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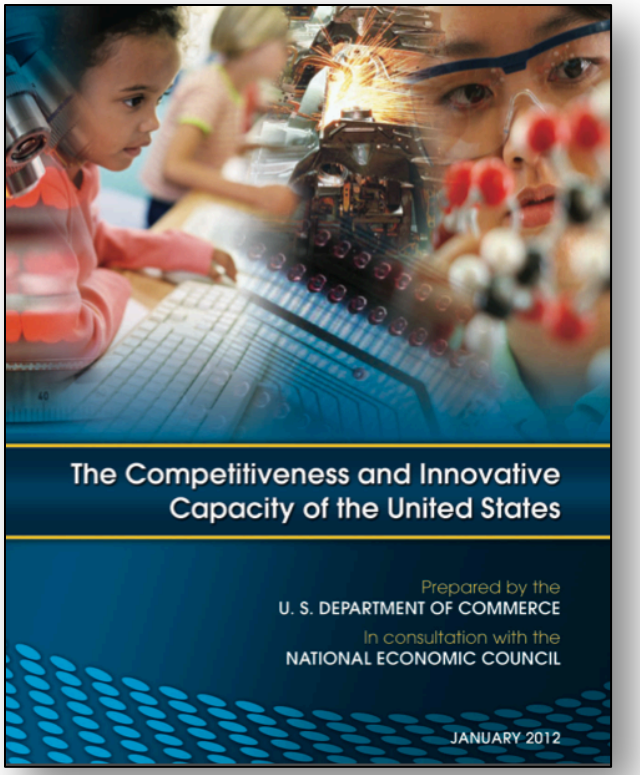
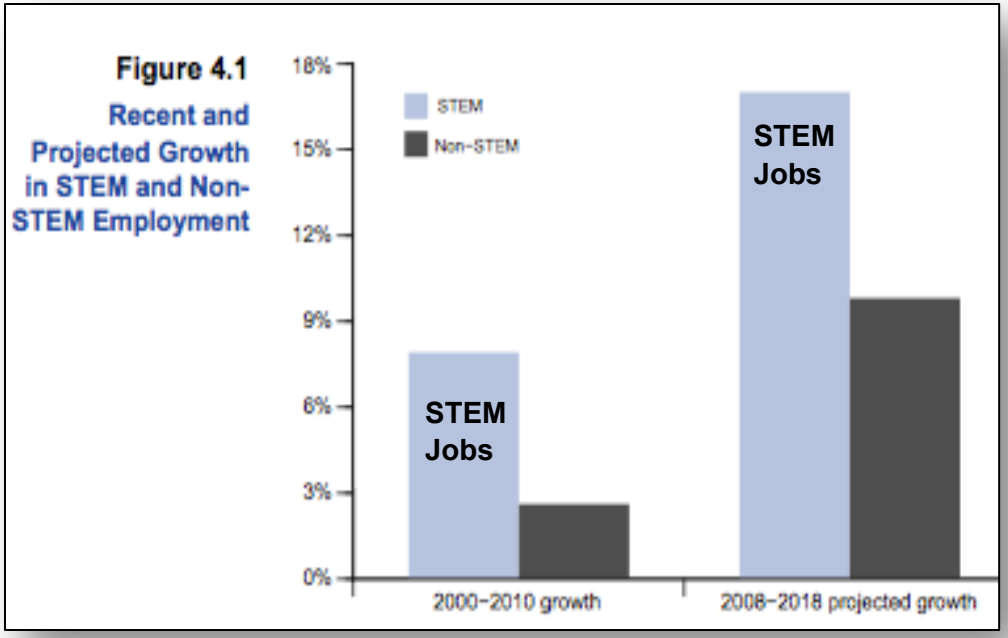
THE COMPETITIVE and INNOVATION CAPACITY of the US

- **Innovation** is the key driver of competitiveness, wage and job growth, and long-term **economic growth**
- **Poor preparation in math and science** is limiting the number of **STEM graduates**
- **Education is a key element** for promoting **economic growth** and increasing **the innovative capacity** of the US

