educational and informative content about the value of clinical investigation in P.R., disease awareness and our participation in events/industry and patient groups and while capitalizing on social ads to push the reach of strategic content.

1. FACEBOOK & INSTAGRAM:

These platforms address a mainly local (P.R.-based) audience: Trade & Academia, Health Organizations, Patient Groups & Medical Associations. In these platforms we use Spanish language, an educational and approachable tone, addressing content themes focusing on driving awareness of the value of clinical trials, events, PRCCI's capabilities.

2. LINKEDIN & TWITTER:

These platforms address the following PRCCI's audience: clients (pharmaceutical and medical device companies in the US) & sites. For that reason, we use English language in these platforms, a professional and informative tone, and address the content themes of Clinical Trials Updates, PRCCI Capabilities & Events.

3. FACEBOOK AD CAMPAIGNS:

We work with sponsored content to reach our target audience and gain more visibility. Also, we set up traffic campaigns to support specific events.

SOCIAL MEDIA CAMPAIGNS

In 2022, we have had four key social media campaigns aligned with business objectives. These have been focused on:

1. 3rd Clinical Research Summit
2. Clinical Research Week
3. Professional Training Program
4. Patient Recruitment

Overall, the four campaigns have reached 505,214 people who saw the content 603,086 times (impressions) and achieved 10,500 interactions (engagement). This represents a 2% engagement rate. Some efforts were part of paid social campaigns, while others were organic social campaigns (no paid efforts were made).

505,214
people reached

603,086
impressions

10,500
interactions



2022 -2023 OBJECTIVES

1. Expand Business Development Activities

A new focused approach by paying close attention to research and monitor the industry pipeline to identify trials from small and medium size pharmaceutical companies to become a preferred business partner increasing the allocation of new clinical studies in our sites. Our approach is geared to increase the number of contacts with pharmaceutical companies and identify new investigators in the therapeutic areas of interest by actively participating in medical conventions.

2. Program Implementation to Support Patient Recruitment and Retention

Internal and external collaborations are set in place to execute a direct-to-patient campaign and a new partnership with the 330 Centers to promote trials and educate patients. We have added the Recruitment Specialist position to support this strategy as it is critical for the success of the increasing number of trials on a yearly basis.

PRCCI will generate awareness about clinical investigation and promote trials at Health Fairs, clinical institutions, etc. Other efforts will be in pursuit to increase patient education activities on the benefit of participating in clinical trials in partnership with patient advocacy groups.

3. Measure PRCCI's economic impact to the Clinical Research Ecosystem in Puerto Rico

A renowned economic researcher and data scientist will be appointed to provide a thorough analysis of the current clinical research ecosystem in Puerto Rico and how PRCCI contributes to the financial growth of clinical research directly and/or indirectly among member and non-member sites. The analysis is expected to be completed by 2023.



EVENT PHOTOS



3rd PRCCI Clinical Research Summit – October 28th and 29th, 2021



Launch of Covid-19 Patient Registry – December 22, 2021





Radio Interview with WIPR – March 17, 2022

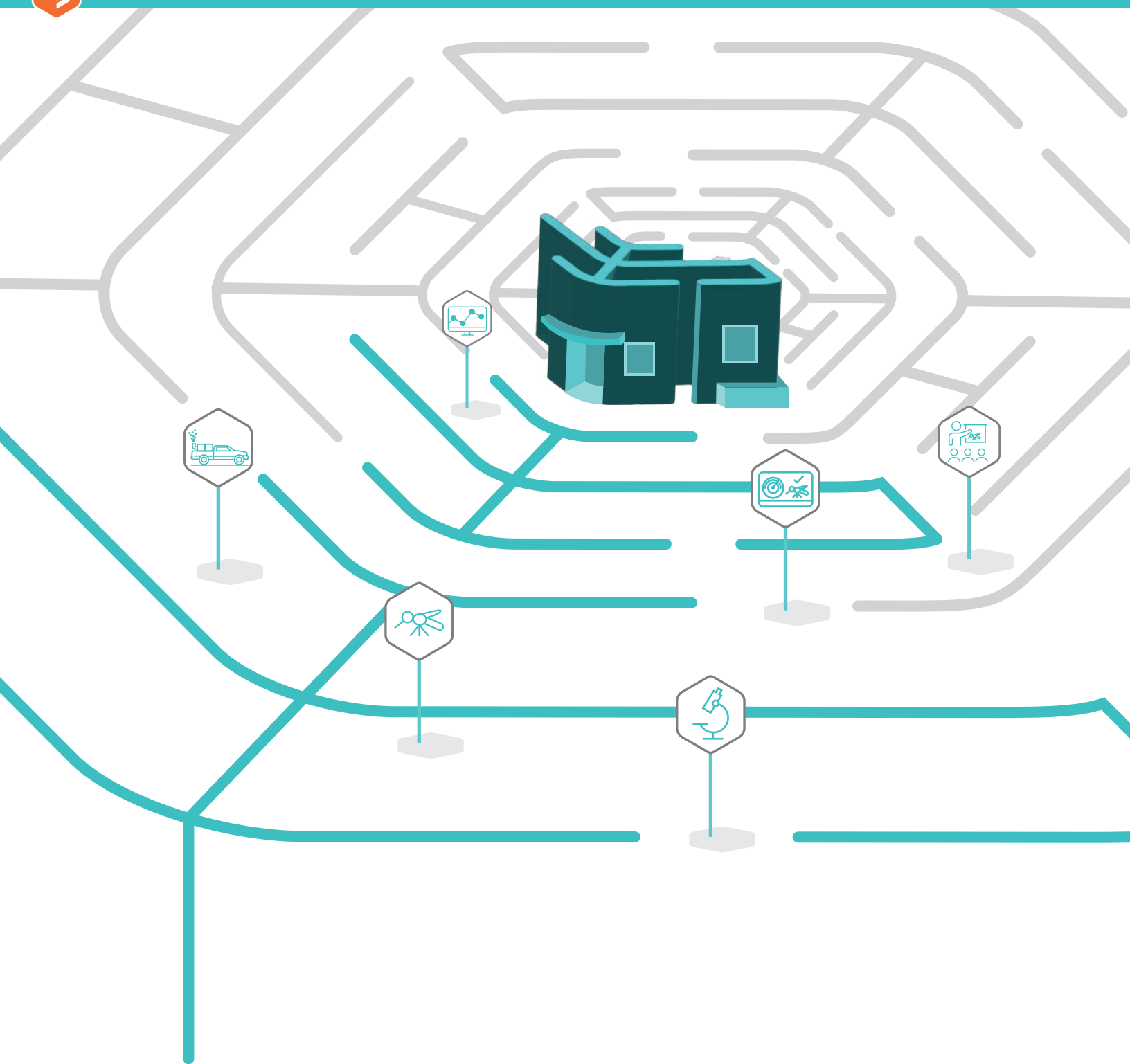


Patient Advocacy Round Table– June 24th, 2022



Summer Internship 2022





Puerto Rico Vector
Control Unit



Unidad de Control de Vectores de Puerto Rico

PUERTO RICO VECTOR CONTROL UNIT

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 (CDC) and the Puerto Rico Science, Technology, and Research Trust (PRSTRT). The PRVCU aims to leverage Puerto Rico's capacity to control the *Aedes aegypti* mosquito, the vector for the diseases Zika, chikungunya, and dengue in Puerto Rico. The Unit focuses on strengthening the capacity for vector control in Puerto Rico as well as implementing vector surveillance, creating innovative information systems, carrying out vector control operations, and boosting community engagement through citizen mobilization and education programs (Figure 1).

OUR MISSION

The mission of the PRVCU is to 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.

OUR VISION

By 2022, Puerto Rico has a modern and dynamic territory-wide integrated vector management program that serves as a local and regional research, evaluation, and training center.

PROGRAM DIRECTOR



[Dr. Grayson Brown](#) Mr. Brown has a Ph.D. in entomology. As Executive Director, his role is to continue the Unit's development/expansion, provide vision, strategy, and leadership to the program, and develop this unit into a world-class vector management organization.

PROGRAM MANAGER



[Dra. Julianne Miranda-Bermúdez](#) Dra. Julianne Miranda-Bermúdez is the program manager of the PRVCU. She holds a master's and doctorate degree in Public Health. She has the responsibility to manage and oversee all the PRVCU projects, and develop and maintain relationships with collaborators, partners, community leaders, municipalities, etc.

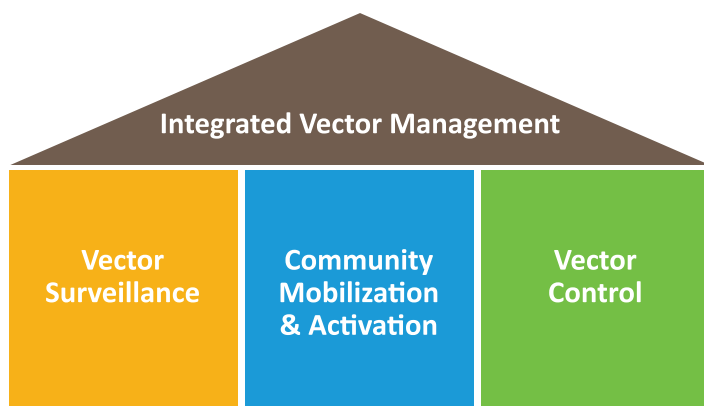


Figure 1: Representation of the three core pillars established by the Unit to implement an Integrated Vector Management model for Puerto Rico. of the three core pillars established by the Unit to implement an Integrated Vector Management model for Puerto Rico.



MAIN ACHIEVEMENTS

Strong capacity building and international recognition

During this period, PRVCU restructured and is now focused on project-based operations. This involved several personnel changes. The Unit added 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 Unit is the only vector management program with a dedicated QA specialist. In another personnel change, Dr. Julieanne Miranda-Bermúdez was promoted to Program Manager to oversee all operations and to continue supporting the community engagement and communications efforts. There have also been numerous efforts at staff development. For example, during the past year our staff has taken over 60 trainings in diverse topics including vector control technologies and strategies, safety procedures, communication strategies, supervisory tools, new laboratory procedures, among others. After these personnel changes, the PRVCU now has a staff of 28 employees divided into two main divisions: vector management and community mobilization.

In October 2021, PRVCU staff participated in the Entomological Society of America (ESA) conference “Entomology 2021” where we delivered a symposium, two oral presentations, and one poster presentation (Figure 2). In March 2022, the PRVCU participated in a regional meeting of the ESA at the San Juan Convention Center. About 600 entomologists were in attendance. The Unit hosted a visit of many of the attendees in our San Juan facilities. They had the opportunity to see the operations that the PRVCU conducts in the field, laboratory, GIS, and communities. Also in March 2022, the PRVCU staff participated in the American Mosquito Control Association (AMCA) 88th Annual meeting in Jacksonville, Florida where one poster and three oral presentations were delivered. During the conference, Rafael Saavedra-Hernández won the third place on the poster competition (Figure 3). This competition is open to everyone in the Association and the PRVCU has now taken a 1st, 2nd, and 3rd place over the past three years. PRVCU will host the 2025 AMCA Annual Meeting to be held in Puerto Rico. This will be the first time this organization will have met in Puerto Rico and represents a major recognition for the Unit. The AMCA is the largest association of vector management professionals in the world, and we expect 1,500 – 2,000 attendees at this meeting.

Staff of the Unit were recognized again this year. In May 2022,

Nexilianne Borrero, Vector Management Supervisor, participated in the Annual Conference of the AMCA in Washington, DC. Nexilianne Borrero received a grant from Central Life Sciences to participate in the conference (Figure 4). Another important achievement for the PRVCU was that Dr. Marianyoly Ortiz, former PRVCU Associate Director, completed the Board-Certified Entomologist (BCE) certification. This was through the ESA and is the only board certification for professional entomologists worldwide.



Figure 2: Participation of PRVCU staff in ESA 2021 Annual Meeting.



Figure 3: Participation of PRVCU staff in AMCA 2022 Annual Meeting.

PRVCU Student Program

Between January and June 2022, the PRVCU had the opportunity to have more than 15 interns from the following universities: University of Puerto Rico - Medical Sciences Campus, Ponce Health Sciences University, and London School of Hygiene and Tropical Medicine (Figure 5). The interns had the opportunity to participate in each area of the PRVCU and learned about our projects.

The Unit hosted Emma Collins, PhD student in epidemiology at the London School of Hygiene and Tropical Medicine. Ms. Collins dissertation is on the genomics of *Ae. aegypti* resistance to insecticide and she is conducting the field component of her research here with the Unit. She is the first of several graduate students who will work with us from that university.



Figure 4: Participation of PRVCU staff in AMCA Annual Meeting in Washington, DC.



Figure 5: Students that participated in the PRVCU Internship Program

MAIN ACHIEVEMENTS IN VECTOR SURVEILLANCE

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. During the reporting period, the PRVCU laboratory in San Juan was upgraded to a BSL-3 laboratory which is the standard for human pathogens that can cause serious or deadly disease through inhalation and is required for certain viruses.

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 Arecibo, Bayamón, Caguas, Carolina, Cataño, Cayey, Culebra, Dorado, Guánica, Guaynabo, Ponce, Sabana Grande, San Juan, Toa Baja and Trujillo Alto. Currently, a total of 957 AGO traps are being processed (Table 1).



950+
AGO traps

Table 1: Number of AGO traps as part of the surveillance system for this period.

Municipality	Number of AGO traps	Project or purpose
Arecibo	25	Dengue Hotspot
Bayamón	202	Many positive cases
Caguas	240	DoD Project
Carolina	20	Dengue Hotspot
Cataño	10	Dengue Hotspot
Cayey	9	Municipal Support
Culebra	25	Rotary Club Project
Dorado	17	Dengue WALs
Guánica	15	Municipal Support
Guaynabo	21	Dengue Hotspot
Ponce	165	COPA Project
Sabana Grande	10	Municipal Support
San Juan	139	Many positive cases and some Hotspots
Toa Baja	49	Municipal Support
Trujillo Alto	10	Dengue Hotspot

The PRVCU laboratory uses the Triplex 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). Table 2 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.

Table 2: Summary of mosquito samples processed in the PRVCU laboratory for this period.

Description	August 2021-July 2022	To date (January 2018-July 2022)
AGO captured chamber processed	55,864	324,799
Total <i>Ae. aegypti</i> female captured	630,518	2,846,499
Total pools tested for arbovirus	46,215	107,715
Total pools positive for dengue	44	96
Cataño	10	Dengue Hotspot

MAIN ACHIEVEMENTS IN COMMUNITY MOBILIZATION

The Community Outreach program adapted to the challenges of the COVID-19 pandemic

During the COVID-19 pandemic, the Community Mobilization (CM) Program was adapted for the new reality to educate and empower the Puerto Rican community. PRVCU adapted educational offerings to videos, virtual talks, and other digital support materials.

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 more than 150 activities and a distribution of 7,893 educational materials and 4,358 repellents (Table 3 and Figure 6).

During this year:

+630,000

Ae. aegypti female captured

More than
150 ACTIVITIES



7,000+

Educational Materials

4,000+

Repellents

Table 3: Summary of Outreach Activities conducted during this period.

Activity/Material	August 2021– July 2022	Total to date since September 2017	
	Number of activities/materials	Number of activities/materials	Number of Municipalities
Educational booths	34	625	55
Educational talks (general public)	20	368	42
Educational talks (schools)	25	545	51
Community visits	22	9,323	28
Informational visits	44	384	19
Workshops or trainings	2	20	6
Summer camps	4	31	8
Distribution of repellents	4,358	118,677	78
Distribution of larvicides	389	5,991	48
Distribution of educational material	7,893	175,162	78
Distribution of activity books	233	19,654	55
Mosquito nets	17	1,331	20



Figure 6: Pictures of education and community outreach activities

MOSQUITO DAY 2021

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. There were three main activities: (1) invitation to organizations to develop or participate in educational activities such as breeding sites reductions, informational visits, and educational talks and booths; (2) a contest to create a video of a house inspection and breeding sites reduction using Mosquito app with three prizes; and (3) training for employees and community leaders to make or fix screens (Figure 7). In general, during August 2021, the message of prevention and education was delivered to 20 municipalities on the island and one community in Perú. Through the three initiatives, a total of 2,362 people from different age groups participated. The most popular activity was the invitation to organizations, entities, groups, community leaders, among others, achieving participation of 2,332 people (1,685 people who participated in activities organized by registered groups and 647 people who participated in activities where the Unit was invited to offer the educational and awareness information).



Figure 7: Left to Right: (a) Participants in Perú conducting breeding sites reductions; and (b) Participant during the screens training in Ponce. (c) Participant during the screens training in Ponce.

COMMUNITY MOBILIZATION APP: MOSQUITALO

The mobile application, Mosquito, is being promoted on the PRVCU social media pages and media interviews. Currently, the app recorded more than 4,000 breeding sites that were reported as removed or treated. Some participants use the application in different municipalities such as Bayamón, Cabo Rojo, Caguas, Carolina, Cataño, Coamo, Culebra, Dorado, Guaynabo, Humacao, Juana Diaz, Las Piedras, Manatí, Mayagüez, Naguabo, Orocovis, Patillas, Peñuelas, Ponce, San Germán, San Juan, Toa Alta, Trujillo Alto, Vieques, Yabucoa, and Yauco. Also, has been used in other countries such as Mexico. This application will be updated to include other types of breeding sites and facilitate the data collection.

BOY SCOUTS OF AMERICA INITIATIVE

The PRVCU designed and implemented a comprehensive course for the Insect Study Merit Badge for the Boy Scouts of America and provided the course during the last three years. During this period, the CM team provided the course to 40 Boy Scouts in Guajataka Camp, San Sebastián (Figure 9).

“GUARDIANES DE LA SALUD” INITIATIVE

The CM team implemented a virtual 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 trainees with the materials necessary to conduct their activities for the certification. During this period, a total of four (4) full training sessions have been conducted for a total of 40 trained participants and 23 certified “Guardianes de la Salud”. From the beginning of the initiative more than 300 people has been impacted by Guardians of Health. Information about this initiative can be found at <http://prvectorcontrol.org/guardianes-de-la-salud/>. This project was presented during the Medical Sciences Campus Forum from the University of Puerto Rico. Likewise, in May 2022, Jania García-Zeno, Community Outreach and Education Representative, participated in the 17th PHSU-PRI Annual Scientific Conference/1st RCMI Symposium on Health Disparities and won the first place in a poster presentation titled “Virtual Education Intervention against the *Ae. aegypti* mosquito during the COVID-19 Pandemic” in the Public Health Category (Figure 9).

PARTICIPATION IN THE TV PROGRAM “LA FORMULA STEAM”

CM Team received an invitation from Dr. Greetchen Díaz to participate in her TV program “La Formula STEAM” in WIPR-Channel 6. During this period, two Community Education and Outreach Representatives participated in the second experiment that PRVCU developed that was presented on television on September 7, 2021 (Figure 10).

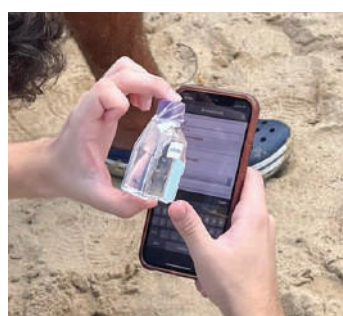
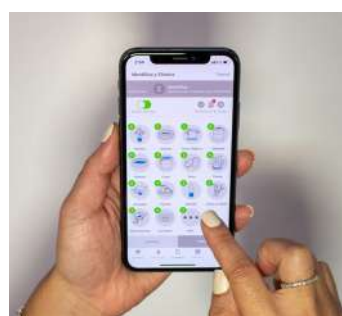


Figure 8.1: Mosquito App

Figure 8.1: Mosquito App

Figure 9.1: Participation of the PRVCU during the Insect Study Merit Badge in Guajataka Camp, San Sebastián

Figure 9.2: Participation of the PRVCU during the Insect Study Merit Badge in Guajataka Camp, San Sebastián

Figure 9.3: Participation of the PRVCU during the Insect Study Merit Badge in Guajataka Camp, San Sebastián

Figure 9.4: Participation of the PRVCU during the Insect Study Merit Badge in Guajataka Camp, San Sebastián

Figure 10.1: Figure 9: 17th PHSU-PRI Annual Scientific Conference.

CHRISTMAS ACTIVITIES

In December 2021, different activities were conducted to continue the dissemination of preventive messages (Figure 11). These activities included the following: (1) delivery of Christmas cards for all the houses that participate in the PRVCU surveillance system in the different municipalities; (2) “Parrandón Navideño” in different municipalities such as Ponce, Cabo Rojo, Hormigueros and Guánica (3) Three Kings Caravan that was conducted in January 2022 in Ponce and Bayamón, for the next report the pictures of this activity will be included. For this activity, PRVCU developed an art that the kids would prepare the box for the grass (<https://bit.ly/3l8h9rH>).



Figure 10.2: Jania García-Zeno receiving the first place during the poster presentation in the 17th PHSU-PRI Annual Scientific Conference.

Figure 11.1: Picture of the CM Team during the transmission of the program.

Figure 11.2: Picture of the CM Team during the transmission of the program.

Figure 12.1: Pictures of the Christmas activities to promote the prevention messages.

Figure 12.2: Pictures of the Christmas activities to promote the prevention messages.

THE PUERTO RICO VECTOR MANAGEMENT ASSOCIATION REACHED OVER 160 MEMBERS

To date, **163 individuals from different sectors (municipal, private, academic, among others) have become members** of the Puerto Rico Vector Management Association (PRVMA) representing 58 local municipalities and five additional countries (United States, Perú, Ecuador, Chile, and Mexico). There are 44 municipalities that have representation from municipal employees (OMME or DOH). Efforts will continue to recruit members using social media strategies as well as announcements using traditional media.

Every year, all the members received a welcome kit (poster, calendar, and others) about the Association as part of the recruitment and retention process. The first members meeting was conducted on September 7, 2021, and three regional representatives were selected (Ponce, Mayaguez, and Metro regions). As part of the benefits of the members, an educational talk was provided about the requirements of the certification of Category 9 by Mr. Raúl Pérez from the University of Puerto Rico - Mayaguez Campus.

ANNUAL CONVENTION OF VECTOR CONTROL 2021

PRVCU conducted the Annual Convention of Vector Control on September 28-30, 2021, to celebrate the 5th Anniversary of the PRVCU and present the AMVPR to the public. The Summit was dedicated to Capt. Alfredo Casta. The objective of this convention was to provide information about mosquito *Ae. aegypti* and vector control initiatives. The participants of the convention gained knowledge about the biology and ecology of mosquitoes, vector control, mosquito surveillance tools, community outreach, calibration of spray machines, among other topics, which makes it easier for them to be at the forefront of an outbreak of dengue on the island. The convention counted with the subject matter experts in these topics. This meeting included virtual presentations and two days of face-to-face activities (rodeo) in San Juan and Ponce (Figure 13). A total of 153 people participated in the convention during the three days.

STAKEHOLDERS' MEETINGS

To continue increasing the collaborations with the municipalities, the AMVPR had a meeting with the leadership of the Bureau of Emergency Management and Disaster Administration (NMEAD), participated during the four Emergency Management Conventions around the island and presented the PRVCU and the AMVPR during the regional directors meeting (Figure 14). Also, meetings with different municipalities have been conducted to support vector control strategies.



