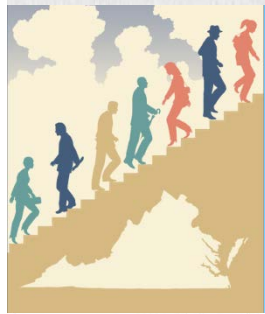




The Value of a College Education

How Should the Success of Higher Education be Measured?



VEI Leadership Challenge
May 1, 2015

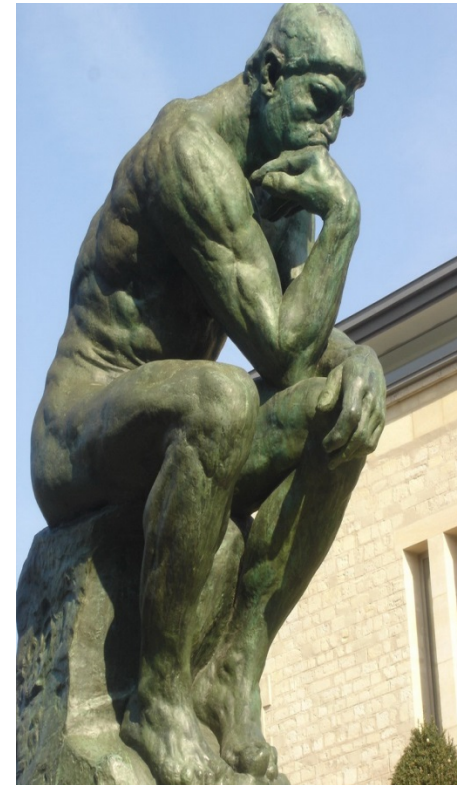
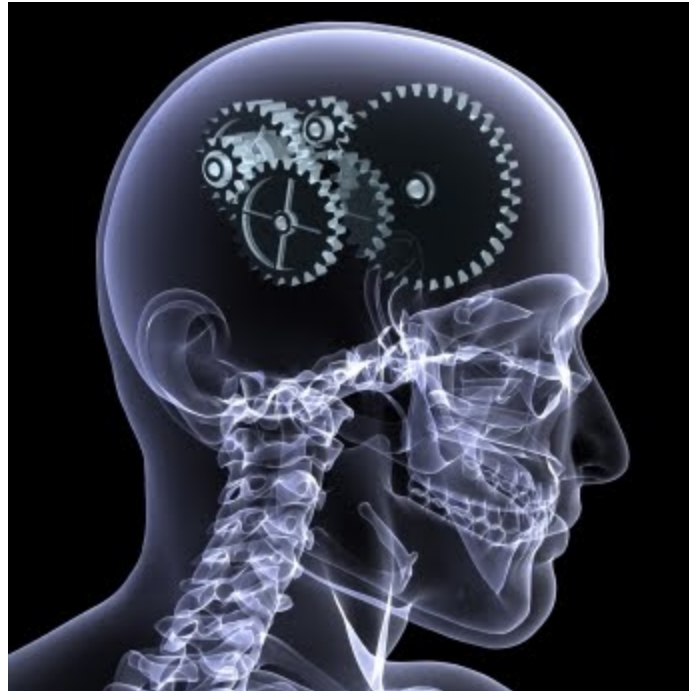


Team 2 Members

- * Andy Babish – Department of Transportation
- * Marcus Elam – Department of Corrections
- * Susan Hancock – State Corporation Commission
- * Angela Harvell – Department of Behavioral Health & Developmental Services
- * Jason Powell – Senate Finance Committee
- * Brent Sheffler – Economic Development Partnership

To Measure Success, Ask One *Big* Question

Does Higher Education Make Cogs or Critical Thinkers?



“The value of an education in a liberal arts college is not the learning of many facts but the training of the mind to think something that cannot be learned from textbooks.”