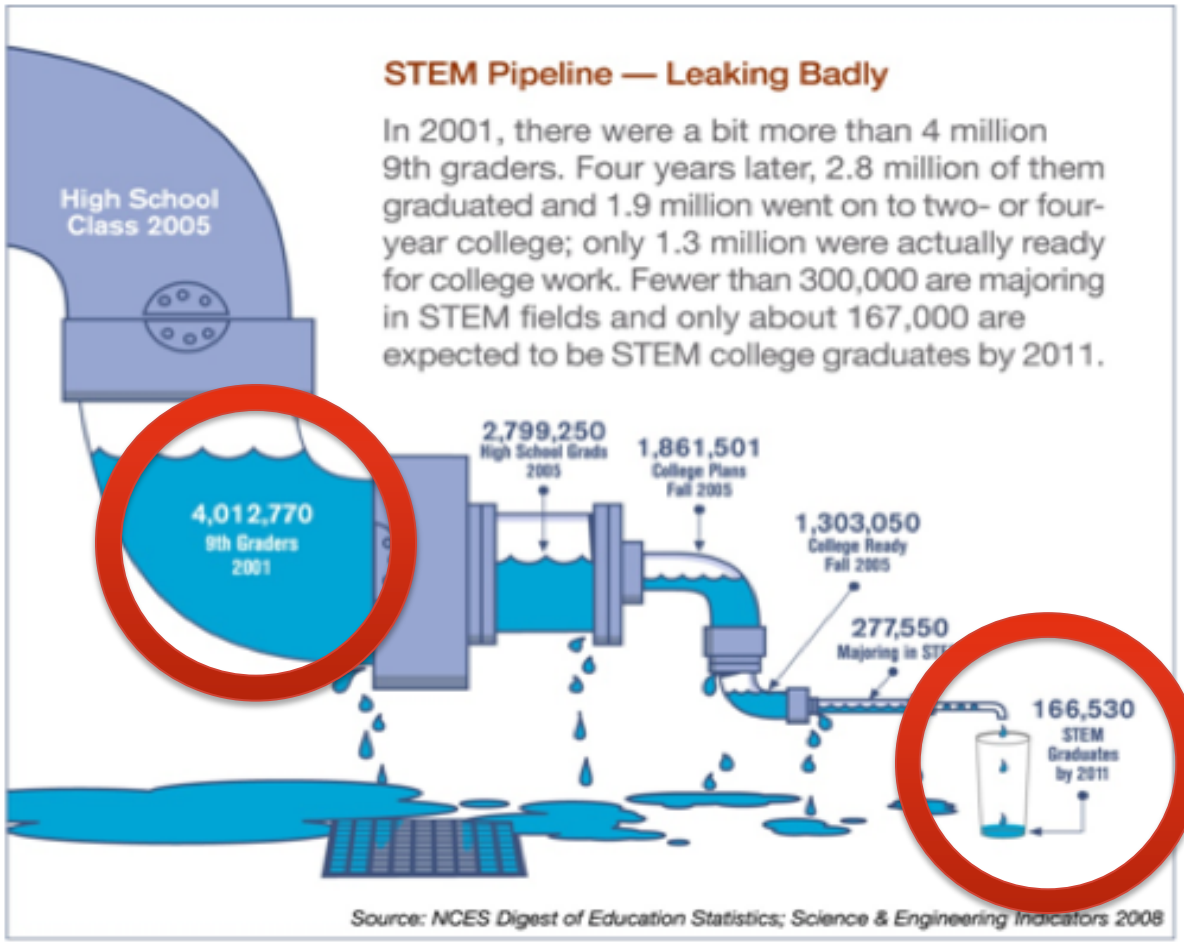


Job Growth



- OVER THE PAST 10 YEARS, GROWTH IN **STEM JOBS WAS 3 TIMES** AS FAST AS GROWTH IN NON-STEM JOBS
- **STEM EMPLOYMENT** IS EXPECTED TO **GROW** AT EVEN FASTER RATES

Science & Engineering Indicators

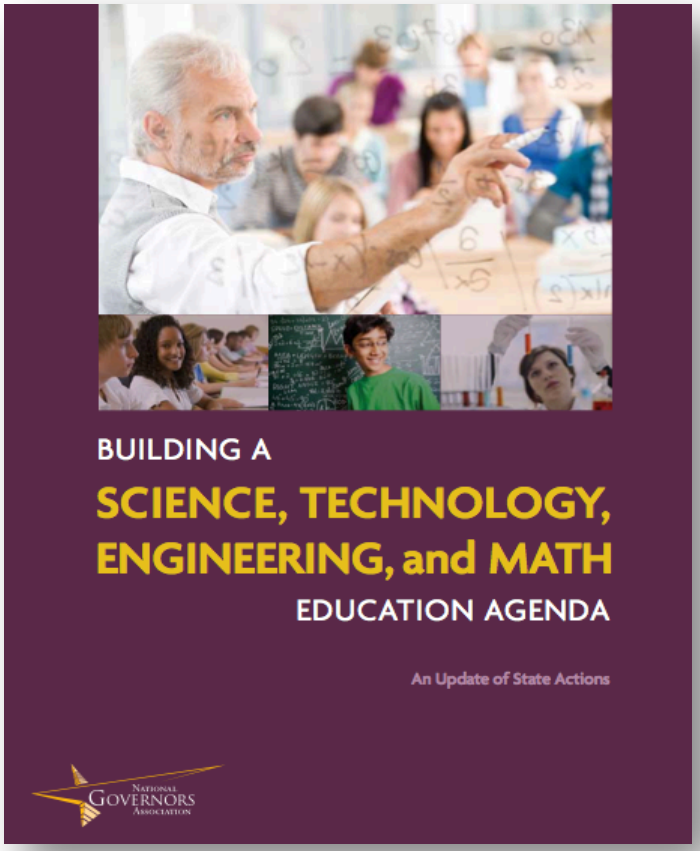


STEM Facts

- **WAGES** - STEM job holders earn **11% higher wages** than other 4-year degreed jobs

- **JOB GROWTH** - In the last 10 years, STEM jobs grew **3 times faster** than non-STEM jobs

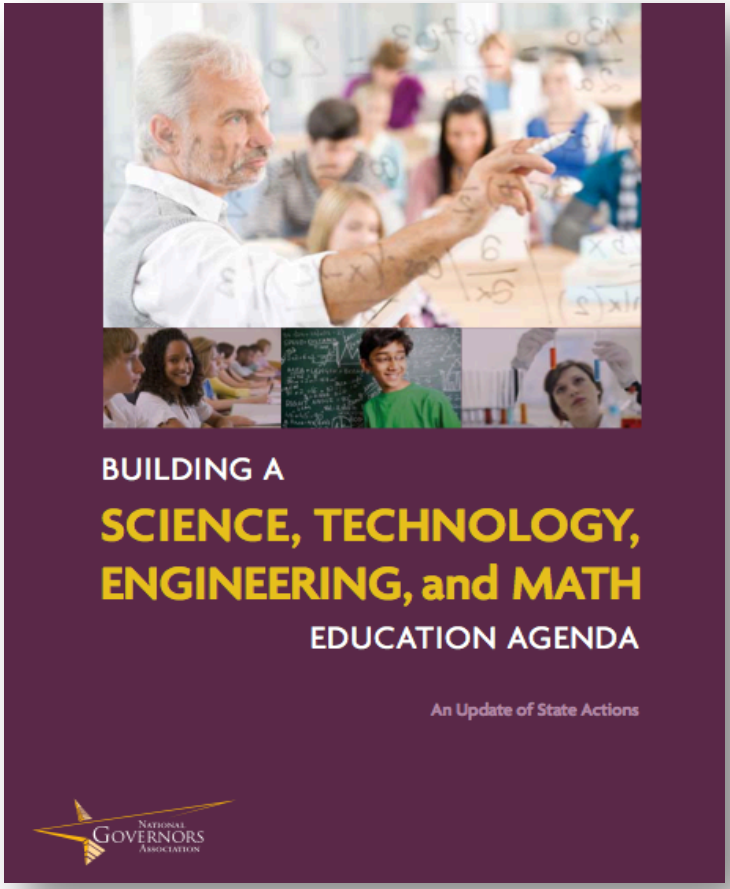
- **LOWER UNEMPLOYMENT** - In 2010, the US **unemployment rate** for **STEM workers** was **5.3%**, compared to **10%** for all all other occupations



