

**Public Meeting on Economic Development  
for Puerto Rico-Reinvigorating Puerto Rico's  
Manufacturing Base"**

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Friday, March 30, 2017, 3:15 pm.



Puerto Rico  
Science, Technology  
& Research Trust



TESTIMONY OF LUCY CRESPO  
CHIEF EXECUTIVE OFFICER OF THE PUERTO RICO SCIENCE  
TECHNOLOGY AND RESEARCH TRUST

At the Financial Oversight and Management Board for Puerto Rico on the  
“Public Meeting on Economic Development for Puerto Rico-  
Reinvigorating Puerto Rico’s Manufacturing Base”

Friday, March 30, 2017, 3:15 pm.

Convention Center, 2nd Floor, Room 209

Good afternoon. My name is Lucy Crespo. I am the Chief Executive Officer of the Puerto Rico Science Technology and Research Trust.

Thank you for the opportunity to address the Board on this very important topic for all of us in Puerto Rico

The Puerto Rico Science, Technology, and Research Trust is a non-profit organization created to encourage and promote innovation, transfer and commercialization of technology, and to facilitate the creation of jobs in the technology sector. We are also responsible for Puerto Rico’s public policy for science, technology, research and development. Our 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 working with our industrial base.



During the last two years the Puerto Rico Science Technology and Research Trust implemented the following key initiatives to move forward Puerto Rico's agenda in the Science, Technology and Research areas, and to accelerate the economic development, and transformation of Puerto Rico to a knowledge based economy.

The initiatives are:

1. Established Puerto Rico Consortium for Clinical Investigation (PRCCI). A cooperative with 22 members that in less than a year of operation have secured over 190 clinical research study opportunities, signed 9 contracts, with accrued revenues of \$1.3M. PRCCI is building clinical research capabilities partnering with TransCelerate members : Pfizer, Lilly and Merck. In collaboration with our strategic partner, Yale University, we are providing best practices training to researchers across the Island
2. Established Parallel18 Global Accelerator for Innovation-Driven Enterprises. This initiative will be shared in details in a later session by Parallel18's Executive Director Sebastian Vidal.
3. Established Puerto Rico Center for Tropical Biodiversity and Bioprospecting currently digitizing specimens from over 40 identified collections, and assessing the potential commercial value of ten of our research projects in this field.
4. Established Puerto Rico Brain Trust for Tropical Disease Research and Prevention that is in the process of deploying the Puerto Rico Vector Control Unit secured by a multiyear CDC grant.
5. Executed two major Research Grants Programs with over \$6.0M investment, and over 30 awardees. These investments so far has yield additional \$4.5M in competitive grants money, 7 patents submitted, over 80 abstracts and presentations, more than 10 peer reviewed publications, and 6 companies started up from academia.
6. Established the Puerto Rico Technology Transfer and Commercialization Office. The office has generated 4 technology transfer agreements with universities, 2 interuniversity agreements, and 7



collaborations with companies in the private sector. Over 15 conferences and seminars for Intellectual Property Management and Technology Transfer have been offered. The office performed over 60 IP and Commercialization assessments.

7. Completed the construction of the Puerto Rico Environmental Research Laboratory, a facility that will house the EQB and Vector Control Unit laboratories in Science City.

To Reinvigorating Puerto Rico's Manufacturing Base:

1. we need to expand the contributions in the value chain of the existing companies by increasing activities in manufacturing, R&D, and services
2. to expand manufacturing and supply chain activities in our newest and fastest growing sector: aerospace
3. and to enable the creation of new manufacturing startup companies in areas such as: 3D printing, smart textiles, IOT (Internet of Thing) devices and applications

We also need to leverage the current strengths that the Puerto Rico Manufacturing ecosystem have. Some of the key action that can be pursued to ignite more manufacturing activities in PR are:

1. Designate Puerto Rico as the location for the Medical Devices Manufacturing Institute under the National Network of Manufacturing Institutes program hosted by NIST. This would help Puerto Rico leverage its talent and resources into the creation of research and innovation in the area of Medical Devices. Puerto Rico has traditionally been a powerhouse in this area and has the potential to use its knowledge to participate in the future of medical devices. In fact the Trust is in advance discussion with two global medical devices companies that want to expand their footprint activities in Puerto Rico. As stated in the "Value of Bioscience Innovation in Growing Jobs and Improving Quality of Life" presented in Bio San Francisco Conference 2016 New Jersey and Puerto Rico stand out as the only jurisdictions that are specialized in 4 of the 5 bioscience industry.



