GOVERNMENT-UNIVERSITY-INDUSTRY RESEARCH ROUNDTABLE
THE NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE

The Knowledge Economy: States' Competitive Advantage in Research and Innovation

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NORTH CAROLINA DEPARTMENT OF COMMERCE

www.nccommerce.com/sti

OSTI Mission & Roles

Mission: To improve the economic well being and quality of life of all North Carolinians **through advancing science, technology, and innovation**

ROLE	EXAMPLE
STRATEGIC (50%)	
• **Evaluator & Advisor** (30%)	Creating/using NC innovation indexes to evaluate and inform policy and programs
• **Champion & Communicator** (20%)	Leading/distributing NC technology roadmaps to chart the course for NC's economic future
TACTICAL (50%)	
• **Funder & Implementer** (40%)	Developing/administering NC technology commercialization grant programs
• **Convener & Facilitator** (5%)	Organizing/leading NC technology conferences & workshops to catalyze businesses
• **Recruiter & Retainer** (5%)	Attracting/keeping high-tech, high-growth, entrepreneurial businesses to/in NC

Board/Office of Science, Technology & Innovation

25 Board Members (BSTI):

- Governor
- Secretary of Commerce
- Governor appoints:
  - 1 from UNC-Chapel Hill
  - 1 from NC State University
  - 2 from components of UNC
    (one of which from an HBCU)
  - 1 from Duke University
  - 1 from another private college/university
  - 1 from NC Community College System
  - 1 representing K-12 public education
  - 6 from private industry in NC
  - 7 at-large
- General Assembly appoints:
  - 1 from President Pro Tempore of Senate
  - 1 from Speaker of the House

3-7+ Staff – Office of Science, Technology & Innovation (OSTI):

- Executive Director
- Assistant Director
- Executive Assistant
- Research Associates & Interns (2-3)
- NC Dept. of Commerce Colleagues

What is Innovation?

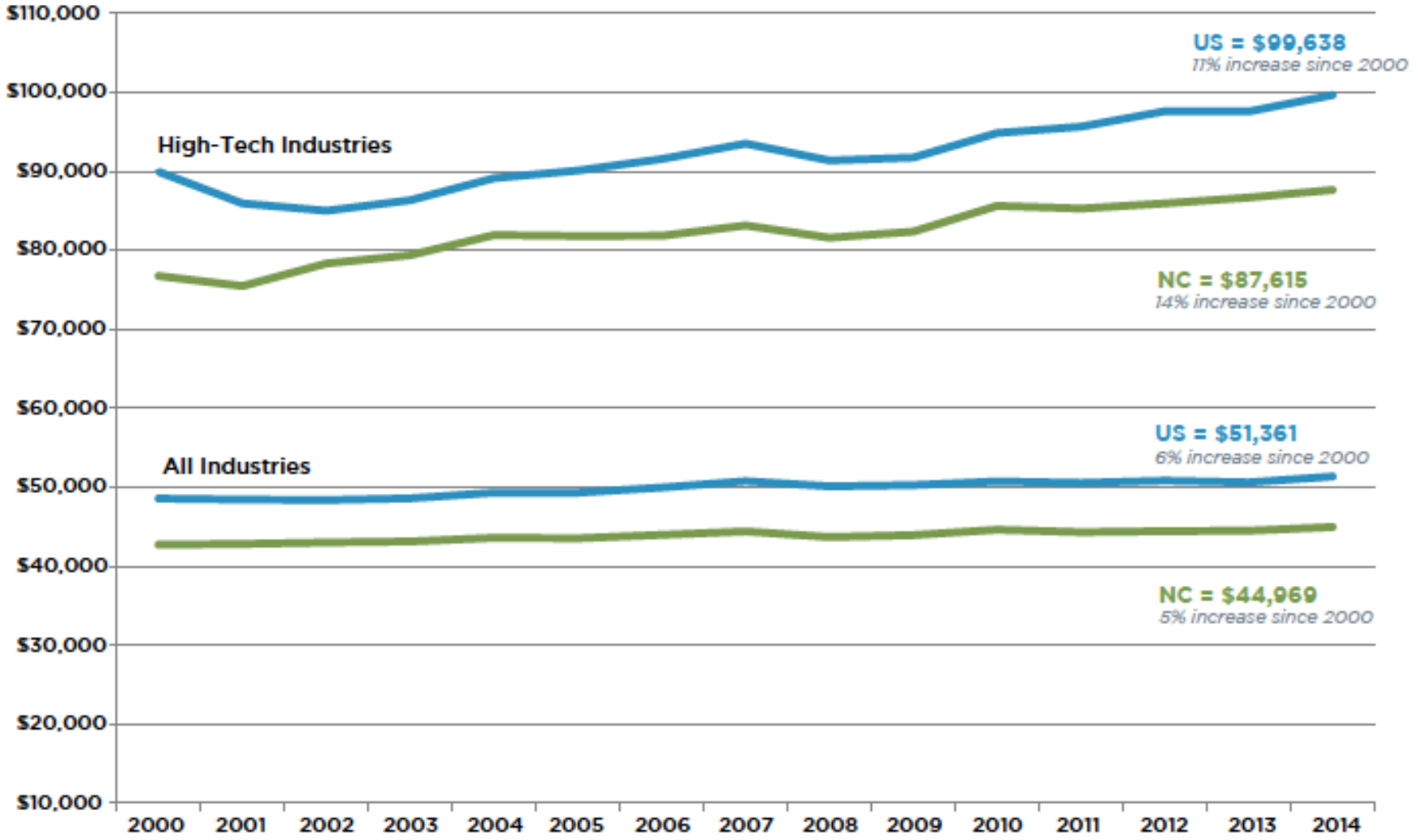
- **Innovation** is the creation & adoption of new products, services, and business models to yield value (i.e., **something new that adds value**)