Why we lag behind…

Reasons the US lags behind its competitors in producing…"STEM graduates:

- ❑ Failure **to motivate student interest** in **math and science**
- ❑ Failure of the post-secondary system to **meet STEM job demands**

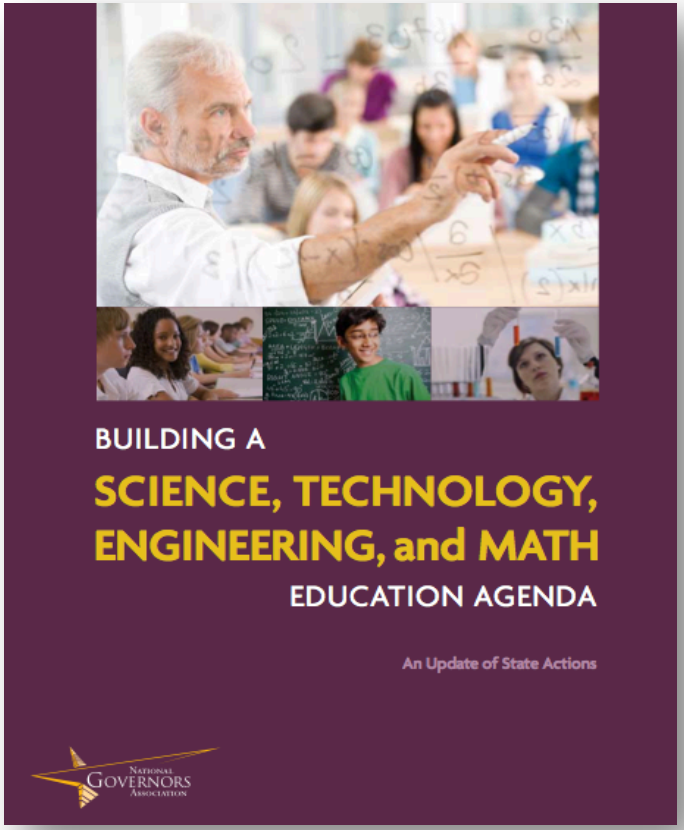


Others are taking action now…

- Use **informal learning** to expand math and science beyond the classroom -

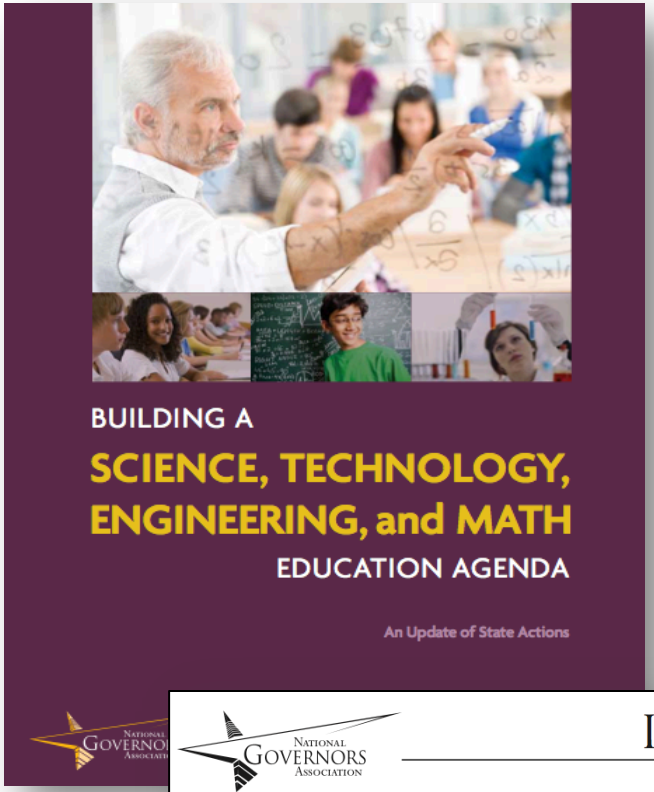
*Many institutions, such as **museums and science centers** provide valuable out-of classroom experiences that demonstrate **how math and science connect to everyday life and careers** and expand **skills**.*

*These programs are proving to have a **positive effect on STEM interest** and **achievement.***