Figure 13: Pictures of the Annual Convention of Vector Control 2021



Figure 14: Left to Right: (a) Meeting with NMEAD Leadership; (b) Meeting with NMEAD Regional Directors; (c) PRVCU personnel with Nino Correa, Director of NMEAD; and (d) Noemí Martínez participating during one of the NMEAD Conventions.

STRONG PRESENCE IN TRADITIONAL AND DIGITAL MEDIA OUTLETS

Digital Content and Social Media

The main social media page used by PRVCU is Facebook, with a total of 16,632 followers (Table 4). New strategies to increase engagement and provide more relevant information include video blogs, social media campaigns, contests, and mosquito facts (Figure 15). In addition to Facebook, PRVCU has accounts in 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 in YouTube, a video

blogs series was developed to promote the reuse of potential breeding sites and eliminate them. A total of 69 videos have been developed and distributed using this platform. The channel has 432 subscribers. Moreover, PRVCU develops monthly newsletters that has being distributed to more than 1,200 contacts.

More than
18,000

followers in social media

1,200

contacts received on our
monthly newsletter

Table 4: Summary of the PRVCU social media accounts and the number of followers.

Social Media Channel	Number of followers (last year)	Number of followers (this year)
Facebook	16,513	16,632
Instagram	852	950
Twitter	224	303
YouTube	366	432



Figure 15: Social Media contests for Halloween and Christmas

MAIN ACHIEVEMENTS IN VECTOR CONTROL

Released millions of male mosquitoes with Wolbachia in Ponce

In December 2021, PRVCU ended the weekly releases of millions of male mosquitoes with Wolbachia, a bacterium that lives in the cells of over 60% of the insects, but not in *Ae. aegypti*. When introduced to this mosquito, and only males with the bacteria are released to the environment, the males mate with the females without Wolbachia but because they are incompatible, these females lay eggs that do not hatch. This serves as a population control method that eventually reduces the population of mosquitoes in nature.

The PRVCU released over 90 million male mosquitoes carrying Wolbachia from September 2020 to December 2021. The release program was significantly hampered by the COVID-19 pandemic, but the test was successful enough to indicate the limitations of this technique. The main limitation was that the large number of mosquitoes needed to reduce the natural population proved too costly to sustain. Because this technique requires continuous releases into the future, we determined that the technique was simply too expensive to be viable in Puerto Rico. Despite that limitation, the project had significant accomplishments during the implementation (Figure 16). The efforts of the PRVCU team and collaborators resulted in significant reduction in the *Ae. aegypti* mosquito population.

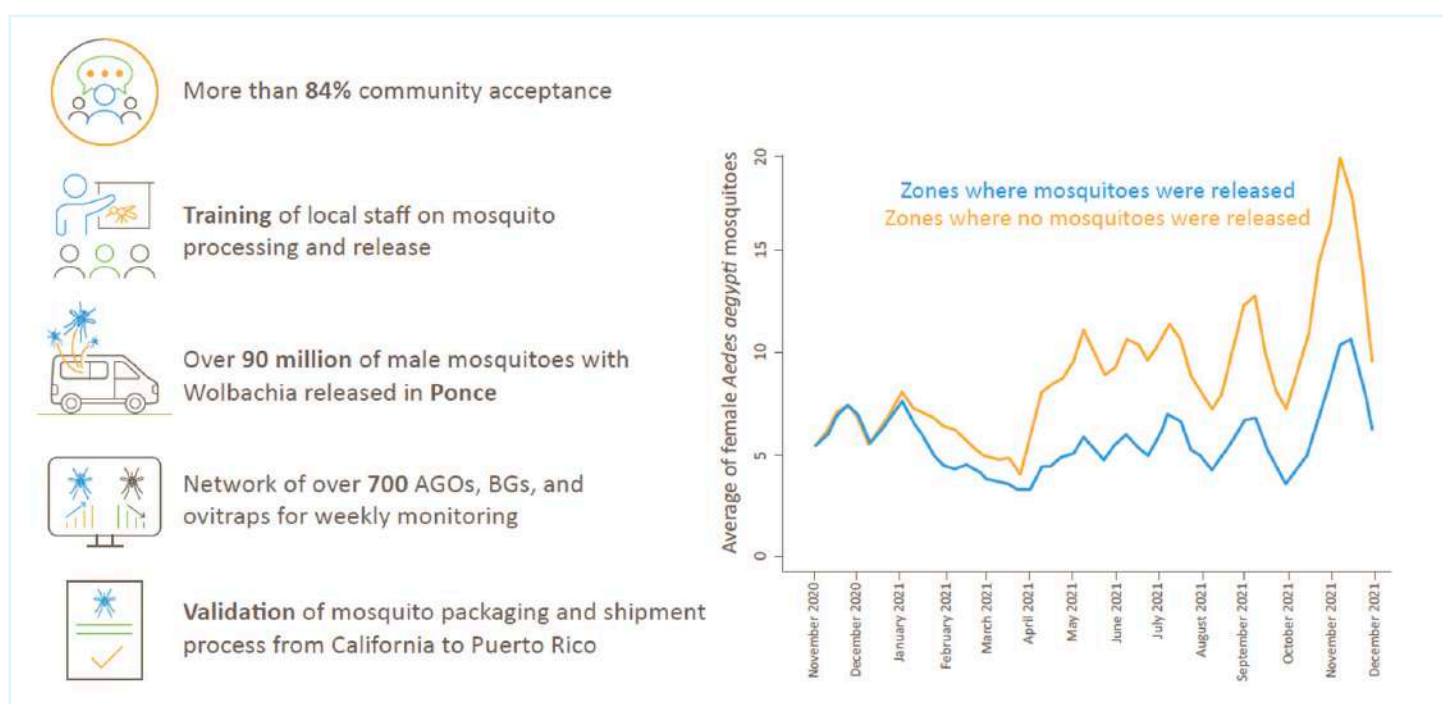


Figure 16: Main accomplishments of the Wolbachia project in Puerto Rico.



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. In June 2022, the first annual cross-sectional serosurvey began throughout Caguas as another component of this project. The two parts together are expected to clearly show the threshold density for dengue in Caguas.

IMPLEMENTED RAPID VECTOR CONTROL RESPONSE IN DIVERSE AREAS

As part of the collaboration with the CDC, Puerto Rico Department of Health and PRVCU, a rapid vector control

response has been implemented in areas with active dengue cases. The following areas where cases of Dengue type 1 & 2 were detected, we responded quickly and effectively. Despite the limited resources and personnel, the response to the hotspots has been successful. Table 5 shows the areas that were served during the last year.

Date	Serotype	Area	Activities	Result
June – September 2021	Dengue 1	Alejandro Housing Project, San Juan*	<ul style="list-style-type: none"> ■ 14 AGO surveillance traps ■ 170 AGO control traps ■ Breeding sites source reduction ■ Use of larvicides ■ Community and education activities. 	This intervention was successful as the mosquito population was dramatically reduced and no more cases of Dengue 1 were reported.
September – December 2021	Dengue 1	El Trebol Housing Project, San Juan*	<ul style="list-style-type: none"> ■ 18 AGO surveillance traps ■ Breeding sites source reduction ■ Use of larvicides ■ Community and education activities 	No more cases of Dengue 1 were reported.
September – October 2021	Dengue 1	Jardines de Trujillo Alto, San Juan*	<ul style="list-style-type: none"> ■ 10 AGO surveillance traps 	
September – October 2021	Dengue 2 (Mosquito pools)	Caparra Terrace and Las Lomas, San Juan*	<ul style="list-style-type: none"> ■ 10 AGO surveillance traps ■ Breeding sites source reduction ■ Use of larvicides ■ Community and education activities 	No more mosquito pools positives of Dengue 2 were reported.

Date	Serotype	Area	Activities	Result
October – December 2021	Dengue 2 (Human cases)	Puerto Nuevo, San Juan*	<ul style="list-style-type: none"> ■ 12 AGO surveillance traps ■ 203 AGO control traps ■ Breeding sites source reduction ■ Use of larvicides ■ Community and education activities 	This intervention was successful as the mosquito population was dramatically reduced and no more cases of Dengue 2 were reported.
December 2021	Dengue 1	El Prado Housing Project, San Juan*	<ul style="list-style-type: none"> ■ 10 AGO surveillance traps ■ Breeding sites source reduction ■ Use of larvicides ■ Community and education activities 	No more cases of Dengue 1 were reported.
December 2021	Dengue 2 (Human cases)	Sector el Cacao and Urb. Colinitas del Cacao, Carolina	<ul style="list-style-type: none"> ■ 9 AGO surveillance traps 	No more cases of Dengue 2 were reported.
January 2022	Dengue 4	Villa Carolina, Carolina*	<ul style="list-style-type: none"> ■ 10 AGO surveillance traps 	No more cases of Dengue 4 were reported.
February 2022	Dengue 1	Juana Matos 1, 2, 3 Housing Project, Cataño*	<ul style="list-style-type: none"> ■ 20 AGO surveillance traps ■ 44 AGO control traps ■ Breeding sites source reduction ■ Use of larvicides ■ Community and education activities. 	No more cases of Dengue 1 were reported.

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 island. The support itself is coordinated through the Association mentioned above and is a key aspect of the PRVCU's efforts to maintain close relationships with municipalities in Puerto Rico. Support includes vector and virus surveillance, larvicide applications (Figure 17), training, etc.



Figure 17: Main accomplishments of the *Wolbachia* project in Puerto Rico.

COLLABORATION WITH ROTARY CLUB INTERNATIONAL FOR A PROJECT 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, we aim to control the *Ae. aegypti* mosquito and prevent epidemics caused by the viruses they transmit. Currently, the PRVCU has completed one year in the Island with multiple efforts to reduce *Ae. aegypti* mosquito population. For the period from April 1 to June 30, 2022, the average female *Ae. aegypti* by trap/week was 4.92. This average by week was the lowest during the first year, representing 1.28 less than of the beginning of the project (Figure 18).

Following AGO surveillance trap deployment protocol, 25 AGO traps were deployed on the urban area of Culebra. With the surveillance system we can know mosquito density in four areas of Culebra: Town, Clarke, Villa Muñeco, and Fulladosa. The team has been able to reduce more than 50% of the mosquito

population in the Town, in comparison with the beginning of the project. Most of this effort is due to transforming a breeding site, an unused fountain, into a garden with the collaboration of more than 20 volunteers from different organizations. A surveillance trap to the fountain was averaging more than 90 *Ae. aegypti* female mosquitoes/week, after the garden it average less than six (6) *Ae. aegypti* female mosquitoes/week.

In terms of the community mobilization activities conducted in Culebra, a total of 180 Knowledge, Attitudes, and Practices surveys were administered, more than 15 community activities, two (2) train the trainers and six (6) school talks were conducted with an impact of around 400 people. Likewise, more than 265 repellents, 400 flyers and 194 larvicides were distributed. The Culebra project activities were presented on the 88th AMCA Annual Meeting Poster presentations and was awarded with the third place.

More than
50%
of the mosquito
population in the Town

400
People Impacted through
educational activities



Figure 18: Density of *Ae. aegypti* female mosquitoes during the first year of the project.



Figure 19: Culebra projects activities

SPONSORS

ANNUAL CONVENTION OF VECTOR CONTROL 2021



MOSQUITO DAY 2021



GRANTS





COLLABORATORS





FUTURE PLANS AND DIRECTIONS FOR THE PRVCU

The main driver the PRVCU's direction is the emerging priority of the CDC to eliminate dengue in 10 years. We expect a plan for dengue elimination to be adopted by the CDC by the end of FY 2022. The plan will have 4 major components: prevent dengue transmission, prevent dengue infections, stamp out any emerging or sporadic outbreaks, and prevent re-introduction. The PRVCU will be focusing on projects leading to the implementation of all 4 of these components.

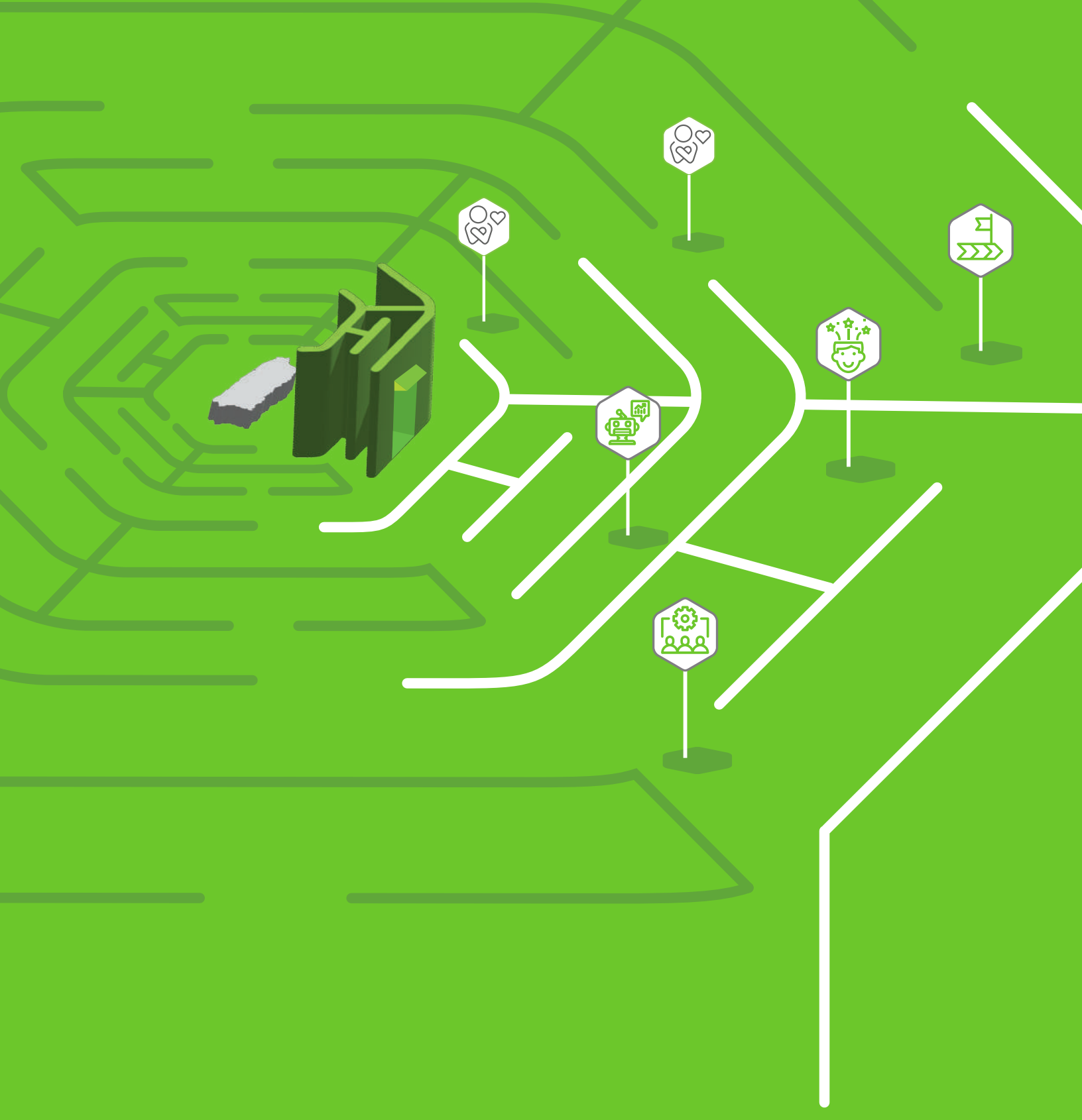
1. Dengue transmission: This will be a project in El Salvador using a technology not yet approved for use in the US. It has been very successful in the 11 countries where it has been used and we will collect the information needed to gain approval so that it can be used in PR.

2. Infections: Several dengue vaccines are or soon will be available for use in PR each with their own advantages and disadvantages. The PRVCU community engagement team will be conducting surveys to create effective community messaging to increase acceptance of these vaccines.

3. We have received funding for developing an early outbreak response protocol along with our CDC colleagues. Detecting and eliminating dengue clusters before they spread is the objective of this work.

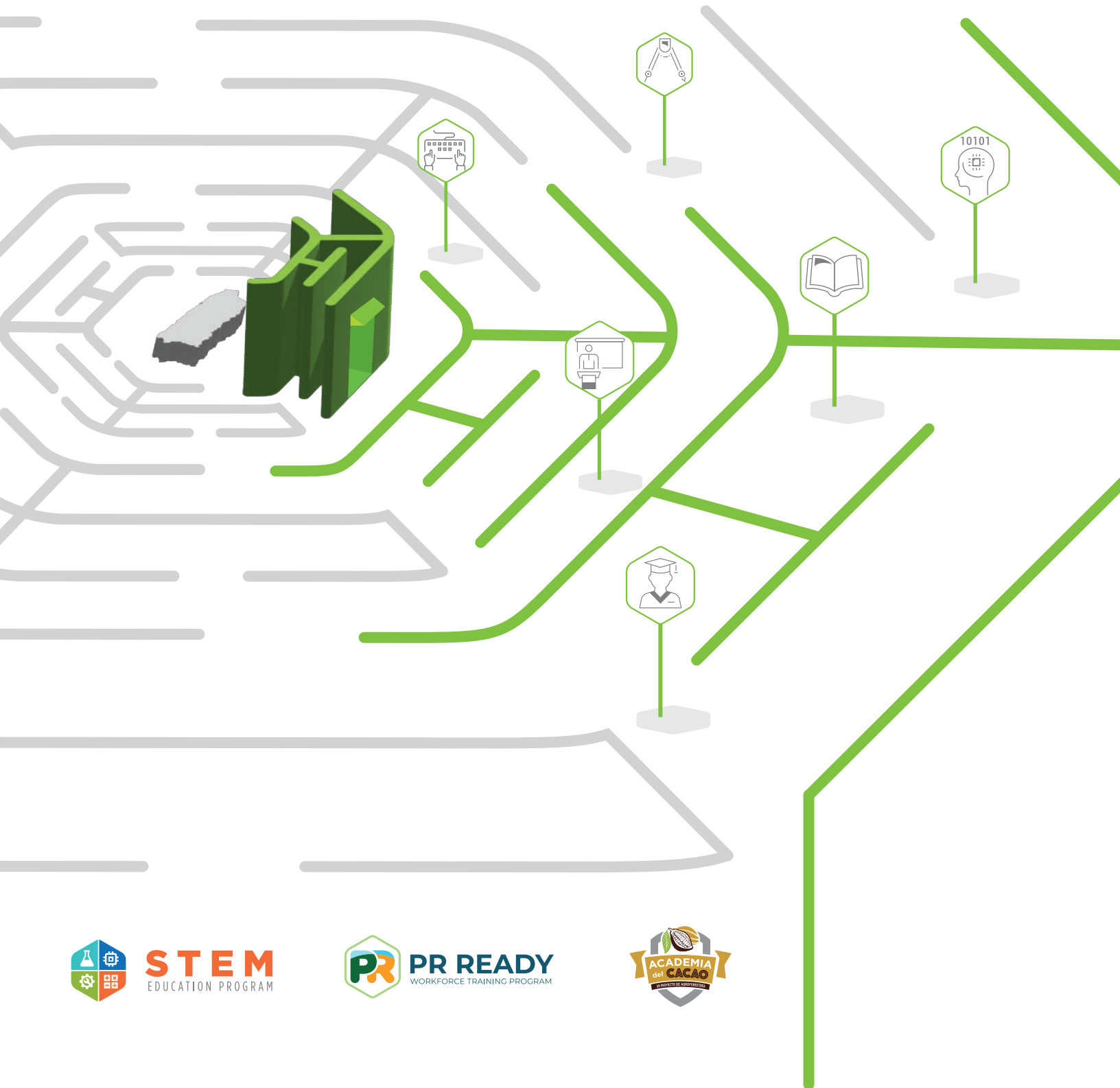
4. Prevent re-introduction: We will prioritize working with the health departments of nearby islands, such as Dominican Republic, to prevent inter-island dengue spread.

In addition to this central effort, we will continue to emphasize our original objective – implementing an Integrated Vector Management program for PR. Our primary tool for this will be our growing Puerto Rico Vector Management Association which now has most municipal vector control and emergency management personnel as members. This association has helped build political support for the Unit and this support will eventually lead to permanent funding.



FOUNDATION

ANNUAL REPORT 2021-2022



STEM
EDUCATION PROGRAM



PR READY
WORKFORCE TRAINING PROGRAM



**STEM EDUCATION &
WORKFORCE DEVELOPMENT**



STEM EDUCATION & WORKFORCE DEVELOPMENT

STEM EDUCATION & WORKFORCE DEVELOPMENT PROGRAM

Global economies, advancements in digitalization, the interconnectedness of professional disciplines, and the reality of modern society demand that economic strategies and their workforce adapt to meet the challenges of the 21st century. The STEM Education & Workforce Development Program is driven towards leading initiatives, collaborations and necessary public policy shifts necessary to reimagine the way Puerto Rico engages its K-College educational and workforce ecosystem; all this to enhance the island's prime resource, its people.

The program concentrates on two major fronts. First, the STEM Education program which guides efforts with multiple partners to lead, develop and enhance opportunities in science, technology, engineering, and mathematics for students Kinder to 12th grade. On the other front, the Workforce Development program, is a host of initiatives that leverage funding to provide certifications, credentials, and capacity building to multiple stakeholders across the island.

Our work is geared towards establishing accessible options to enhance STEM education and workforce development pathways with equity for all.

MISSION & VISION

To advance, connect, expand, and sustain key initiatives that drive STEM education and workforce development as key components of Puerto Rico's economic development.

PROGRAM DIRECTOR

[Jorge A. Valentine, CAPM](#)



Experience encompasses 15+ years in both proprietary and nonprofit settings; including a secondary school principalship, educational project design, and management, as well as student service leadership among other roles. He holds a BA in Management from the UPR, an MA in Humanities from USC, a Doctor of Education candidate at Ana G. Mendez University, and is a PMI® Certified Associate in Project Management. At the Trust, he oversees the development of K-12 educational initiatives, and workforce development projects, and supports efforts to research STEM career selection, persistence, and attrition among K-16 students.



Figure 1: Innovation starts with interest, curiosity and fun.

Figure 2: Students celebrate their efforts at STEM Code Challenge 2022.

Figure 3: TECH Saturdays projects.



Puerto Rico Ready

37 PARTICIPANTS

CDBG-DR Workforce Training

160 CERTIFIED PARTICIPANTS

Agricultural projects more than

**\$100,000
OF PRIVATE INVESTMENT**

WORKFORCE DEVELOPMENT PROGRAM

The Workforce Development Program (WPD) is the link between the outputs from the K-12 education efforts, and the vision for lifelong learning for adults whether in or outside the workforce. The main purpose of the program and its component is to provide professional learning, micro credentials and professional credentials in the areas of emergent technologies.

The Program is leveraging strong partnerships such as the most recent agreement with ISACA, to provide **Information Technology Associate Certificates (ITCA)** and **Certificate in Emergent Technologies (CET)** credentials to university students, educators, active employees in the IT sector, as well as under and unemployed individuals interested in jumpstarting their IT careers.

The WDP is also working to provide HUD-eligible participants with credentials and training through its **Puerto Rico Ready** initiative with a total of 37 participants already certified as of August 2022 with credentials in Manufacturing Fundamentals, FAA107 Drone Piloting and IT. The final year of the CDBG-DR Workforce Training grant forecasts a total of 160 certified participants, and we are working hard on meeting the challenge.

