



# “Where Innovation Lives”

Bill Dean  
Director PTRP  
November 13, 2008



## Universal Understanding:

The role **science** and **technology** plays  
in restoring and building economic  
prosperity in the 21st Century is  
without question . . .



PIEDMONT  
TRIAD  
RESEARCH PARK

# The Unprecedented Opportunity

Turning **Scientific Ideas** into  
Business Enterprises. . . . .

“It is not so much the accumulation of more savings or capital that is the key to improving standards of living; rather it is innovation.”

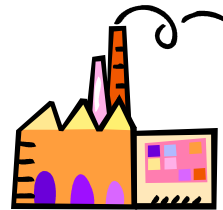
The Mystery of Economic Growth - Brookings

## Historical Manufacturing

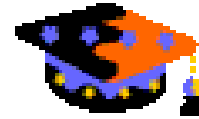


- **Tobacco**
- **Apparel**
- **Textiles**
- **Furniture**

*Last decade  
over 40,000 jobs lost  
in Piedmont Triad*



manufacturing



technology



- **Pharmaceuticals**
- **Biomedical Engineering**
- **Regenerative Medicine**
- **Imaging**
- **Medical Devices**
- **Clinical Trials**
- **Nanotechnology**
- **Information Technology**
- **Design**

**A Community in Transition  
Winston-Salem, NC**

“The only sustainable advantage for U. S. regions is continuous innovation.”

Council on Competitiveness

**“Innovators helped shape America . . .  
they will continue to do so.”**



**Wright Brothers, Kitty Hawk, NC**



In today's world of uncertainties...

...“People need a future—  
the future needs research.”

Fraunhofer Research  
Germany

## Universities are being challenged...

In addition to education, discovery, and objective review, now come demands for economic stimulation and regional leadership.

These demands hold tremendous promise for universities and their communities. They also raise fundamental questions about industry support, scientific integrity, and the academic reward structure.



The Institute for Emerging Issues  
NC State University

## What has led to the trend in University-based partnerships in Economic Development?



- A. The economic shift of business and local economies relying on new ideas to build competitive products for a global marketplace has placed great value on university research and technology transfer
- B. Business trends, have and will, continue to be built on new technology. To be effective, both the private and public sectors must create today's new environment.
- C. New paradigm has emerged...technology companies are looking to universities for new technologies rather than investing in high risk R&D.



# University/Industry Benefits . . .

- **Industry** benefits from collaborative discoveries and expertise of academia. (Fast entry to new markets.) 
- **Universities** benefit from financial support and focused, highly capitalized industry research. (Centers of Excellence are created.) 
- Thus, **communities** benefit from jobs, income, and new wealth creation. (Improved quality of life.)

# Yes, there are fundamentally different **cultures** and **core values** . . .

- **For Universities**, primary emphasis is on teaching and expanding knowledge. 
- **For Industry**, protection of intellectual capital, financial return, and time horizons. 

A successful university-industry relationship should support the mission respectively of each other to create economic value for the public good.



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# University Technology Development





Numerous studies have shown that anchors of fast-growing, technology-oriented economies are major research universities interacting with a robust technology-oriented private sector.

*State Science and Technology Institute*



Reynolda Campus

Wake Forest University made an early commitment to its role in Economic Development to generate economic and societal benefit that brings value to both industry and academia. This is being accomplished through PTRP.



Medical Center Campus



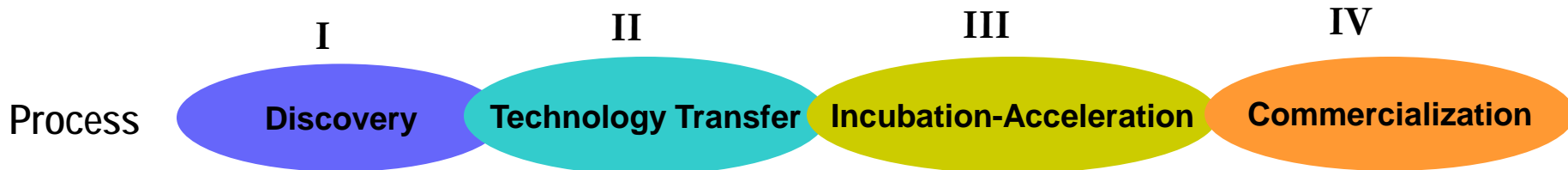
Shaping a pathway where **science** and **business** work together.

“Innovation is. . . the process by which individuals, companies, regions and even entire countries remake themselves in the face of changing markets.”