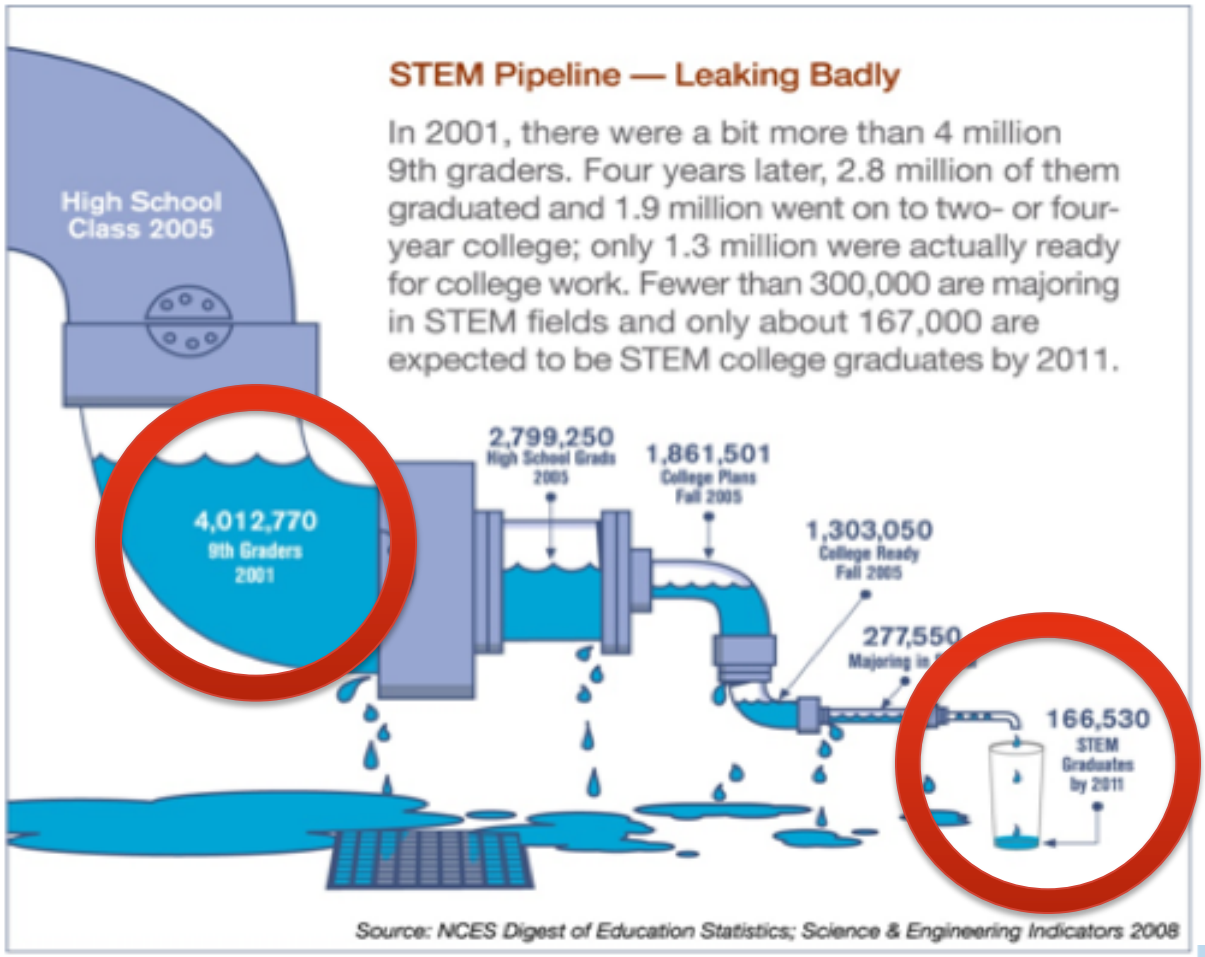


The Role of Informal Science (ISE)

- ISE - which largely takes place at **museums, science centers**, and other institutions—can be an **effective tool in a broader STEM agenda** to help cities and states achieve their goals.
- **(1)** They raise student **interest, confidence, and classroom achievement** and **(2) Generate student interest** in pursuing **STEM studies and careers.**
- Evidence shows that **teacher professional development** at informal science institutions **can improve teacher effectiveness** in the classroom



Science & Engineering Indicators



"No amount of savings and investment, no policy of macroeconomic fine-tuning, no set of tax and spending can generate sustained economic growth unless it is accompanied by the countless large and small discoveries that are required to create more value from a fixed set of natural resources."

Paul Romer, Economist, 1993

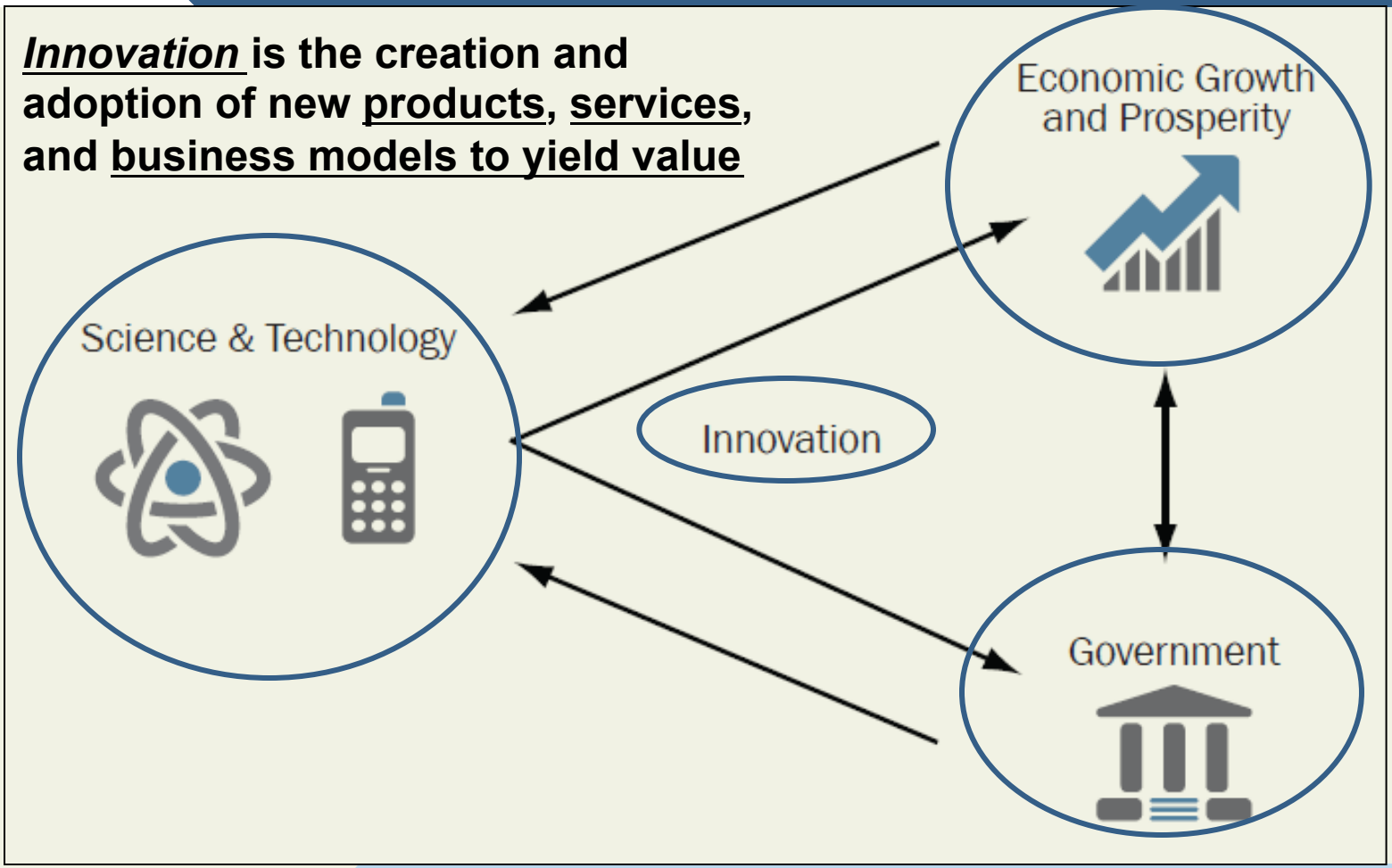
STEM Innovation is The Key to Prosperity

