

Stephen Fleming Vice President

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### Stephen Fleming



- 15+ years investment experience.
  - -General Partner, Alliance Technology Ventures (affiliated with Georgia Research Alliance).
  - −18 investments as lead investor, 11 profitable exits incl. 4 IPOs, \$650M acquisition
- BS, Physics, Ga. Tech (Highest Honors).
- 15 years operational experience at AT&T Bell Labs, Nortel, Licom (venture-backed startup).
  - -Supervised startups developing first ADSL modem and one of the first cablemodems in early 1990s.
- Multiple advisory boards at Georgia Tech; endowed chair in telecomm; occasional instructor in undergrad & MBA entrepreneurship programs.
- Joined Ga. Tech staff in 2005; now Vice President, EI<sup>2</sup>
- Atlanta native; regional technology leader.

### The Question



# How are innovative states created and maintained?

### The Environment





"The first step in winning the future is encouraging American innovation."

-President
Barack Obama
State of the Union,
25 January 2011

## 2010 Manufacturing Survey





 Biannual checking pulse of industry in Georgia

• One outcome:
Companies that
innovate have
higher profitability

#### Innovation





"Innovation" is our middle name...
What do we mean by "innovation"?

### What is Innovation?



Research is the transformation of money into knowledge.

Innovation is the transformation of knowledge into money.

—Dr. Geoffrey Nicholson, 3M (inventor of the Post-it note)

### Innovative States





1st century: Rome

15th century: Venice





19th century: Britain

early 20th: Detroit





late 20th: Silicon Valley

21st century: Singapore ...and???



### Lessons from History



# What makes an innovative state in the early 21st century?



### Today's Innovation Ecosystem



- Failure of industrial R&D model
  - -Shift to government and universities
- Globalization (accelerated by the Internet)
  - -Intellectual property
  - -Workforce
  - -Finance
  - -Supply chains
- Government as facilitator, coordinator, and customer
  - -In USA, Federal research dollars dominate, but state-level actions can deliver competitive edge

### What Works?



### What Works?



- Free markets
- Intellectual property protection
- Collaborative culture & social networks
- Flexible career paths
- Welcoming to outsiders & immigrants
- Meritocratic advancement
- Acceptance of **failure** as learning experience
- Continuous replenishment
  - Of bright young people
  - -Of interesting new technologies

### What is Innovation?



Research is the transformation of money into knowledge.

Innovation is the transformation of knowledge into money.

Where does society find the knowledge?

—Dr. Geoffrey Nicholson, 3M (inventor of the Post-it note)



Three distinct stages of university evolution:

Reference: Jan Youtie & Philip Shapira, Building an Innovation Hub: A Case Study of the Transformation of University Roles in Regional Technological and Economic Development, 2006