U. S. Department of Labor

## PTRP Integrated (non-linear) Business Model

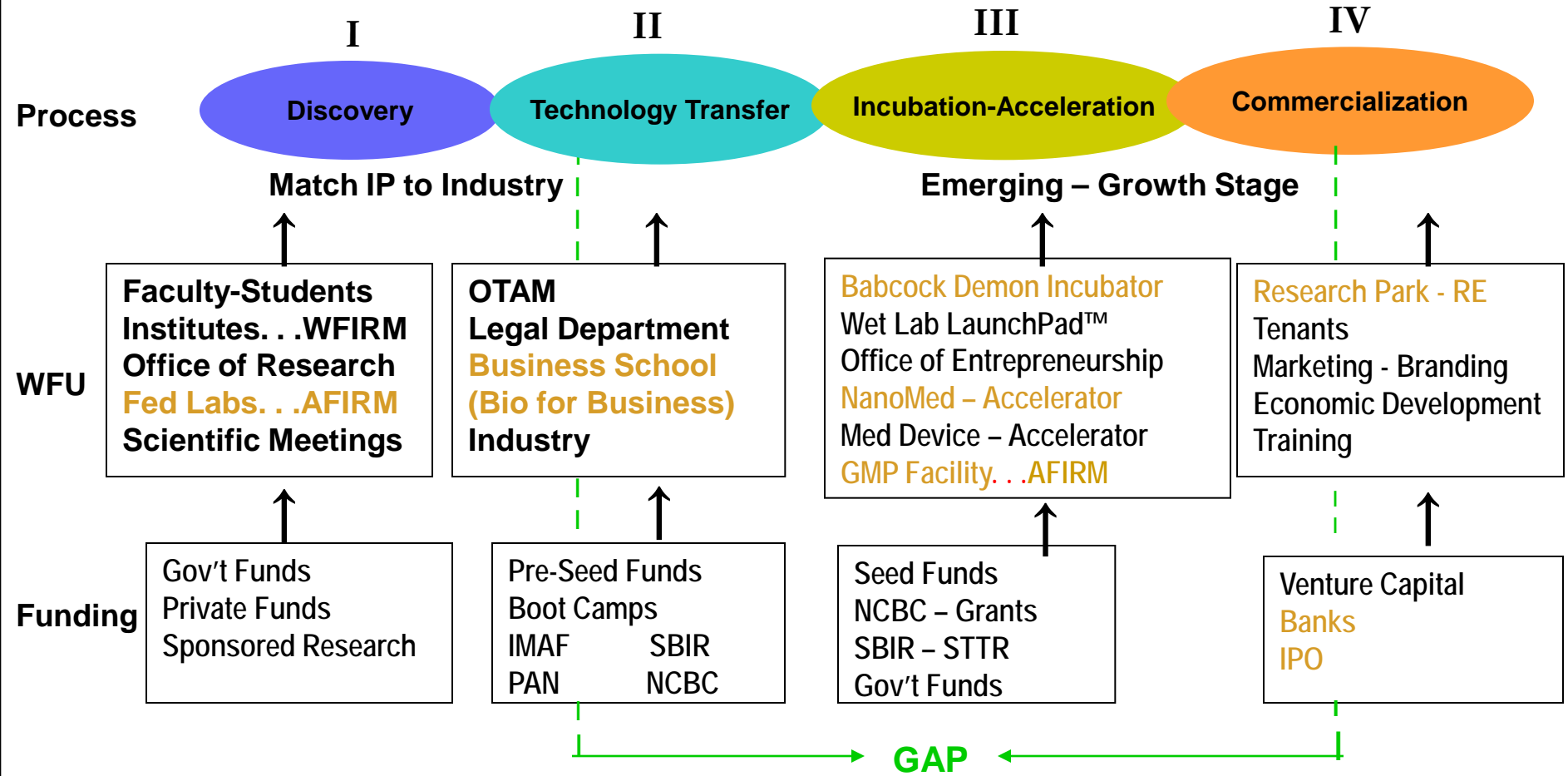
Critical Linkages and Process between  
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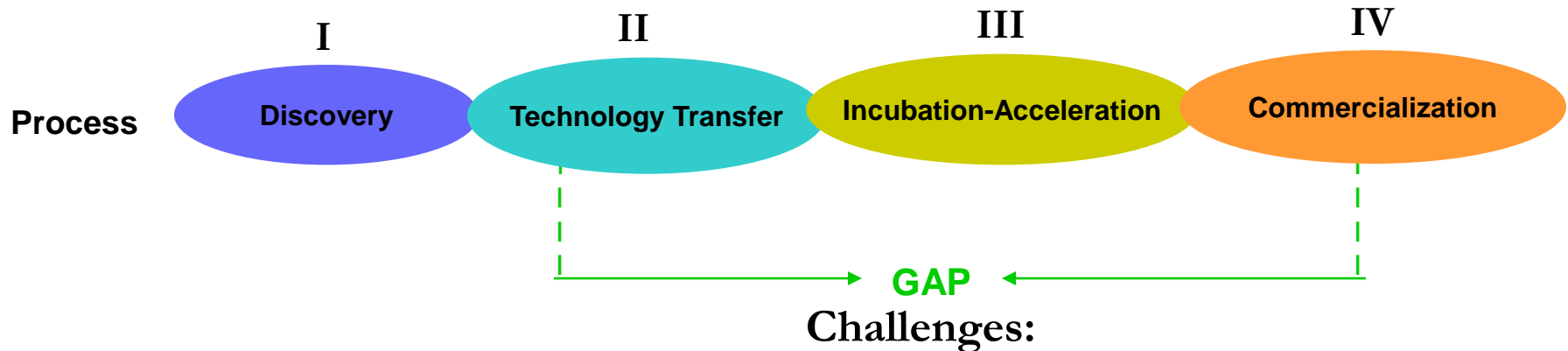


# PTRP Integrated Business Model

Critical Linkages and Process between  
Discovery and Commercialization. . .