2. Designation of SBA 8 (a) Program to all Puerto Rican manufacturing Companies and/or small business manufacturing companies based in Puerto Rico. This idea is based on the Alaska SBA 8 (a) program Designation. In general terms the designation should help Puerto Rico small business manufacturing companies to pursue government contracts while building sustainable capabilities, and contribute to Puerto Rico's economic development without additional costs for the Federal Government.

3. Accelerate Commercialization of University-based Research through a Regional Proof of Concept Center for the Life Sciences. A regional proof of concept (POC) center would serve all Puerto Rico academic institutions with life science research activities. A separate line item would be established in the Department of Human and Health Services (HHS)/National Institutes of Health for FY 2017 and be set aside as a maximum 5-year grant, renewable per year, for the amount of \$1.5 million/year to support the operational costs of establishing and implementing the regional POC center

I am including a document with a broader set of potential activities to the Board for the consideration.

Thank you to all the members of the Board for your interest in and attention to this matter.



## Introduction

Puerto Rico's prosperity for the coming years will depend on the successful development of its science and innovation ecosystem. That will determine, more than many other factors, Puerto Rico's standing in the global economy.

For Puerto Rico to thrive, and to come out of the present financial crisis, it needs to drive productivity and growth. It is clear that the development of science, innovation, and entrepreneurship as tools to generate wealth is an essential condition for productivity and growth. Investment in the innovation sector creates more jobs, higher salaries, and better quality of life than any other. It has a positive effect on education systems and fosters a culture of curiosity and discovery. In addition, high-quality research and development attracts talent and global and local businesses, creating a virtuous circle of productivity, growth, and knowledge.

To be successful in the long term it is important for the public and private sectors to commit to Puerto Rico's Science, Technology, & Innovation Policy and to the full implementation of the Puerto Rico Science, Technology, and Research Trust's (the Trust) Strategic Plan. All Puerto Ricans, including all political parties and future government administration should be unified by this common vision: By 2022, Puerto Rico is a globally recognized innovation hub that develops, attracts, and retains scientists, technology entrepreneurs, and enterprises to unlock world class creativity and competitiveness. Federal efforts that strengthen the Trust's existing initiatives, all based on its Policy and Strategic Plan, should be pursued.

Following please find the Trust's proposal's, geared to helping the Financial Oversight and Management Board for Puerto Rico achieve its mission of identifying impediments to growth and recommending changes to promote long-term economic growth and stability; spur new job creation; and attract investment.



## Recommendations

### Technology Commercialization and Research

1. Assign Grants for Commercialization Accelerator Initiatives. Federal agencies with extramural budgets for R&D that are in excess of \$10 million obligated to Puerto Rico higher education institutions could award annual grants to support institutions of higher education in Puerto Rico pursuing specific innovative initiatives to improve the institutions' capacity to identify, protect, and transfer discoveries and innovations to industry or to further develop technology such that it has a better chance of being commercialized.
2. Accelerate Commercialization of University-based Research through a Regional Proof of Concept Center for the Life Sciences. A regional proof of concept (POC) center would serve all Puerto Rico academic institutions with life science research activities. A separate line item would be established in the Department of Human and Health Services (HHS)/National Institutes of Health for FY 2017 and be set aside as a maximum 5-year competitive grant, renewable per year, for the amount of \$1.5 million/year to support the operational costs of establishing and implementing the regional POC center.
3. DARPA and NIH set-aside. Designate a percentage of DARPA and National Institutes projects (budget) to Puerto Rico. The assignment would consider among other factors, availability of resources and capabilities in Puerto Rico. For example: (1) research and development topics that are tied to specific conditions like diseases that are endemic to Puerto Rico (e.g. Dengue, Chikungunya, Zika); (2) Department of Defense projects that require software (Cybersecurity) or hardware development (wearables or bio devices) or services delivery performed by USA citizens and in USA soil. Minimum period of time: 10 years.



