Universities as Economic Engines for Regional Transformation

Bethlehem, Pennsylvania

The City of Bethlehem in Eastern Pennsylvania is within a day’s drive of nearly 1/3 of the nation’s population.

The market area includes 35 million people.
Regional Assets

• Strong history
• Vibrant downtown
• Shift to new economy
• Universities and colleges
• Location, location, location

Lehigh University as an Engine of Economic Growth

Today’s Economy Driven By:
• Access to knowledge
• Application of new ideas
• Technology transfer
• Technology workforce

Precisely the business of universities!
## Lehigh University as an Engine of Economic Growth

- Anchoring the community
- Generating a technology workforce
- Contributing to “brain gain”
- Attracting companies and jobs
- Partnering in R&D
- Creating new companies/attracting investments

## Step 1: Focus Lehigh on Key Technology Areas

$75 million academic venture capital initiative: “Lehigh 20/20”

- Materials Science
- Biotechnology
- Nanotechnology
- Optical Technology
Example: Center for Optical Technologies

- $16 million in state funding over 5 yrs.
- $15 million from Lehigh over 5-7 yrs.
- $8 million in Congressional funding over 4 yrs.
- $8 million in alumni investment
- Construction of new optics lab
- Partnerships with established and start-up businesses, Penn State, Ben Franklin, local community colleges

Step 2: Creation of Innovative Educational Programs

- Computer Science and Business
- Health and Biopharmaceutical Economics
- Entrepreneurship
- Bioscience/Bioengineering
- Global Citizenship
Step 3: A Funky College Town

- Goal: attract and retain new graduates
- Enhance quality of life
- Make area attractive to smaller companies
- Revitalize the community
- Lead!

Southside Bethlehem Master Plan

Principles of the Master Plan
- Big Idea 1: Anchors
- Big Idea 2: Reconnections
- Big Idea 3: Open Space
- Big Idea 4: Gateways

New Acorn Street Lights
$2 Million Public Investment
Universities are communities, not separate worlds. We serve as an engine for economic development for the City.”

Dr. Gregory C. Farrington, President, Lehigh University

Lehigh University Campus Development

Campus Square
Retail, Restaurants
Residence Hall
Parking Garage
$27 million
Southside Renaissance

- Campus Square
- Gold Plus Card
  - 63 local merchants
  - Over $1.2 million in merchant sales
- Streetlights / Streetscape
- Enhanced integration of campus and community

Step 4: Programs to Stimulate Economic Development

- Small Business Development Center
- Iacocca Institute
- Manufacturers Resource Center (MRC)
- Entrepreneurship programs/internship programs
Entrepreneurship at Lehigh

- Office of Technology Transfer, Entrepreneurial Research, and Education
  - Funding from PA Dept. of Community and Economic Development Opportunity Grant and Keystone Innovation Grant
  - Supports commercialization of products/services for regional, state, and national economic development
- Curriculum in Entrepreneurship
  - Minor in Entrepreneurship, Global Village
- Governor’s School for Global Entrepreneurship
  - Entrepreneurial scholarship

PA Infrastructure Technology Alliance (PITA)

- $5 million from the Commonwealth annually, with Carnegie Mellon as partner
- State funding leveraged dollars 2 to 1
- 400 projects with 125 companies
  - 9 new start-up companies
  - Produced 11 patents and 3 provisional patents
Agile Manufacturing Enterprise

- $750K in state funding
- Student consulting projects focused on cost-savings for Pennsylvania agencies and companies
- Worked with 18 Pennsylvania manufacturers in 2004
- $10.7 million in savings to PennDOT

Step 5: New Company Formation

All on Lehigh’s campus….
- Ben Franklin Technology Partners incubator
- Venture capital
- Lehigh University entrepreneurial programs
  – Integrated Product Development (IPD)
  – Office of Technology Transfer
Ben Franklin Technology Partners Incubator

• Business incubator located at Lehigh
  – Develops early stage companies
  – Improves established manufacturers
  – Promotes infrastructure initiatives

• Impact since ’83:
  – Started 337 new companies
  – Created 9,373 new jobs
  – Retained 17,266 existing jobs

• Business-University link
  – Faculty experts
  – Facilities and equipment
  – Graduate students
  – Internships

Some Successes

• Glucolyte
  – Medical devices
  – Glucose sensor with optical technologies

• Azevan Pharmaceuticals, Inc.
  – Pharmaceutical
  – Licensed technology from Eli Lilly

• OraSure Technologies, Inc.
  – Medical devices
  – HIV testing

• IQE, Inc.
  – Microelectronics
  – Wafer manufacturing
**OraSure Technologies, Inc.**

- BF investments 1988-1990  $231,817
- Born in business incubator
- Merged with a publicly-traded company
- Recently received one-day FDA approval for first rapid HIV test; announcement by President Bush
- Employs more than 190 people
- Built and expanded into Beth Tech III
- Lehigh alumnus co-founder; student hires; faculty consultants

---

**IQE, Inc.**

- BF investments 1989-1991  $231,146
- Born in business incubator
- Microelectronics company
- After 10 years, company merged with another
- New company went public with a market cap in March 2000 of $1.25+ billion
- All local jobs were retained
- Founder remains on faculty; student hires
Success Continues…

John Cook Tech Center
- Funded by Loan Pool Partnership
- Former Bethlehem Steel site
- Graduates of Ben Franklin Incubator

Step 6: Attracting New Companies
- Lehigh University
- Ben Franklin Technology Partners
- Lehigh Valley Economic Development Corporation
Keystone Innovation Zone (KIZ)

• Objectives
  – Create new technologies/support entrepreneurs by growing/locating companies near universities and colleges
  – Tech transfer
  – Infrastructure development
  – Curriculum development to support new technologies

• Additional Partners
  – City of Bethlehem, hospitals, community colleges, private sector

KIZ First-Year Accomplishments

• Awarded 7 tech projects/11 student internships
• Attracted 2 companies to the KIZ
• 4 companies within the KIZ received $3 million in federally-funded research grants
• Transportation Linkage Study
• Wireless Telecommunications
  - Feasibility Study
  - Implementation Plan
• Life Sciences Study
The Power of Partnerships!