Finally, agricultural projects are turning the needle on agroforestry and agroecological practices. By way of more than \$100,000 of private investment and our collaboration agreement with Sterling College in Vermont, the Academia del Cacao is building capacity for farmers interested in having high quality cocoa as their main crop; Agroecología para el Futuro is mapping the agroecological ecosystem and its gaps; while EcoGather is producing open-source academic content along with partners in India, Bhutan and the continental US.



Virtual Info Session for IT participants August 2022



STEM

EDUCATION PROGRAM

STEM EDUCATION PROGRAM

We reimagine and transform STEM education in Puerto Rico through a variety of resources and initiatives for teachers, parents, and students. Our program is a source of accessible and quality learning experiences that encourages students to continue growing throughout their academic careers.

VISION

We strive to facilitate quality and accessible education in Puerto Rico through the promotion of effective public policy, innovative learning opportunities, and key initiatives for the development of children, teens, and adults.

MISSION

Our mission is to reimagine and lead the way towards STEM, Career Technical Education and Workforce Development innovation in Puerto Rico to continue shaping our current and future professionals in the field.

By closing of the year, the STEM Education Program has successfully met its 2020 goal to expand its outreach, increase programmatic awareness, increase female participation on all its platforms, and become a reference for other programs bridging the gaps in STEM and STEM-related education on the island. Not only has the program gathered major following on its social media outlets; it has increased its average female participation by 10%, it has gathered more than \$200,000 in discretionary funding to support STEM initiatives and has partnered with leading organizations on the island to broaden its impact.

STEM DIRECTOR

[Dra. Frances Zenón Meléndez](#)

Obtained a doctorate in Microbiology with a concentration in Virology in 2014 from the University of Puerto Rico, Medical Sciences Campus. What she likes most about her job is that she can impact students all over the island and provide them with educational tools that help them develop and promote their love for science.



STEM Boxed Kit Experience served a total of
495 STUDENTS
from across the island. The average participation of public-school students is **66%**

Female participation

35%
average

30 TEACHERS
participation

73% STUDENTS
PUBLIC SCHOOL
Tech Saturdays

27%
FEMALE
PARTICIPANTS





KEY ACHIEVEMENTS

STEM BOXED KIT EXPERIENCE-AFTERSCHOOL PROGRAM

The STEM Boxed Kit Experience is an eight (8) week afterschool program that engages students with meaningful, hands-on learning in a distance setting by delivering a “boxed kit” to every participant’s household, and offering direct facilitation of materials, lessons, challenges, and skills through online sessions twice a week.

- Female participation has increased by 10%, with an **average of 35% of participants identified as female.**
- During the fiscal year 2021/2022, the program served a total of **495 students** from across the island. The average participation of public-school students is **66%.**

The STEM Boxed Kit Experience will continue during the fiscal year 2022/2023 with sponsorship from the Medtronic Foundation and the collaboration of Fundación Atención Atención, one of Puerto Rico’s leading educational content producers. The goal is to reach an additional 500 students in a 24-month span in addition to the creation of a platform with free STEM content available for parents, teachers and the rest of the community.

SERIES - ONLINE PROFESSIONAL DEVELOPMENT FOR DEPARTMENT OF EDUCATION PHYSICS TEACHERS

The STEM Education Program in collaboration with Morehead State University, at the request of physics teachers of all the academic levels in the Puerto Rico Department of Education, provided depth of knowledge workshops in physics focused on practical applications of lessons and tools for the classroom, online interactive simulations, and strategies to engage students from all levels. The opportunity served **30 teachers.**

TECH SATURDAYS @ HOLBERTON PUERTO RICO

In collaboration with Holberton School Puerto Rico, the Tech Saturdays’ initiative served 30 juniors and seniors from around the island in an 8-week workshop focused on programming. The experiential learning opportunity included skills development in problem solving, integration of computational thinking into design, as well as introduction to the Python programming language.

Tech Saturdays’ participation rates include **73% public school**

students, and 27% female participants.

EXPLORING COMPUTER SCIENCE (ECS-PD)

As part of the STEM Education Program’s strategic commitments to promote and support public policy that promotes computer science education as part of the curriculum at the Puerto Rico Department of Education (PRDE), the Exploring Computer Science professional development was enacted in collaboration with PRDE and the University of Puerto Rico.

For the experience, a total of 76 teachers are already certified. The most recent 22 completed their professional development during the Summer of 2022. This group of teachers is prepared and has already been assigned to teach at least one computer science course at their schools with support from the Academic Affairs Office at PRDE.

SUMMER STEM CODING CHALLENGE

The Summer STEM Coding Challenge is a hands-on STEM experience that brought back in-person sessions after COVID-19 lockdowns. In collaboration with Terminal 34, a Parallel18 graduate and local startup coding academy, we developed two one-week sessions in the municipalities of San Juan and Ponce. A total of **46 participants** – 28% of them females – enjoyed experiential learning on mobile device design, programming fundamentals, block programming



Figure 1: Engaged students at Tech Saturdays @ Holberton-Female participation for the STEM Education Program increase.

Figure 2: Exploring Computer Science (ECS-PD) ECS teachers are ready to begin their adventure as computer science facilitators in their schools.



PR READY

WORKFORCE TRAINING PROGRAM

+300 APPLICATIONS

from residents of **64 municipalities** on the island,
represented in **62% female** and **38% male**.



PUERTO RICO READY

Puerto Rico Ready is a Puerto Rico Department of Housing Community Development Block Grant – Disaster Relief (CDBG-DR) funded initiative. The program's goal is to train and build competencies in participants across the island, and offer training, certification, and mentoring.

The program offers professional certifications and credentials in emergent and established economic sectors to unemployed or underemployed residents of Puerto Rico in Information and Technology, Health Services and Manufacturing. Once participants complete the program, they can be part of a talent portal that serves as a recruiting tool for various employers.

KEY ACHIEVEMENTS

APPLICATIONS

More than **300 applications** from residents of 64 municipalities on the island, represented in **62% female** and **38% male**.

MEETING THE MISSION TO SERVE UNDERSERVED INDIVIDUALS

With presence in 11 orientation activities, 7 virtual information sessions, as well as in the CDBG-DR Routes in Bayamón, Salinas and Orocovis with the Department of Housing, **53%** of applicants reported their **income is below \$15,000.00**; while **52%** indicated that they are unemployed and 64% have a bachelor's or master's degree. With 42 active participants on the course, and 36 already having completed basic coursework, the target for the year 2022 is to serve more than 150 participants.

PROGRAM MANAGER

[Gilmarie Mendoza](#)



Experienced administrator and educator skilled in Educational Technology, Curriculum Development, Public Speaking, and Teacher Training. Strong research professional with a Doctoral degree in Education focused in Curriculum, Teaching and Learning Environments (Ed. Technology) from Universidad del Turabo.



AGRICULTURE INITIATIVES

In 2021, agricultural initiatives at the Puerto Rico Science, Technology and Research Trust were included under the Workforce Development Program as capacity building, educational content and workshops are a key component of the two programs engaging with communities across the island. Academia del Cacao focuses on broadening aromatic cocoa's place in agroforestry, while Agroecología para el Futuro looks to create a useful knowledge base for supporters to assess their investments on agroecology.

The program's achievements are as follow:



ACADEMIA DEL CACAO

The project offers educational content about agroforestry crop production using Puerto Rico's fine and aromatic cocoa – one of the world's top 10 – as the key crop. The Academia trained 40 local farmers in areas such as agroforestry planning, management and economics and has entered its second phase where five farmers will receive financial support as they establish their own agroforestry operations.

Academia materials and learning resources, including workshop videos, are available through www.academiadelcacao.com and are free for the interested public to access.



Agroecología
para el Futuro

AGROECOLOGÍA PARA EL FUTURO

The program's mission is to perform the necessary data gathering to support the agroecological sector's development. The goal is to measure the gap of financial and technological challenges agroecological farmers face, execute pilot programs to test how the gaps can be bridged, and develop guidance literature to help agroecology supporters make better decisions when considering investments on the sector. At this point, the program has connected local farmers and is in the process of completing initial questionnaires to embark on the analysis phase.



ECOGATHER

Through the EcoGather initiative, a global educational platform for ecological farming created by Vermont's Sterling College, the Trust is contributing educational content with the island's context. EcoGather in Puerto Rico is powered by the partnership with Plenitud Puerto Rico, a local agroecology nonprofit project, and is producing learning modules on human scale agriculture, technology applied to farming, water collection and crop production as a tool for cultural exchange. The modules are expected to be completed by 2023 and become part of a knowledge base that is connecting projects in Bhutan, India, Colorado, and Vermont.



PROGRAM MANAGER

[Nayla Bezares](#)

Nayla Bezares is a doctoral candidate in agriculture, food and environment at the Friedman School of Nutrition Science and Policy at Tufts University. Her doctoral thesis applies food systems modeling techniques to evaluate food security strategies in Puerto Rico. She has a broad background in the disciplines of nutrition, sustainability, agricultural science, and food policy with specific training and expertise in applying life cycle assessment methods to evaluate the sustainability performance of farms and secondary data analysis using statistical methods. Her doctoral research will lay the groundwork for food systems performance tracking in Puerto Rico. In addition to her academic research, Nayla has also managed various agricultural development projects for the Puerto Rico Science, Technology and Research Trust. These projects include an agroforestry training program that promotes cacao farming, sustainable practices, and farmer-to-farmer knowledge sharing; an evaluation of the agroecological sector in Puerto Rico using primary data collection methods; and producing educational content for a global online learning platform that provides farmers access to information and real-world examples of sustainable farming practices in different contexts.



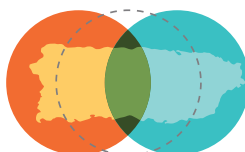
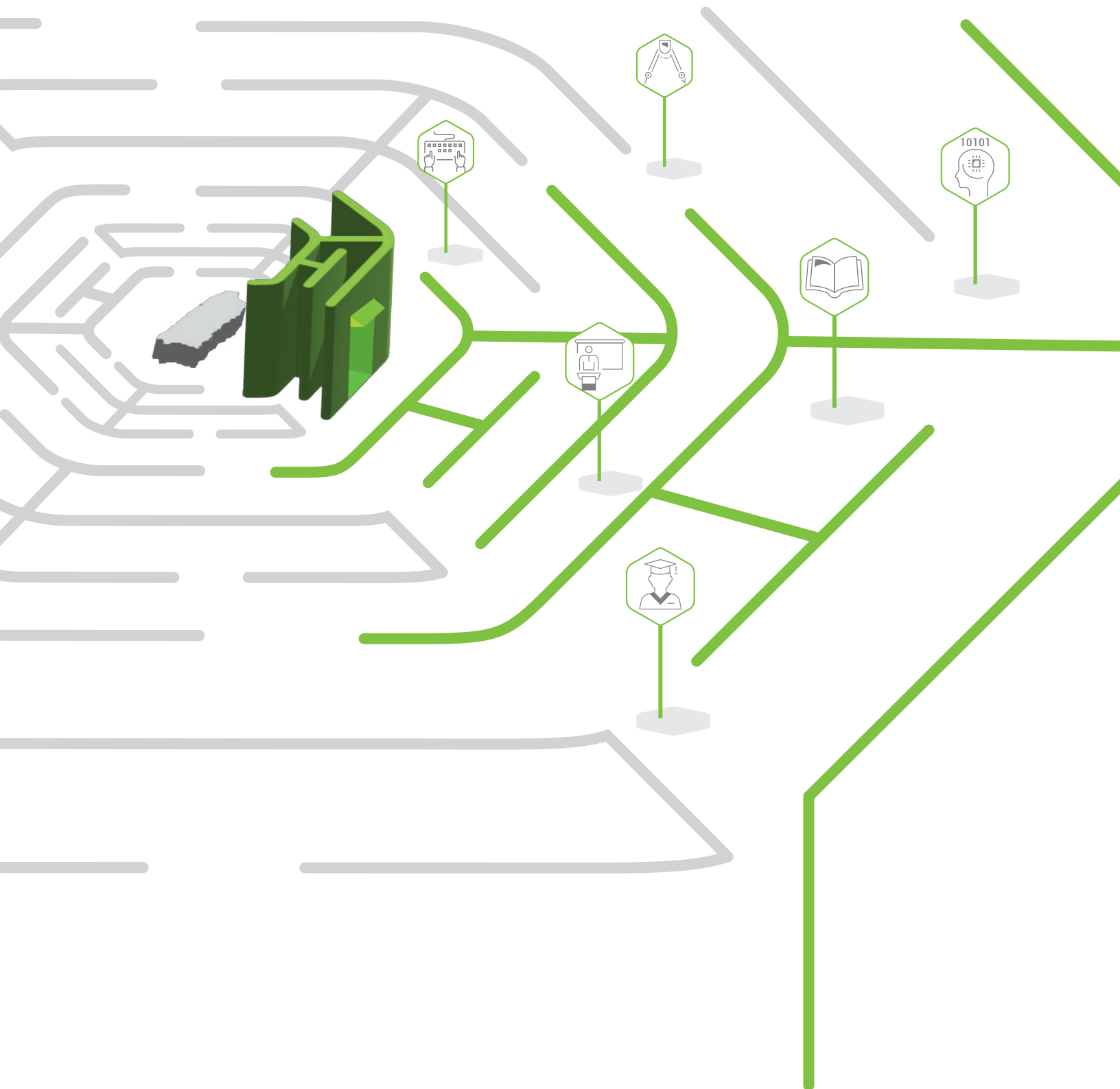
FUTURE PLANS

The STEM Education & Workforce Development Program has been successful at meeting its mission within the scope developed for the past three years in which it has been active. As the challenges brought upon by the pandemic, and the adoption of new approaches to continue keeping in touch with our stakeholders, we look into the future with enthusiasm.

For the STEM Education Program, we are working on broadening our collaborations and partnerships with other STEM organizations to amplify our reach. Planning includes the development of a STEM Pathways platform where students, parents and educators can get information on STEM and STEM-related career pathways.

Puerto Rico Ready will increase its presence in regional media to increase its outreach and communications. As this is the program's final year, the goal is to increase inquiries, admissions, and completion. It is also the year to complete the final deliverable, the project's talent showcase platform; a job-finding tool available for potential employers on the island.

As for our agriculture projects, we seek to complete ongoing activities and provide our stakeholders with the tools needed to improve the economic landscape of agroforestry, while producing high-quality educational content for the public.

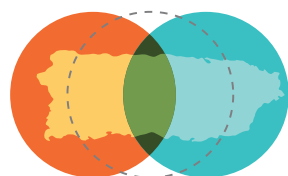


PR RESEARCH
& INNOVATION



Meet-ups





**PR RESEARCH
& INNOVATION**



Meet-ups

MEETUPS PROGRAM

The Research and Innovation Meetups Program continues to be a successful platform for sustained dialogue among an increasing base of stakeholders of emerging ecosystems in Puerto Rico. We remain focused on continued stakeholder engagement from the vantage point of our program drivers: increasing social capital, shared leadership, collaboration, and more sensible and intelligent business practices. Salient achievements for the Meetups Program are presented below.

VISION

A community that thrives on diversity and creativity as the basis for its social economic prosperity.

MISSION

To foster productive, solution-design dialogues to increase citizen wellbeing while promoting innovation and economic development.

PROGRAM DIRECTOR



[Ricardo Burgos](#)

Innovation agent with experience in creative economy, food security (bio protection + precision agriculture), visitors economy, waste management, social & solidarity economy, urban farming





MEETUP EVENTS

The program's shift to virtual dialogue facilitation in 2019 allowed for our attendance to almost duplicate. In looking back (the Meetups Program has been running successfully for 7 years), we are excited to see a 398% growth in attendance since it started, in 2005. Finally, all Meetups produced during this last year have exceeded 100 attendees per event.

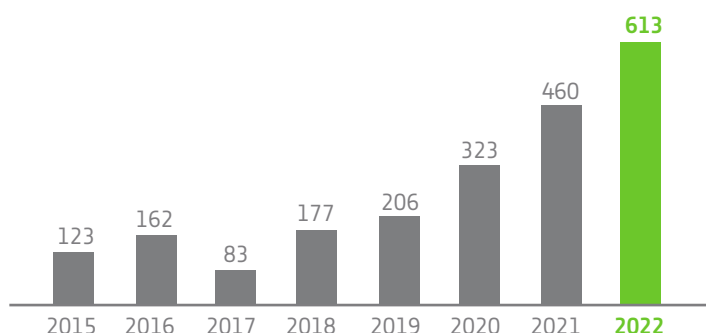
This year we facilitated 4 meetup events, with an aggregate attendance of 625 persons and 62 subject matter experts as guest speakers. The events addressed the following topics of discussion: Rising Seas (133 attendees), Cybersecurity (145 attendees), Space Economy (163 attendees), and Workforce Development (184 attendees).

Important takeaways from these achievements include:

- 1) Validation that the program remains an effective convener of a wide variety of stakeholders aligned with the Trust's mission and vision;
- 2) Increased collaboration with private sector stakeholders, for example: ISACA, Space Foundation, and MILO Space Institute; and
- 3) Weaving of collaboration has extended beyond dialogue and evolved into program support, as it happened with Workforce Development and Space Economy.

The graph below illustrates attendance levels to a diverse agenda of facilitated discussions in our Meetup events.

Meetup Program Annual Attendance
(2015-2022)



398% GROWTH

in attendance since it started, in 2005

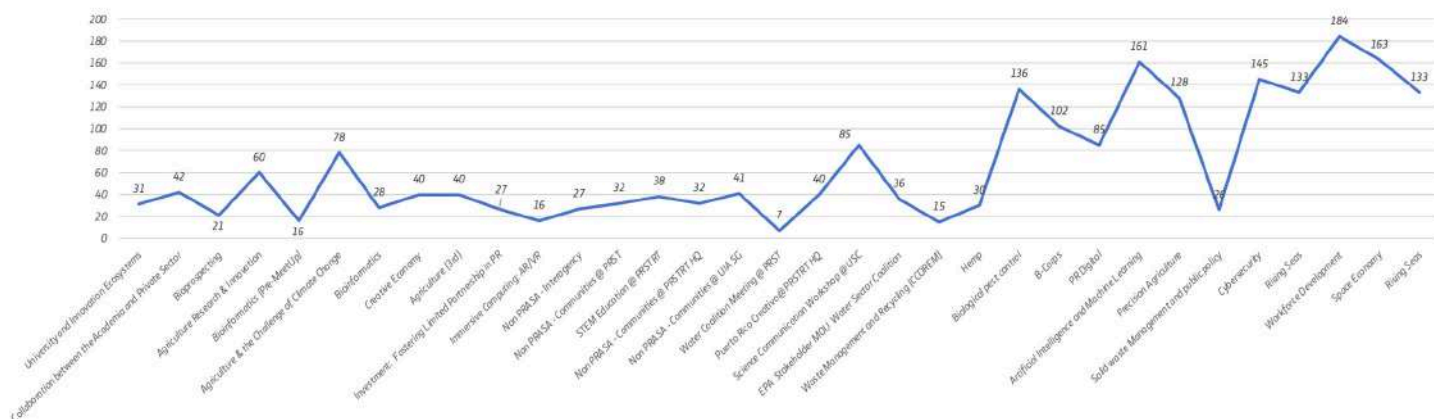
4 MEETUPS EVENTS

More than

620

Person attendance

MeetUp Program - Attendance (2015-2022)



PRSTRT PROGRAM SUPPORT

Beyond dialogue facilitation, the Meetups Program is committed to remaining a transversal supporting unit to other PRSTRT programs. This year our engagement supported eight (8) PRSTRT programs, as described below (in alphabetical order):

Caribbean Center for Rising Seas

We collaborated with the program's leadership to produce the Rising Seas Meetup in March 2022.

Center for Tropical Biodiversity

Engaged in pre-production discussions and ecosystem mapping for a Bioeconomy Meetup, to take place during 2022-2023.

Colmena 66

Engaged in ongoing collaboration through the B Corporation Train the Trainers program and advocacy strategies. We also participated in the SBIR/STTR Federal Grant Program to expand outreach efforts and increase recruitment.

Cultural Heritage Innovation Program

Design and development of the Creative Economy research conducted by Abexus, to be launched during 2022-2023.

Parallel 18 / Pre18

As part of our efforts to support the growth of B Corporations in Puerto Rico, we conducted the first B Corporation orientation session, which allowed for the establishment of the program's B Corporation mentoring tracks for all future cohorts.

Puerto Rico Public Health Trust

We are engaged in ongoing collaboration to define strategies that promote community economic development through entrepreneurship. Engaged in pre-production discussions for a Meetup to address senior citizen wellbeing, to take place during, to take place during 2022-2023.

Research Grants Program

Consistent collaboration for the identification of research activity and networking with subject matter experts for the production of Meetup events. Conversely, the Meetups Program makes referrals to the program arising from the new audience groups within our reach.

SBIR-STTR Program

As it happens with the Research Grants Program the Meetups Program makes referrals to the program arising from the new audience groups within our reach.

STEM Education

We continue supporting the Academia del Cacao, as well as the Peter Alford Foundation's Agroecological Farming Viability grant (to identify the main gaps limiting viability and growth among agroecological operations in PR in order to secure the sustainability of the sector) and the Sterling College Eco Gather Subgrant (for the creation of a first-of-its-kind online platform and network dedicated specifically to advancing ecological thought and action within and between communities). Finally, we collaborated with the STEM Education team to produce the Workforce Development meetup in March 2022.



PRSTRT SPECIAL PROJECTS

The Meetups Program continues to engage a variety of initiatives to improve PRSTRT's program's leadership and leverage economic growth and impact. During the last year we engaged six (6) multistakeholder sector special initiatives along three core areas: strategic networking and support, MOU support, and grant development, as the leverage for our program drivers to continue evolving.

SPACE ECONOMY

Around the production of a very successful Space Economy Meetup in April 2022, the Trust has had an evolving collaborative relationship with Space Foundation and Milo Space Institute for the creation of Puerto Rico Space Studio to accelerate mission driven projects in Puerto Rico. Conversations towards the implementation of NASA sponsored project are part of the anteroom for a more formal relationship among the organizations via a MOU.

WASTE MANAGEMENT

With the leading support of the Trust's IT Department, the development of a recycling material data gathering tool that will be made available to municipalities for the effective collection of recycling materials has resulted in the release of a beta version. It was presented to the EPA and the DRNA, both of whom agree on its value added. Moving forward, we are working towards identifying the funding model for the platform for its prospective use by municipalities and private sector entities.

SOCIAL AND SOLIDARITY ECONOMY

Our initial collaborative engagement with Sistema B has led us to weave B corporation increased awareness and visibility (through Colmena66), and the cultivation of its thought processes into the PRSTRT's business incubation and acceleration programs for all Pre18 and P18 future cohorts. At present, we are engaged in a direct collaborative relationship with B Labs US & Canada for the implementation of a B Local chapter in Puerto Rico.

FOOD SECURITY

We continue to focus on increasing the visibility and awareness of important issues that affect Puerto Rico, such as food security, from the intersection of important topics like biological pest controls and agricultural activity. For example, we continue to support the grant implementation of Peter Alford Foundation's Agroecological Farming Viability Grant and Sterling College's Eco Gather Subgrant, both of which are in collaboration with the STEM Education Program. In addition, we are mapping the agroecological ecosystem with the support of the Peter Alford Foundation.

