NCnanotechnology:

Overview

Presented to
NC State Nanotechnology Integration Forum
February 21, 2008

John Hardin, Ph.D.
Deputy Director & Chief Policy Analyst
North Carolina Board of Science and Technology

BOARD OF SCIENCE & TECHNOLOGY

http://www.ncscienceandtechnology.com

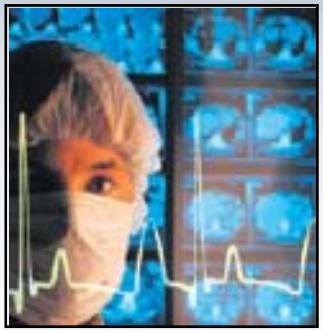
New Products, New Companies & New Jobs

Textiles

Novel & Smart Fabrics

Medicine

Diagnostics & Drug Delivery



Machinery

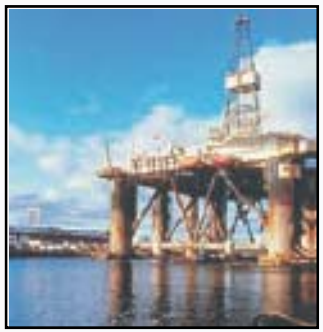
Materials & Coatings

Environment

Filtration & Purification

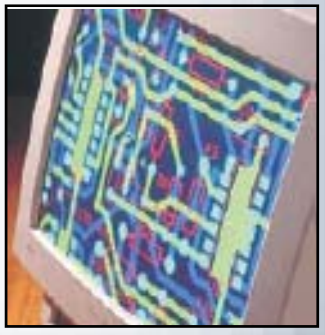
Energy

Catalysts & Converters



Electronics

Semiconductors & Switches



Source: National Nanotechnology Initiative; NanoBusiness Alliance

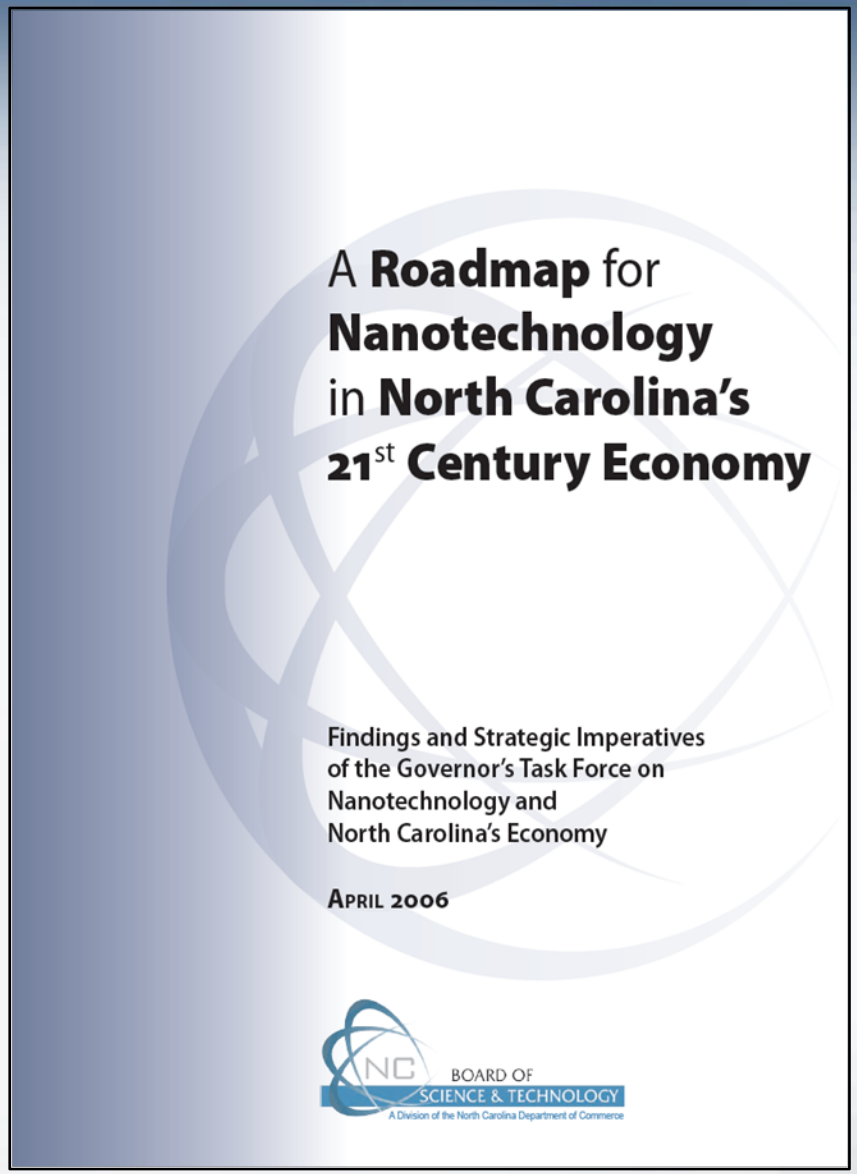
Predicted Impact of Nanotech on the Global Economy