-Albert Einstein

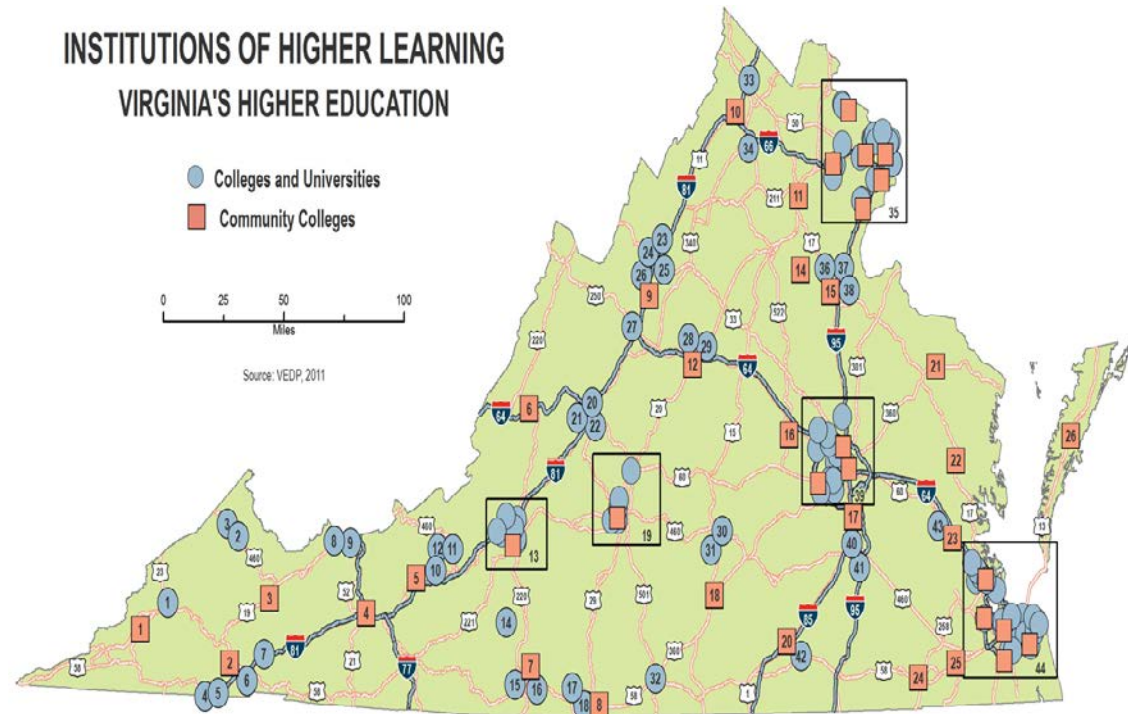
Defining Higher Education Drives Definitions of Success

- * Virginia's **public higher education** system is the 12th largest in the country

- * **15 four-year institutions;**
- * **23 community colleges with 40 campuses;**
- * **One two-year college;**
- * **Four regional higher education centers;**
- * **One institution focused mainly on research and graduate education.**

- * **410,000** students
- * **46,150 FTE** salaried & 10,862 wage employees
- * **25,523** registrations for internet delivered/web based, televised, or two-way video courses.

INSTITUTIONS OF HIGHER LEARNING VIRGINIA'S HIGHER EDUCATION

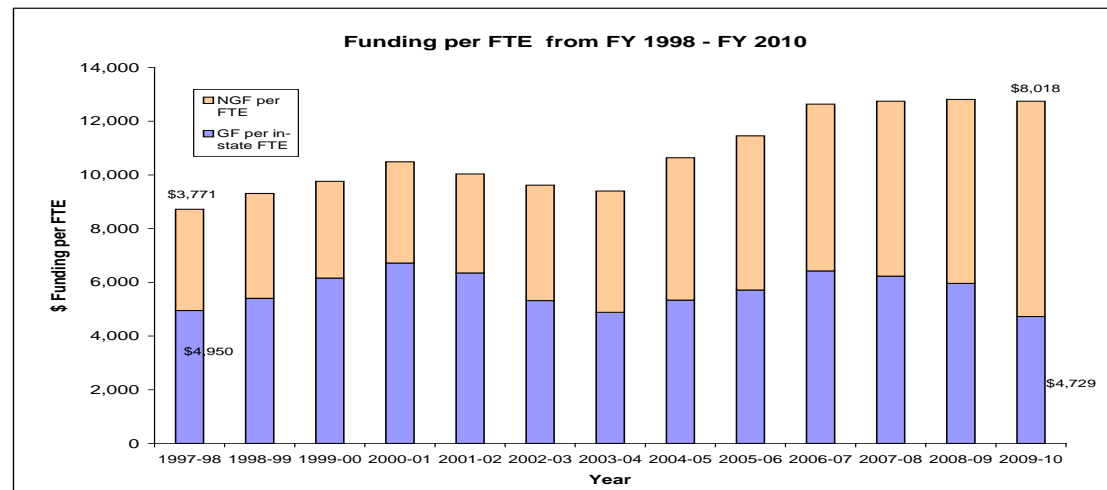


- * Virginia has **34 private non-profit institutions** of higher education.
- * Over 110,000 students.
- * 369,260 registrations for internet delivered/web based or televised courses.
- * Virginia has **78 private for-profit institutions** of higher education.
- * Over 52,000 students (2008-09).