STRATEGIC NETWORKING AND SUPPORT

Beyond the encounter of audiences to engage in meaningful dialogue, the Meetups Program actively identifies salient leadership in these meetup events and engages them in order to foster spinoff initiatives that address island wide challenges by enabling grounding of quick wins and advancing the interests of that emerging ecosystem while cultivating the relationships among the varied stakeholders that populate it.

CREATIVE ECONOMY

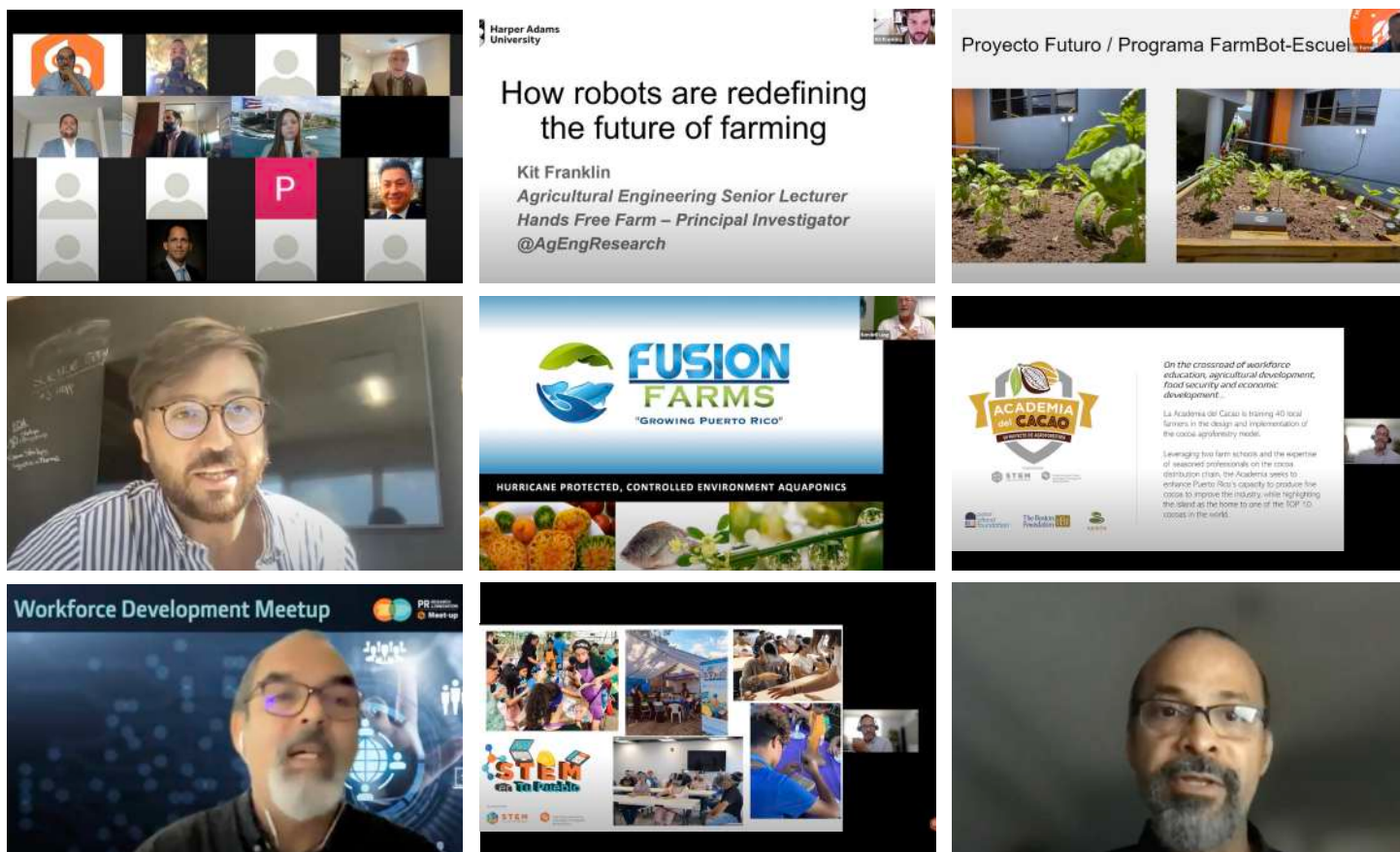
The Meetups Program has taken the lead in the design of the Puerto Rico Creative Economy research study, conducted by Abexus, and to be launched during 2022-2023.

MOU's

The Meetups Program continues to engage a variety of initiatives to improve PRSTRT's program's leadership and leverage economic growth and impact. During the last year we engaged six (6) multistakeholder sector special initiatives along three core areas: strategic networking and support, MOU support, and grant development, as the leverage for our program drivers to continue evolving.

CARIBBEAN SCIENCE CONSORTIUM

The Trust continues to support the Consortium via shared MS Office 365 software licensing for all Consortium members, which has allowed for increased networking and research activity among USVI and Puerto Rico based researchers, in the areas of coastal management, water quality, and cistern studies.



FUTURE PLANS

The program aims to continue expanding outreach activities and enable dialogue to widen PRSTRT's audience base and mapping that allows for a supportive network of emerging leaders. As we move forward, the Research and Innovation Meetups platform will continue furthering its mission objective of identifying and engaging intelligent opportunities to further develop Puerto Rico's social capital.

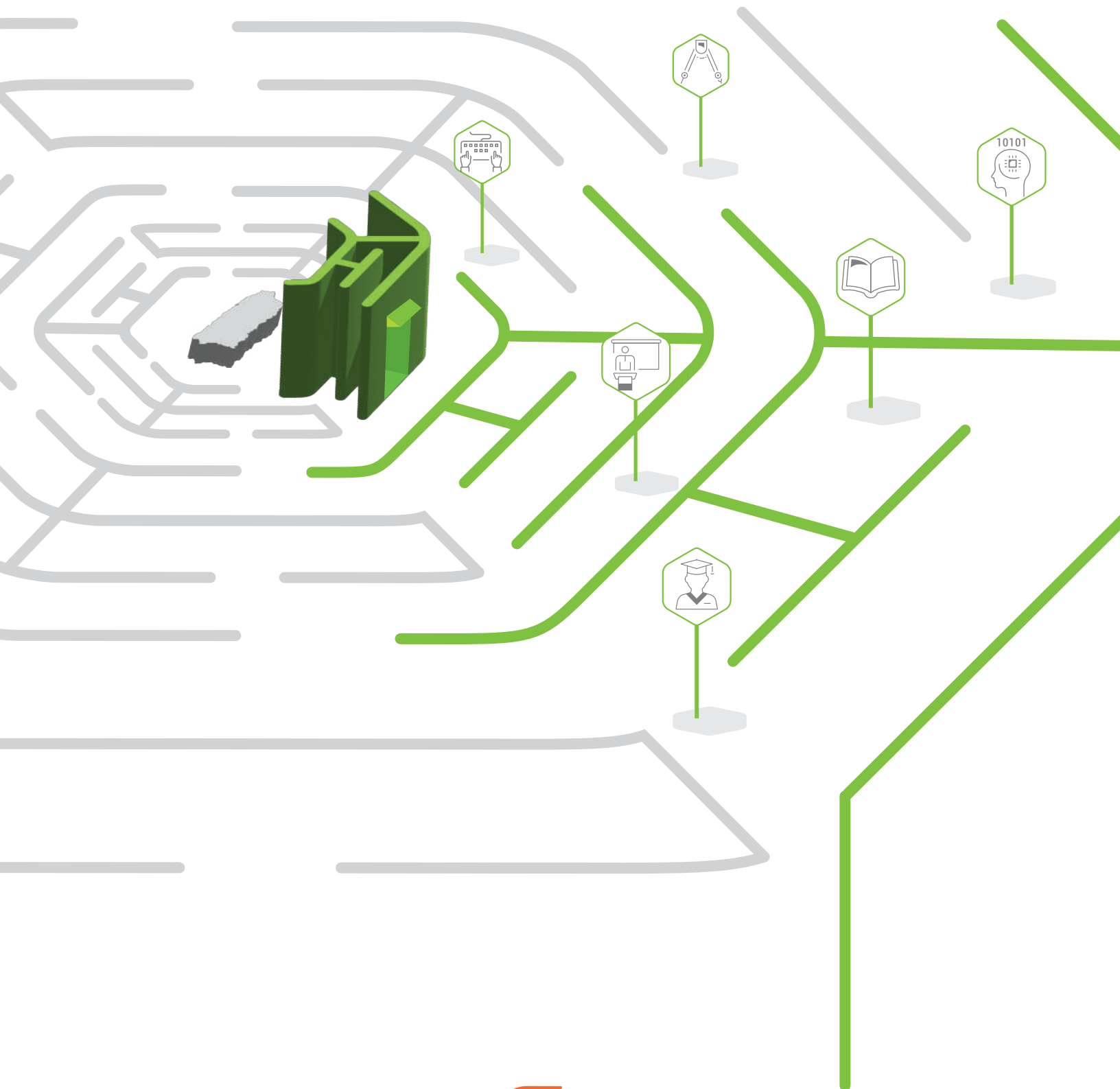
We look to the new year (2022-2023) based on four strategic anchors: **Alignment with global trends and opportunities**, so as to curate discussion topics that carry a high potential of success as viable economic sectors; this will enable better focus related to the continued **facilitation of dialogues and collaborative action**, as well as the **exploration of innovation for social wellbeing with an entrepreneurial approach**, all of which are geared at the **canvassing and fostering of newer and more sustainable economic development initiatives**.

Our outlook for the 2022-2023 work pipeline includes the following endeavors:

Meetup events. We aim to grow our audience base by producing Meetup events on topics, such as: End of Life Management for Photovoltaic Systems; Wellbeing economy; Aging 2.0; Bioeconomy; and Climate Technology. At the same time, we want to remain supportive of other important subject matters that have a high potential for increased economic and academic activity, like Space Economy, Workforce Development, and Science Communications.

Grant development support. Increased grant applications to support special initiatives and program development.

Product development. Mapping the knowledge economy in collaboration with stakeholders of emerging ecosystems has been a very productive experience. As we move towards more strategic audience management, we see the potential value of developing ecosystem directories as available infographic products to increase networking visibility and awareness, feed new audience networks, and identify new areas of opportunity.



Science City



Science City

SCIENCE CITY

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.



Science City, with approximately 69 'cuerdas' of land, is a project that seeks to transform 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 that will 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 conference center, offices, a civic center with an elementary and intermediate level school, commercial premises, multi-family housing, recreational areas, and a linear promenade. The main building of the Innovation Center is located here.



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.

CHIEF FACILITIES MANAGEMENT OFFICER



[Jerry Meléndez,](#)
[Chief Facilities Management Officer](#)

He 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 been at the Trust

to 10 years 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.



There are three main zones within the proposed development of Science City. On both sides of the Old Oso Blanco Penitentiary there 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.

BENEFITS OF SCIENCE CITY

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 employee
- 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 from the other incentives discussed herein.
- Sales tax exemption on construction materials and capital equipment (11.5%)

- New Tax Market Credit Eligible Location

ACCOMPLISHMENTS THIS FISCAL YEAR

FORWARD CENTER PROJECT

- The contract amount was adjusted to \$6,380,991.71
- The work certified for up until July 31, 2022, is \$4,985,750.56
- This represents a 78% percent of the work completed.
- Project finished on March 25, 2023.

DEPARTMENT OF PUBLIC SAFETY

The PRSTRT leases the parcels B-1 and B-2 to the Department of Public Safety. They will build a Safety Room and the Emer-



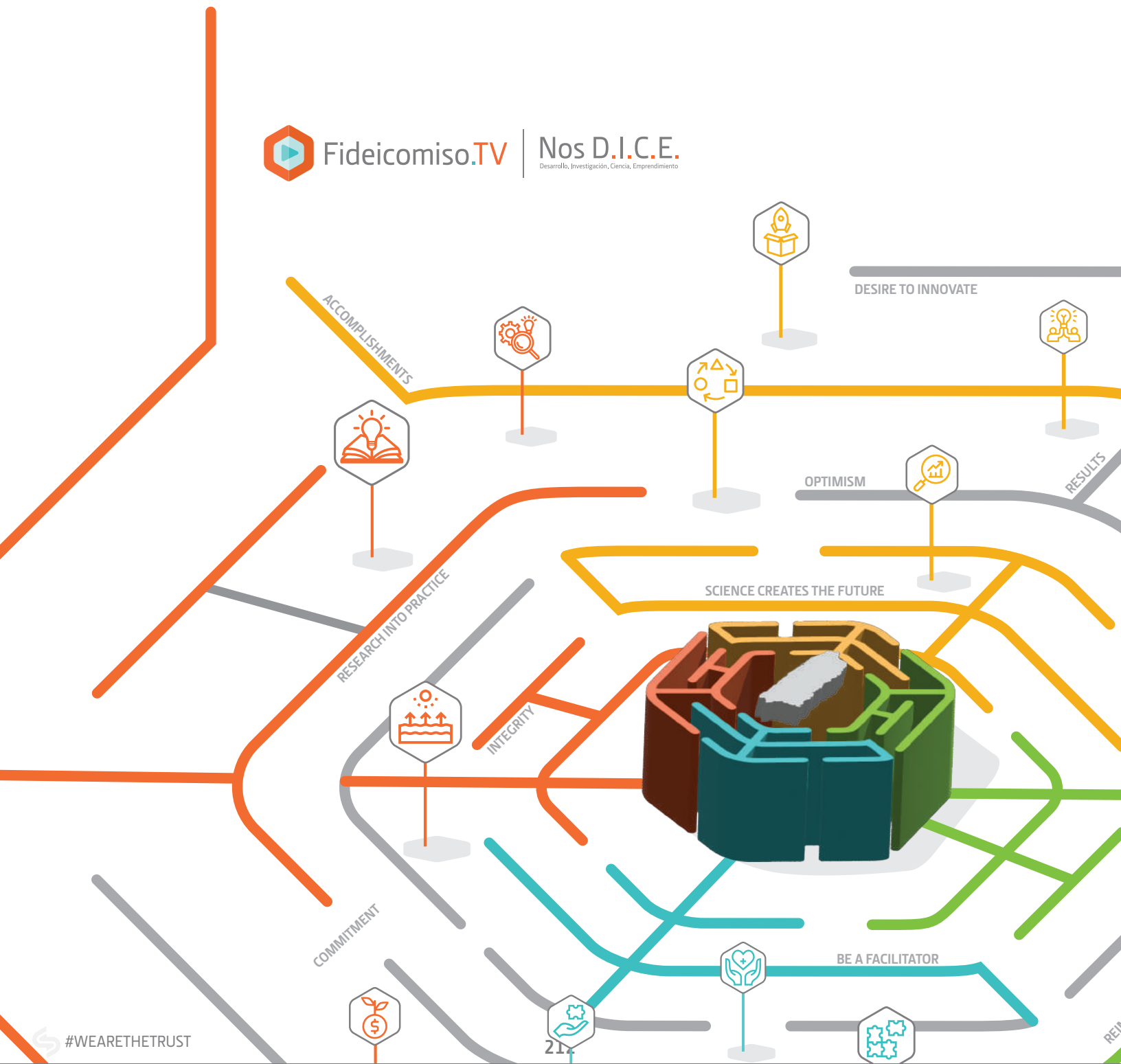


FUTURE PLANS

Science City Boulevard

The Science City Boulevard will be a road consisting 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 Luis A. Ferré), 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 Science City.





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 the 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 recognizes the Trust as a facilitator and reference for innovation.

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 | ■ Photography |
| ■ Graphic design | ■ Public relations |
| ■ Content development | ■ Event production and support |
| ■ Social media | ■ Photography |
| ■ Websites and blogs | ■ Video Editing & Production |
| ■ Channel strategy and campaigns | ■ Many other services |
| ■ Audio, video and interactive productions | |



DMC OFFICER



Lupe Vázquez, Chief Communications & Marketing Officer

She is the leader of our creative team and the go-to person to request any information we need to communicate. She served as editor and reporter for more than 30 years at a local newspaper. Her experience also includes working with designers in the production of print materials, digital platforms, conceptualization, brand management and sales strategies.



CHANNEL LANDSCAPE

To support the dissemination of outreach efforts, campaigns, and other messages, the Trust owns and manages a wide range of digital channels and tools. **The Trust and its programs are accessible through:**

- 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 newsletters

In addition, DMC also manages a diverse set of platforms and organizational licenses that facilitate the delivery, monitoring and optimization of marketing efforts. Some of these are:

Web & Administration

- Wordpress
- Google My Business

Social Media Management

- Facebook
- Instagram
- LinkedIn
- Twitter
- TikTok
- Sprout Social
- Business Manager

eMarketing

- Mailchimp
- Hubspot

Video & Audio

- YouTube
- Spotify
- Anchor

Event Promotion/Ticketing

- Eventbrite

Virtual Events & Streaming

- Streamyard
- Teams
- Zoom

Recruiting

- ADP
- Indeed

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.

COMMUNICATIONS & MARKETING KPIS

Paralleled with the continued growth of the Trust and its impact, new challenges and opportunities arise that drive us to improve and evolve the way we execute our communications efforts. Technology and the way we reach our target audiences are also changing rapidly on a local and global scale. This requires us to set new strategies and creative solutions that meet today's needs. At DMC, this fiscal year was specially focused in continuing bringing results to our programs, delivering marketing efforts that translated our brand in virtual and hybrid format, the standardization of processes and the optimization of channels to set a solid ground for more growth.



"The Trust is a microcosm of the innovation that exists in Puerto Rico and the outstanding talent that pushes the boundaries every day. This offers great communications opportunities, but also requires a bold creative team that will work together hand in hand to deliver great results in coomunications. That is why #WeAreTheTrust."

- Lupe Vázquez, DMC Officer

OPTIMIZATION OF CHANNELS

In collaboration with the IT Department and the DMC social media team, we standardized processes to improve the management of our channels in compliance with cybersecurity best practices and to improve the optimization and monitoring of our social media channels.

DMC Core team and communications and marketing staff from five programs were integrated into the use of the Sprout Social, a social media management and intelligence tool. This resulted in better defined metrics, better data and connection with audiences and a structured management process of the main social media profiles, all connected using the same platform.

Mailchimp, Eventbrite and Google Ads licenses were also changed to organizational accounts to unify audiences and structure processes, manage social media channels and manage audiences tied to our strategic pillars. We defined desired results in the creation of a conceptual calendar for social networks to highlight all 16 programs' content and what it can add to the conversation of innovation, entrepreneurship, public health and development. We are beginning to integrate HubSpot into marketing efforts. The CRM platform has previously been used to collect data with registrations and forms and we are starting to integrate the marketing capabilities offered by this customer experience platform.

AUDIENCES

As previously stated, the Trust and its programs own and manage multiple channels with a broad audience reach. This year we have continued to grow our audiences, proving the interest of the public and the commitment of all program communication teams.



151k

Social Media Followers

of PRSTRT and programs
(Facebook, Instagram, LinkedIn,
Twitter, YouTube and TikTok)

44k

Mailchimp Contacts

with interests aligned to research
and development, entrepreneurship,
public health and innovation.

898

Eventbrite contacts

156+ Trust and Program events
published via Eventbrite

35k

**Research & Development
Followers**

76k

**Entrepreneurship
Followers**

35k

**Public Health
Followers**

3k

**Foundation
Followers**

SOME OF OUR WORK OUTPUTS

The Trust and its programs provide unlimited opportunities to communicate events, discoveries, topics of interests, research and innovation advancements, highlights of experts, among many other initiatives. There are many instances where the DMC team has supported the execution and delivery of these milestones. Some of this fiscal year highlights are:

**15 Logo
designs**

New logos for projects and programs:

- Stem Work Force Development
- Agroecología Para El Futuro
- PR READY
- YOUTH 2050
- STEM Boxed Kit (rebranded)
- Research Institute
- Scientific Review Board
- AGILE
- FORWARD SYM-POSIUM 2022
- Mosquito Day
- Guardianes de Salud
- Convención Annual de Vectores
- XPand
- Acércate al Grant
- Salud al Mediodía

**15 Website
Pages**

New landing page/blog posts:

- [Agile](#)
- [PR Ready](#)
- [Stem Workforce CDTI](#)
- [Forward 2022](#)
- [Workforce Development Meetup](#)
- [Space Economy Meetup](#)
- [End of Life Management for Photovoltaic Systems](#)
- [STEM Boxed Kit](#)
- [PRPHT Summit 2022](#)
- [PRPHT Salud Mental](#)
- [Red de Pacientes de Puerto Rico](#)
- [Mosquito Day](#)
- [Guardianes de Salud](#)
- [Convención Annual Control de Vectores](#)

171

FideicomisoTV Videos

*Videos produced and published at
Fideicomiso TV, youtube channel*

20+

**Press releases
submitted to media**



EARNED MEDIA

Earned media (or free media) refers to publicity gained through promotional efforts other than advertising (paid media) or branding (owned media). The Trusts collaborated this year with three main media and public relations partners:

THE **BIG**
THINK
GROUP

bcw

PharMaCon
HEALTH MARKETING & COMMUNICATIONS GROUP

Through these partnerships we were able to gain the following results of non-paid publicity for our non-profit organization:



EARNED MEDIA PER PUBLIC RELATIONS PARTNER

Agency	Non-Paid Publicity	Impressions	Media Appearances
The Big Think Group	\$4,897,729.45	49,946,814	721
BCW	\$165,552.00	25,500,000	71
Pharmacon	\$ 124,870.00	105,000	10

Communications & Marketing

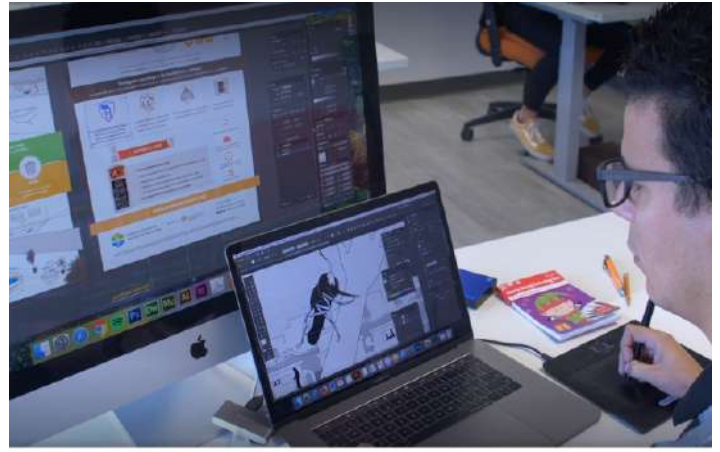
\$5,188,151.45

Total Non-Paid Publicity

75,551,814 Total Impressions

802 Total Media Appearances

Growth Metrics





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 Empreende 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"](#)