- $300B electronics
- $340B materials
- $180B pharmaceuticals
- $100B chemical manufacture
- $70B aerospace
- $20B tools
- $30B improved healthcare
- $45B sustainability

Market size predictions: $1 trillion over next 10-12 years

Source: National Science Foundation

What are NC's nanotech strengths, prospects, & policy responses?



Roadmap Background and Goal

- In spring 2005, NC's Senior Science & Technology Advisor and its Board of Science and Technology formed the **Governor's Task Force on Nanotechnology and the Economy**

- Composed of 28 members broadly representing business, academia, and the public sector from across NC, its charge was to:

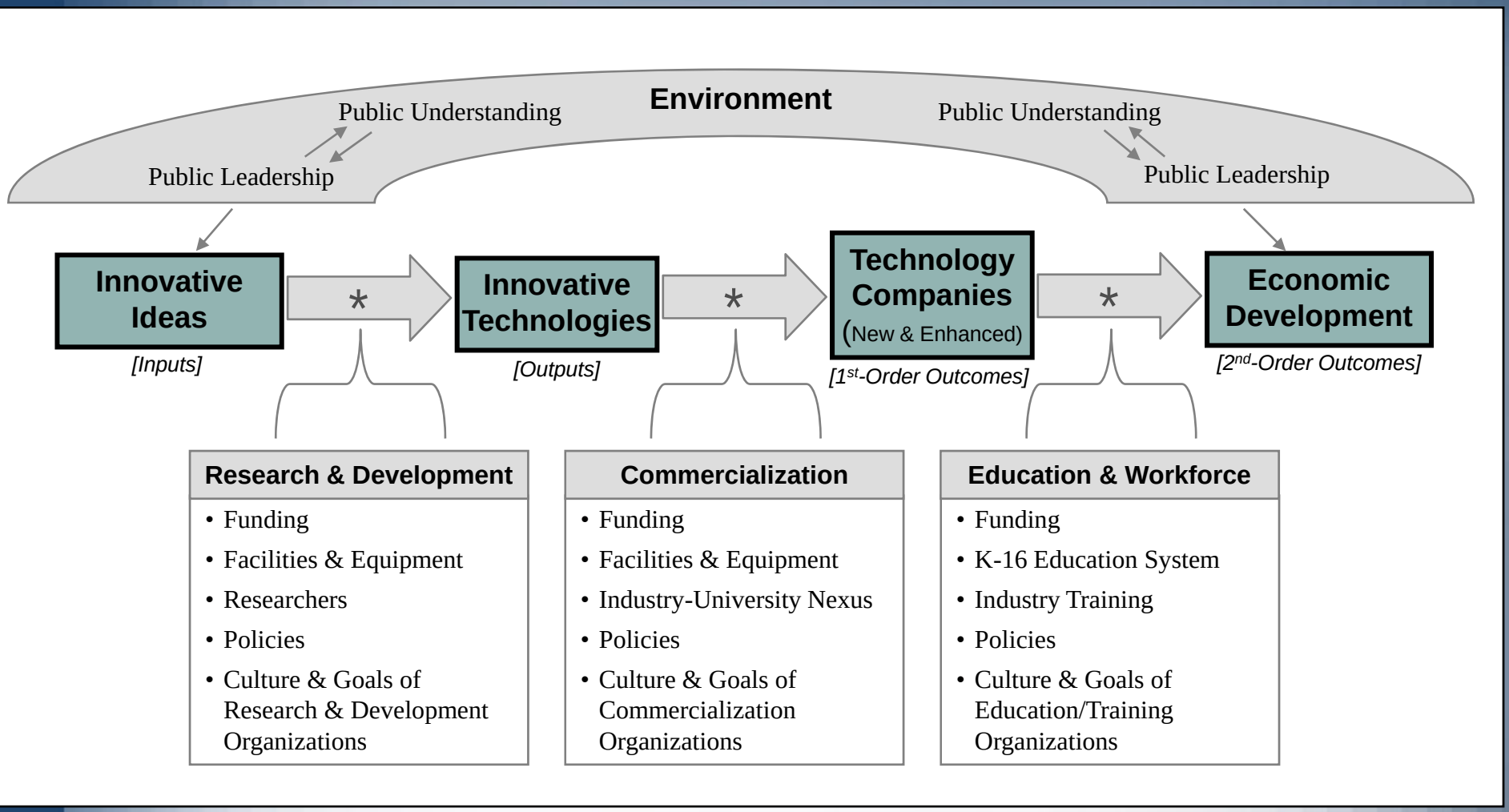
  - ***Develop a roadmap for an aggressive and coordinated initiative to advance successful nanotech-based economic development and high-wage employment across NC***