Competing Expectations of the System Drive Measures of Success

- * Attaining some form of Higher Education is critical for maintaining global market competitiveness.
 - * Educate tomorrow's leaders.
 - * Provide critical competencies valued across all economic sectors.
 - * Provide workforce training and retraining.
 - * Stimulate economic development opportunities.
- * During economic downturns, funding for and outcome measures of higher education are particularly vulnerable.
 - * State funding cuts typically offset by tuition increases.
 - * Placement rate of recent graduates dropped but have started.

These expectations are coupled with increased enrollments and a push from the business community to grow the number of degrees.



Approaches to Balancing Competing Measures of Success Are As Varied As Each Institution

Number of graduates, degrees, or certifications

Publications, patents, research commercialization or firm formation

Academic offerings and alignment with student interests

Placement rate & starting wage

Reducing gaps in attainment for non-traditional students

Reducing post school student debt loads

Employers getting applicants with minimum skills and ready to go to work with little or no additional training

Preparing students to adapt to conditions and jobs that are unknown

These measures can be impacted by externalities ranging from the adequacy of the Pk-12 pipeline to the global economy.

Virginia's Demographic Changes Will Impact Each Stage of the Pipeline

FALL PUBLIC SCHOOL (K-12) ENROLLMENT BY RACE/ETHNICITY, 2004 AND 2013

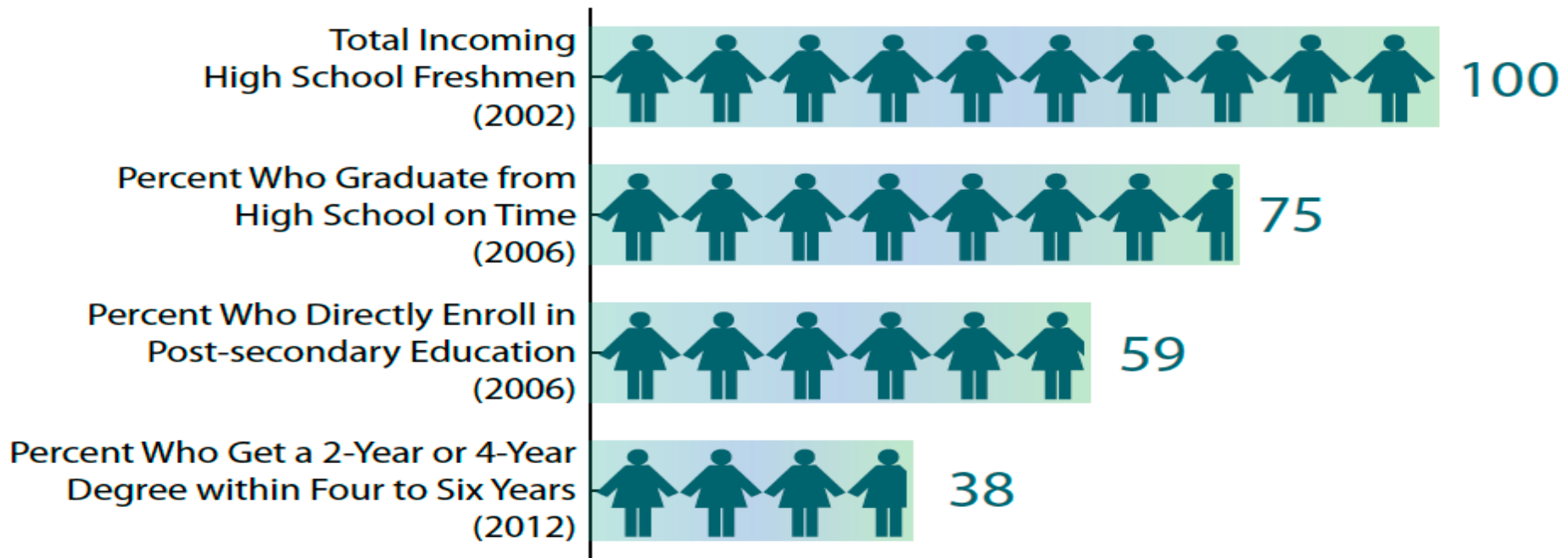
Race / Ethnicity	Fall 2004 Enrollment	% of 2004 Total	Fall 2013 Enrollment	% of 2013 Total	Change, 2004 - 2013	
					Number	Percentage
Total	1,203,701	100.0%	1,273,210	100.0%	69,509	5.8%
White, NH	719,264	59.8%	664,369	52.2%	-54,895	-7.6%
Black, NH	321,303	26.7%	295,942	23.2%	-25,361	-7.9%
Hispanic	84,305	7.0%	166,269	13.1%	81,964	97.2%
Asian, NH	58,006	4.8%	80,689	6.3%	22,683	39.1%
Two or More, NH	N/ A	N/ A	60,072	4.7%	60,072	N/A
Other	20,823	1.7%	5,869	0.5%	-14,954	-71.8%
Economically Disadvantaged	351,609	29.2%	510,054	40.1%	158,445	45.1%
Limited English Proficiency	74,676	6.2%	125,857	9.9%	51,181	68.5%