# Critical Linkages and Process between Discovery and Commercialization. . .



- Venture Capital
- Affordable Office and Lab Space
- Core Services – Specialized equipment
- Political innovation policies (education – industry – government integration)
- Societal implications (community engagement and education)
- Globalization – Competitiveness
- University – Business (culture differences)
- Unrealistic expectations

# University Research and Discovery Bench to Bedside



## PTRP: Technology Activity Scientific Collaborations



**Medical and biomedical** studies include advanced research in cancer, kidney dialysis, neuroscience, nanotechnology, tissue engineering, structural biology, nutrition, aging, substance abuse and imaging.



**Information technology** companies work with computer networks, software development, and information consulting for financial services, life science and healthcare.



**Business support services** provide photography, healthcare information, enterprise management assistance, seed capital, corporate communications and design work.



## Core Research Capabilities



- Clinical Trial Design and Oversight
- Public Health Sciences...Biostatistical Sciences
- Biomolecular Imaging
- Structural Biology
- Tissue Engineering...Regenerative Medicine
- Nanotechnology
- Non-Human Primate Models
- Transgenic Mice Development
- Biomedical Engineering



**OTAM's Vision** – To improve the health and well-being of all people by facilitating the creation of new products and services from the inventions and discoveries of our faculty, staff and students.

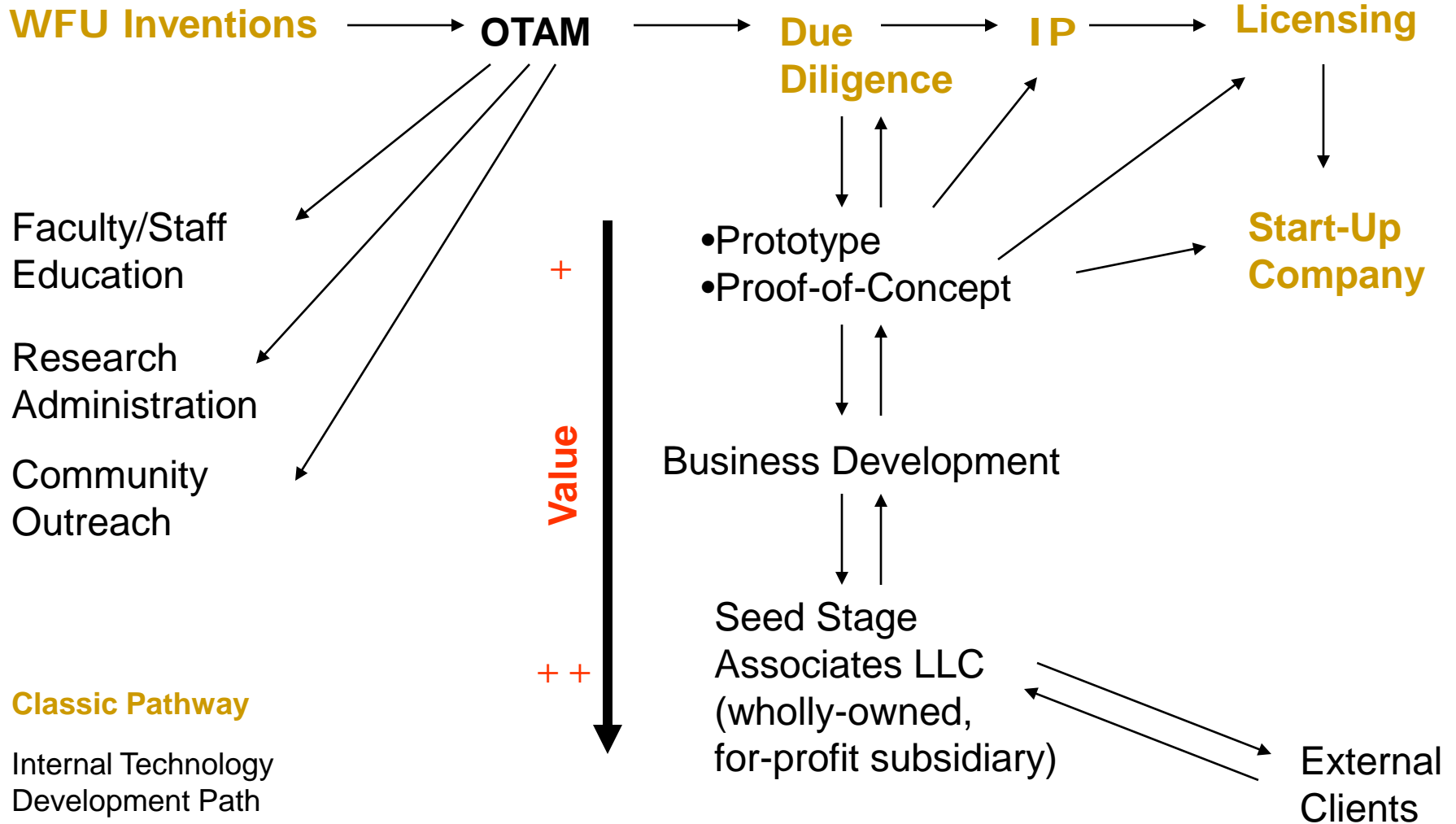
**OTAM's Mission** – To maximize the value of Wake Forest University's intellectual assets through the creation of novel and effective models for commercializing technology.