4. Designate Puerto Rico as the location for the Medical Devices Manufacturing Institute under the National Network of Manufacturing Institutes program hosted by NIST. This would help Puerto Rico leverage its talent and resources into the creation of research and innovation in the area of Medical Devices. Puerto Rico has traditionally been a powerhouse in this area and has the potential to use its knowledge to participate in the future of medical devices. In fact the Trust is in advance discussion with two global medical devices companies that want to expand their footprint activities in Puerto Rico. As stated in the “Value of Bioscience Innovation in Growing Jobs and Improving Quality of Life” presented in Bio San Francisco Conference 2016 New Jersey and Puerto Rico stand out as the only jurisdictions that are specialized in 4 of the 5 bioscience industry. (Major subsector area: Agricultural Feedstock & Chemical, Drugs & Pharmaceutical, Medical Devices & Equipment, Research, Testing & Medical laboratories and Biosciences-relates Distribution).

5. Right to use and commercialize technology from Federal Laboratory Consortium. Approve agreement or law (executive order or congress mandate) to allow companies based (operating) in Puerto Rico to have access, right to use and commercialize technology licenses at no cost from the Federal Laboratory Consortium for Technology Transfer (FLC). Minimum period of time: 10 years or during the PROMESA years.

6. SBA Programs set-aside. Negotiate a set-aside percentage of dollars for SBA Programs: (a) SBIR & STTR, SBA/SBIC Impact Investment Initiative, SBA Early Stage SBIC Initiative, and Department of Defense (DOD) Rapid Innovation Fund. Minimum period of time: 10 years or during the PROMESA years.



7. Designation of SBA 8 (a) Program to all Puerto Rican manufacturing Companies and/or small business manufacturing companies based in Puerto Rico. This idea is based on the Alaska SBA 8 (a) program Designation. In general terms the designation should help Puerto Rico small business manufacturing companies to pursue government contracts while building sustainable capabilities, and contribute to Puerto Rico's economic development without additional costs for the Federal Government. This designation can be broadened to other sectors to accelerate economic development.

8. Elimination of CONUS requirement. The US Government has the goal of acquiring 25% of their purchases from small business. If they eliminate the CONUS (Continental USA Only) requirement, small businesses established in Puerto Rico will be able to bid for those opportunities, significantly increasing economic activities both for products and services.

### **Infrastructure**

9. Expand the New Market Tax Credit to all Puerto Rico. Designate all of Puerto Rico as a low-income community, which would enable investors to qualify for tax credits as a result of investing in Community Development Entities.

10. Assign Federal Investments in Research Facilities. Assign 5% of the Federal Investments in Research Facilities Construction and Major Research Instrumentation Budget to Puerto Rico. In the report of March 2015 the projected budget for 2016 was \$2.8M for R&D facilities and major equipment. Request simultaneous alignment and assignment of the operating budget for these facilities. We propose that the Puerto Rico Science District is designated as the location for those facilities. Minimum period of time: 10 years.

11. Designate Puerto Rico as HUBZONE and Promise Zone. Name all the Municipalities of Puerto Rico as HUBZONE and a Promise Zone to increase



access to federal contracting opportunities for small businesses. This is of critical importance for the development of the Puerto Rico Science District.