- **Business innovation is based on advancements in science technology, engineering, and mathematics (STEM).**
  - New Products & Services
  - New Processes

- **Innovation has three key economic benefits***
  - Innovation provides a first-mover advantage in new products and services, **expanding exports and creating expansionary employment effects** in the short term
  - Innovation's expansionary effects lead to a **virtuous cycle of expanding employment**
  - Innovation leads to **increased wages and lower prices**, both of which expand domestic economic activity and create jobs.

** Source - State New Economy Index*

Science Centers Are Central
They create a community of innovation and a culture that supports the new economy



What is a New Economy?

"New Economies are ones that are knowledge-based, globalized, entrepreneurial, IT-driven, and innovation-based."*

Science Centers are critical to enabling the New Economy and its traits in a community.

**The Kauffman Foundation of Entrepreneurship*

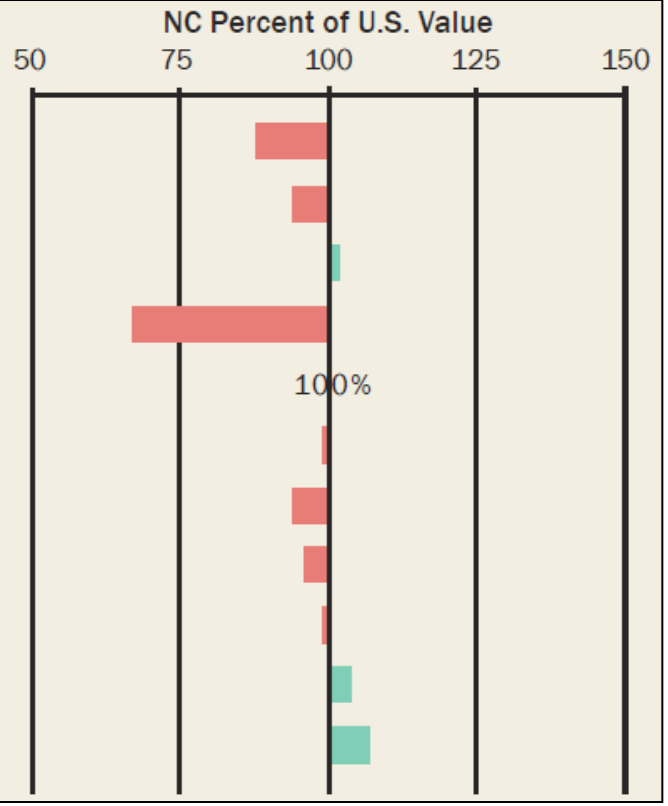
Where do we rank in the New Economy?

2010 Rank	2010 Score	State	1999 Rank	2002 Rank	2007 Rank	Change from 2002*	Change from 2007*
1	92.6	Massachusetts	1	1	1	0	0
2	77.5	Washington	4	4	4	2	2
3	76.9	Maryland	11	5	3	2	0
4	76.9	New Jersey	8	6	2	2	-2
5	76.6	Connecticut	5	7	6	2	1
6	75.0	Delaware	9	9	7	3	1
7	74.3	California	2	2	5	-5	-2
8	73.7	Virginia	12	8	8	0	0
9	72.8	Colorado	3	3	9	-6	0
10	71.3	New York	16	11	10	1	0
11	70.6	New Hampshire	7	12	13	1	2
12	69.1	Utah	6	16	12	4	0
13	67.5	Minnesota	14	14	11	1	-2
14	67.0	Oregon	15	13	17	-1	3
15	65.1	Illinois	22	19	16	4	1
16	63.6	Rhode Island	29	23	15	7	-1
17	63.4	Michigan	34	22	19	5	2
18	63.0	Texas	17	10	14	-8	-4
19	62.6	Georgia	25	18	18	-1	-1
20	61.0	Arizona	10	15	22	-5	2
21	60.6	Florida	20	17	23	-4	2
22	60.2	Pennsylvania	24	21	21	-1	-1
23	59.5	Vermont	18	26	20	3	-3
24	57.1	North Carolina	30	24	26	0	2
25	55.2	Ohio	33	27	29	2	4
26	54.5	Kansas	27	30	34	4	8
27	54.2	Idaho	23	20	24	-7	-3
28	54.0	Maine	28	29	32	1	4
29	53.1	Wisconsin	32	37	30	8	1
30	52.5	Nevada	21	31	27	1	-3
31	52.1	Alaska	13	39	25	8	-6
32	51.7	New Mexico	19	25	33	-7	1
33	50.8	Missouri	35	28	35	-5	2
34	50.5	Nebraska	36	36	28	2	-6
35	49.7	Indiana	37	32	31	-3	-4
36	49.7	North Dakota	45	47	37	11	1
37	49.7	Montana	46	41	42	4	5
38	49.5	Iowa	42	40	38	2	0
39	49.3	South Carolina	38	35	39	-4	0
40	48.7	Hawaii	26	38	41	-2	1
41	48.5	Tennessee	31	34	36	-7	-5
42	47.2	Oklahoma	40	33	40	-9	-2
43	46.0	Louisiana	47	44	44	1	1
44	46.0	Kentucky	39	42	45	-2	1
45	45.1	South Dakota	43	46	48	1	3
46	45.0	Wyoming	41	43	43	-3	-3
47	43.5	Alabama	44	45	46	-2	-1
48	40.0	Arkansas	49	49	47	1	-1
49	38.1	West Virginia	48	48	50	-1	1
50	35.3	Mississippi	50	50	49	0	-1