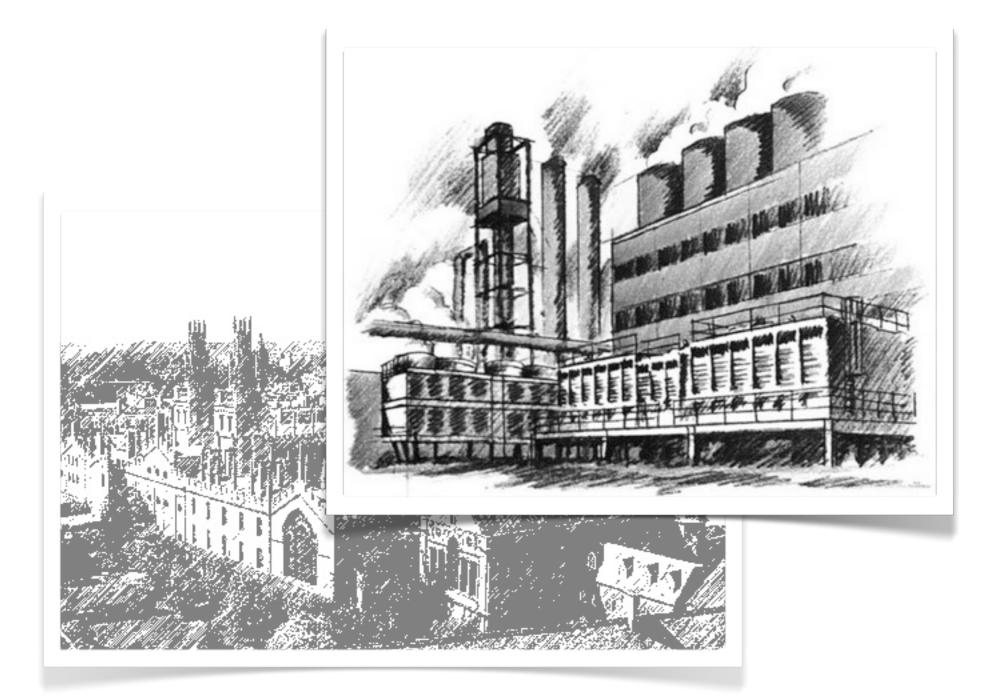


### Knowledge storehouse

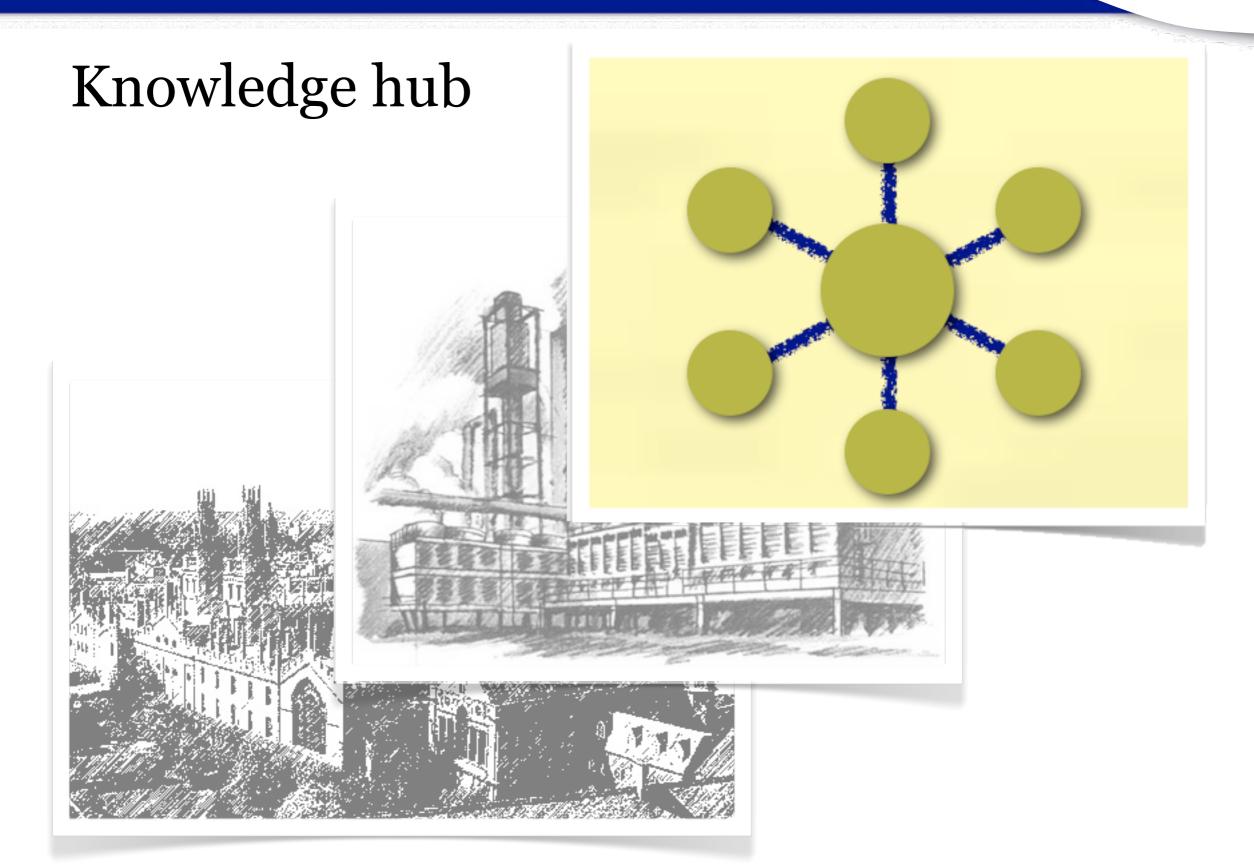




### Knowledge factory





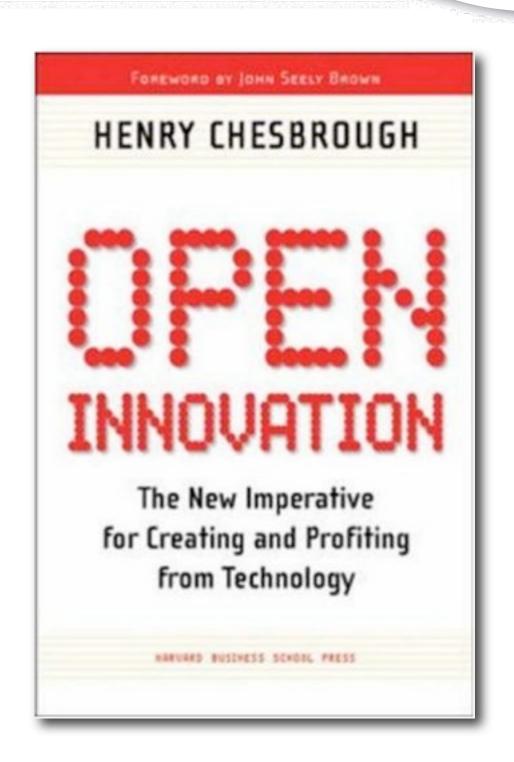


### A New Collaborative Model



"No company has a monopoly on useful knowledge anymore. Useful knowledge is becoming more and more widespread all over the world."