- Innovation comes primarily from **science** (systematic knowledge) & **technology** (practical/creative application of knowledge)

- Between one-third to one-half of **economic growth** in U.S. is attributed to innovation *(Source: U.S. Department of Commerce 2012)*

- Innovation has big (5x) **multiplier effect** (across sectors & skill levels)
  - e.g., If Inmar adds a high-paying data scientist job in Winston-Salem → more jobs for waiters, landscapers, store clerks, painters, etc., **but not vice-versa** *(Source: Moretti 2013)*

Average Annual Wage, High-Tech Industries & all Industries, U.S. & N.C., 2000-2014



Source: Bureau of Labor Statistics, U.S. Department of Labor

Innovation is the Economic Accelerator for NC

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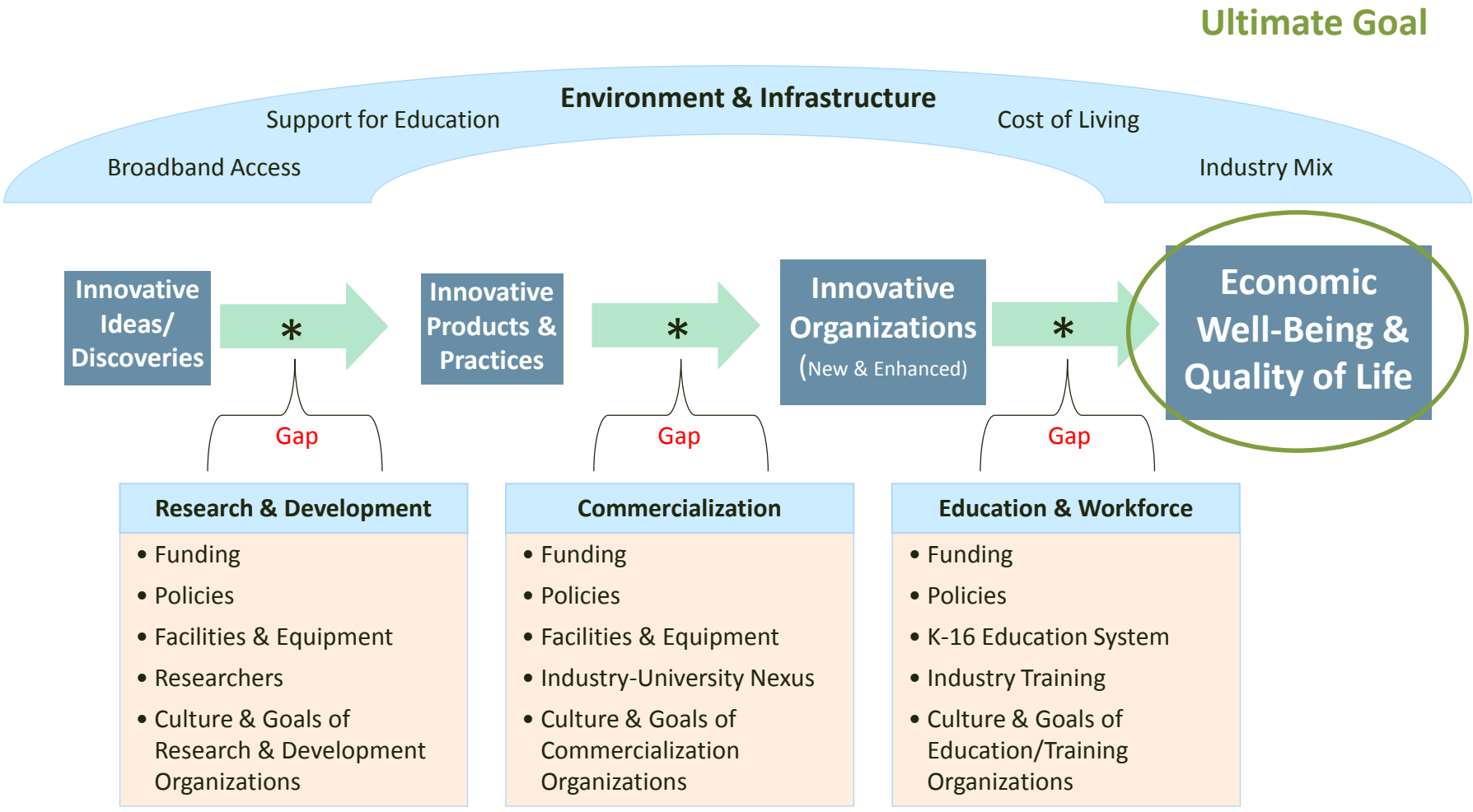
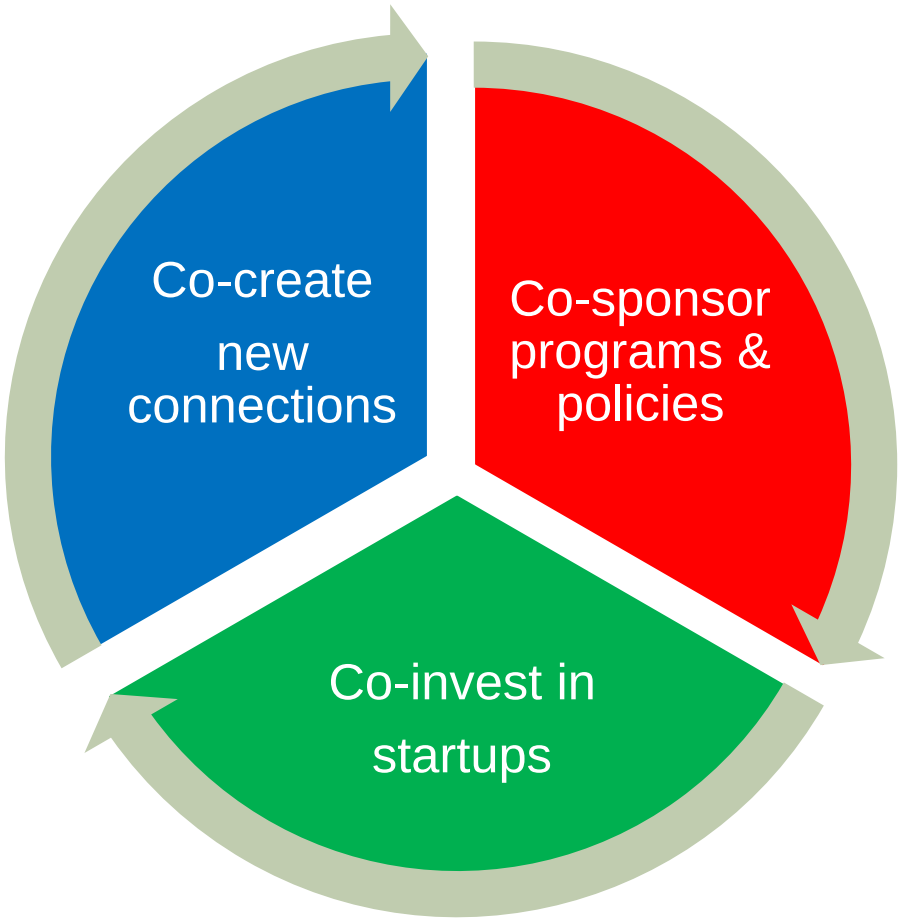
Innovation occurs most *efficiently* and *effectively* in a vibrant, healthy **innovation ecosystem**

What's an Innovation Ecosystem?



OSTI Co-Strategy

1. **Co-create new connections** inside and outside the NC system **that don't yet exist** for new synergies
2. **Co-sponsor** policies and programs that **accelerate** the capabilities of the **system**
3. **Co-invest** in **startups** to enable them to survive and thrive