Roadmap Intent

Not a strategic plan, but rather a **call to action** for NC's political and policy leaders, industry, research institutions, educators, and the public to:

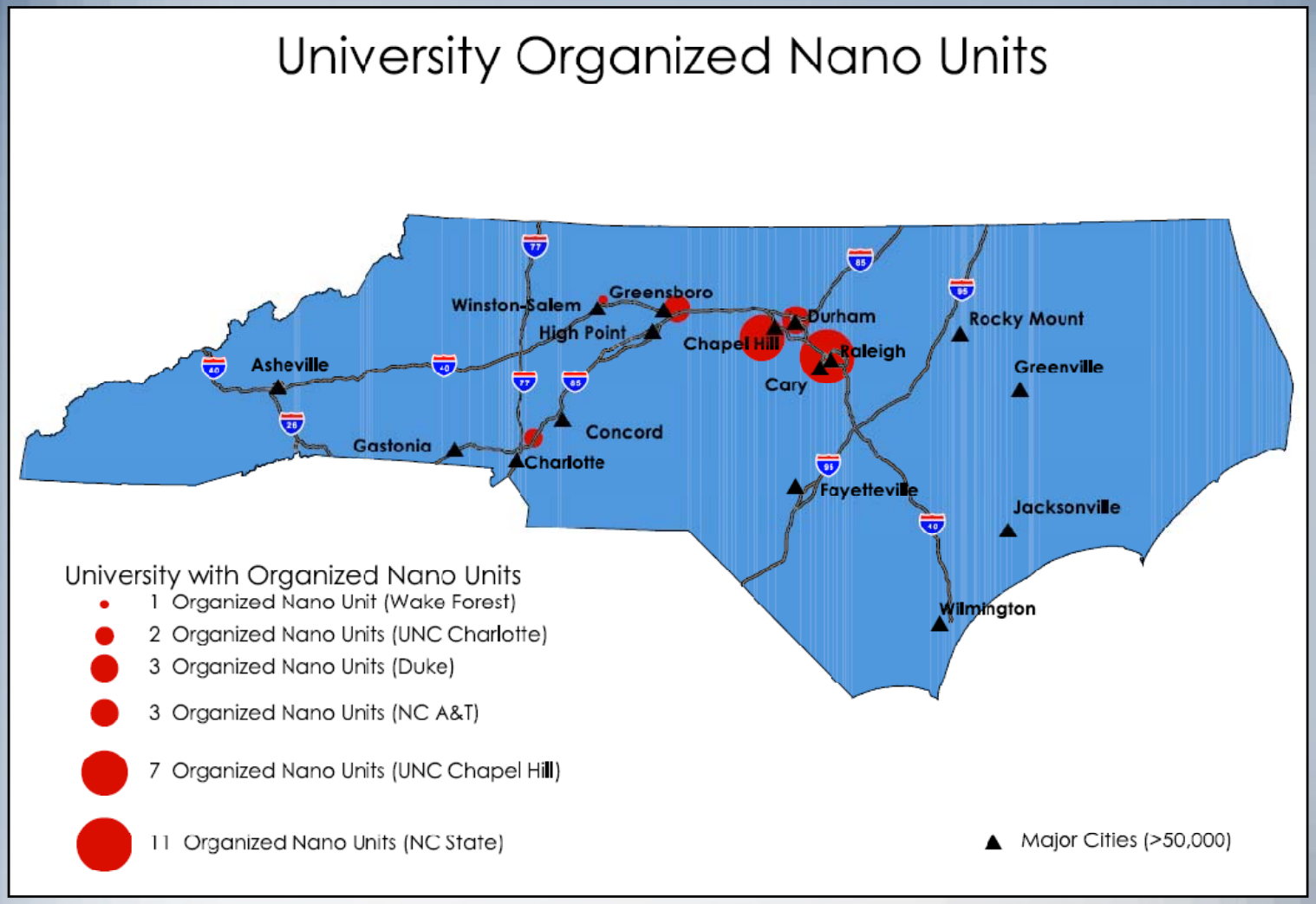
- Increase NC's ability to innovate
- Increase collaboration between companies and R&D centers
- Develop a well-educated and trained workforce
- Provide a supportive public and political policy environment
- Diversify our technology cluster portfolio to include nanotech