Note: Hispanics can be of any race; NH = non-Hispanic; "Other" for 2004 includes individuals of two or more races, a designation not used in 2004.
Source: Virginia Department of Education.

Loss of Students Throughout the Pipeline Affects Higher Education Success Measures

Educational Attrition in Virginia:

The High School – College Pipeline (2012)



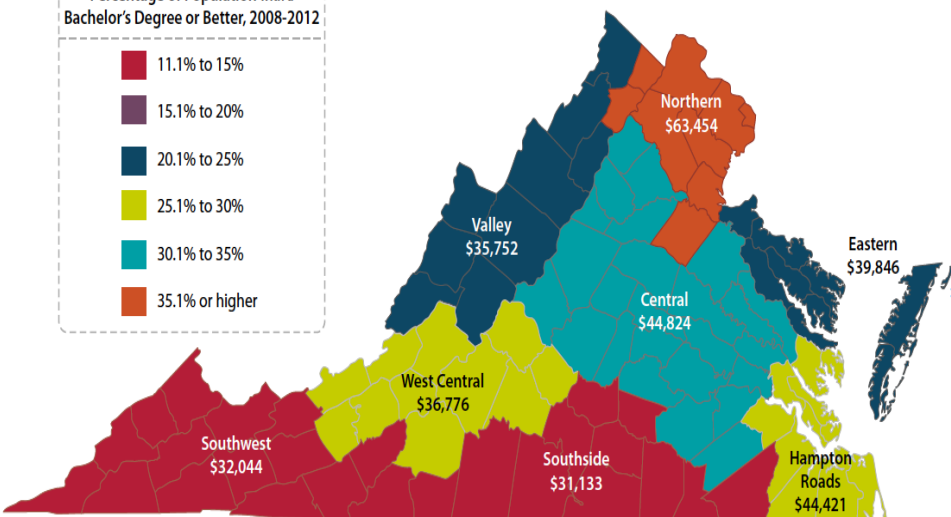
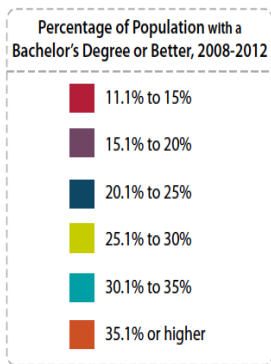
DATA NOTES:

Data from the National Center for Education Statistics (NCES) and the State Council for Higher Education in Virginia (SCHEV). Data does not reflect a uniform cohort and is not strictly longitudinal.