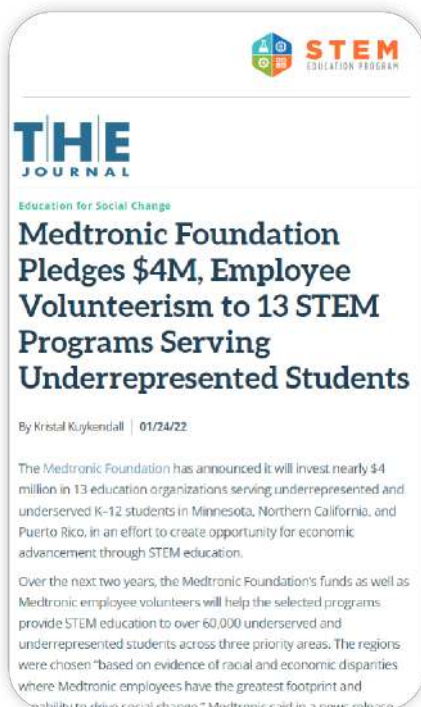
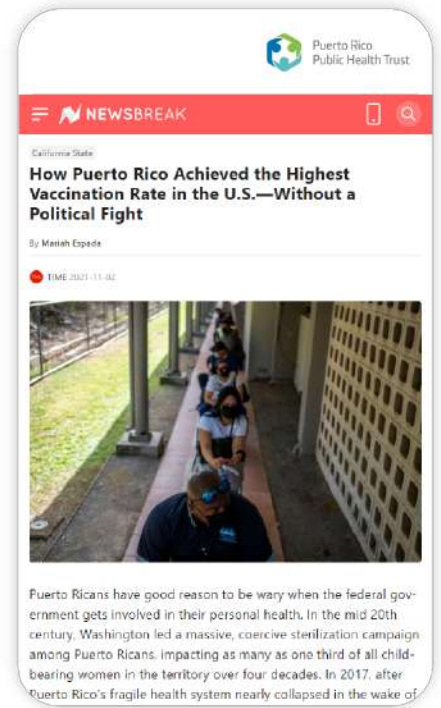


Image 7. Metro [“Culebra se une a la lucha contra los mosquitos y brotes de enfermedades arbovirales”](#)

Image 9. News is my business [“Op-Ed: PRCCI supports blood collection efforts in Puerto Rico”](#)

Image 11. News Break [“How Puerto Rico Achieved the Highest Vaccination Rate in the U.S.—Without a Political Fight”](#)

Image 8. The Journal [“Medtronic Foundation Pledges \\$4M, Employee Volunteerism to 13 STEM Programs Serving Underrepresented Students”](#)

Image 10. El Expresso [“Crearán un ‘safe room’ en terrenos donde albergaba el Oso Blanco”](#)

Image 12. DPL News [“Puerto Rico | Urgen a la integración de las mujeres en las carreras STEM”](#)



DMC TEAM



[Lupe Vázquez](#)

Communications &
Marketing Officer



[Ricky Vázquez](#)

Digital Content & Producer



[Marieli Grant](#)

Communications &
Marketing Manager



[Xavier Ocasio](#)

Lead Graphic Designer



[Natasha Sánchez](#)

Content Strategist & Designer



[Alex Morales](#)

Lead Graphic Designer



[Paula Ayala](#)

Content & Editorial Specialist



[Félix Navas Raleigh](#)

Lead Graphic Designer

OUR FUTURE GOALS

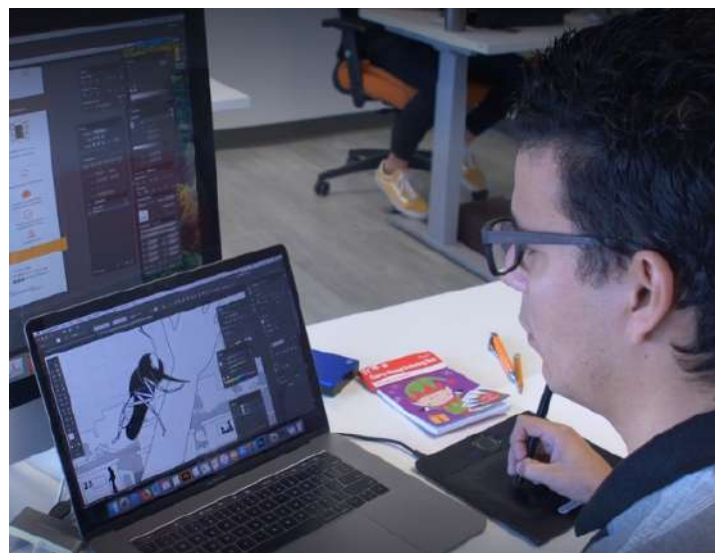
Continuity and improvement
of non-paid publicity results

Expand communication and
marketing teams' capabilities
through recruitment and/or
capacity building of our teams

Revamp of website and
integration of chat bot

Improve our customer
experience strategy
maximizing platforms like
Hubspot and Social Sprout

CONTINUE SUPPORTING OUR PROGRAMS





We include
IMPACT REPORT
OF OUR PROGRAMS
Parallel18 and **Colmena 66**

A program of the:



Puerto Rico
Science, Technology
& Research Trust

parallel¹⁸ Impact Report 2020-2021

About this Report

Since 2016, parallel18 has been changing the narrative of Puerto Rico's economy by promoting a diverse ecosystem. 362 startups have been impacted by our two programs and the island's culture, that's shaped by the United States and Latin America. At parallel18, we create opportunities for underrepresented founders, to make their dreams a reality and build high-impact businesses that can reach the world. Clearly, Puerto Rico is becoming the center of it all: where investors land, entrepreneurs meet, and emerging and fully developed markets link up.

This report focuses on the results of **P18's Gen. 9, pre18's Gen. 3** and data about the application round for **pre18's Gen. 4** (a total of 75 companies) that completed the program between 2020-2021. Also, this document offers updates on Gen. 1 through Gen. 8 companies and our subprograms.

The data presented was collected through exit surveys at the end of the program (for Gen. 9), alumni surveys from Gen. 1 to Gen. 8 and data gathered by the parallel18 team.

About 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.

How?

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.



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.

THIS IS HOW THE TEAM LOOKS TODAY (2022)



Héctor Jirau
Investment &
Operations Director



Natasha Martínez
Program Manager



Mónica Rocafort
Business Development
Manager



Lissa Barreras
Marketing
Manager



Menchu Agüeros
Outreach
Manager



Adriana Pérez
Investment Manager



Sylmarie Díaz
Startup Executive



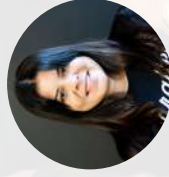
Yessica Fontánez
Startup Executive



Allison Martínez
Communications
Specialist



Betzaida Pagán
Lead Graphic
Designer



Adalis Serrano
Operations Associate

90%

**Female Led
Team**

What we Provide?



Training and Mentorship

(pre18 12 weeks; P18 20 weeks)



A guide and methodology to track growth and structure the company for scalability.



Equity-free funding
(pre18 \$20K; P18 \$40k)



Connections with potential
customers and corporate partnerships
in top companies.



Investment and capital raising
opportunities.



Puerto Rico
Science, Technology
& Research Trust

Additional support
through the Puerto Rico
Science, Technology and
Research Trust.

Our Programs



For Puerto Rican startups who are close to launching their innovative businesses or have recently launched.



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.

Our Sub-Programs

parallel¹⁸ CONNECT

Our Corporate Innovation program 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.

parallel¹⁸ VENTURES

A subprogram focused on helping startups create a strong investment strategy while connecting them with a curated network of investors. Parallel18 Ventures also invests in P18Startups through the Matching Fund, designed to co-invest in promising startups fresh from parallel18. Investments on this fund are made by the Puerto Rico Science, Technology, and Research Trust.

Our Selection Committee

The selection Committee has the task of carefully reviewing and selecting the next batch of startups each year. We appreciate the time and effort imparted by this group of entrepreneurs, mentors, and investors.



Allison Kern
Investor
Morro Ventures
P18 Gen. 9
pre18 Gen. 3



Lauren Maillian
CEO digitalundivided
P18 Gen. 9



Manuel Rosso
COO FloSports
P18 Gen. 9
pre18 Gen. 3



Devin Baptiste
Founder & CEO GroupRaise
P18 Gen9
pre18 Gen. 3 / Gen. 4



Ramphis Castro
Co-founder / General Partner
ScienceVest
P18 Gen. 9
pre18 Gen. 4



Alexiomar Rodriguez
Founder Seed
pre18 Gen. 4



Lincy Ayala
Co-founder BookSloth
P18 Gen. 9
pre18 Gen. 3 / Gen. 4



Pierre Horvilleur
Former Partner at
Morro Ventures
pre18 Gen. 4



Laura Cantero
Executive Director
Grupo Guayacán
pre18 Gen. 3



Giovanni Collazo
Co-founder
Alias Payments Inc.
pre18 Gen. 3



Jennifer Hopp
Managing Partner
ATO Ventures
pre18 Gen. 3



Sandra Pedraza
Entrepreneurship Leader at
University of Sacred Heart
pre18 Gen. 4



Eduardo Padial
Vice President of Operations
and Partnerships at Skootel
pre18 Gen. 4

MENTORS

One of the key benefits of our programs is the mentor's network. 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 July 1st, 2020 to December 31st, 2021:



119

Total of startups (including alumni) that had engagements with mentors **(58% more than Impact Report Y4)**



989

Office hours between mentor and mentee (including alumni) **(88% more than Impact Report Y4)**



9.12

Avg. Net Promoter Score for Mentor Sessions



59

mentor sessions (pre18 Gen. 3 / P18 Gen. 9)

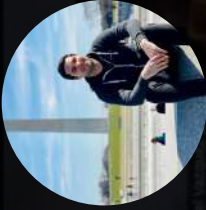
Top Mentors



Alexandra García
Program Manager
Google
Storytelling



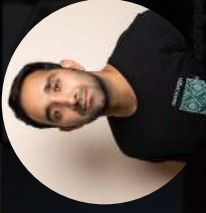
Nate Stewart
VP, Platform Strategy at
BigCommerce
Building a Killer Product Team



Jesse Middleton
General Partner at Flybridge
Co-Founder The Community Fund
Investment Fundamentals



Devin Baptiste
Entrepreneur and Philanthropist
Founder/CEO GroupRaise.com
Unit Economics & Building a Lead Engine



Deepak Chhugani
Founder/CEO at NuvoCargo
How to negotiate and close the deal (First Round of Investment)



Ali Jamal
Growth & Product Executive and
Founding Partner
First Check Ventures
Growth 101



Mayra Ceja
Business Development
HubSpot for Startup
Prospecting Clients



Jim Pouliopoulous
Senior Lecturer,
Storyteller and Author
Storytelling



Dan Maccarone
Strategist / UX Designer &
Co-founder of Charming Robot
Product Interactions



Juan Mario Álvarez
Consulting and Turnaround
Specialist at Rubi-Trigo
Building Revenue Channels

Highlighted Partnership



As part of the resources provided to emerging companies and startups, the Puerto Rico Science, Technology and Research Trust (PRSTRT), and parallel18, along with Mastercard, global leader in payments and fintech businesses, made a 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.



"As global leaders in payments, we're contributing to the future of fintech, and we want to propel Puerto Rico's economy in their current phase. Through this alliance, we can be a vehicle for innovation and training while promoting this niche that is currently developing on the island."

José Vargas,
Regional Manager
Mastercard Puerto Rico

P 1 8 | pre¹⁸

SUMMARY



| SUMMARY



We are closing the funding and education gap that allows entrepreneurs to quit their day jobs and dream big.

1,079

applications (from Gen.1
through Gen.4)

138

companies have graduated
from the program (from Gen.1
through Gen.4)

50

of them have participated
in P18

\$2.2M

in grants distributed



Pre18 Gen. 3 cohort was composed of 40 companies ; **45% of them being female-led.** The startups were focused on different industries such as e-commerce, tourism, media and advertising, health and biotechnology, manufacturing, IT, and gaming.

Where are they today?

\$3.5M

Total Revenue from January 1, 2021, to December 31, 2021

\$255K

Capital raised in Puerto Rico

\$26.7M

Gen3 cohort valuation

137

Employees hired
128 in Puerto Rico

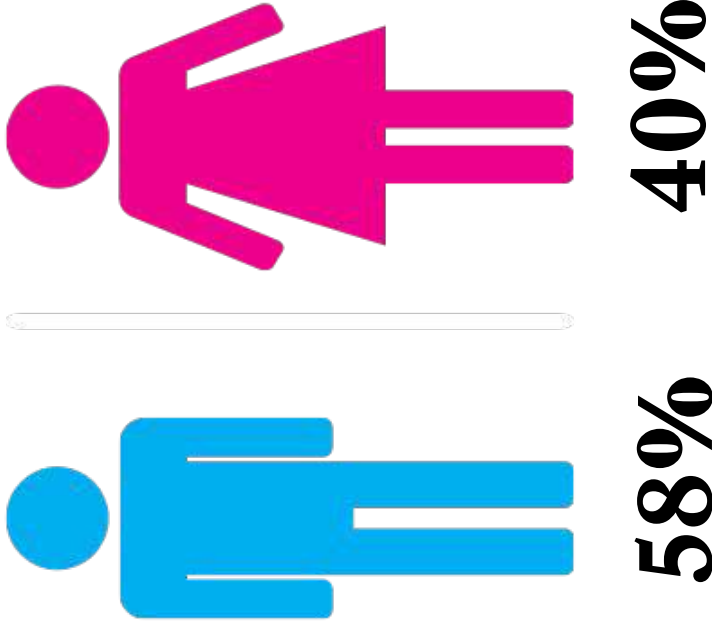
Application Round **Highlights**

381

open applications

Top **Industries:**

- E-Commerce
- Healthcare
- Education
- Manufacturing
- IT Enterprise



* 2% non-binary applicants

How **Gen 4** Looked like?

27 50%

startups

female
representation

Industries:

Agro-tech
E-Commerce
SaaS
Education
Healthcare
Bio-Technology

Real Estate
Fintech
Legal Services
Food and Beverage

@assist787

PARALIAN

channel



HYPERION

ESTHER

Dabb



gifffully

citadoc

Candid
Society



Mente
Serena

Med-a-Fly

findit



maestros
express

mojito
Dating

Ceyba



abacrop

RED ATLAS

STREAM
TECHNOLOGIES



buzzzy

enspacio

TEMIS
TECHNOLOGIES

P 1 8 | SUMMARY

P 1 8

4,500+ 248

applications (from Gen.1
through Gen.9)

companies have graduated
from the program.

35

participated in our last
cohort Gen.9.

22

local companies
participated in our last
cohort Gen.9.

GEN.9 Results

\$1.4M

Grants Distributed

\$141M

Gg cohort valuation

63%

local companies

\$25.2M

companies total overall
revenue

\$13.3M

of the overall revenue was locally
captured

\$6.7M

capital raised during the program

\$3.6M

raised from local industries



Cumulative Results

Gen.1 - Gen.9

The presented data, shows the cumulative of all parallel 18 Startups from April 2016 to December 2021.

REVENUE



US **\$212,497,028.81** global
(US\$189,191,906.00 last Year)

US **\$73,037,872.31** in Puerto Rico

INVESTMENT



US **\$189M**
Total investment raised from Gen.1 - Gen.9
(US\$126M last Year)

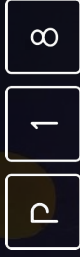
US **\$21.6M**
Total investment raised in Puerto Rico from Gen.1 - Gen.9
(US\$16M last Year)



620
employees hired



97%*
survival rate



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 fifty nine companies later, we can say that we are witnessing the results of that effort.

The following slides show some examples of #P18alumni that have knocked it out of the park.



booksloth

P

1

8

Gen.5

|

pre[®]

Gen.1



Lincy Ayala
Co-Founder



Xiomara Figueroa
Co-Founder

trueface.ai

P

1

8

|

Gen.3



Shaun Moore
Co-Founder



Nezare Chafni
CTO

Puerto Rican tech startup and social app for readers **BookSloth** was acquired by **BookClub**, an online community platform with a mission to scale empathy and learning through great literature. They became the first all-women-led, tech-startup acquisition on the island. Created in 2018 by co-founders Lincy Ayala (CEO) and Xiomara Figueroa (CTO), BookSloth is a passion project created to provide the best reading experience created by and for readers. The app has more than 50,000 users who have participated in thousands of book discussions, reviewed more than 340,000 books and read more than 750,000 books. **Congrats to Xiomara and Lincy!**

Leader in computer vision focused on facial recognition, weapon detection and age verification technologies, **TrueFace** was acquired by **Pangiam**, a technology-based security and travel services provider. Trueface, founded in 2013 by Shaun Moore and Nezare Chafni, provides industry leading computer vision solutions to customers in a wide range of industries. The company's facial recognition technology recently achieved a top three ranking among western vendors in the National Institute of Standards and Technology (NIST) 1:N Face Recognition Vendor Test. The company has a robust sales pipeline and has entrenched positions with clients in over 13 countries. **Kudos to TrueFace!**



P 1 8 | Gen.3



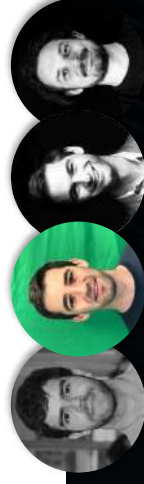
*Founders: Diego Moya
Sebastian Barreani*

Entrenarme is a platform and database for personal trainers and sports centers all over the world. The platform includes clubs, gyms and sports centers, in order to offer a comprehensive proposal to professional athletes, amateurs and sports lovers, who need permanent and personalized professional support.

Acquired by Jeff, an omnichannel ecosystem for day to day services.



P 1 8 | Gen.3



*Founders: Pierre Becerril, Nil Sanz,
Steve Patterson, Drew Patterson,*

Transparent is the global leader in providing data intelligence for the vacation rental industry. They track over 35 million Airbnb, Vrbo, Booking.com & TripAdvisor listings globally, to help vacation rental property managers, DMOs & tourism bodies, hotels & more to optimize strategy & maximize revenue through data insights.

Acquired by OTA Insight a leading cloud-based data intelligence platform for the hospitality industry.

Cleancult

P 1 8

| Gen.3

Cleancult, the leading sustainable cleaning brand on a mission to redefine clean with the power of plant-based ingredients and zero-waste packaging, announced in September 2021 the closing of their Series B raise, amounting to **\$25 million in growth funding**. Along with Reynolds Channel and Anchor Capital, investors in the business include Box Group, Vanterra Capital, and Blue Scorpion Investments, the early investors behind leading brands such as Bombas, Harry's and Quip. Additional raise participants include celebrity investors such as Kevin Hart with his VC firm, Hartbeat Ventures, and Rachel Zoe with Rachel Zoe Ventures.

Launched in 2019 by Ryan Lupberger and Zachary Bedrosian, Cleancult has a complete offering of home cleaning essentials, including Liquid Hand Soap, Laundry Detergent, Stain Stick, All Purpose Cleaner, Dish Soap, Bar Soap, and more, all featuring biodegradable plant-based formulas that harness the power of natural ingredients. **With a hybrid operation between Puerto Rico and the United States; Cleancult has 33% of the team located in the island with a main local office at the Puerto Rico Science, Technology and Research Trust. They also, partnered with the University of Puerto Rico, Mayagüez Campus and have another office located in the west side of the island.**

With this new funding, Cleancult aims to bring on additional retailer partners. Over the next few months, the company will expand into an additional 2,500 stores, elevating the brand's retail presence to over 5,500 stores across the U.S. and Canada including CVS, Bed Bath & Beyond and Meijer.



Ryan Lupberger
Co-Founder / CEO

Zachary Bedrosian
Co-Founder



PRoduce raises **\$1.8M** in capital to boost support of small farmers

PRoduce received a **\$1.8 million capital injection** led by Semillero Partners fund to improve the consumer's shopping and food experience, while increasing support for local entrepreneurs including farmers, fishermen, coffee collectors, and artisanal producers. The funds will be used mostly to recruit executive and business development positions.

PRoduce serves more than **50,000 customers** while supporting **600 local producers and growers**.



Crystal Diaz
Co-Founder



Francisco Tirado
Co-Founder



Martin Louzao
Patricio Schames
Co-Founders



Kiwi Financial raises \$3.5M in capital

The capital injection led by Advent-Morro Equity Partners and its subsidiary Morro ventures, will support the startup growth in **Puerto Rico** and **LATAM**.

The startup, founded in Puerto Rico, offers personal loans which usually go up to \$500 to help people without banking services build a credit history. Currently, they serve **10,000 clients in Puerto Rico**, who had no credit history or had their credit is affected. This represents between 30% to 40% of the market on the island.



Mariano Sanz
Co-Founder



Alexander Schachter
Co-Founder



SUB-PROGRAMS | SUMMARY

para//el¹⁸
VENTURES

parallel¹⁸ VENTURES

Startups rely on investment to fund their operations and boost their growth, this is why we support our #p18ners on the road to raise funds. In November 2021, we hosted our Investor's Week with a reverse pitch session. Thirteen investors from 11 venture capital funds from Puerto Rico, New York, Los Angeles, Dominican Republic, Mexico, Colombia, Brazil and Switzerland showcased their

funds and investment interests to our p18's Gen. 9 cohort. This event also included a Roadshow in which participant investors got to know the entrepreneurial ecosystem in Puerto Rico. Today, our Investment Manager, **Adriana Pérez** is working to create more investment opportunities for startups and to keep strengthening the relations with the investment network.

\$2.6M

invested (Including Business Continuity Fund)

85%

Portfolio Survival Rate
Including Business Continuity Fund

Total Investment Raised

(Gen. 1 - Gen. 9)

\$22,443,136.00

Business Continuity Fund Portfolio Raised (29 startups)

\$29,815,500.00

Matching Fund Portfolio Raised (24 startups)





MATCHING
FUND

MATCHING FUND

Follow-on fund designed to co-invest in promising graduated P18Startups. With this fund, the Puerto Rico Science, Technology and Research Trust matches private capital raised by entrepreneurs in exchange for stocks or convertible notes.

24

investments

75%

survival rate

12

of our investees have received

US **\$1M** investment in the life of
the company

us **\$1.6M**

total amount invested

11

international companies have
established operations in Puerto Rico.





100% of the companies that received the investment are still operational.

From the moment the COVID-19 pandemic started affecting the startup ecosystem, we rethought the way we operated as a program. After reducing the cohort for Gen. 8, the remaining operation budget was redirected to invest **\$1M USD in a special fund for our alumni**. When the pandemic started, P18 had graduated close to 200 startups and we knew many of them would need our help to keep operating.

The investments made strengthen the program's commitment to supporting underrepresented entrepreneurs, **since 31% of the startups are led by women**. Additionally, the parallel18 Ventures portfolio increases its diversity **by adding LGBTQ+ and BIPOC founders alumni**.

A year after receiving the funds, one startup had reached the highest Monthly Recurring Revenue ever, while another managed to close their **Angel round and grow sales 54% YoY, after investors had initially backed out**.

Success Stories



"We were facing the lack of resources to continue paying basics such as office rent and raw material. The BCF helped tremendously in keeping focused during those super challenging months and never giving up! All the help received was critical to be able to keep the operation; even when nothing happened commercially speaking during 2020, once the market reopened and the sales activities were resumed, which is the testimony of resilience and patience to avoid going off the market."

Luben Ron, General Manager

BRANDS OF

"We were growing really fast during the pandemic and that had an impact on our runway. We had to start with our series A much earlier than projected and the BCF helped us extend our runway so we could close our series A. The BCF had a great impact on the continuity of our business, it allowed us to stretch our runway enough so we could close our series A."