**OTAM** works closely with industry, community leaders, scientists, investors, entrepreneurs, and many others to accomplish its commercialization objectives in areas of:

- Invention Disclosure
- Licensing
- Patents and Patenting
- Public Disclosure
- Sponsored Research



# OTAM Value Chain



## Research Activity 2007

■ Inventions Disclosed	59
■ US Patents Issued	8
■ New Patents Filed	28
■ Options/License Agreements	13
■ Start-up Companies Created	4
■ Licensing Revenues	\$71 million



#2 ranking for ROI on R&D

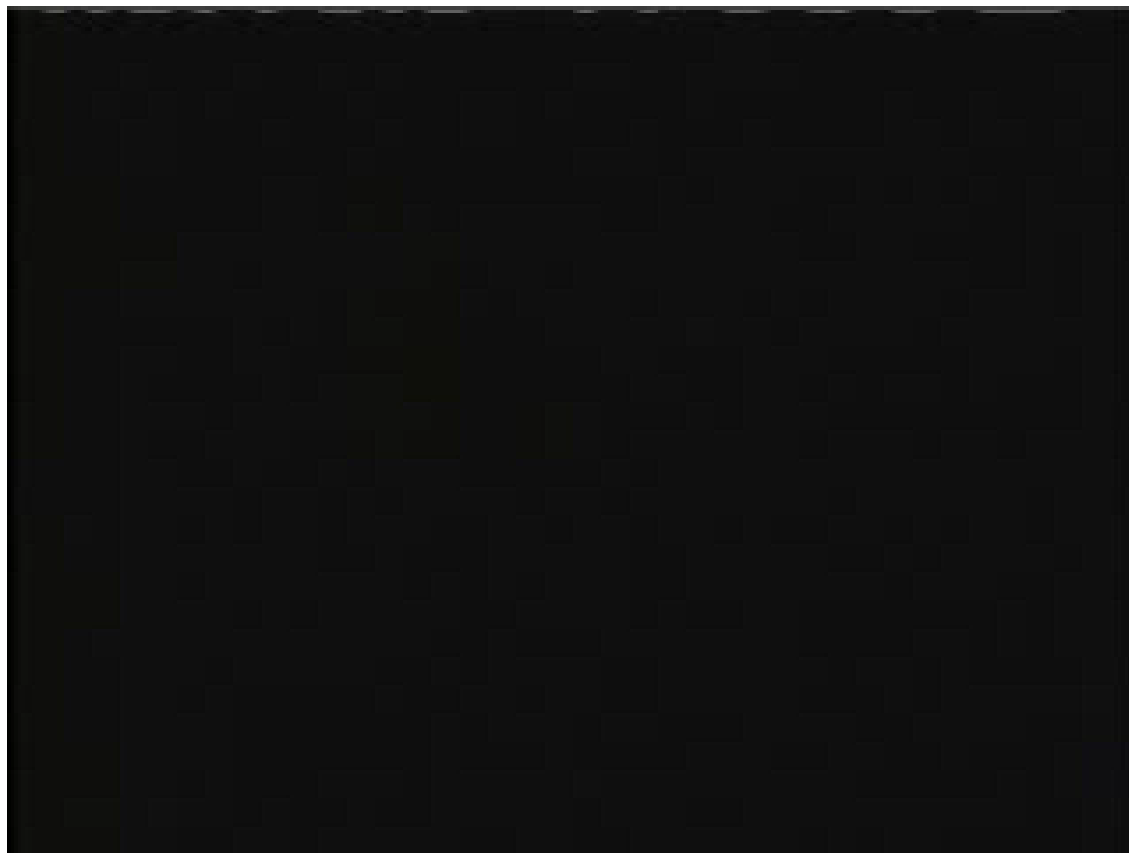




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# CBS Evening News

February 6, 2008







# Partnerships, Collaborations, and Alliances

Partnerships, collaborations, and alliances are necessary to build the environment, culture, and infrastructure to take innovation to the marketplace. These partnerships will produce:

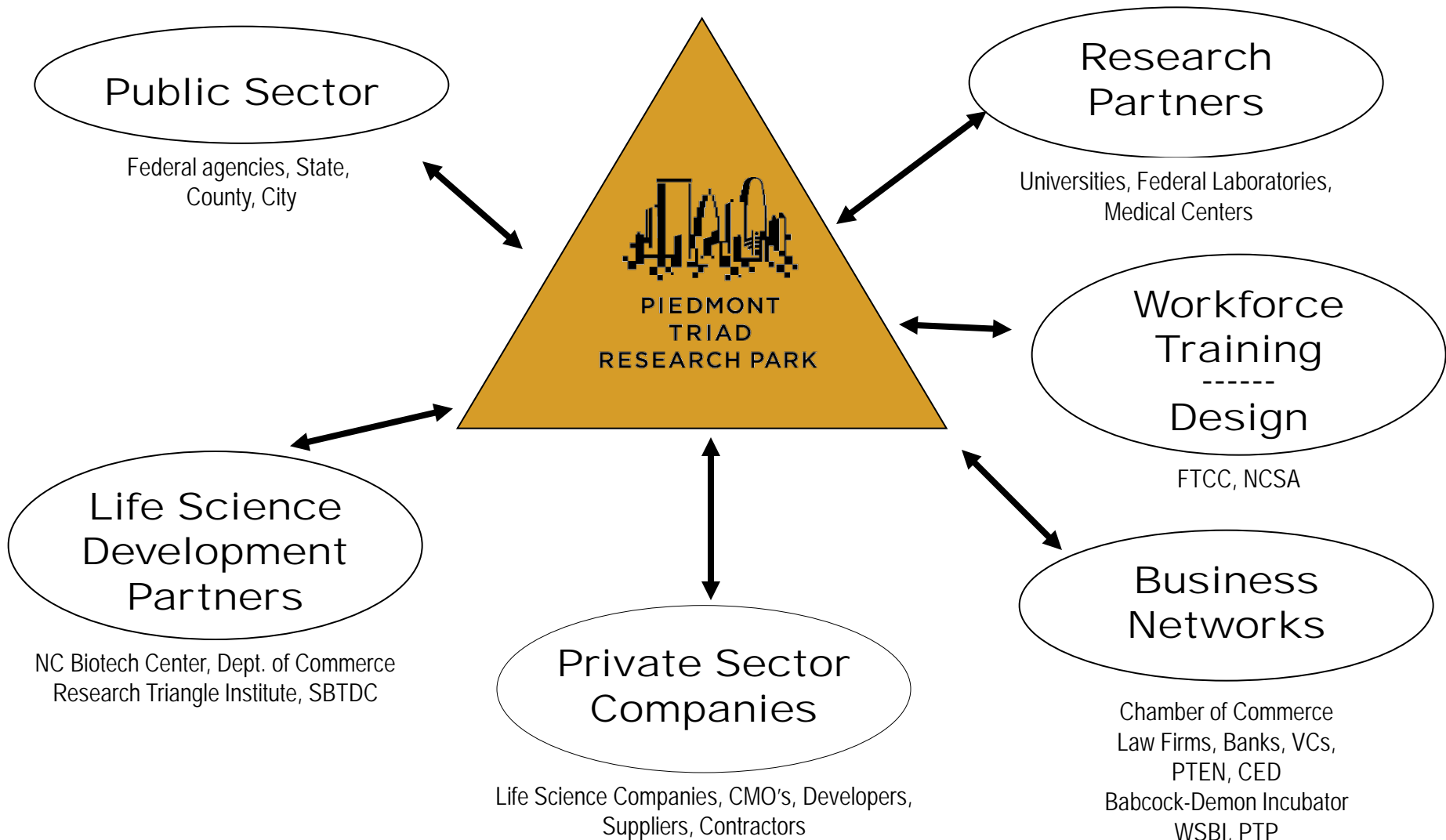
- Capital and Investment
- Education
- World-class Research
- Training
- Entrepreneurial Culture
- Leadership
- Networks to transfer-share knowledge (person to person, firm to firm)







# Community...Business & Academia Partnerships. Collaboration. Networks. Economic Development.



# Community Support



# Goals

## Technology Roadmap

- Improve WS economy and quality of life
  - Increase number of high-paying science/engineering/technical jobs
  - Increase average wages
  - Increase tax base
- Be demonstrated leader in enabling a knowledge-based local economy
- Be known as a center of high-tech in: regenerative medicine, nanomedicine, nanotechnology, design and digital media, biomedical engineering
- Move to next level as technology community; be at forefront of innovation

- I. Translate Local Science/Technology Into Jobs
- II. Import/Develop from within New Science and Technology
- III. Provide New Infrastructure for Innovation
- IV. Increase Capital
- V. Increase Government Support
- VI. Develop the Workforce
- VII. Engage Leadership
- VIII. Promote a Healthcare Tourism Industry
- IX. Brand, Market and Sell Winston-Salem



# Training



**U.S. Department of Labor Grant**



- N.C.'s largest two-year biotechnology degree program
- Nanotechnology Program-1st Associate in Applied Sciences degree program in N.C.