OSTI Programs & Projects

80s

NC SSM
NORTH CAROLINA SCHOOL of SCIENCE & MATHEMATICS

FIRST FLIGHT

North Carolina Biotechnology Center

MCNC
Connecting North Carolina's Future Today

90s

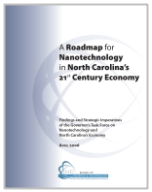
Universal Service

Vision 2030 **Initiative**

Information Highway

00s

Innovation Indices



Nanotechnology Roadmap

NC Small Business

Green Business Fund

10s

Innovation Indices

i2j

Innovation-to-Jobs

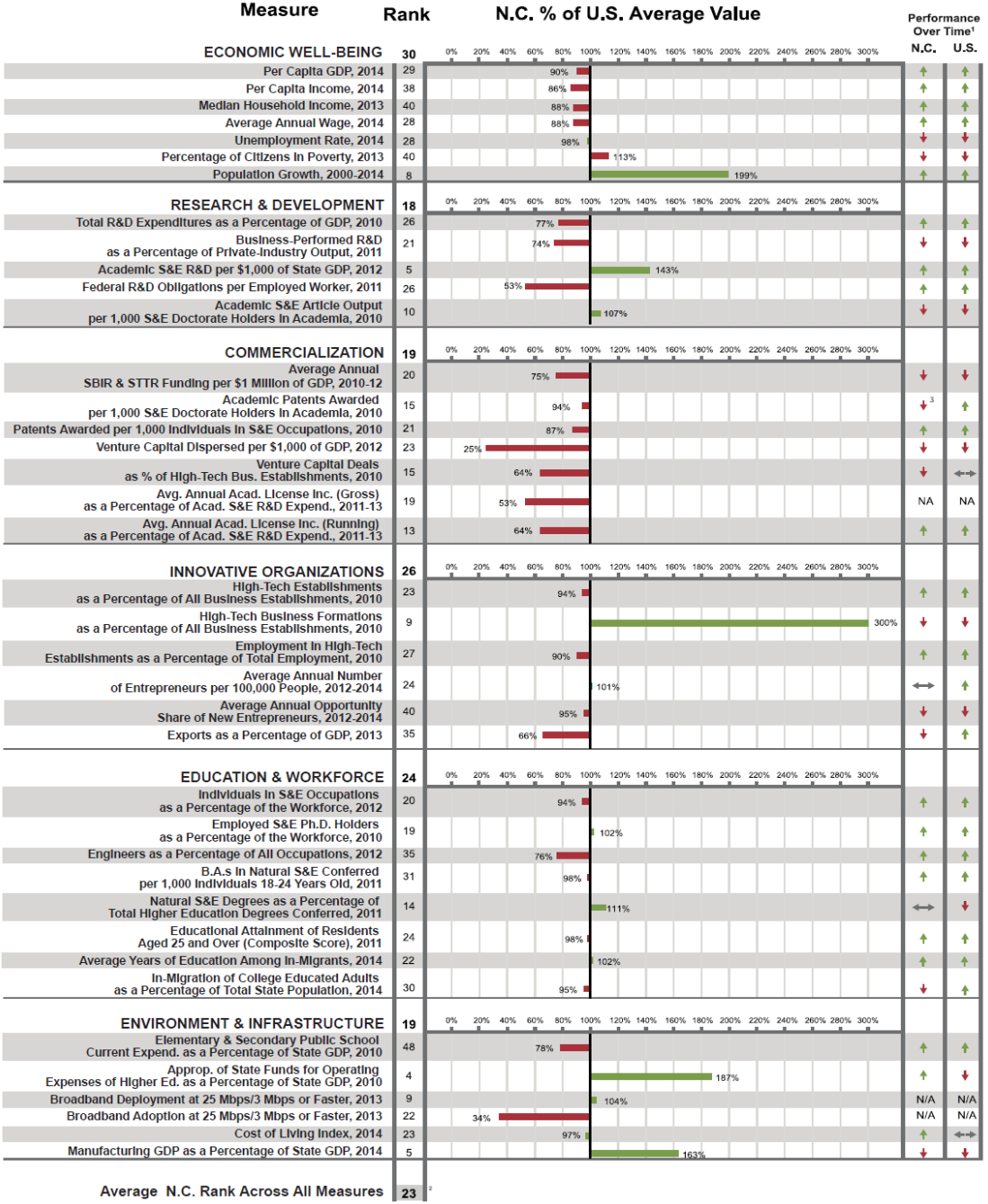
NC Small Business

PowerAmerica

Available at:

www.nccommerce.com/sti

2017 Index to be released later this year



2015 Index Dashboard Overview

Which Factors Matter Most for Economic Prosperity?

Which factors have largest impact on three economic well-being variables:

- Per capita GDP
- Per capita personal income
- Average annual pay

Using *SAS Visual Statistics*, analyzing 15 years of data across each of the 50 U.S. states, we found three factors statistically significant for predicting changes in economic well-being variables across all U.S. states:

- Proportion of workers in high-tech industries
- Proportion of workers in science and engineering occupations
- Proportion of population with post-secondary educational attainment