-Henry Chesbrough



# Implications for Georgia?



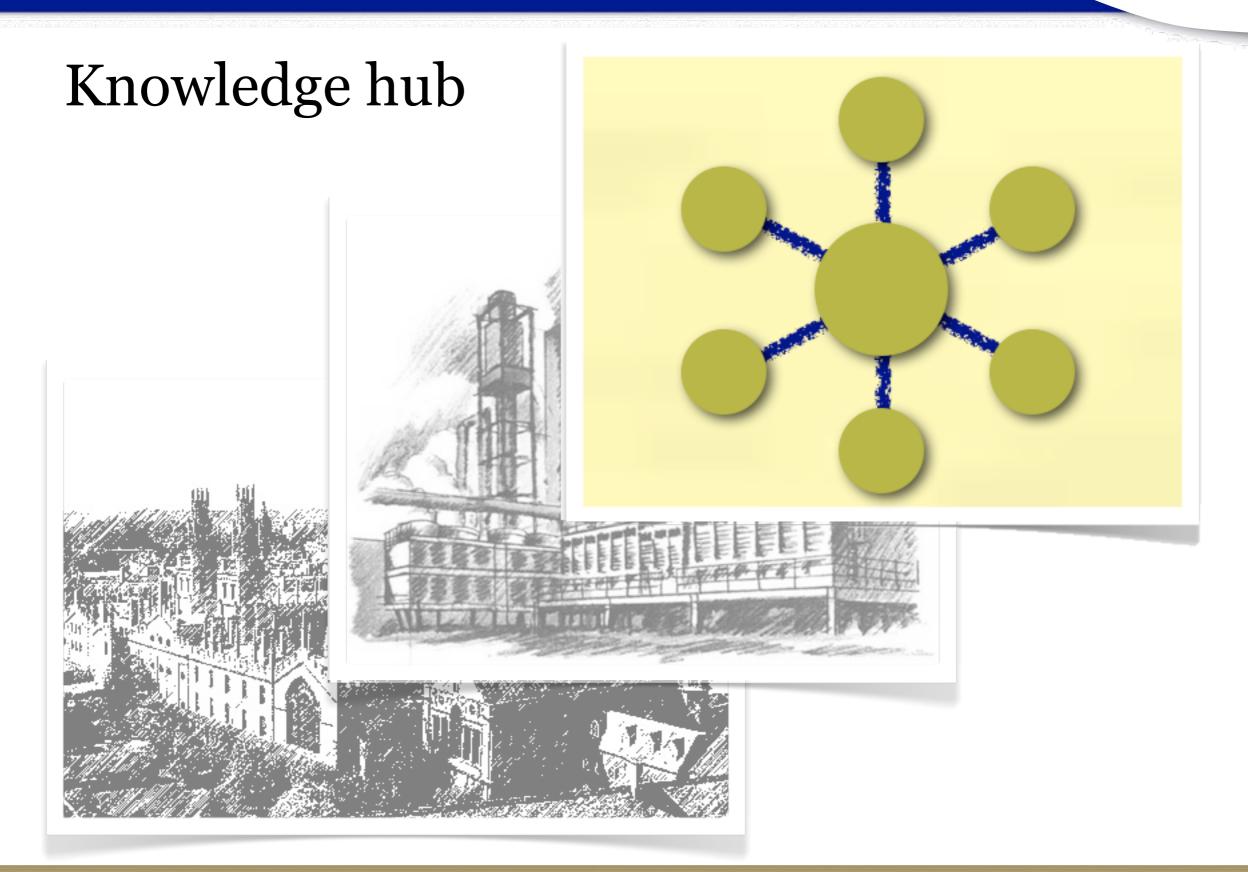


# We're Not the Valley



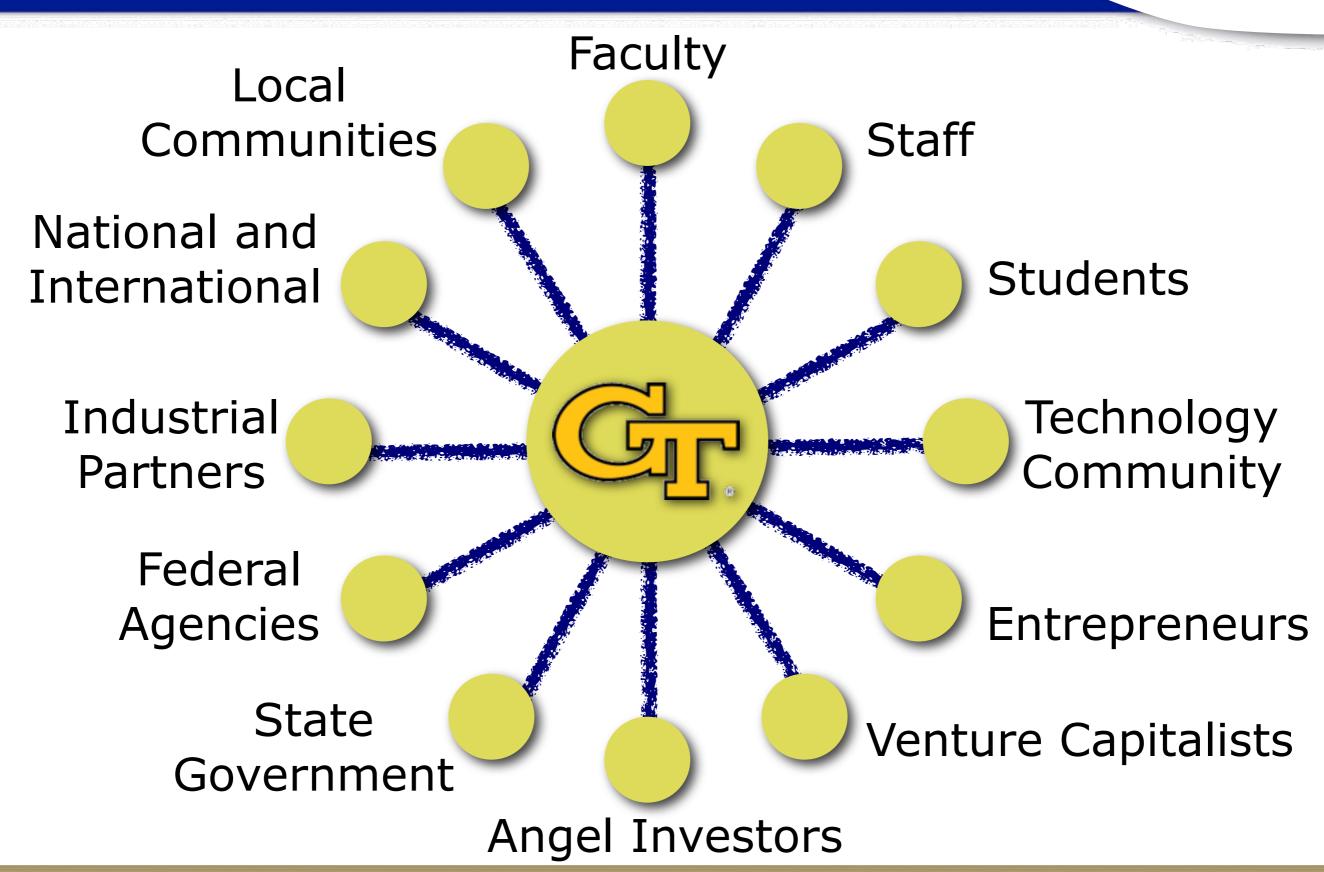






### GT as a Knowledge Hub





# Georgia Tech History





### National Rankings



# U.S. News & World Report, America's Best Engineering Graduate Schools 2010

- 1. Massachusetts Institute of Technology
- 2. Stanford University
- 3. University of California Berkeley
- 4. Georgia Institute of Technology
- 5. University of Illinois Urbana-Champaign
- 6. Carnegie Mellon University
- 7. California Institute of Technology (CalTech)
- 8. University of Texas Austin
- 9. University of Michigan Ann Arbor
- 10. Cornell University



Sixth Year!

http://grad-schools.usnews.rankingsandreviews.com/grad/eng/search

## National Rankings



# U.S. News & World Report, America's Best Engineering Graduate Schools 2010

Strength across the board!