- BioNetwork: A statewide initiative that connects community colleges across N.C., providing specialized training, curricula and equipment.



- National workforce training centers for bio-manufacturing, bio-processing, R&D, and informatics.



**Lab Technician Training**



**Instruction**



# PTRP Tenant Amenities

- Tenant Advisory Council
- Tenant Association Network
- PR and Marketing Assistance
- Forums to facilitate relationships
- Networking and Social Events
- Educational Events
- Welcome Activities/CEO Roundtables
- Newsletter
- Electronic Newsflashes
- Website Listing
- Joint Marketing//Tradeshow/Events
- Economic Development Support
- Facilitated access to R&D support through the people, programs and facilities of area colleges, universities and medical centers
- Active exchange of entrepreneurial and technical ideas through roundtables, seminars and other technology events
- Facilitated workforce development opportunities.
- Business incubation and entrepreneurial counseling and training
- Venture capital opportunities.
- Facilitated government and non-profit support (tax incentives, grants, loans, consulting)
- Capacity Planning – Consultation and collaboration with local developers
- Discounted hotel rates for research park tenants and visitors
- Event planning assistance



**Tenants “Adopt” Interns**



**BIO Show**



**Social Gathering**

# PTRP Events and Tenant Activities

- Science & Technology Speaker Series
- Technology Council Network Meetings
- National Center for Biotechnology Workforce Grants Awarded
- Triad BioNight
- International Dignitaries
- Eleanor Nunn Lectureship Series (Dr. Atala)
- WSSU Career Fair
- Park Tours
- Science Seminars
- Habitat for Humanity Luncheon (Targacept)
- Annual School of Medicine Graduate Student Seminars
- Tenant Association Network Meetings
- Tenant Advisory Council—Tenant Surveys
- Tenant Social Networking Events
- Tenant Lunch n' Learns
- Media Announcements
- Courtyard Events



Tenant Association Network



SciTech Summer Camp



Outdoor Classes



Triad BioNight Awards



Tenant Lunch n' Learns



Capital Symposium





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# Next Generation Science Park



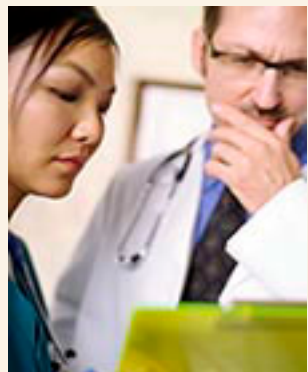
- World-class research
- Entrepreneurial companies/new products
- Focus on translational science
- Global population
- Sustainable infrastructure
- Work, live, environment
- Networks and collaborations
- Academia and Business together
- Education and Training





# PTRP Tenant Population

## “Big Thinkers. . . .Big Ideas”



- 41 tenants (private companies / university departments)
- 335 corporate personnel
- 486 university faculty, staff & students
- 821 Total population

## Global Population:

5 of 7 Continents

25 Countries

China	Spain
India	England
Japan	Russia
Ukraine	Korea







# PTRP Companies

“The future is now”