Population Shift to Urban Areas is Reflected in Attainment and Income

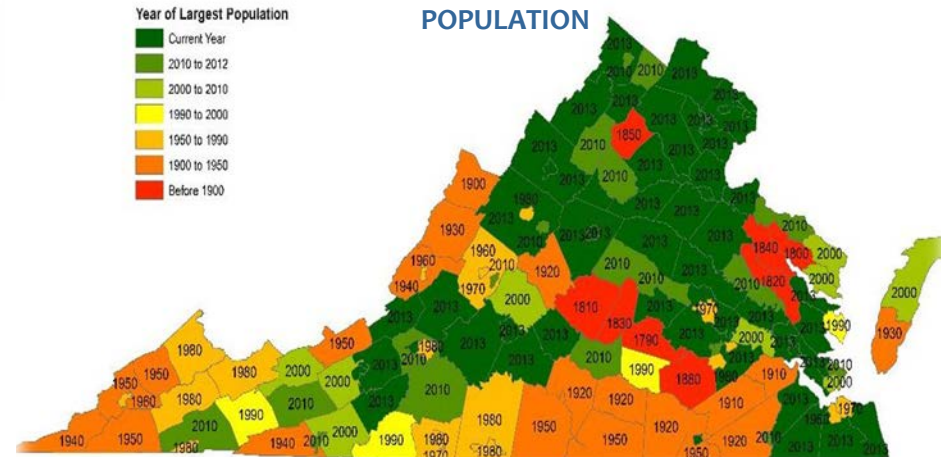
- * Metro regions have both the highest educational attainment rates and personal income averages.

EDUCATIONAL ATTAINMENT AND PERSONAL INCOME, BY VIRGINIA REGION, 2012



Source: Council on Virginia's Future, 2014.

POPULATION CHANGES WITHIN VIRGINIA BY YEAR OF LARGEST POPULATION



Source: Weldon Cooper Center and ODU Regional Studies Institute, 2014.

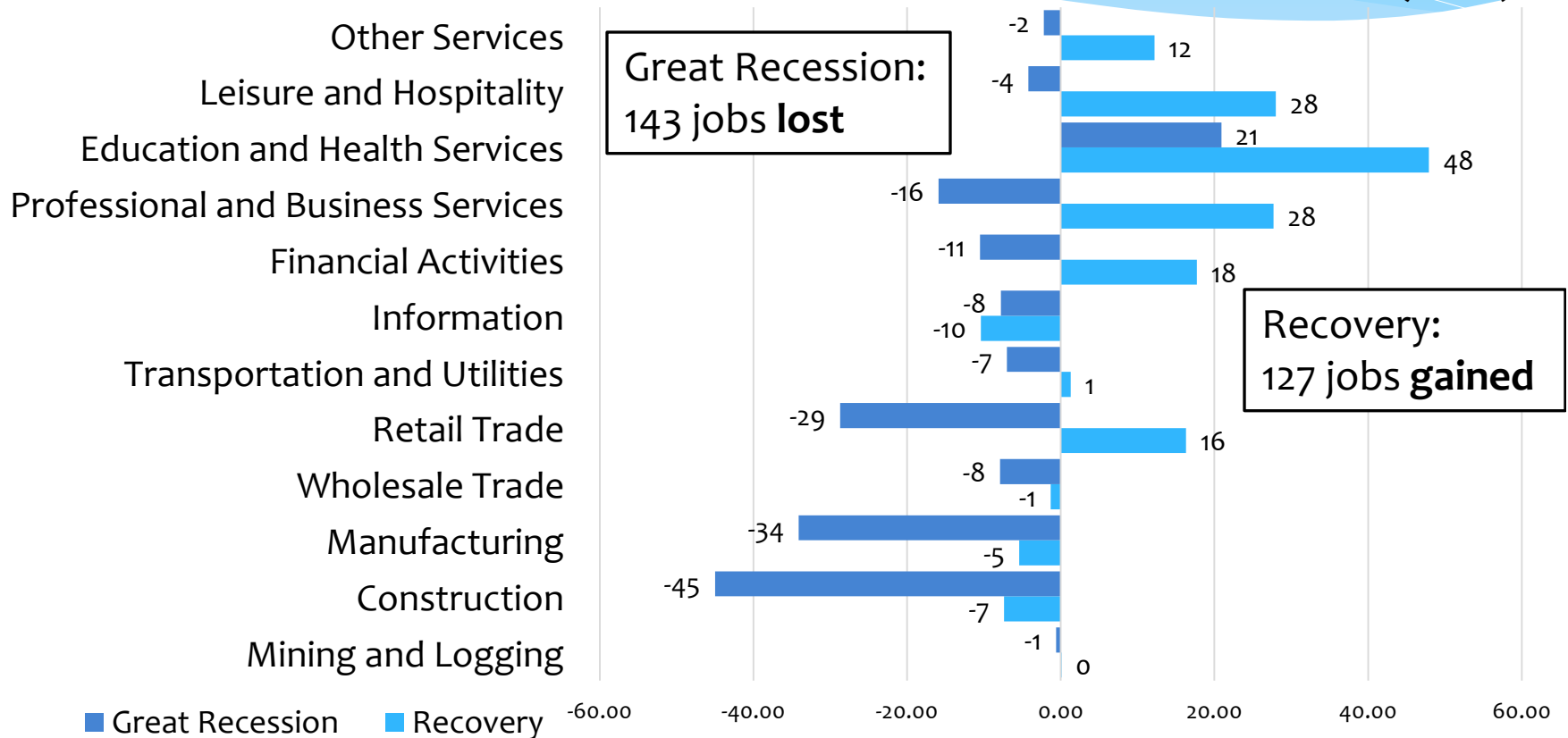
- * Private business perceptions of our workforce capacity vary by region.