**20th** 

Year!

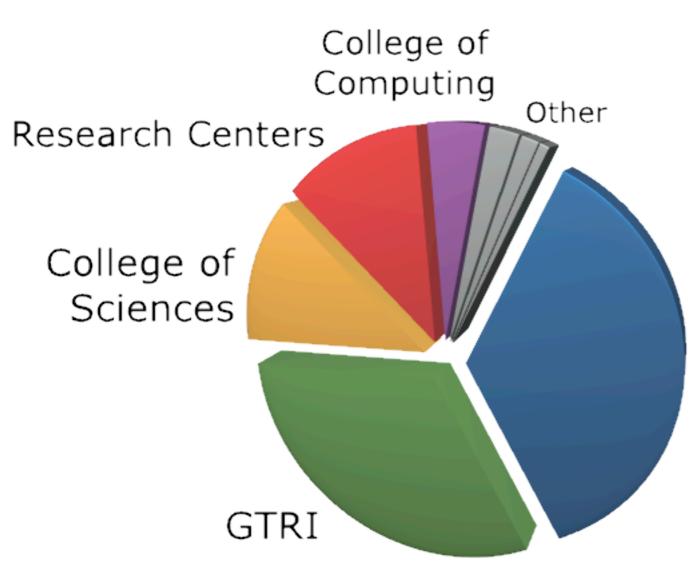
Aerospace #4
Biomedical #2
Chemical #9
Civil #3
Computer #7
Electrical #6
Environmental #5

Industrial #1
Materials #8
Mechanical #6
Nuclear #8
Agricultural N/A

### Georgia Tech Research



- Over \$500 million in sponsored research annually!
- Highly interdisciplinary research clusters.



Applying Georgia
Tech brainpower to
significant industry
or societal problems.

College of Engineering

### Georgia Tech VentureLab



Creating great startups from Georgia Tech research

Market Milestones Meetings Management Money

### Money











### Georgia Research Alliance

















### Georgia Research Alliance



Sponsored Research \$1.5 billion/year













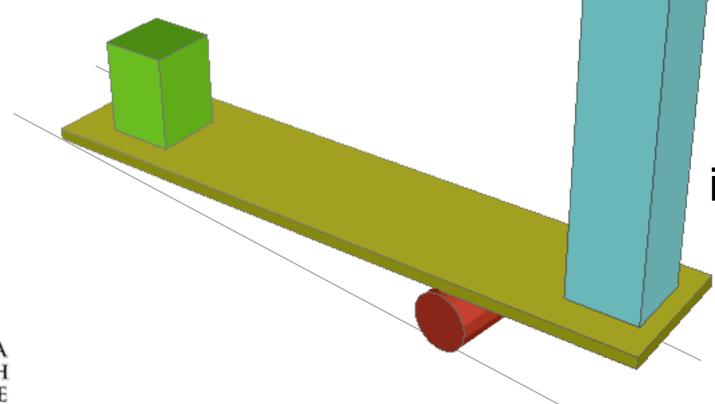
### GRA Leverage



### \$2.6 Billion

Total state investment since GRA formation (FY1993-2012)