Source: The Kauffman Foundation of Entrepreneurship

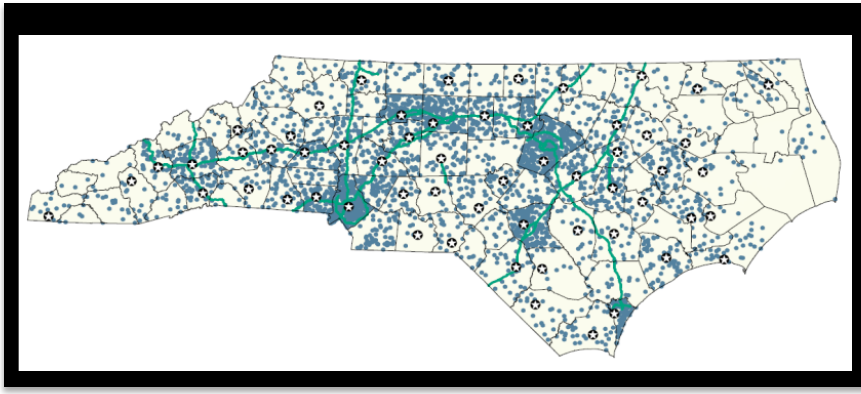
Strengths & Weaknesses: Human Capital

Human Capital Resources	NC Rank
Individuals in S&E Occupations as Share of Workforce (2006)	29
Computer Specialists as Share of Workforce (2006)	20
Employed S&E Doctorate Holders as Share of Workforce (2006)	17
Engineers as Share of Workforce (2006)	39
High School Graduates or Higher Among Individuals 25-44 Years Old (2005)	35
AA Degree Holders or Higher Among 25-44 Year Olds (2005)	23
BA Degree Holders Potentially in the Workforce (2005)	23
BA Degree Holders or Higher Among 25-44 Year Olds (2005)	26
BA Degrees Conferred per 1,000 18-24 Year Olds (2005)	29
BA in Natural Sci. and Eng. Conferred per 1,000 18-24 Year Olds (2005)	25
S&E Degrees as Share of Higher Education Degrees Conferred (2005)	16