Alan Taveras, Founder



"We had a lot of business deals that fell off because of the pandemic, investors backed out of our angel round and in general we saw a traction and fundraising problem. The timing was certainly amazing, when we were granted the BCF we had a one month runway; it gave us the liquidity to as the name of the fund says... continue and to have enough runway and peace of mind to overcome this very critical circumstance"

Alonso Mujica, CEO



LINKEDAI

"After the coronavirus outbreak last year, there was a lot of uncertainty. Although our industry (AI/software) wasn't one of the most impacted industries, most of our clients were very cautious about their expenses and many of them were very affected. Our revenue went down, and acquiring new clients in the middle of this huge global crisis was a challenge. We needed a new strategy, and time to figure it out, the Business Continuity Fund was key to accomplish this. Experimentation and deep analysis of our business model were crucial to reach the point we are right now. We changed our model to a recurrent one, and acquired new clients, and reached the highest MRR we ever had since we started LinkedAI."

Paula Villamarin, CEO



"When COVID-19 hit, our revenues went to zero. Istopro was a hiring platform mainly for low-mid level sales positions, for which there was no interest at the beginning of the pandemic. We were able to quickly decrease our expenses, raise some money (including the Business Continuity Fund), focus on building our product, and re-launch our platform focused on higher mid-senior roles in technology / product and digital roles. With the BCF, we managed to get back to revenue making, and this year grow over 2.5x over last year, making the business from less than 10% prepaid to over 70%"

Giuseppe Belpiede, CEO

parallel¹⁸ | CONNECT

GEN.9

As a program, we know that business connections are the key for the growth of companies. Parallel18 Connect, supports our startups by introducing possible business opportunities to begin or continue their journey to scale outside their original markets.

With a new Business Development Manager on-board, **Mónica Rocafort**, the mission of the sub-program was re-designed by introducing the startups with not only local business connections but also with international ones with the purpose of generating a global mindset and supporting our mission of helping our startups to scale globally.

Once our Gen. 9 #p18ners joined the program, the Business Development team started looking for fits with our current and potential corporate partners.



26

parallel18 Connect
meetings



110

total of initial
interactions



3

deals
closed

GEN.9

HIGHLIGHTED DEALS



PAWLS provides natural effective and holistic healing solutions for dogs of every age, size, breed, and gender, focusing on the most common allergies such as itching, hotspots, and dry skin. **Now, PAWLS products will sell all over Puerto Rico by partnering with Plaza Provision as their exclusive distributor. Pawls will have product presence in all Walmart supermarket stores.**



ensemble



Ensemble is a Next-Generation Space Environment Modeling Tool that empowers physicists with the ability to build, visualize, and advance space weather models and satellite trajectory data sources. **Now, Celerops will automate the process of downloading scientific data that Ensemble can use for their visualizations. The data comes from agencies such as NOAA, NASA, and Arecibo Radio Telescope, among others.**



CelerOps



Celerops provides a set of integrated services that are designed to increase organization efficiency and effectiveness. **Now, Celerops will automate processes and 480 tables for Liberty Mutual Insurance.**

Gen 3

Since pre18ners are still looking for product/market fit, many of their corporate meetings are oriented to customer discovery and not necessarily to acquire clients.



31

startups
impacted



10

total of initial
interactions



7

subsequent
interactions



3

deals
closed

Gen.3 HIGHLIGHTED DEALS

VITAL



VITAL is a brand of practical + zero-waste home essentials and accessories on a mission to mainstream green. Initially, VITAL will have a presence at the SuperMax on Ave. De Diego and then, they will join other stores.



DONRIFA



Don Rifa is a digital raffle platform where businesses, organizations, or individuals can create an alternative source of income. With this connection, Puma energy gave Don Rifa \$500 in credit cards to give away to their users for a month.



Pintá is a gel polish brand that provides a self-care experience while doing a manicure at the comfort of your home. **With this** deal closed on Feb 19, 2021 Pintá received up to 70% discount on packages sent to the USA. This connection was made because of DemoEvent.

Some of our PARTNERS

Want to join them? Send an email to: Mónica Rocafort

monica@paralle18.com

para//el¹⁸ | **CONNECT**



JOSÉ SANTIAGO, INC.



EVERYONE
HUS!

GET SH*T
DONE!

CHALLENGE
TO **INN**VATE
MUSA EDITION

| SUMMARY



Think. Research. Develop.

Challenge to Innovate was a program for STEM college students to think, research, and develop solutions using NASA-patented technology.

NASA has the technology. Students decided how to apply it.

Challenge to Innovate helped participants create **hardware solutions for the pharmaceutical or agricultural industry**. The final goal was to prepare students to present and explore the possibility to create a startup derived from that project.



Who qualified?



College students majoring in mechanical, electrical, and computer engineering or similar majors.



Those who wanted to develop hardware focused in biotech, manufacturing and agriculture.



Students interested in understanding how to sell or create startups from their science-based ideas.



Participants eager to apply their college knowledge and innovate.

Technologies Applied



Pharmaceutical industry

- Passive Smart Container - MSC-TOPS-36
- Precision Low Speed Motor Controller - MSC-TOPS-76
- Improved Infrared Contrast Analysis and Imaging - MSC-TOPS-34



Agricultural industry

- Microwave-Based Water Decontamination System - MSC-TOPS-53
- Multi-Stage Filtration System - GRC LEW-TOPS-93
- Flash Pose - GSC-TOPS-102

Program Completion

Students



Teams



What did they said?



Of participants reported having expanded their knowledge of the following topics through CTI:

- Market research
- Product Development
- Startups
- Rapid prototyping
- Technology Transfer



GiveBack

GiveBack

At parallel18, we are committed to sharing our entrepreneurial knowledge and supporting the community. That's why, with our GiveBack program, 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.

Giveback Partners



Universidad
de Puerto Rico

SAGRADO
Universidad del Sagrado Corazón



Holberton
PUERTO RICO

GEN.9

14,425

Giveback Hours

2,830

People Impacted

Gen.3

81

Giveback Hours

4,416

People Impacted

TAL|ENT

program

In this talent database, we accept highly motivated undergrad students, as well as recent graduates and graduate students from all disciplines. We also have space for freelancers and other types of professionals who seek to contribute their talent to the island's business ecosystem. The TalentApp is available to all the parallel18 alumni (350 companies/549 entrepreneurs), as well to the current cohort.

Program Highlights:

App changes

- The TalentApp was revamped and relaunched on August 11, 2021; giving it a fresh look, a more organized structure, and the ability to contact the candidates directly through the app. With the feedback and recommendations from the startup's founders, we were able to accommodate the companies' hiring needs by providing a friendly, easy-to-use talent pool with interested candidates.
- Also, we modified the candidate's application form; keeping it more simple but including all the necessary information a company needs to make the best hiring decisions.

Relevant Data:

1,238 Total profiles until December 2021
279 New profiles from July 2020 through December 2021
159 New profiles since the re-launch

Gen.3

13 startups used the TalentApp
10 candidates interviewed
6 hires

Gen.9

15 startups used the TalentApp
54 candidates interviewed
7 hires



A Seat at the Table

These sessions started as an initiative to address the issue of women constantly looking for a seat at the table, especially when it comes to raising investment. Recently, we have been changing this narrative by offering the space for our entrepreneurs to express themselves about the barriers that, as underrepresented founders, they face day by day, especially when raising investment or pitching their solutions.

Pride Month - LGBTQI+ INCLUSION IN ENTREPRENEURSHIP: A conversation on inclusion of the entrepreneurial ecosystem.

- This edition of the series A Seat at the Table highlighted 4 queer entrepreneurs that were part of our programs and lead successful businesses. The conversation was moderated by Camille Padilla Dalmau, the founder of the media platform 9 Millones (pre18, Gen. 3) and the panelists were Ana María Hernández from Equal Love (pre18, Gen. 3), Omar Negrón from Remora (pre18, Gen. 3), and Daniel Bedolla from Excited (P18, Gen. 4). Each participant talked about the recent gaps of inequality that the LGBTQI+ community has in the entrepreneurial ecosystem and how they've surpassed these challenges. The session was available for the general audience and was broadcast through the Youtube and Facebook platforms of parallel18. The listeners also had the opportunity to interact with the panelists and the moderator.

Women's Heritage Month - From Latinas to Latinas: A space to discuss how we can achieve gender equality in different industries.

- This edition of the series A Seat at the Table highlighted 3 latina entrepreneurs from p18 Gen. 8 and Gen. 9. The conversation was moderated by Virginia Buccioni-Hillman, co-founder of HireLlama (now Awana - P18, Gen. 9) and the panelists were Lorena Martínez, founder of Tale+ (pre18, Gen. 3 and P18, Gen. 9) and Jonelie Vélez, co-founder of Tasty Smart (P18, Gen. 8). In the virtual space, each participant talked, from their perspectives, about gender inequality in their fields and how to find the right tools to tackle the issue towards a more inclusive and equitable ecosystem. The session was available for the general audience and was broadcast through the Youtube and Facebook platforms of parallel18. The listeners also had the opportunity to interact with the panelists and the moderator.

Positioning “In the News”

Parallel18's work, the quality of our companies and our efforts to promote innovative entrepreneurship in Puerto Rico have been recognized in several international media outlets.

The following shows the results of non-paid publicity and media coverage for parallel18 between **July 2020 - December 2021**:

\$974,459.00

Non-paid publicity value

15,573,630

Total impressions

213

Total appearances

HIGHLIGHTED PRESS COVERAGE



What's next for parallel¹⁸?



Will be one for the books!

As we commemorate the success of our program over the years and having reached the tenth generation of P18, Gen. X consist of only the best **10 startups** that will receive a grant of **\$125,000** USD for their business plus an investment of \$25,000. The application round closed on April 25th and the program started in June 28th, 2022.

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 to provide the most amazing opportunities for participants and alumnis. At parallel¹⁸, we will:

- Increase and strengthen the investment opportunities in Puerto Rico with events and education to keep doing our part to fortify raising capital in the island.
- Focus on the community to keep strengthening relationships with partners, mentors, and investors to keep boosting the startup's growth.
- And as always, **KEEP PROMOTING INCLUSIVE ENTREPRENEURSHIP!**

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. We are grateful for always looking for ways to make it happen.

To our mentors: your volunteer work makes our program stronger and more valuable for our companies.

To the investor's network: thank you for trusting us and for financially supporting our startups.

To the amazing parallel18 team: none of this would've been possible without your commitment and dedication to the entrepreneurial community.

If you want to join our community as a mentor, want to be part of our partner network and if you are looking to diversify your portfolio with innovative startups please contact us at cobi@parallel18.com

APPENDIX

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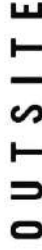
Gen.2

P 1 8



Gen.3

P 1 8



Gen.4

P 1 8

ARK
PARADIGM



ATLASWEARABLES



backstartup



BrainHi



CuidaMiMascota



EVOTING
LÍDER EN VOXACIÓN ELECTRÓNICA

EXCITED®



HUSKY



StagelBoom

TextualMind
Intelligent Textual Sensors



woocar



UpCraftClub

Gen.5

P 1 8

Spot'n

SURVEYKIWI

ADVENTURE
BUCKET LIST

vozy

agrobeads®

SINDYK

ristcall

rendy.io

produce!

booksloth

PRat'an

pedidos

FLEXIO

MYSTRENGTHBOOK

monito

MOLCAJETE
FOODS LLC

Distopro

LiliWeds

libros

KNOWD

HIVECUBE

Guilty

GOPANZA

GOLAZZO\$

ESNÜ

elemetrica

deb media

Dame
UnBite

CABAN
SYSTEMS

Barepedales!

Gen.6

P 1 8

CÍNCÖ

Facturedo

PROCESSIM
LABS

DATAWIFI

Unicorn

SAVOR



PINTA

3GELATO

hackmetrix

uva!



ELEGIRSEGURO.COM



OGMA
LANGUAGE STUDIO

Explority

hometuls



ISLEÑAS

EDUSYNCH



YU-TRACK
ENTERPRISE

accountberry
The sweet side of accounting

enviopack

BUSSI

Renewable
Solutions

Organic
POWER, LLC

Gen.7

P 1 8

ExpedienteAzul

ARVADA CORP
Put it inside the box

FITCO

IntelliTech

LINKEDAI

silabuz.com

DataScope

the FIVE GREEN CO.

alómaestro.com

alana

Syrona Women

OVEE

KETEK

FIXME

agtools

maser

SIRENA PATTERNS

Symmetric Health Solutions

tagshelf

nilus

FitWallet

tais

cargøfive

ALOMY

LICIMATIC

AppLivo

ABEXLUS

scraperaapi

BOXPOWER

Chaty

VALET SELLER

aboxto

RONPON

OMICS GLOBAL SOLUTIONS

DELOS

LICK

MY HEALTHY WOE

Gen.8

P 1 8

outcome
project

Fitverz
The fitness universe



Dealer**App**Center

BARRAS
labon Artesanal



BeauTY**911**

Raincoat



Gen.9

P 1 8

andeno

AWANA

BOÔN

CelerOps

PilotoMail®

PrivacyWall

CINCEL

cueela

Deaf To Uk

DONRIFA

RunBatings

ensemble

Evocare

güeno

RECOVERY+
NATURAL RECOVERY SUPPLEMENT

tale+

jetson-

KIWI

Komercia

leadsales

WAYRU

ZENTTEAM

MARANTA
POWER

NATIVEMATERIALS.com

PIEZAS RUSH

Pauls

PRYZE

Queritel

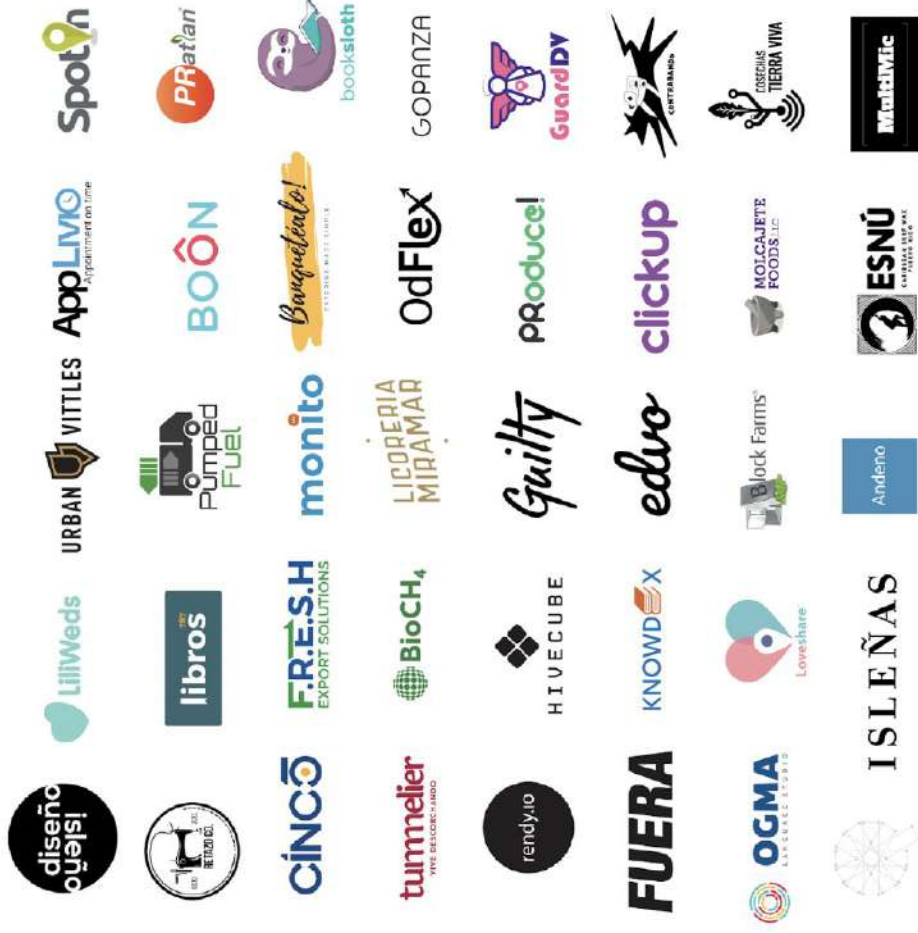
Seed shalder

F

TerraFirma
SOFTWARE

vitaRx

Gen.1



Gen.2



ISLAND
BOUND



Asset Shelf
Construction Supply Marketplace



PickUp Waste



HUERTO
RICO



PRENTO FARMS



tais

Bean Wards

popio

BEAUTY 911

LATTUGA
— ORGANICS —

SIRENA
PATTERNS
1ST FURNACE VERNACLES



Synchrolog

Raincoat



CryptXLABS



Fitverz
The fitness universe



OUTCOME
project



LICK



MYDPO

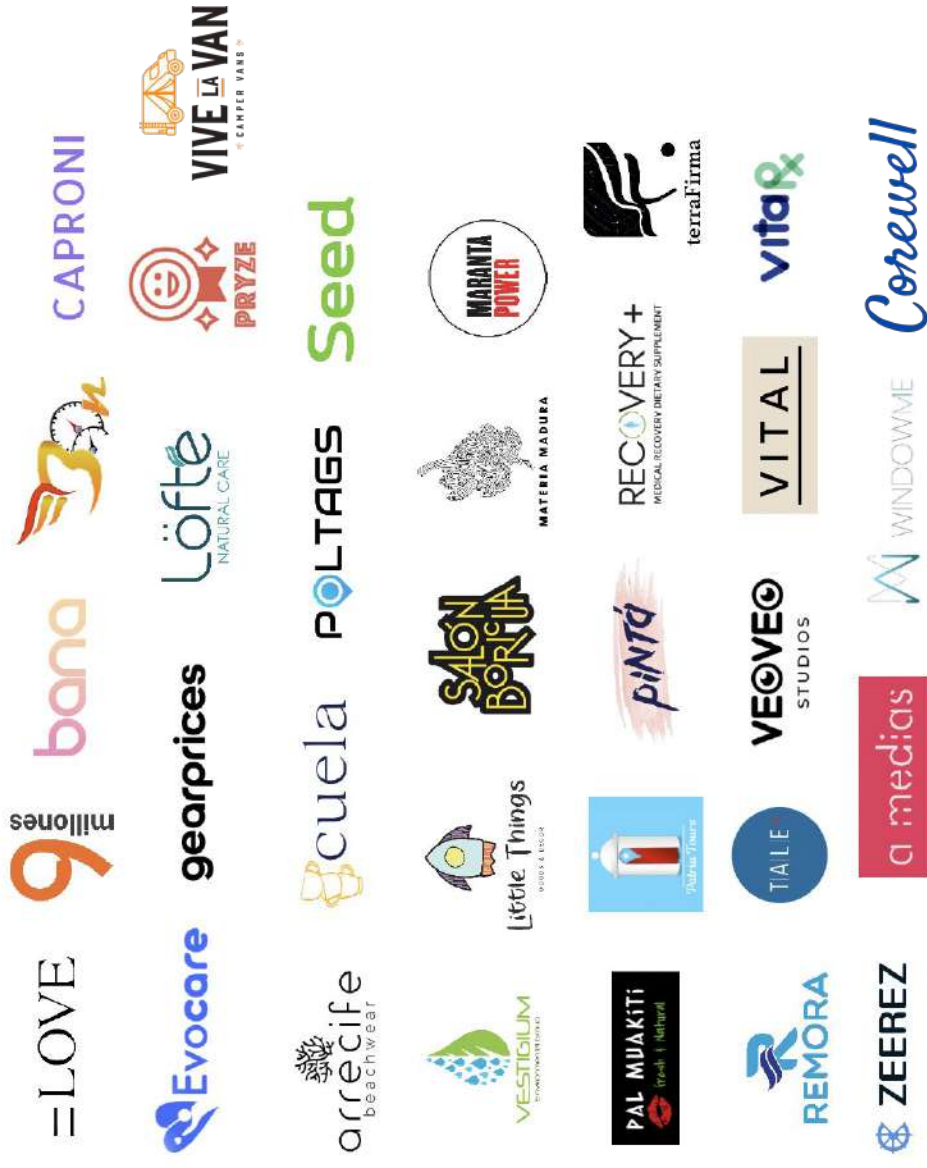


freshH₂O
solutions

WATRIC ENERGY
RESOURCES



Gen.3



Gen.4



El Estado de la Comunidad Empresarial en Puerto Rico

REPORTE DE IMPACTO 2021



En Colmena66 llevamos cinco años conectando y construyendo la comunidad empresarial

Facilitamos el emprendimiento al enlazar a las personas con el recurso adecuado en el momento indicado para que puedan desarrollar empresas exitosas en Puerto Rico. Somos la única organización en la isla que trabaja con todo tipo de empresa en cualquier etapa de negocio. Como integrador del ecosistema empresarial, en Colmena66 analizamos las brechas y trabajamos de la mano con la Red de Apoyo para atenderlas.

Como programa del Fideicomiso para Ciencia, Tecnología e Investigación de Puerto Rico, Colmena66 forma parte del pilar de emprendimiento junto a Fase1, parallel18, Xpand y los programas de Subvenciones Federales SBIR/STTR. Así mismo, pertenecemos a la comunidad de SourceLink, una red de sobre 70 constructores de ecosistemas empresariales en EEUU.

Nuestras metas y compromiso con la comunidad empresarial son:



Catalizar y facilitar el acceso a los recursos para emprender



Construir y conectar la comunidad empresarial



Crear e impulsar la innovación

Cinco años integrando y solidificando la comunidad empresarial



2016

2017

2018

2019

2020

- Lanzamiento con 160 colaboradores en la Red

- Levanta Tu Negocio: Huracán María
- Shop&Hire
- PRSTRT Coworking Space

- Tu Camino Empresarial (mapa)
- Tu Camino Empresarial Tour
- Presentación de recuperación ante desastres en el Growing Entrepreneurial Communities Summit, Federal Reserve Bank of Kansas City

- Primer Boricua Empeñe Fest
- Creación del comité SBIR/STTR
- SBIR Road Tour
- Junte Agroempresarial
- Tu Camino Empresarial: Versión Agro
- Café con Miel
- Guías Paso a Paso
- Newsletter curado para la Red
- Plan de Acción Personalizado

- Levanta Tu Negocio: Terremotos
- PRSTRT Co-Working Space
- Levanta Tu Negocio: COVID-19
- Serie de Webinars SBIR
- Virtual Boricua Empeñe Fest
- Refuerzo PyME
- Serie Empresarios al Día
- COVID-19 Resource Hub
- SBIR/STTR Newsletter

2021

Acércate al GRANT

- Pica Alante con C66: Serie de Incentivos
- Acércate al Grant: Fase 0
- Ganador SBA Lab-to-Market: Super Connector Award
- Ganador SBIR Growth Accelerator Fund Competition
- Boricua Empeñe Fest Virtual



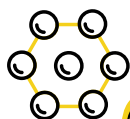
Desde el 2016 hemos integrado, enlazado y fortalecido la comunidad empresarial en Puerto Rico. Hemos desarrollado soluciones comprensivas para atender las necesidades de las organizaciones de apoyo empresarial y las personas que desean comenzar o crecer un negocio.

Aportando a la comunidad en el 2021



11,716

búsquedas en nuestro Directorio Interactivo de Recursos



6,553

referidos a los recursos adecuados de la Red de Apoyo Empresarial (Red C66)



3,072

Personas recibieron nuestros servicios personalizados a través de nuestra línea directa o por correo electrónico buscando apoyo para iniciar o hacer crecer sus negocios.