## **Human Capital**

12. Designate the Puerto Rico Science, Technology, and Research Trust as a Local Educational Agency. STEM education must be improved and scaled for Puerto Rico to be able to participate and grow in the innovation economy. Knowledge and skills in programming and other subjects must be integrated into the educational program of every child and young person. Furthermore, reskilling of existing professionals must take place. In light of the challenges of the existing education system of Puerto Rico, the designation of the Trust as a Local Educational Agency would permit the use of Federal Department of Education funds for these purposes. The Trust is already a key supporter of several capacity-building initiatives.

13. Allocate WIOA funds for programming skills development in unemployed. Allocate a significant amount of funds from the Workforce Innovation and Opportunity Act to fund programs for the development of basic, intermediate, and advanced programming skills in people who are not employed already. This would allow a better support and growth of all science and technology-related fields such as aeronautical, IT, Digital Health, and Bioinformatics.

14. Expand the scope of EB-1 visa. This would incentivize immigration of talented foreign entrepreneurs and attract globally oriented high-growth startups to Puerto Rico, and ease EB5 Visas for Puerto Rico. Lowering capital requirements to \$500,000 and \$250,000 respectively to incentivize investors.

15. Allocate H1B visas specifically for Puerto Rico. This would attract many talented workers and also companies, particularly large tech companies, to PR. It also mitigates the “brain drain” which is devastating the economy.



## **Governance**

16. Facilitate the Puerto Rico Digital Service. Facilitate the creation of a “Puerto Rico Digital Service”, modeled after the United States Digital Service. This team would be in charge of transforming Puerto Rico to a “native digital” government, so that it can better serve its citizens at a significantly more efficient and at a much lower cost than how it serves citizens today. It would enable a government-wide coordination of Information Technology investment and implementation that ensures proper delivery of information and services, and incorporate best practices in E-Government as an opportunity to reinvent government services.

## **International Relations**

17. Include Puerto Rico in USA treaties. Ensure that software developed, and/or licensed from Puerto Rico is free of royalty payments in all the countries USA has this type of agreements or Treaties with. It seems that sometimes Puerto Rico is not specifically included in the USA Treaties. To fully enable software development, manufacturing and distribution from PR we need this provision. The same policy should apply for games, films, media and other forms of entertainment. This should become a permanent practice or policy by the US Department of State.

## **Benefits**

If we can transform these ideas to specific programs under each category, we can achieve the following benefits for Puerto Rico and for the Federal Government.



- **Technology Transfer and Commercialization.** These initiatives will support the creation of wealth by facilitating a source of value that is vastly underestimated and underutilized in Puerto Rico, which is knowledge created by universities and their researchers. Aside from job creation and other factors, technology transfer has untapped potential to make public and private universities more sustainable and less dependent on federal and other external sources.

- **Puerto Rico SBA 8(a)-assisted businesses** will produce profits, jobs and much-needed business know-how to disadvantaged communities, by graduating a number of substantial, well-financed and well-managed companies that will contribute to the economic development of Puerto Rico's disadvantaged population and communities. Also, new and existing companies will have access to new channels for their products and services.

The Federal Government would also add a strategic partner for technology transfer and business development. Puerto Rico produces 22,000 STEM graduates per year, and the highest percentage of Hispanic and female engineering graduates in the nation. This will result in a lower level of migration from Puerto Rico to the USA, and in the growth of Puerto Rico's economy.

- **The Infrastructure initiatives**, such as the designation of Puerto Rico as a Low-Income Community under the New-Market Tax Credit, would incentivize investment in science and technology businesses in Puerto Rico, and help develop economic development projects such as the Puerto Rico Science District.

- **Human Capital.** The capacity-building, education, and immigration recommendations would allow a better support and growth of all science and technology-related fields such as aeronautical, IT, Digital Health, and Bioinformatics, while also leveraging the international talent that is key for the innovation economy.



- The creation of a Puerto Rico Digital Service will prevent many of the governance issues that gave way to the present crisis for the local and federal governments. The remedies and solutions that the Fiscal Control Board and the local and federal governments will implement will need solid technology-enabled governance systems to be able to be effective and sustainable.