Addressing this challenge requires balancing competing regional needs.

Replacement Jobs Are Being Created in Sectors Requiring Some Level of Skills Training

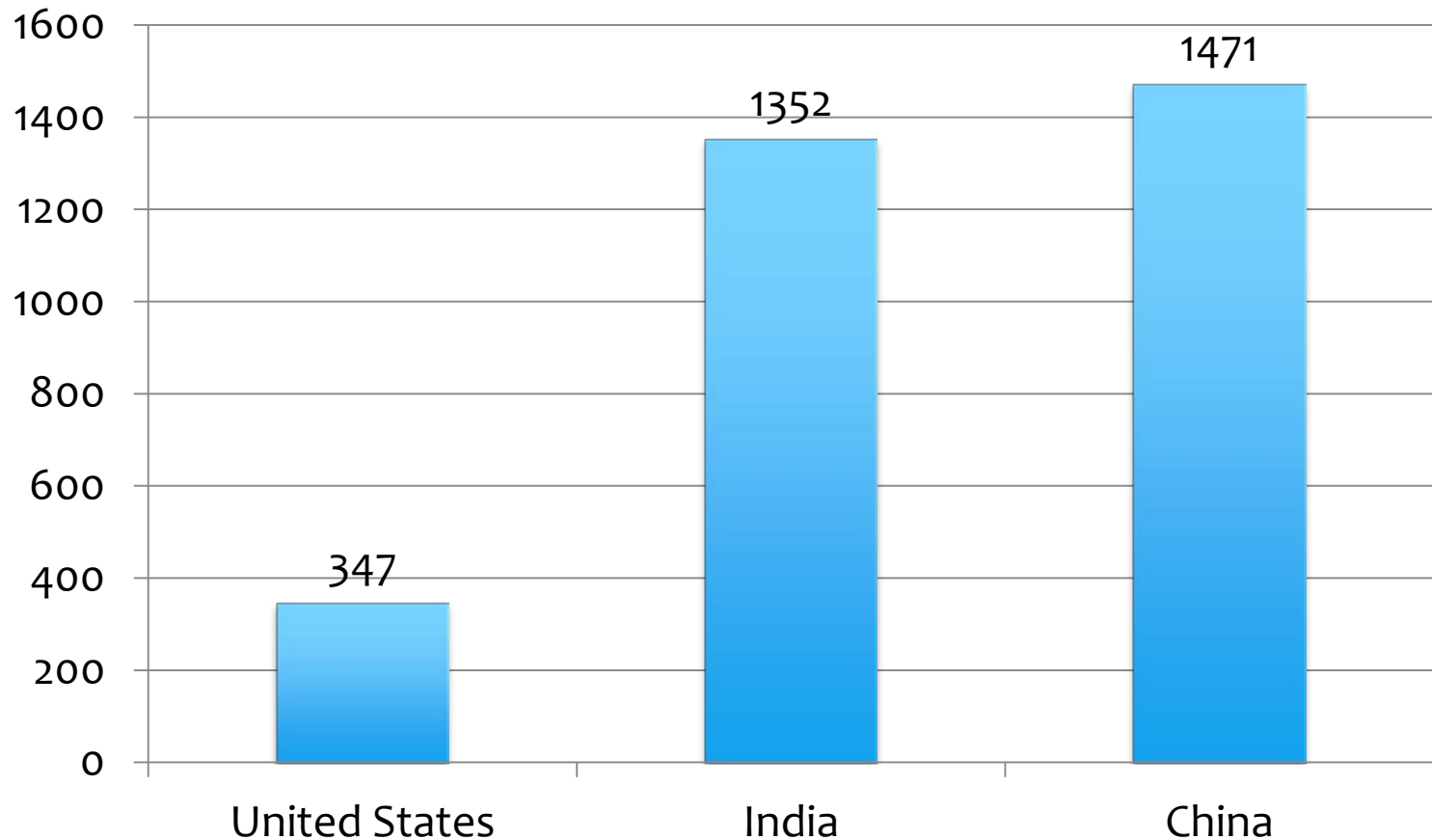
Virginia job creation (12/2007-9/2014)