251

horas de asistencia personalizada provistas por nuestro equipo de Estrategas Empresariales



260+

Miembros en nuestra Red de Apoyo Empresarial

Posicionando a Puerto Rico



Colmena66 es uno de más de 70 afiliados de SourceLink® a través de EE.UU., una organización que ayuda a las comunidades a desarrollar redes inclusivas de apoyo por medio de tecnología y consultoría para identificar, conectar, empoderar y medir sus ecosistemas empresariales.

Colmena66 ha permanecido entre los afiliados con mejor desempeño en indicadores claves como:

Año	Búsquedas usando el Directorio de Recursos	Uso de nuestra herramienta de monitoreo SourceLink Pro™	Horas de asistencia personalizada	Solidez de la red de recursos
2021	#6	#1	#1	#5

El perfil de las personas que buscan apoyo de Colmena66

Nuestra audiencia principalmente se compone de personas entre las edades de:

31%

35-44 años

26%

45-54 años

22%

25-34 años



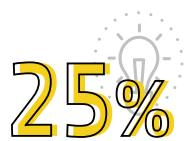
Las motivaciones principales para emprender en el 2021 fueron:

- 1 Ser su propio jefe, ser independiente, o tener control de su futuro
- 2 Seguir una pasión
- 3 Tener mayor flexibilidad para tener más balance entre vida y trabajo

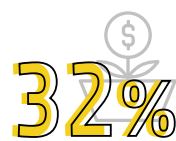


En contraste, en el 2020 las dos motivaciones principales para emprender fueron "Tengo muchas ideas" y "Necesidad económica".

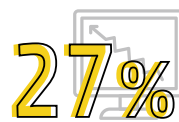
Etapas de desarrollo empresarial:



Idea



Existencia | Infancia



Crecimiento temprano



Expansión



Madurez



Descenso



57% se encuentran en las etapas iniciales del desarrollo de su negocio. Comparado al 2020, hubo un aumento del 5% en etapa de existencia o infancia.

Las 5 industrias de mayor representación en nuestra comunidad son:



Venta al por menor



Industria creativa



Agronegocios, Agricultura

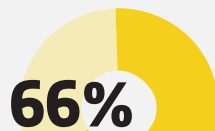


Salud

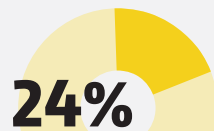


Educación

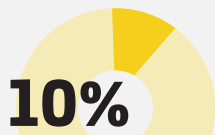
En cuanto al alcance de los negocios que ya están generando ventas:



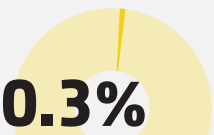
está vendiendo solo en Puerto Rico (no exportan)



está generando ventas en Puerto Rico y EE.UU.



está alcanzando mercados internacionales



está vendiendo al gobierno federal.

Los 5 retos principales que los emprendedores reportaron en el 2021



Desarrollo de plan de negocios



Disponibilidad de financiamiento



Mercadeo y ventas



Capital humano



Administración del negocio (contabilidad, recursos humanos, etc.)



83% de las personas encuestadas están utilizando sus ahorros personales para financiar sus negocios

Recomendaciones para la comunidad empresarial

Luego de cinco años integrando y construyendo el ecosistema junto a la Red de Apoyo Empresarial y realizando las investigaciones, a continuación compartimos nuestras recomendaciones para continuar fortaleciendo la comunidad empresarial y aportar a una estrategia de desarrollo económico equitativa e inclusiva enfocada en empresarismo:



Entender el ecosistema por medio de datos

- • • Comprender el estado actual de la comunidad empresarial desde las perspectivas de los emprendedores y de las organizaciones de apoyo para atender brechas.
- • • Definir metas y métricas comunes para monitorear esfuerzos colectivos de la red de apoyo empresarial y facilitar la toma de decisiones.



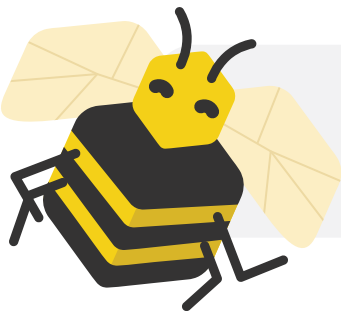
Reducir las barreras al emprendimiento

- • • Ampliar acceso a educación empresarial y acceso a capital.
- • • Agilizar los procesos para comenzar un negocio, sostener operaciones y manejar el cumplimiento regulatorio.



Promover una cultura empresarial fuerte

- • • Acercarnos al emprendimiento como una herramienta de desarrollo económico con implicaciones reales para los individuos que deciden emprender.
- • • Mantener estándares que incentiven crecimiento, calidad y colaboración.



Conoce más sobre el estado de la comunidad empresarial y nuestras recomendaciones para impulsar una estrategia de desarrollo económico aquí.

**¡Somos Tu Camino
Empresarial!**

(787) 525-4111 | info@colmena66.com

colmena66.com



Colmena66
Tu Camino Empresarial

Un programa de:



Puerto Rico
Science, Technology
& Research Trust

Impulsado por:





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

Strategic Plan 2022 - 2025

Puerto Rico Science Technology & Research Trust

June 17, 2022



#WeAreTheTrust

prsciencetrust.org



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.



Puerto Rico Science, Technology & Research Trust Balanced Scorecard Strategy Management System



MISSION		VISION		CORE VALUES		PERFORMANCE MEASURES – Key Indicators		OBJECTIVES		PERFORMANCE MEASURES – Key Indicators		STRATEGIC INITIATIVES	
By 2025, the Trust transformed Puerto Rico into a global hub for scientific, technological, and economic innovation, serving as a catalyst for sustainable growth and prosperity.		By 2025, the Trust transformed Puerto Rico into a global hub for scientific, technological, and economic innovation, serving as a catalyst for sustainable growth and prosperity.		Accomplishments and Results: Collaborations, Accomplishments, Commitment, Optimism/Potential, Entrepreneurship, High Quality, Desire to Innovate, High Quality		Strategic Theme: Our commitment to deliver value to our clients is a top priority. We will continue to invest in our people and our infrastructure to ensure we are the best choice for anyone in PR and the Caribbean looking for innovative solutions to their problems.		Strategic Theme: We will continue to invest in our people and our infrastructure to ensure we are the best choice for anyone in PR and the Caribbean looking for innovative solutions to their problems.		Strategic Theme: We will continue to invest in our people and our infrastructure to ensure we are the best choice for anyone in PR and the Caribbean looking for innovative solutions to their problems.		Strategic Theme: We will continue to invest in our people and our infrastructure to ensure we are the best choice for anyone in PR and the Caribbean looking for innovative solutions to their problems.	
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Puerto Rico
Science, Technology
& Research Trust

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.



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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.

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



PRSTRT TODAY

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Puerto Rico
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Timeline



Luz A. Crespo

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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



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& Research Trust

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

#WeAreTheTrust

prsciencetrust.org

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

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Puerto Rico
Science, Technology
& Research Trust

Strategic Plan 2022 - 2025

Puerto Rico Science Technology & Research Trust

June 17, 2022



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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.



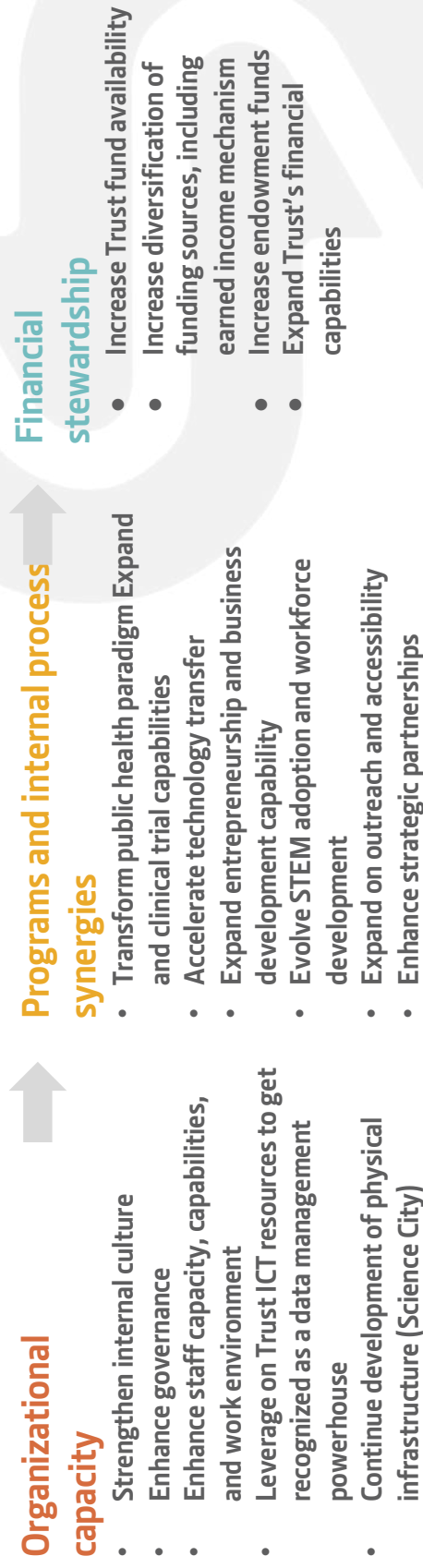
Core Values



Puerto Rico
Science, Technology
& Research Trust

Strategy Map

Puerto Rico Science, Technology, and Research Trust



Plan Objective: Increase Puerto Rico's innovation capacity



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



ENTREPRENEURSHIP



PUBLIC HEALTH



FOUNDATION PROGRAMS





Puerto Rico
Science, Technology
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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.



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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 going to measure it?

# of research assets (publications, patents, students impacted, PhD dissertations, companies funded)	# of research assets (publications, patents, students impacted, PhD dissertations, companies funded)
# funded research projects and \$	# funded research projects and \$
# strategic relationships that promote R&D and attract more funds to PR	# strategic relationships that promote R&D and attract more funds to PR

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

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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.

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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 >>> (Knowledge 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)



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).

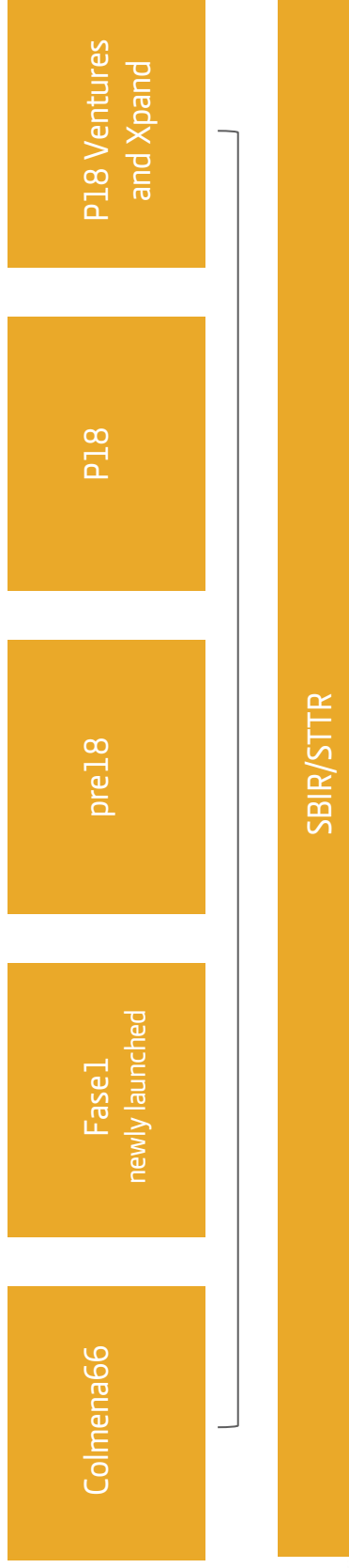


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Entrepreneurship

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 and international reputation.

With this background and its current status, the Entrepreneurship pillar has a clear new approach of building a innovation platform



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Parallel18: Pre18 and P18

2016



2021



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Colmena66

2016

2017

2018

2019

2020

2021

Launch with 160
collaborators on the
Net

- Networking Meetings
- Levanta Tu Negocio: Huracán María
- Shop&Hire
- PRSTRT Co-Working Space

- Tu Camino Empresarial (Map)
- Tu Camino Empresarial Tour

- First Boricua Emprende Fest
- SBIR/STTR: SBIR Road Tour
- Meeting Agro Industries
- Tu Camino Empresarial: Versión Agro
- Personalized Action Plan

- 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

- 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

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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.

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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.

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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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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 startups created and funded by parallel18 programs
- # of underrepresented founders funded.
- # of companies created by parallel18 programs



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



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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 and 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.

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Puerto Rico
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Public Health

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;

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Public Health



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.

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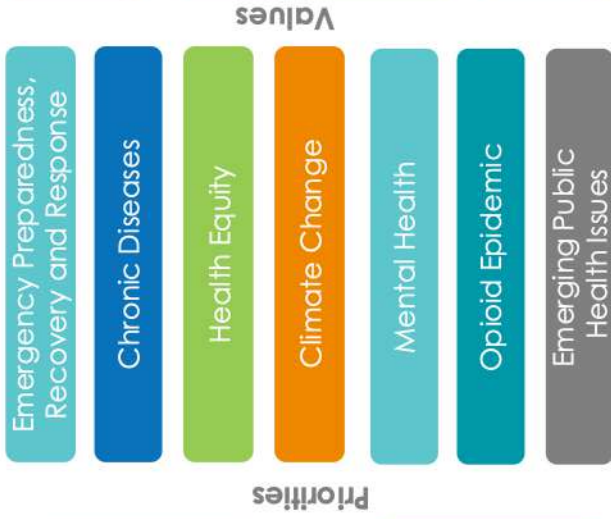
OUR FOUNDATION

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.





Outcomes Driven

IMPROVE PUBLIC HEALTH 		INCREASE QUALITY OF LIFE 	DECREASE MORTALITY 
SHORT TERM OUTCOMES	INTERMEDIATE OUTCOMES	LONG TERM OUTCOMES	
<ul style="list-style-type: none">Improved program administration and employee satisfactionUtilization and creation of dataSupport, collaborate and work with partners, community leaders and other stakeholdersDeveloped systems change for increased access to specialized medical services via telemedicineDeveloped health promotion and educationCHW certification	<ul style="list-style-type: none">Population-Based ChangesProgram-level ChangeEnvironmental-level ChangePolicy-level Change	<ul style="list-style-type: none">Enhanced quality of life for residentsPromotion of chronic disease related risk factorsIncrease public health awareness promotion and preventionIncrease support for PRPHT activities	



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.

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Puerto Rico
Science, Technology
& Research Trust

Public Health

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

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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; strengthening 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.

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Puerto Rico
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Foundations

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

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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

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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



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



PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

(A Puerto Rico Not-For-Profit Organization)

Basic Consolidated Financial Statements
June 30, 2022 and 2021



RSM Puerto Rico
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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 (together the Trust), which comprise the consolidated statements of financial position as of June 30, 2022 and 2021, the related consolidated statements of activities, functional expenses, and cash flows for the years then ended, and the related notes to the consolidated financial statements (collectively, the financial statements).

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Trust as of June 30, 2022 and 2021, and the changes in its net assets and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audits 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 the Trust and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the 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 financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Trust's ability to continue as a going concern within one year after the date that the financial statements are available to be issued.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the 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 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 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 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 the Trust's 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 financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Trust's 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 28, 2022.



Stamp No. E513007 was affixed to
the original of this report.

**PUERTO RICO SCIENCE, TECHNOLOGY AND
RESEARCH TRUST AND ITS SUBSIDIARIES**



CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

June 30, 2022 and 2021

	2022	2021
ASSETS:		
Cash	\$ 31,853,570	\$ 23,530,989
Accounts receivable, net of allowance for doubtful accounts of \$31,491 in 2022	489,616	869,527
Prepaid expenses	15,386	71,861
Due from governmental entities	1,003,365	5,428,877
Investments	4,168,344	4,273,838
Convertible promissory notes receivable, net	932,018	1,315,000
Other assets	26,261	29,483
Endowment fund	44,792,997	54,081,742
Property and equipment, net	2,888,038	1,863,868
Building, net	11,210,118	6,847,334
Land and property for research, development and infrastructure project related to science and technology	18,100,307	18,100,307
Land development costs	11,329,395	11,329,395
Construction in progress - Science City	11,159,421	11,153,287
	<u>\$ 137,968,836</u>	<u>\$ 138,895,508</u>
LIABILITIES AND NET ASSETS		
LIABILITIES:		
Program service payable	\$ 1,055,050	\$ 1,641,363
Accounts payable	2,862,532	2,156,775
Refundable advances	4,819,763	-
Accrued expenses	445,334	520,304
Other liabilities	180,419	154,022
	<u>9,363,098</u>	<u>4,472,464</u>
NET ASSETS:		
Without donor restrictions:		
Undesignated	60,303,822	57,337,560
Designated by the Board of Trustees for endowment	44,792,997	54,081,742
	<u>105,096,819</u>	<u>111,419,302</u>
With donor restrictions:		
Purpose restrictions	5,408,612	4,903,435
Perpetual in nature	18,100,307	18,100,307
	<u>23,508,919</u>	<u>23,003,742</u>
	<u>128,605,738</u>	<u>134,423,044</u>
	<u>\$ 137,968,836</u>	<u>\$ 138,895,508</u>

The accompanying notes are an integral part of these consolidated statements of financial position.

**PUERTO RICO SCIENCE, TECHNOLOGY AND
RESEARCH TRUST AND ITS SUBSIDIARIES**



CONSOLIDATED STATEMENTS OF ACTIVITIES
For the years ended June 30, 2022 and 2021

	2022		
	Without donor restrictions	With donor restrictions	Total
REVENUES, SUPPORT AND OTHERS:			
State grants and assessments	\$ 13,197,510	\$ -	\$ 13,197,510
Federal grants	21,240,735	-	21,240,735
Private grants and sponsorships	535,295	1,779,507	2,314,802
Donations and contributions	31,098	-	31,098
Clinical trials	95,411	-	95,411
Rental income	343,310	-	343,310
Net return (loss) on investments	(10,712,192)	136,627	(10,575,565)
Net return on endowment fund	719,535	-	719,535
Other income	238,582	-	238,582
	25,689,284	1,916,134	27,605,418
Net assets released from restrictions:			
Satisfaction of program restrictions	1,410,957	(1,410,957)	-
	27,100,241	505,177	27,605,418
OPERATING EXPENSES:			
Program and services:			
Research and data	4,389,909	-	4,389,909
Public health initiative	16,685,285	-	16,685,285
Technology transfer and commercialization	5,595,357	-	5,595,357
Science City development	583,654	-	583,654
	27,254,205	-	27,254,205
Supporting services:			
Management and administrative	6,168,519	-	6,168,519
	33,422,724	-	33,422,724
CHANGE IN NET ASSETS	(6,322,483)	505,177	(5,817,306)
NET ASSETS, beginning of year	111,419,302	23,003,742	134,423,044
NET ASSETS, end of year	\$ 105,096,819	\$ 23,508,919	\$ 128,605,738

Continues . . .

**PUERTO RICO SCIENCE, TECHNOLOGY AND
RESEARCH TRUST AND ITS SUBSIDIARIES**



CONSOLIDATED STATEMENTS OF ACTIVITIES
For the years ended June 30, 2022 and 2021

Continued...

	2021		
	Without donor restrictions	With donor restrictions	Total
REVENUES, SUPPORT AND OTHERS:			
State grants and assessments	\$ 10,000,000	\$ -	\$ 10,000,000
Federal grants	13,038,277	2,641,645	15,679,922
Private grants and sponsorships	70,417	1,228,991	1,299,408
Donations and contributions	39,061	-	39,061
Clinical trials	196,733	-	196,733
Rental income	348,742	-	348,742
Net return on investments	9,884,534	819,453	10,703,987
Net return on endowment fund	444,934	-	444,934
Other income	932,018	-	932,018
	<u>34,954,716</u>	<u>4,690,089</u>	<u>39,644,805</u>
Net assets released from restrictions:			
Satisfaction of program restrictions	3,445,654	(3,445,654)	-
	<u>38,400,370</u>	<u>1,244,435</u>	<u>39,644,805</u>
OPERATING EXPENSES:			
Program and services:			
Research and data	2,211,591	-	2,211,591
Public health initiative	14,115,201	-	14,115,201
Technology transfer and commercialization	4,760,460	-	4,760,460
Science City development	413,330	-	413,330
	<u>21,500,582</u>	<u>-</u>	<u>21,500,582</u>
Supporting services:			
Management and administrative	4,523,902	-	4,523,902
	<u>26,024,484</u>	<u>-</u>	<u>26,024,484</u>
	<u>12,375,886</u>	<u>1,244,435</u>	<u>13,620,321</u>
NON-OPERATING INCOME:			
Gain on extinguishment of debt	1,797,415	-	1,797,415
Donation of land	-	2,000,000	2,000,000
	<u>1,797,415</u>	<u>2,000,000</u>	<u>3,797,415</u>
CHANGE IN NET ASSETS	<u>14,173,301</u>	<u>3,244,435</u>	<u>17,417,736</u>
NET ASSETS , beginning of year	<u>97,246,001</u>	<u>19,759,307</u>	<u>117,005,308</u>
NET ASSETS , end of year	<u>\$ 111,419,302</u>	<u>\$ 23,003,742</u>	<u>\$ 134,423,044</u>

The accompanying notes are an integral part of these consolidated statements.

**PUERTO RICO SCIENCE, TECHNOLOGY AND
RESEARCH TRUST AND ITS SUBSIDIARIES**



CONSOLIDATED STATEMENTS OF FUNCTIONAL EXPENSES

For the years ended June 30, 2022 and 2021

	2022					
	Program activities				Support activity	
	Research and data	Public health initiative	Technology transfer and commercialization	Science City development	Management and administrative	Total
Program support:						
Capacity building and sponsorships	\$ 95,858	\$ -	\$ 59,303	\$ -	\$ -	\$ 155,161
Research and development grants	1,900,888	10,000	-	-	-	1,910,888
Matching grants	-	-	349,998	-	-	349,998
Parallel 18 grants	-	-	1,948,719	-	-	1,948,719
Other program initiatives	202,224	9,389,016	-	-	-	9,591,240
	<u>2,198,970</u>	<u>9,399,016</u>	<u>2,358,020</u>	<u>-</u>	<u>-</u>	<u>13,956,006</u>
Personnel costs:						
Salaries and wages	1,019,307	3,225,934	1,551,567	134,920	2,106,844	8,038,572
Benefits and payroll taxes	328,176	1,282,122	492,291	60,047	852,751	3,015,387
	<u>1,347,483</u>	<u>4,508,056</u>	<u>2,043,858</u>	<u>194,967</u>	<u>2,959,595</u>	<u>11,053,959</u>
Professional services	<u>445,915</u>	<u>1,467,372</u>	<u>706,881</u>	<u>279,572</u>	<u>935,821</u>	<u>3,835,561</u>
Occupancy expenses:						
Depreciation and amortization	28,494	903,945	640	5,847	258,418	1,197,344
Rent	-	-	164,556	-	27,000	191,556
Repairs and maintenance	681	-	1,704	61,612	272,740	336,737
Security	-	-	-	-	137,299	137,299
Other	10,564	705	371	-	543,554	555,194
	<u>39,739</u>	<u>904,650</u>	<u>167,271</u>	<u>67,459</u>	<u>1,239,011</u>	<u>2,418,130</u>
Travel	18,453	127,755	34,864	12,154	24,384	217,610
Other	339,349	278,436	284,463	29,502	1,009,708	1,941,458
Total operating expenses	<u>\$ 4,389,909</u>	<u>\$ 16,685,285</u>	<u>\$ 5,595,357</u>	<u>\$ 583,654</u>	<u>\$ 6,168,519</u>	<u>\$ 33,422,724</u>

Continues . . .