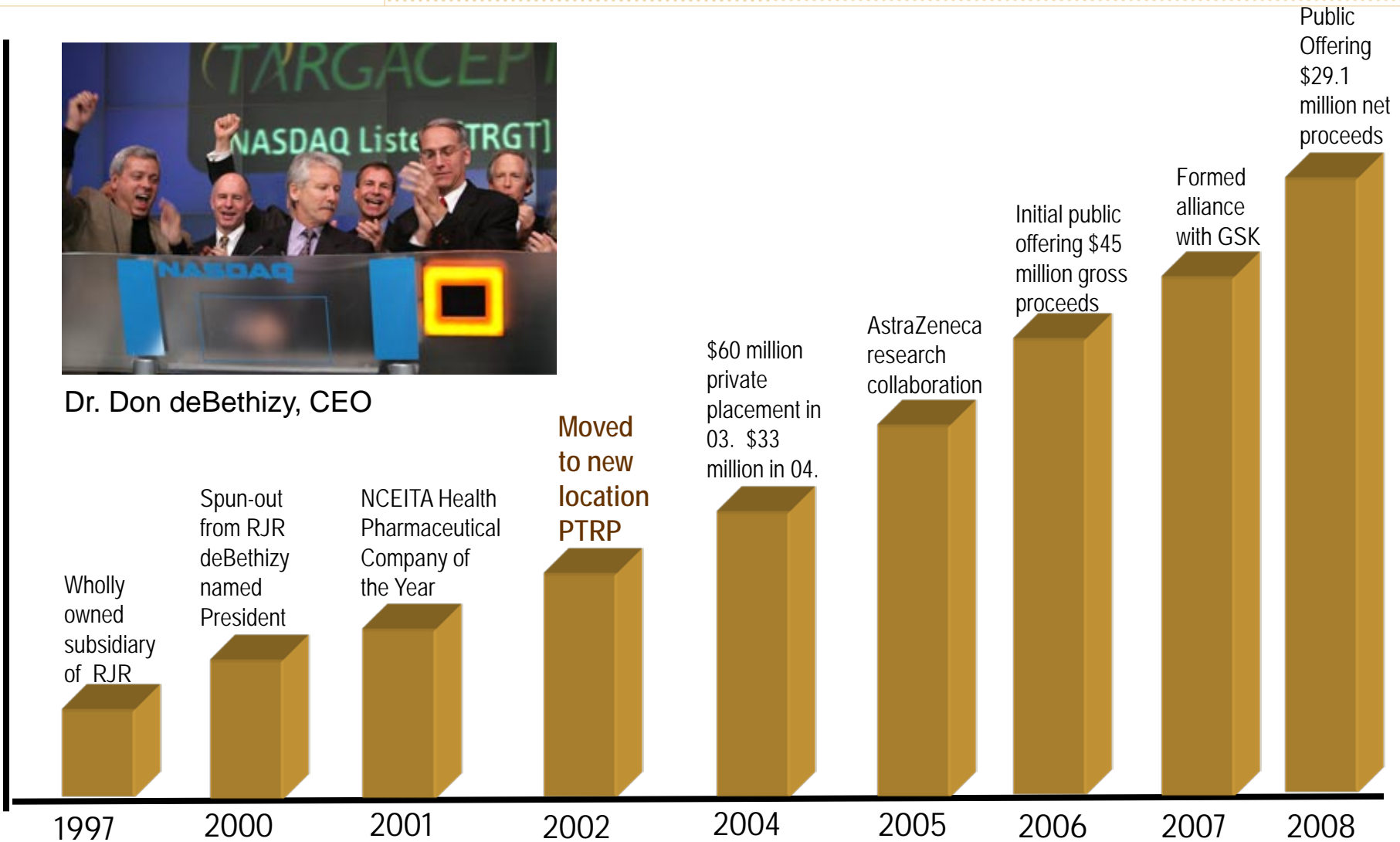


# Targacept's History

## “From Park to Wall Street”



Dr. Don deBethizy, CEO



# Babcock Demon Incubator

## Benefits

- Revenue Business Plan
- Market Analysis and Strategy
- IP Assessment
- Financial Assumptions
- Develop Management Team

## Services

- Director on site
- Experienced Board
- Access to professional fields
- Facilities
- Shared business equipment

Babcock Demon Incubator operates under the Babcock Schools Angell Center for Entrepreneurship. The mission is to foster entrepreneurial education at Wake Forest, increase the number and quality of growth-oriented early stage ventures in the Triad, support intellectual property commercialization activities at Wake Forest, and contribute to an entrepreneurial spirit in the local community.



# Wet Lab LaunchPad™

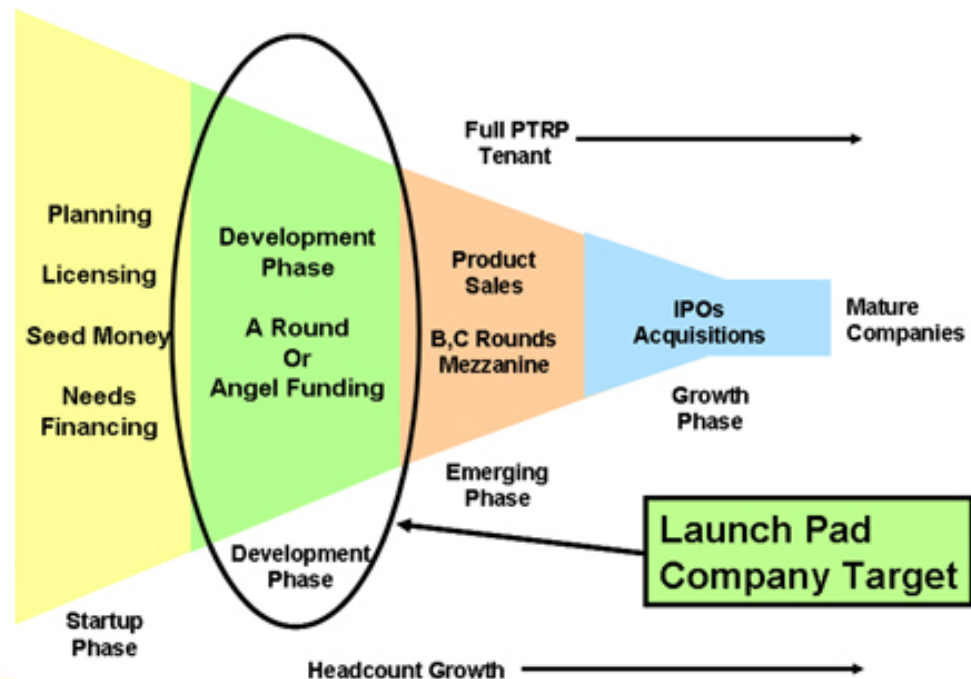
## Partnership:

University

Private Sector

Public Sector

The purpose of the Wet Lab LaunchPad is to assist early stage bioscience companies to become successful by providing affordable laboratory space. The success of these companies will directly translate into increased PTRP occupancy, increased intellectual capacity, and economic growth for Forsyth County and Winston-Salem.





# Carolina Liquid Chemistries

1<sup>st</sup> Tenant

“This space at this price is head and shoulders above any other option we could have chosen in the state.”

Phil Shugart, CEO  
Winston-Salem Journal  
12-18-07





# Global Competition

Communities around the world are developing Research Parks, Technology Parks, Innovation Centers, and Incubators with a mission and strategy that brings public – private partnerships together to advance innovation and economic development.





# A Part of North Carolina's Innovation Community

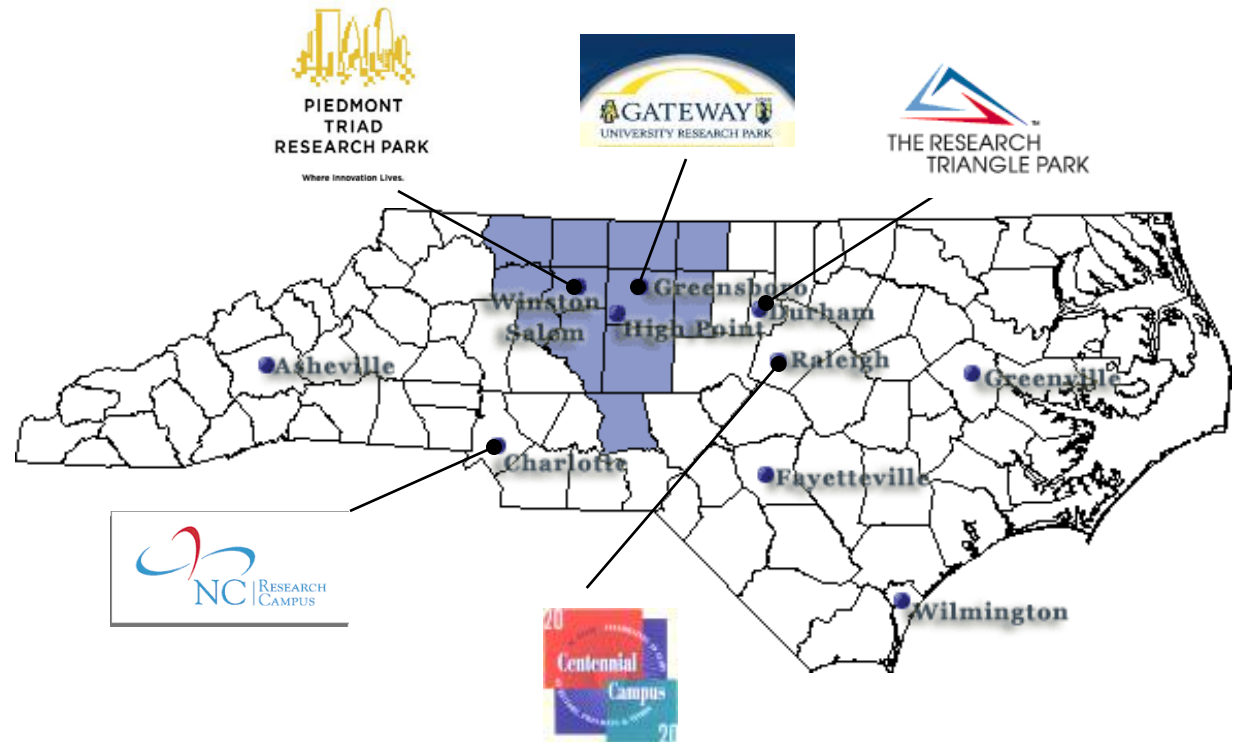
Winston-Salem ranked 24th by Forbes of “Best Metro Areas for Business and Careers.”

Winston-Salem was named one of the most livable communities in the US in 2004 by Partners for Livable Cities.

Winston-Salem ranked as one of the top seven intelligent communities in 2008.

Winston-Salem ranked one of the top 25 locations for biotechnology in “Business Facilities”.

## *NC Research Parks Network*







# Piedmont Triad Research Park Winston-Salem, North Carolina

“Where Innovation Lives”