Roadmap Approach



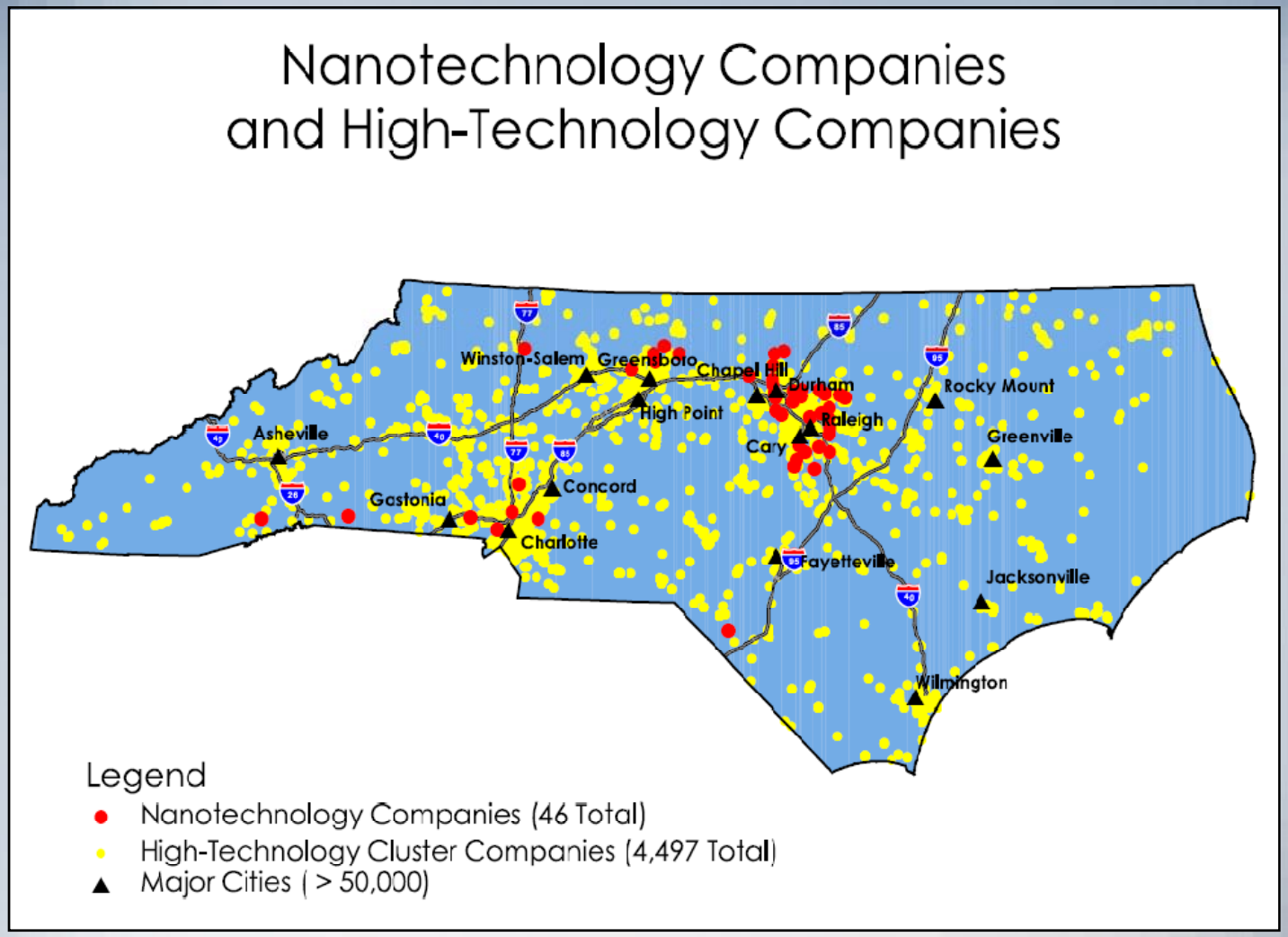
Sample Findings: R&D Patterns

NC universities are home to more than 29 organized R&D units focusing on nanotech (2006)



Sample Findings & Predictions: Commercial

NC has more than 50 nanotech companies and a statewide distribution of high-tech clusters that will be highly impacted by nanotech (2006)



Sample Findings & Predictions: Commercial

NC has a strong presence in several tech clusters that will be highly impacted by nanotech; nanotech could help grow weak clusters

Core U.S. Technology Clusters in North Carolina[12]

Cluster	Jobs (2002)	Average Wages (2002)	Real Wage Growth (1989-2002)
Information Technology/Instruments	84,113	$ 71,639	59.7%
Communication Services & Software	69,768	$ 61,917	54.5%
Chemicals/Plastics	48,789	$ 45,038	12.8%
Motor Vehicle Manufacturing	37,078	$ 44,661	28.6%
Pharmaceuticals & Medical Technologies	36,120	$ 59,387	54.4%
Industrial Machinery	16,210	$ 48,870	20.6%
Aerospace	4,146	$ 50,091	31.2%
Total/Weighted Average	**296,224**	**$58,549**	

NCnanotechnology.com

- Information clearinghouse about nanotechnology, particularly in NC
- Povides information of use to a broad audience as well as targeted users

Since December 26 (<two months):

- Nearly 3,000 page views
- More than 1,000 visitors from 59 countries, 45 US States, and 45 NC cities