**PUERTO RICO SCIENCE, TECHNOLOGY AND
RESEARCH TRUST AND ITS SUBSIDIARIES**



CONSOLIDATED STATEMENTS OF FUNCTIONAL EXPENSES
For the years ended June 30, 2022 and 2021

Continued...

	2021					
	Program activities				Support activity	
	Research and data	Public health initiative	Technology transfer and commercialization	Science City development	Management and administrative	Total
Program support:						
Capacity building and sponsorships	\$ 30,232	\$ -	\$ 44,203	\$ -	\$ -	\$ 74,435
Research and development grants	391,279	35,000	100,000	-	-	526,279
Matching grants	-	-	800,000	-	-	800,000
Parallel 18 grants	-	-	1,023,167	-	-	1,023,167
Other program initiatives	182,404	6,216,039	272	5,263	-	6,403,978
	603,915	6,251,039	1,967,642	5,263	-	8,827,859
Personnel costs:						
Salaries and wages	590,567	4,130,348	1,354,342	123,727	1,565,125	7,764,109
Benefits and payroll taxes	217,263	1,485,563	430,801	48,225	617,636	2,799,488
	807,830	5,615,911	1,785,143	171,952	2,182,761	10,563,597
Professional services	388,378	1,157,508	479,500	226,997	732,840	2,985,223
Occupancy expenses:						
Depreciation and amortization	27,999	413,294	87,673	-	247,147	776,113
Rent	-	-	162,120	-	27,000	189,120
Repairs and maintenance	2,224	-	70	-	258,087	260,381
Security	-	-	-	-	100,740	100,740
Other	11,182	35	524	-	455,942	467,683
	41,405	413,329	250,387	-	1,088,916	1,794,037
Travel	207	212,695	26	2,561	15,852	231,341
Other	369,856	464,719	277,762	6,557	503,533	1,622,427
Total operating expenses	\$ 2,211,591	\$ 14,115,201	\$ 4,760,460	\$ 413,330	\$ 4,523,902	\$ 26,024,484

The accompanying notes are an integral part of these consolidated statements.

**PUERTO RICO SCIENCE, TECHNOLOGY AND
RESEARCH TRUST AND ITS SUBSIDIARIES**



CONSOLIDATED STATEMENTS OF CASH FLOWS
For the years ended June 30, 2022 and 2021

	2022	2021
CASH FLOWS FROM OPERATING ACTIVITIES:		
Change in net assets	\$ (5,817,306)	\$ 17,417,736
Adjustments to reconcile change in net assets to net cash provided by (used in) operating activities:		
Bad debts expense	106,491	150,000
Gain on conversion of notes receivable	(47,012)	-
Unrealized (gain) loss on investments	51,191	(650,120)
Realized loss on investments, net	75,000	111,275
Capitalized income on Endowment fund	(719,535)	(444,934)
Unrealized (gain) loss on Endowment fund	10,738,870	(9,687,537)
Loss on sale of property and equipment	209	-
Depreciation and amortization	1,197,343	776,113
Land received as donation	-	(2,000,000)
Gain on extinguishment of debt	-	(1,797,415)
Changes in operating assets and liabilities-		
Decrease (increase) in assets:		
Accounts receivable	348,420	(166,000)
Prepaid expenses	56,475	103,902
Due from governmental entities	4,425,512	(4,299,985)
Other assets	3,222	-
Increase (decrease) in liabilities:		
Program service payable	(586,313)	6,484
Accounts payable	705,757	191,543
Refundable advances	4,819,763	-
Accrued expenses	(74,970)	76,761
Other liabilities	26,397	14,003
Net cash provided by (used in) operating activities	<u>15,309,514</u>	<u>(198,174)</u>
CASH FLOWS FROM INVESTING ACTIVITIES:		
Advances under convertible notes receivable	102,982	(905,000)
Proceeds from sale and redemption of investments	375,037	2,927,823
Purchase of investments	(143,722)	(427,205)
Contributions to Endowment fund	(730,590)	(8,340,202)
Purchase of property and equipment	(2,033,051)	(1,646,015)
Addition to construction in progress - building	(4,551,455)	(915,362)
Addition to construction in progress - Science City	(6,134)	(4,931)
Net cash used in investing activities	<u>(6,986,933)</u>	<u>(9,310,892)</u>
NET INCREASE (DECREASE) IN CASH	8,322,581	(9,509,066)
CASH, beginning of year	23,530,989	33,040,055
CASH, end of year	<u>\$ 31,853,570</u>	<u>\$ 23,530,989</u>

The accompanying notes are an integral part of these consolidated statements.

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS June 30, 2022 and 2021

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 \$7,130,000 or 35% out of the monies deposited in the Special Fund for Economic Development managed by the Puerto Rico Industrial Development Company (PRIDCO) for the fiscal year ended June 30, 2021 and thereafter, with annual increase of the greater of 3% or 35% out of the monies deposited in the Special Fund for Economic Development managed by PRIDCO, (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 1986, as amended, and (iv) private grants and donations, other government funds, and legislative appropriations.

The Act 214, as amended on 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 years ended June 30, 2022 and 2021, 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.

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS June 30, 2022 and 2021

- 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 years ended June 30, 2022 and 2021.

- 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 organization. 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, 2022 and 2021, 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).

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS June 30, 2022 and 2021

- 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 the 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.

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS June 30, 2022 and 2021

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 reports 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.

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS June 30, 2022 and 2021

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 has incurred expenditures in compliance with specific contract or grant provisions. Amounts received prior to incurring qualifying expenditures are reported as refundable advances in the statements of financial position.

Contributed services – Contributions of services are only recognized if services received: (a) create or enhance non-financial assets or would typically need to be purchased if not provided by donation, (b) require specialized skills and are provided by individuals possessing those skills. The contribution revenue for services received is recognized at the fair value of those services. There were no contributed services during the years ended June 30, 2022 and 2021.

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 years ended June 30, 2022 and 2021, 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.

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS June 30, 2022 and 2021

- *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 years ended June 30, 2022 and 2021.

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, 2018 to 2022.

Advertising and promotion – The Trust and its Subsidiaries charge to operations advertising and promotion costs as they are incurred. During the years ended June 30, 2022 and 2021, the Trust and its Subsidiaries incurred in advertising and promotion expenses of approximately \$148,000 and \$143,000, respectively.

Accounting standards with future applicability – In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*, which sets out the principles for the recognition, measurement, presentation and disclosure of leases for both parties to a contract (i.e. lessees and lessors). The guidance in ASU 2016-02 supersedes the leasing guidance in Topic 840, *Leases*. An entity may adopt the Topic 842 either (1) retrospectively to each prior reporting period presented in the financial statements with a cumulative-effect adjustment recognized at the beginning of the earliest comparative period presented or (2) retrospectively at the beginning of the period of adoption through a cumulative-effect adjustment. Expanded disclosures with additional qualitative and quantitative information will also be required. The FASB has also issued several updates to ASU 2016-02. The standard will be effective for annual reporting periods beginning after December 15, 2021.

In January 2020, the FASB issued ASU 2020-01, *Investments-Equity Securities (Topic 321)*, *Investments-Equity Method and Joint Ventures (Topic 323)*, and *Derivatives and Hedging (Topic 815)*, which clarify certain interactions between the guidance to account for certain equity securities under Topic 321, the guidance to account for investments under the equity method of accounting in Topic 323, and the guidance in Topic 815, which could change how an entity accounts for an equity security under the measurement alternative or a forward contract or purchased option to purchase securities that, upon settlement of the forward contract or exercise of the purchased option, would be accounted for under the equity method of accounting or the fair value option in accordance with Topic 825, *Financial Instruments*. These amendments improve current GAAP by reducing diversity in practice and increasing comparability of the accounting for these interactions. For non-public entities, the amendments are effective for fiscal years beginning after December 15, 2021, and interim periods within those fiscal years. Early adoption is permitted. The amendments in ASU 2020-01 should be applied prospectively.

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES



NOTES TO CONSOLIDATED FINANCIAL STATEMENTS June 30, 2022 and 2021

In September 2020, the FASB issued ASU 2020-07, *Not-for-Profit Entities (Topic 958) - Presentation and Disclosures by Not-for-Profit Entities for Contributed Nonfinancial Assets*. The objective of the amendments in ASU 2020-07 is to increase transparency of contributed nonfinancial assets for not-for-profit entities through enhancements in presentation and disclosure requirements. Not-for-profit entities will now be required to present contributed nonfinancial assets as a separate line item in the statement of activities, apart from contributions of cash and other financial contributions. Not-for-profit entities will also be required to disclose various information related to contributed nonfinancial assets, including additional disclosure requirements for recognized contributed services. The amendments in ASU 2020-07 should be applied on a retrospective basis and are effective for fiscal years beginning after June 15, 2021. Early adoption is permitted.

The Trust and its Subsidiaries are evaluating the impact of these guidance on its financial statements.

2) 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, 2022 and 2021, the Trust and its Subsidiaries' cash deposits exceeded the insured limits of FDIC and SIPC by approximately \$30,124,000 and \$21,919,000, respectively.

For the years ended June 30, 2022 and 2021, grants and contributions from state and federal entities represent approximately 90% and 65%, respectively, out of total revenues. The balance due from these state and federal entities represent approximately 67% and 93%, respectively, of total accounts receivable.

3) Liquidity and availability:

As of June 30, 2022 and 2021, 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	2022	2021
Cash	\$ 31,853,570	\$ 23,530,989
Account receivable	489,616	869,527
Due from governmental entities	1,003,365	5,428,877
Investments	4,168,344	4,273,838
Endowment fund	44,792,997	54,081,742
	82,307,892	88,184,973
Less amount not available to be used within one year:		
Net assets with donor restrictions	(5,408,612)	(4,903,435)
Financial assets available to meet general expenditures over the next twelve months	\$ 76,899,280	\$ 83,281,538

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS **June 30, 2022 and 2021**

4) Investments:

As of June 30, 2022 and 2021, investments consisted of the following:

Description	2022	
	Cost	Fair value
Fixed income:		
Puerto Rico government bond	\$ 2,345,299	\$ 2,082,136
Private equity securities	1,636,208	1,636,208
SAFE investments	450,000	450,000
	<u>\$ 4,431,507</u>	<u>\$ 4,168,344</u>
Description	2021	
	Cost	Fair value
Fixed income:		
Puerto Rico government bond	\$ 2,651,613	\$ 2,439,642
Private equity securities	1,299,196	1,299,196
SAFE investments	535,000	535,000
	<u>\$ 4,485,809</u>	<u>\$ 4,273,838</u>

5) 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.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS June 30, 2022 and 2021

As of June 30, 2022, and 2021, the Trust and its Subsidiaries' investments are classified as follows:

Description	2022			
	Level 1	Level 2	Level 3	Total
Fixed income:				
Puerto Rico government bond	\$ -	\$ 2,082,136	\$ -	\$ 2,082,136
Private equity securities	-	-	1,636,208	1,636,208
SAFE investments	-	-	450,000	450,000
	<u>\$ -</u>	<u>\$ 2,082,136</u>	<u>\$ 2,086,208</u>	<u>\$ 4,168,344</u>

Description	2021			
	Level 1	Level 2	Level 3	Total
Fixed income:				
Puerto Rico government bond	\$ -	\$ 2,439,642	\$ -	\$ 2,439,642
Private equity securities	-	-	1,299,196	1,299,196
SAFE investments	-	-	535,000	535,000
	<u>\$ -</u>	<u>\$ 2,439,642</u>	<u>\$ 1,834,196</u>	<u>\$ 4,273,838</u>

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	2022		
	Private equity securities	SAFE investments	Total
Balance at July 1, 2021	\$ 1,299,196	\$ 535,000	\$ 1,834,196
Purchases	75,000	-	75,000
Conversion of SAFE investments to private equity securities	85,000	(85,000)	-
Conversion of note receivable to private equity securities	252,012	-	252,012
Realized losses	(75,000)	-	(75,000)
Balance at June 30, 2022	<u>\$ 1,636,208</u>	<u>\$ 450,000</u>	<u>\$ 2,086,208</u>

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS **June 30, 2022 and 2021**

Description	2021		
	Private equity securities	SAFE investments	Total
Balance at July 1, 2020	\$ 1,174,196	\$ 340,000	\$ 1,514,196
Purchases	125,000	270,000	395,000
Realized losses	-	(75,000)	(75,000)
Balance at June 30, 2021	<u>\$ 1,299,196</u>	<u>\$ 535,000</u>	<u>\$ 1,834,196</u>

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, 2022 and 2021:

Description	Valuation Technique	Unobservable Input
Private equity securities	Acquisition cost	None
SAFE investments	Acquisition cost	None

6) Convertible promissory notes receivable:

As of June 30, 2022 and 2021, the Trust is the holder of the following convertible promissory notes:

Description	2022	2021
5% interest bearing promissory notes, convertible to shares of common stock of the issuers. The notes were due in August 2022. During the year ended June 30, 2022, \$80,000 were converted and the remaining notes are currently in the process of either conversion or payment.	\$ 547,689	\$ 780,000
2% interest bearing promissory note, convertible to shares of common stock of the issuer. The note was due in April 2021 and a repayment agreement is in progress.	74,329	75,000
7% interest bearing promissory note, convertible to shares of common stock of the issuer. The note was converted during the year ended June 30, 2022.	-	25,000
2% interest bearing promissory note, convertible to shares of common stock of the issuer. The note was converted during the year ended June 30, 2022.	-	100,000
6% interest bearing promissory note, convertible to shares of common stock of the issuer. The note was due in November 2022 but was written off during the year ended June 30, 2022.	-	75,000

Continues . . .

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS **June 30, 2022 and 2021**

Description	2022	2021
Continued . . .		
3% interest bearing promissory note, convertible to shares of common stock of the issuer. The note was originally due in January 2020 and was extended to December 2022.	75,000	75,000
7% interest bearing promissory note, convertible to shares of common stock of the issuer. The note was originally due in April 2022 and was extended to December 2022.	75,000	75,000
3% interest bearing promissory note, convertible to shares of common stock of the issuer. During the year ended June 30, 2022, the note was amended to change the interest rate to 10% and extend the due date to August 2022. A repayment agreement is currently in progress.	50,000	50,000
5% interest bearing promissory note, convertible to shares of common stock of the issuer. The note was due in June 2020 and was written off during the year ended June 30, 2022.	-	25,000
Promissory note convertible to shares of common stock of the issuer. The note bears interest at 8% during the first year and at 12.5% thereafter, until maturity in July 2022. The note was extended to January 2023.	110,000	110,000
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	75,000
	1,007,018	1,465,000
Less: Allowance for doubtful accounts	(75,000)	(150,000)
	\$ 932,018	\$ 1,315,000

The notes are converted upon the occurrence of certain events, including the issuer's failure to pay in full the principal and accrued interest upon its maturity or a change of control transaction.

7) 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.

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS **June 30, 2022 and 2021**

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, 2022 and 2021, 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 years ended June 30, 2022 and 2021, consisted of the following:

Description	2022	2021
Endowment fund at beginning of year	\$ 54,081,742	\$ 35,609,069
Investment return (loss):		
Investment income, net	719,535	444,934
Net appreciation (decrease)	(10,738,870)	9,687,537
Total investment return (loss)	(10,019,335)	10,132,471
Contributions	730,590	8,340,202
Endowment fund at end of year	\$ 44,792,997	\$ 54,081,742

8) Property and equipment:

As of June 30, 2022 and 2021, property and equipment consisted of the following:

Description	June 30, 2022		
	Cost	Accumulated depreciation and amortization	Book value
Furniture and fixtures	\$ 195,979	\$ 119,530	\$ 76,449
Computer and equipment	4,235,162	1,478,928	2,756,234
Leasehold improvements	829,068	796,054	33,014
Vehicle	39,425	17,084	22,341
	<u>\$ 5,299,634</u>	<u>\$ 2,411,596</u>	<u>\$ 2,888,038</u>

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS **June 30, 2022 and 2021**

Description	Cost	June 30, 2021	Book value
		Accumulated depreciation and amortization	
Furniture and fixtures	\$ 123,050	\$ 105,115	\$ 17,935
Computer and laboratory equipment	2,282,560	617,554	1,665,006
Leasehold improvements	829,068	678,367	150,701
Vehicle	39,425	9,199	30,226
	<u>\$ 3,274,103</u>	<u>\$ 1,410,235</u>	<u>\$ 1,863,868</u>

9) Building:

As of June 30, 2022 and 2021, building consisted of the following:

Description	2022	2021
<i>Innovation Center Building</i> - 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.	\$ 3,114,055	\$ 3,114,055
<i>Puerto Rico Environmental Quality Board's Laboratory</i> - Building that houses the laboratory facilities of the Puerto Rico Environmental Quality Board and the laboratory facilities of the Puerto Rico Vector Control Unit.	3,546,932	3,546,932
	<u>6,660,987</u>	<u>6,660,987</u>
Less: Accumulated depreciation	<u>(1,166,539)</u>	<u>(977,868)</u>
	5,494,448	5,683,119
Construction in progress	<u>5,715,670</u>	<u>1,164,215</u>
	<u>\$ 11,210,118</u>	<u>\$ 6,847,334</u>

As of June 30, 2022 and 2021, the construction in progress is related to the construction of the Forward Center Building, a 30,000 square feet, three-story building to be located at the Science City. This construction is partially funded by the US Department of Commerce - Economic Development Administration.

10) 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.

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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.

In July 2020, the Trust and its Subsidiaries received 8.3 acres of land from the Puerto Rico Department of Transportation and Public Works (DTPW). The Trust and its Subsidiaries donated this land on fiscal year ended June 30, 2017 to DTPW to enable the agency to seek financing from the Federal Highway Administration (FHA) for the construction of the Science City Boulevard. Since the financing from the FHA did not materialize, the land was transferred back to the Trust and its Subsidiaries. The donated acres of land were recognized at the fair value at the date of receipt.

The land was restricted by donor for research, development and infrastructure project related to science and technology.

11) 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.

12) Gain on extinguishment of debt:

On May 1, 2020, the Trust and its Subsidiaries received a loan of approximately \$1,786,000, under the Payroll Protection Program, created by the Coronavirus Aid, Relief, and Economic Security Act (CARES Act). The money received from the loan was used for certain eligible expenses such as payroll costs, group health care benefits, rent, and utilities, among others. During the year ended June 30, 2021, the Trust and its Subsidiaries complied with the restrictions and conditions included in the CARES Act and the loan balance of \$1,797,415, including interest accrued at 1%, was fully forgiven and presented as non-operating income in the consolidated statements of activities.

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 month to month basis.

In addition, as of June 30, 2022 and 2021, the Trust and its Subsidiaries leases a facility under a lease agreement that expired on June 30, 2021. After the expiration date, the lease is on a month to month basis. The monthly rental payments approximate \$18,000.

PUERTO RICO SCIENCE, TECHNOLOGY AND RESEARCH TRUST AND ITS SUBSIDIARIES

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For the years ended June 30, 2022 and 2021, revenues on rental agreements amounted to approximately \$343,000 and \$349,000, respectively. Future minimum collections related to the lease agreements after June 30, 2022, are approximately \$9,500.

14) Operating lease agreements:

The Trust and its Subsidiaries entered into a lease agreement for the use of the facilities. The agreement calls for escalating monthly rental payments ranging from \$13,510 to \$14,321 through June 2025. Total rent expense related to this agreement for the years ended June 30, 2022 and 2021, amounted to approximately \$165,000 and \$162,000, respectively.

In addition, the Trust and its Subsidiaries entered into a lease agreement for the use of a two-story office building and one annex in Ponce, Puerto Rico. The agreement calls for monthly rental payments of \$7,500 through September 2021. After the expiration date, the lease is on a month to month basis. Total rent expense related to this agreement for each of the years ended June 30, 2022 and 2021, amounted to approximately \$90,000.

Future minimum lease payments subsequent to June 30, 2022, are as follows:

Year ending June 30,	Amount
2023	\$ 250,758
2024	168,480
2025	85,032
Total future minimum lease payments	<u>\$ 504,270</u>

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 years ended June 30, 2022 and 2021, amounted to approximately \$197,000 and \$151,000, respectively.

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, 2022, are as follows:

Entity	Commitment	Investment
Parliament Credit Opportunities Fund, LLC	\$ 500,000	\$ 350,000
Semillero Investment Fund I, LLC	500,000	495,081
Semillero Investment Fund II, LLC	1,000,000	296,266
Bluhaus Small Business Fund, L.P.	250,000	150,000
	<u>\$ 2,250,000</u>	<u>\$ 1,291,347</u>

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS **June 30, 2022 and 2021**

17) Risk and uncertainty:

On January 30, 2020, the World Health Organization declared the coronavirus outbreak a "Public Health Emergency of International Concern" and on March 11, 2020, declared it to be a pandemic. Actions taken around the world to help mitigate the spread of the coronavirus include restrictions on travel, and quarantines in certain areas, and forced closures for certain types of public places and businesses. The coronavirus and actions taken to mitigate it have had and are expected to continue to have an adverse impact on the economies and financial markets of many countries, including Puerto Rico. While it is unknown how long these conditions will last and what the complete financial effect will be to the entity, to date, the Trust and its Subsidiaries have not experienced material impact on financial results.

18) Supplemental disclosures for the statements of cash flows:

A) Non-cash from investing and financing transactions – During the years ended June 30, 2022 and 2021, non-cash investing and financing transactions were as follows:

Description	2022	2021
Extinguishment of debt	\$ -	\$ 1,797,415
Land received as donation	\$ -	\$ 2,000,000
Unpaid equipment	\$ -	\$ 129,000
SAFE investments converted in private equity securities	\$ 85,000	\$ -
Note receivable converted into investment in private equity securities	\$ 205,000	\$ -

B) Other cash flows information – During the years ended June 30, 2022 and 2021, the Trust and its Subsidiaries made no interest payments.

19) Reclassifications:

Certain reclassifications were made to the June 30, 2021 financial statements to conform them to the June 30, 2022 financial statement presentation. The reclassifications had no effect on the reported change in net assets for the year ended June 30, 2021.

20) Subsequent events:

In July 2022, the US Department of Health and Human Services (US DHHS)'s Centers for Disease Control and Prevention awarded a \$5,754,654 grant to implement a project titled *Enhancing Global Health Security: Strengthening Public Health Surveillance Systems and Preparedness Globally*. The program expires in September 2023.

In August 2022, the US DHHS's Centers for Disease Control and Prevention awarded a \$1,704,710 grant to implement a project titled *Enhancing Regional Capacity for Vector Surveillance and Control in the US territories in the Caribbean*. The program expires in September 2023.

Subsequent events were evaluated through October 28, 2022, the date on which the consolidated financial statements were available to be issued.