\$560M



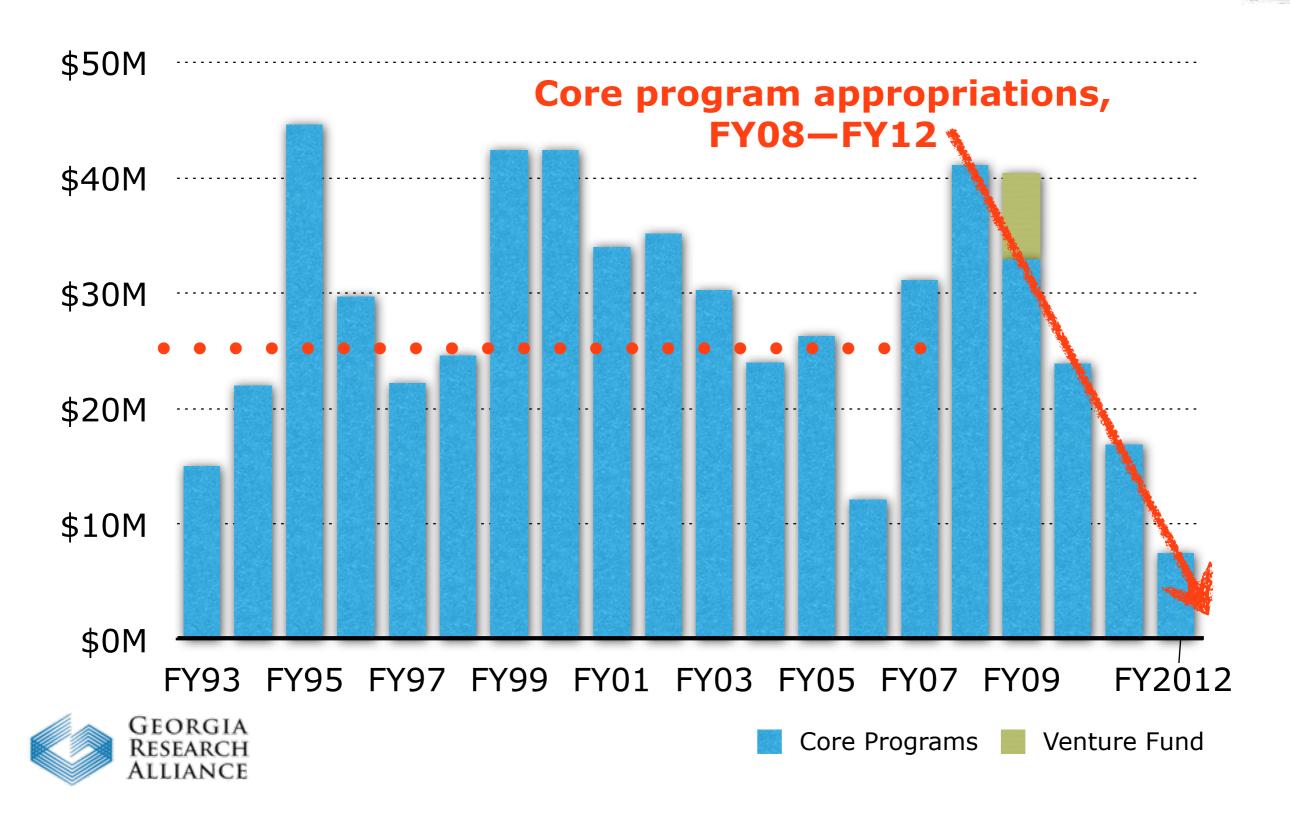
Total Federal and private investments



8/17/2011

### GRA Annual Appropriations





**ATDC** 

Enterprise Innovation Institute



In Depth: 10 Technology Incubators That Are Changing The World



## Venture Capital Availability

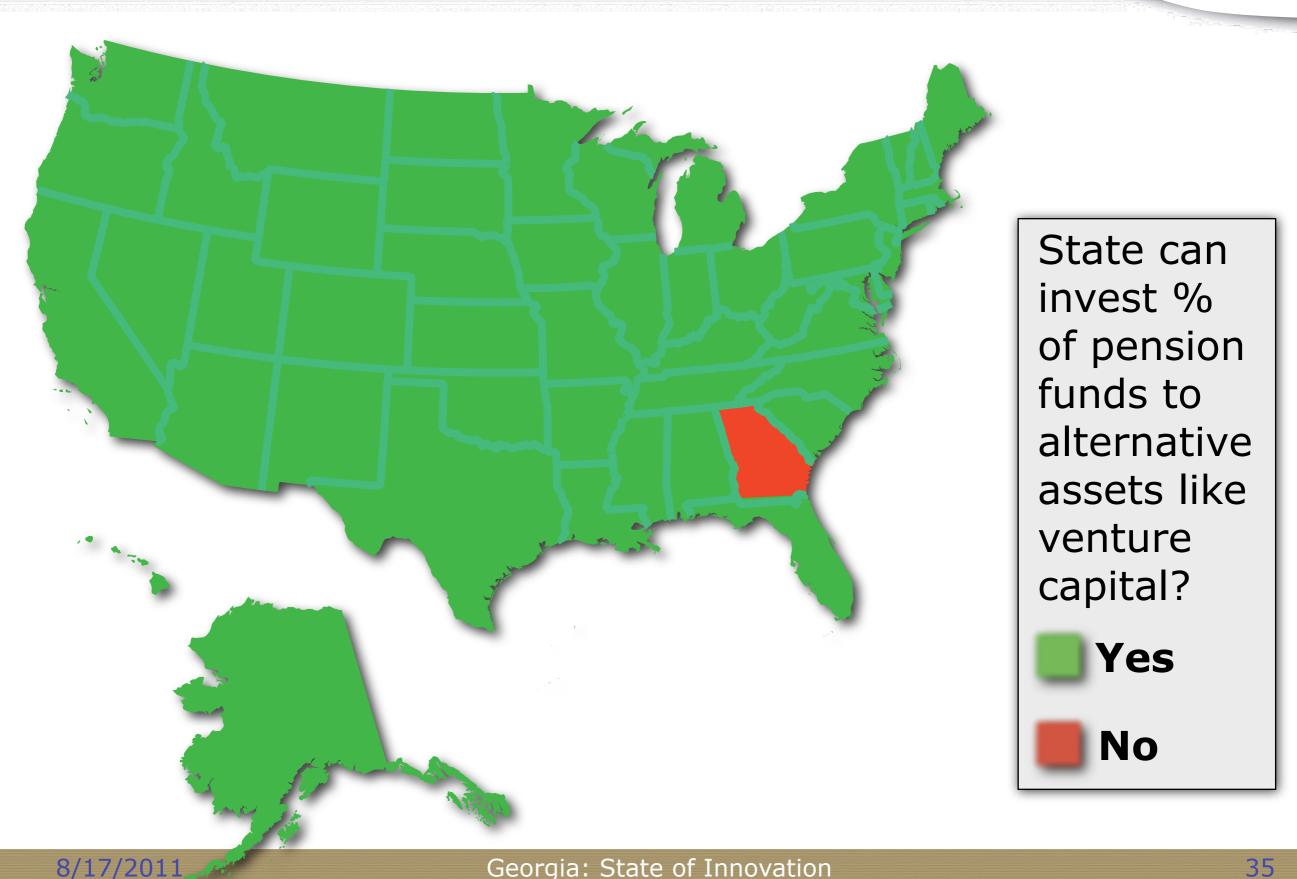




92¢ of every VC dollar invested in Georgia comes from out of state

# Venture Capital Availability





# We're Not the Valley





### Suniva Case Study







- GT conducted 30 years of Federally-funded research
- GRA VentureLab at GT created company
- Incubated in ATDC at Georgia Tech
- GT assisted with mfg. process improvement
- Gwinnett Tech training workforce in Norcross
- Georgia success story!