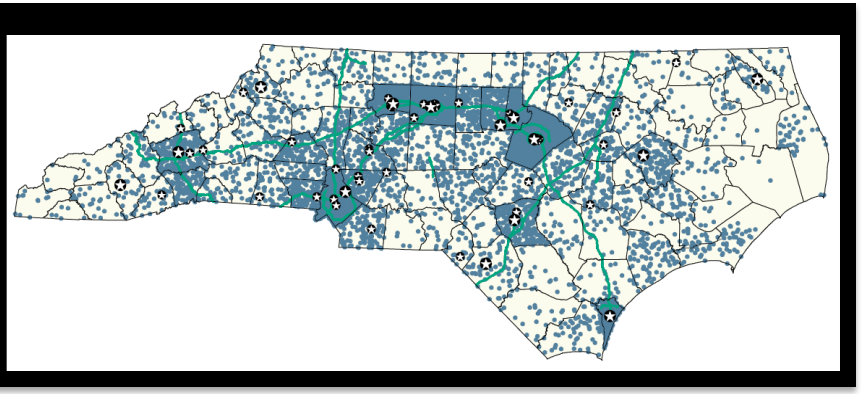


Source: Advancing Innovation in North Carolina

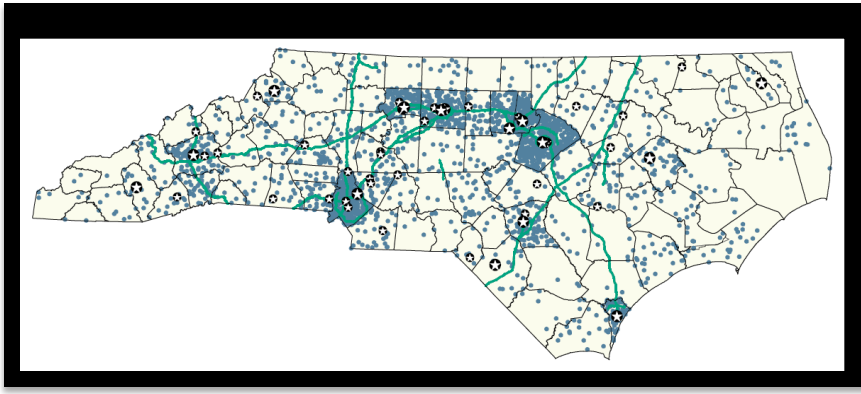
Associate's Degree Holders



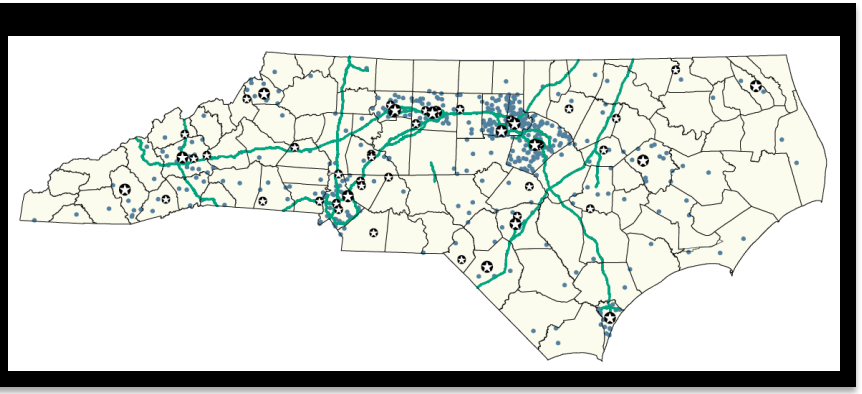
Bachelor's Degree Holders



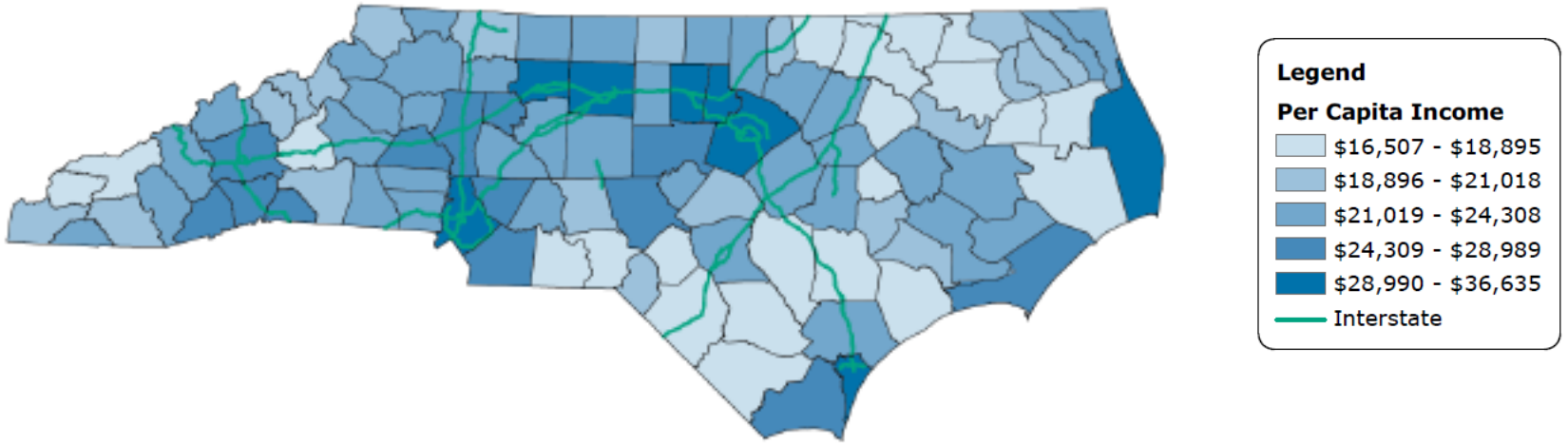
Master's Degree Holders



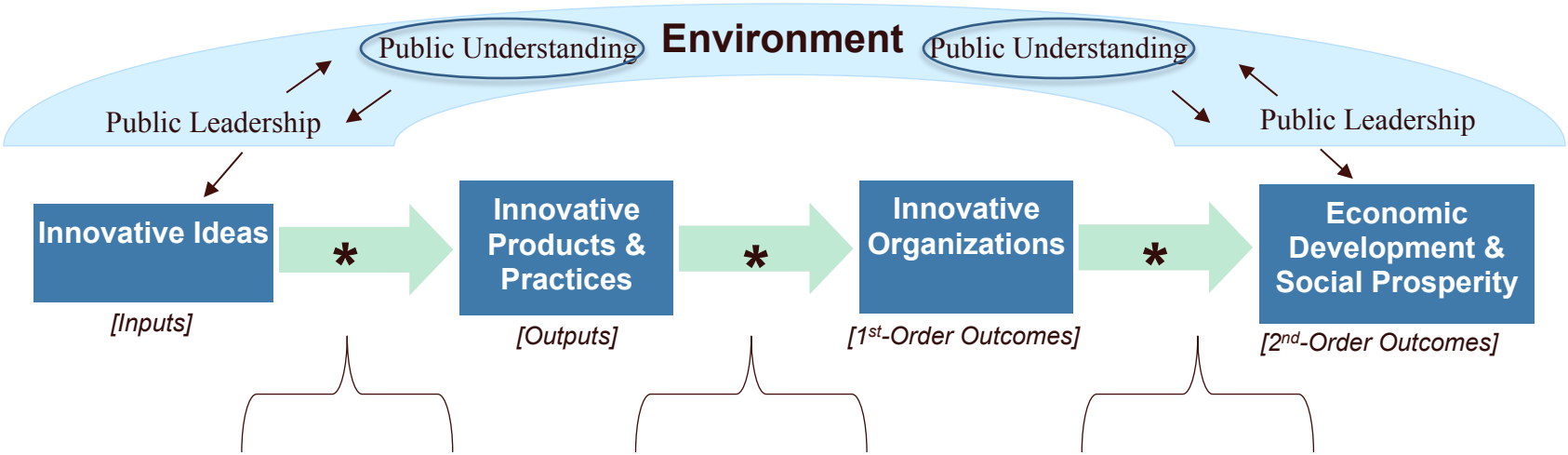
Doctoral Degree Holders



Per-Capita Income



The Innovation Ecosystem



Research & Development

- Funding
- Policies
- Facilities & Equipment
- Researchers
- Culture & Goals of Research & Development Organizations

Commercialization

- Funding
- Policies
- Facilities & Equipment
- Industry-University Nexus
- Culture & Goals of Commercialization Organizations

Education & Workforce

- Science and Technology Centers
- Community Culture of STEM
- K-16 Education System
- Funding
- Policies
- Industry Training

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Informal Science Education

GO-Science is a first-class learning experience for Eastern North Carolina that provides inspirational, motivational, and educational programs and activities for children, adults, and schools in order to help participants appreciate the role of science in our lives; believing that the knowledge of science, technology, engineering, mathematics, and medicine (STEM2) is a core understanding and capacity of an educated community.

