Collaboration, Innovation, and the University of the Future
University of Puerto Rico–Mayagüez
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Provost and EVP for Academic Affairs
The Traditional Ivory Tower Approach

Students educated as scholars and thinkers

“Thrown over the wall” after earning degree

University keeps its distance between business and government

Old model still prevails

In some parts of the world
The World Is Changing Too Fast For the Old Model

• 65% of today’s grade schoolers will hold jobs that do not exist today.
• We are preparing students for jobs that do not yet exist,
• using technology that has not been invented.
The World Is Changing Too Fast For Old Model

- Learners will have 10 - 14 jobs...
- by age 38.
The World Is Changing Too Fast For Old Model

- In 1900 knowledge doubled every 100 years.
- Now, it happens every 13 months.
Communications Explosion: Time it took to reach 50 million people

- Radio – 38 years
- TV – 13 years
- Internet – 4 years
- iPhone – 3 years
- Instagram – 2 years
- Angry Birds – 35 days

There are twice as many text messages a day as the world population.
The 21st Century University

Students educated to be lifelong learners, adaptive, creative, ambitious, innovative, leaders

Seamless transition of students to “real world,” no wall, no separation – ever

Industry, business, government embedded in university

University must be nimble, forward-looking, risk taker, change agent
GT: Define Technological Research
University of the 21st Century

**Unbound** by limitations or expectations, known for partnerships and creating “the next”

**Inventive and Industrious**
Drawing in needed expertise, thinking and tools to develop solutions

**Accessible Returns**
Creating a pathway to success
Make it easy to access outstanding work and intelligent solutions engineered to capitalize on real world opportunities
Higher Education’s Role in Prosperity

From the National Science Board Biennial Report, “SCIENCE AND ENGINEERING INDICATORS 2014”:

• Knowledge- and technology-intensive (KTI) industries have been a major and growing part of the global economy.

• KTI economies rely on sustained investment in research and development that produces useful innovations. They also rely on higher education that prepares students to use S&E knowledge and related research skills to develop new and better ways to make products and perform services.
Georgia Tech at Summit of the Americas

- Leader in first University Presidents Summit
- Presentation by Ralph de la Vega, CEO, AT&T Mobility
- Rafael L. Bras at CEO Summit of the Americas
University of the Future

Pursuing a research strategy involving the entire Institute to maximize economic and societal impact.

Defined 12 (soon to be 13) core research areas

Established a focus on faculty through leadership platforms

Created synergy between academic, research, extension faculty, and related research support functions

Strengthened external partnerships
12 Core Research Areas

- Bioengineering and Bioscience
- Data Engineering and Science
- Electronics and Nanotechnology
- Energy and Sustainable Infrastructure
- Manufacturing, Trade, and Logistics
- Materials
- National Security
- People and Technology
- Public Service, Leadership, and Policy
- Renewable Bioproducts
- Robotics
- Systems
Engineered Biosystems Building
Taking possession this month
Made possible through partnerships
Significant economic impact
Innovative Learning Approaches

Collaborative

Interdisciplinary

Online Courses and Programs

“Flipped” Classrooms

Emphasis on Undergraduate Research

Service Learning

Global Challenges
Partnering in an Online Master’s

Collaborative partnership with AT&T and Udacity

First accredited Master of Science in Computer Science offered exclusively online

2,300 students
Tech Square

An innovation district where new start-up ventures, large companies, and higher education collaborate to develop new technologies and impact economic development.
Attracting Fortune 500 Companies

Panasonic
May 2012

ThyssenKrupp
Jan. 2013

AT&T
August 2013

Home Depot
Summer 2014

Coca-Cola Enterprises
December 2014

Southern Company
Summer 2015

Worldpay headquarters by 2016

NCR headquarters 2017-2018
Attracting Fortune 500 Companies

WorldPay confirms $1M investment in new fintech accelerator at Georgia Tech

Mar 3, 2015, 10:01am EST | UPDATED: Mar 3, 2015, 10:24am EST

WorldPay on Tuesday confirmed plans to invest $1 million to underwrite a financial technology accelerator at the Advanced Technology Development Center (ATDC) at Georgia Tech.

Atlanta Business Chronicle first reported the innovation center plans on Feb. 10

WorldPay CEO Tony Catanzano made the announcement with Georgia Lt. Gov. Casey Cagle and Georgia Tech officials at an event at the Gold Dome.

Roll out the “orange” carpet for Home Depot, which has officially opened its first-of-its-kind, university-based research and development center at Georgia Tech.

NCR (NYSE: NCR) will relocate to Technology Square, a destination for innovation-driven enterprises lured by the talent and research emerging from engineering hub Georgia Tech.
High Performance Computing
2015 InVenture Prize

- 500+ entries
- 1st Place, FlameTech Grill Defender
- Free patent filing
- K-12 InVenture Challenge
- Possible ACC InVenture competition
Institutewide Effort to Foster Entrepreneurship – the FIXD Story

• Began working on it through StartupLab
• Completed Startup Summer, 12-week startup internship
• Seed funding through Kickstarter
• Won Cisco’s “Internet of Everything” Challenge for 2015
• Launching full product release in May
Preparing Professionals for Innovation

- Enterprise Innovation Institute
- Advanced Technology Development Center (ATDC)
- Flashpoint
- NSF Innovation Corps (I-Corps)
- Startup Ecosystems
- Startup Exchange
- VentureLab
Example Company:
- Pindrop Security — Flashpoint alumnus announced in February that it raised $35 million in Series B financing.

Flashpoint Economic Impact:
- 45 companies that have completed the program have attracted $150M in venture funds.
- Combined portfolio value $500M
- Only 6% acceptance to program
EI² helped 1,440 Georgia manufacturing companies increase sales in fiscal 2014 by $219 million and create or save 1,910 jobs.

ATDC program companies reported revenues of more than $1.3B and more than 5,500 jobs.
NSF I-Corps

National Science Foundation grantees can be students, faculty, and entrepreneurs. In I-Corps, they can:

• Create their startup company

• Create their business model description for review by third-party investors

• Gain faster access to technology licenses
Your Turn – Questions & Discussion