## Physical Proximity





**Atlanta** Technology **Angels** 

A TECH INFORMATION SECURITY CENTER











Department of **Economic Development** 







Tech

Enterprise

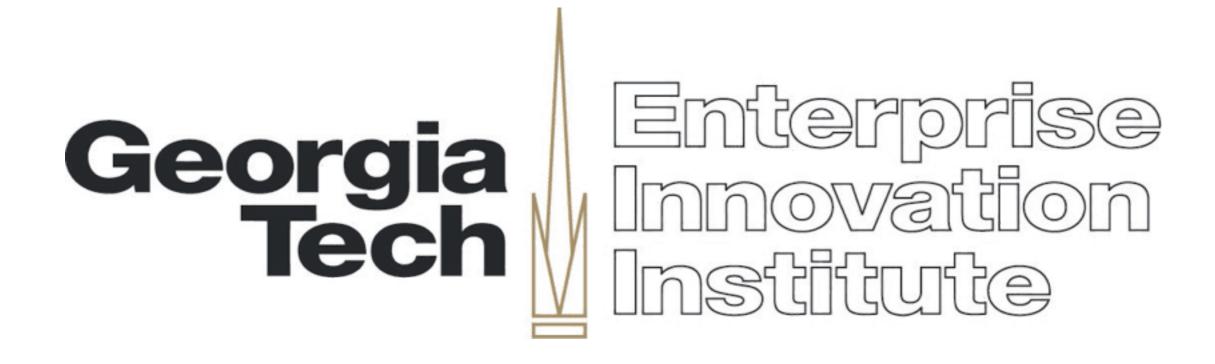






### EI2 Mission





Increasing the competitiveness of enterprises in Georgia through the application of science, technology, and innovation.

# GT Strategic Vision

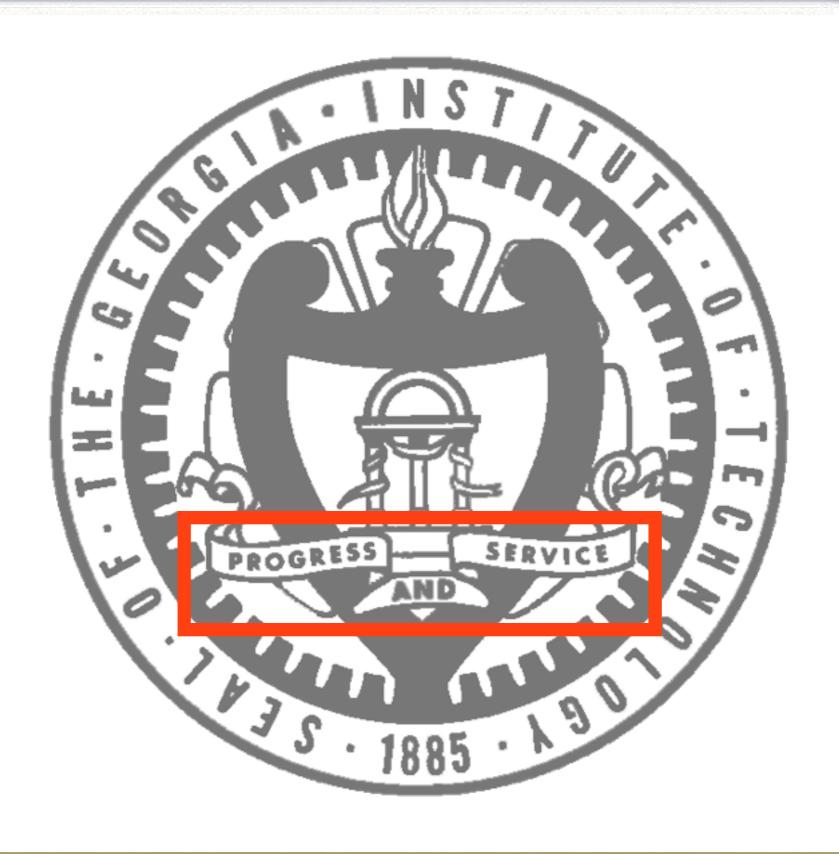




http://gatech.edu/vision

### Progress and Service





### For Further Information



#### **Stephen Fleming**

Vice President, Enterprise Innovation Institute Georgia Institute of Technology

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### "Innovation U." Report



"Virtually every combination of industry relationship or economic development activity can be found at Georgia Tech, and in a very real sense, the university is an operating partner with Georgia state government in the implementation and management of a variety of technology-focused initiatives. Perhaps more than any other research university in North America, economic development is an integral, critical component of the mission of the Georgia Institute of Technology, and this has been true from its very inception." NNOVATION U.

-Southern Growth Policies Board, 2002