Regional Reach

GO-Sciences currently reaches over 28 thousand participants annually with over 19 core educational programs and we have over 800 volunteers with 275 of the volunteer base in Greenville, NC.

Some of Our Programs…

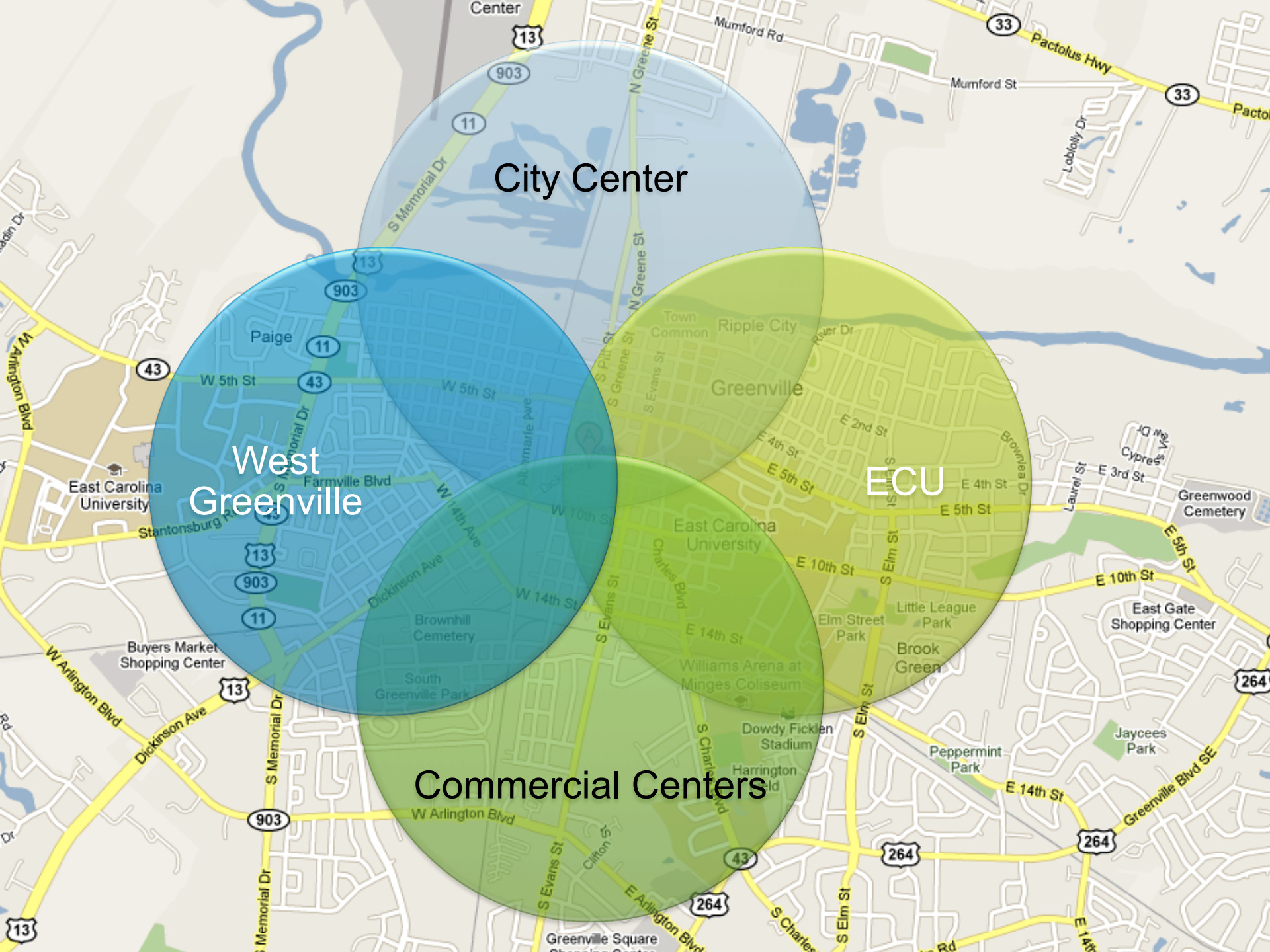
SECONDLIFE SCIENCE

Science Café

Summer Science Camp


DIRECTOR CENTER FOR
SURVEY RESEARCH
ANDREA STRICKLAND
The Crews Aboard the Space Shuttle


FUTURE
STARS


City Center
West Greenville
ECU
Commercial Centers
Center
Mumford Rd
Mumford St
Pactolus Hwy
Lablotty Dr
S Memorial Dr
N Greene St
Paige
W 5th St
Farmville Blvd
East Carolina University
Stantonsburg Rd
W 14th Ave
Dickinson Ave
Brownhill Cemetery
Buyers Market Shopping Center
W Arlington Blvd
South Greenville Park
Town Common
Ripple City
River Dr
Greenville
S Pitt St
S Greene St
S Evans St
E 2nd St
E 4th St
E 5th St
Brownlea Dr
Cypress
Laurel St
E 3rd St
Greenwood Cemetery
E 10th St
S Elm St
Charles Blvd
Little League Park
Elm Street Park
Brook Green
East Gate Shopping Center
Williams Arena at Minges Coliseum
Dowdy Ficklen Stadium
Harrington
Peppermint Park
Jaycees Park
Greenville Blvd SE
Clifton St
E Arlington Blvd
Greenville Square


Our Living Planet
Hydrosphere


Hydrologic Cycle


Fire

What Is **Addiction?**

Four interactive stations use models, graphics and video to teach students about the effects of drug use on the human body.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