Jobs in (000s)



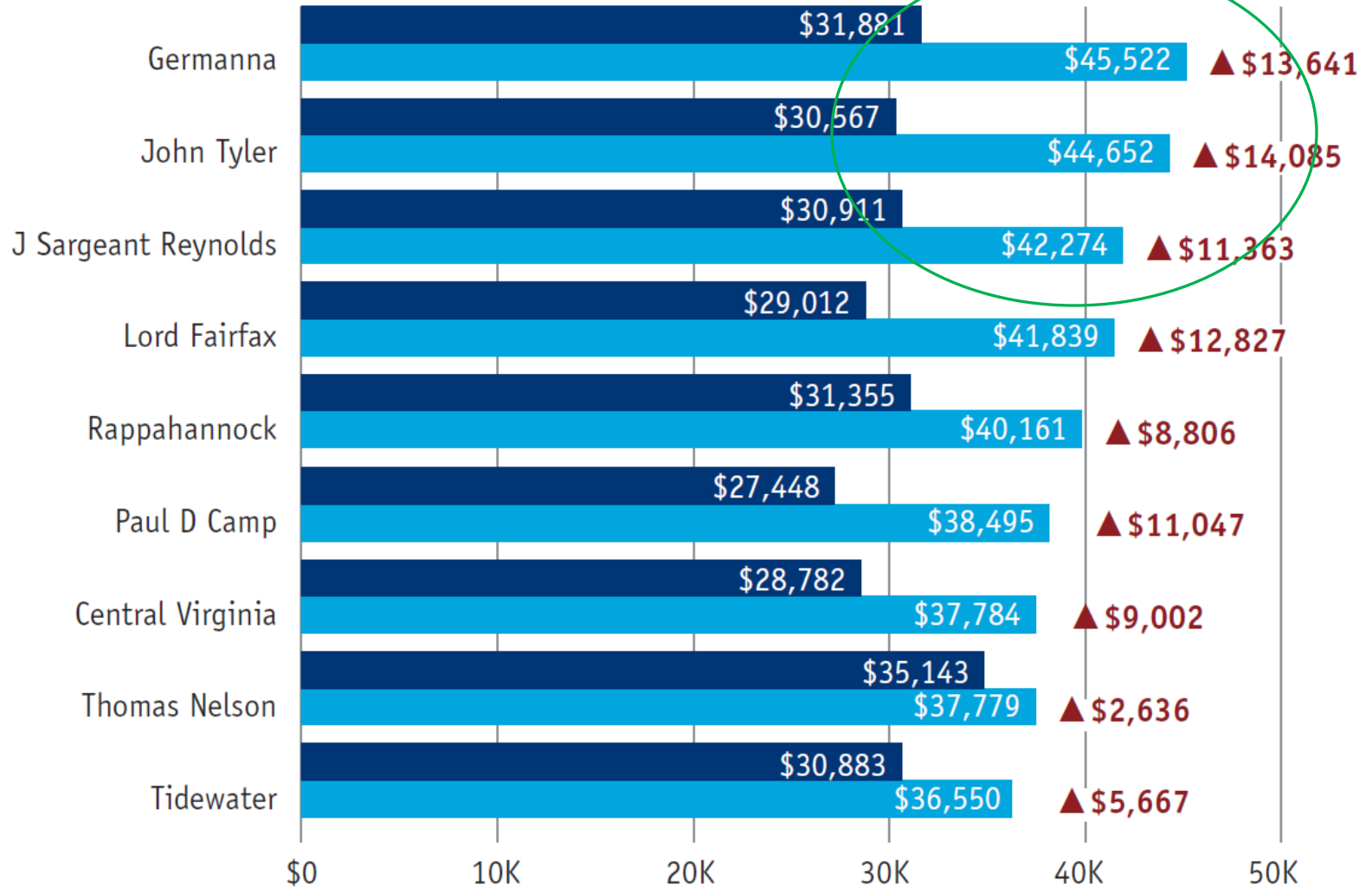
Why this Matters: Our Competitors Have Four Times as Many People

Projected Population 2025 (in millions)

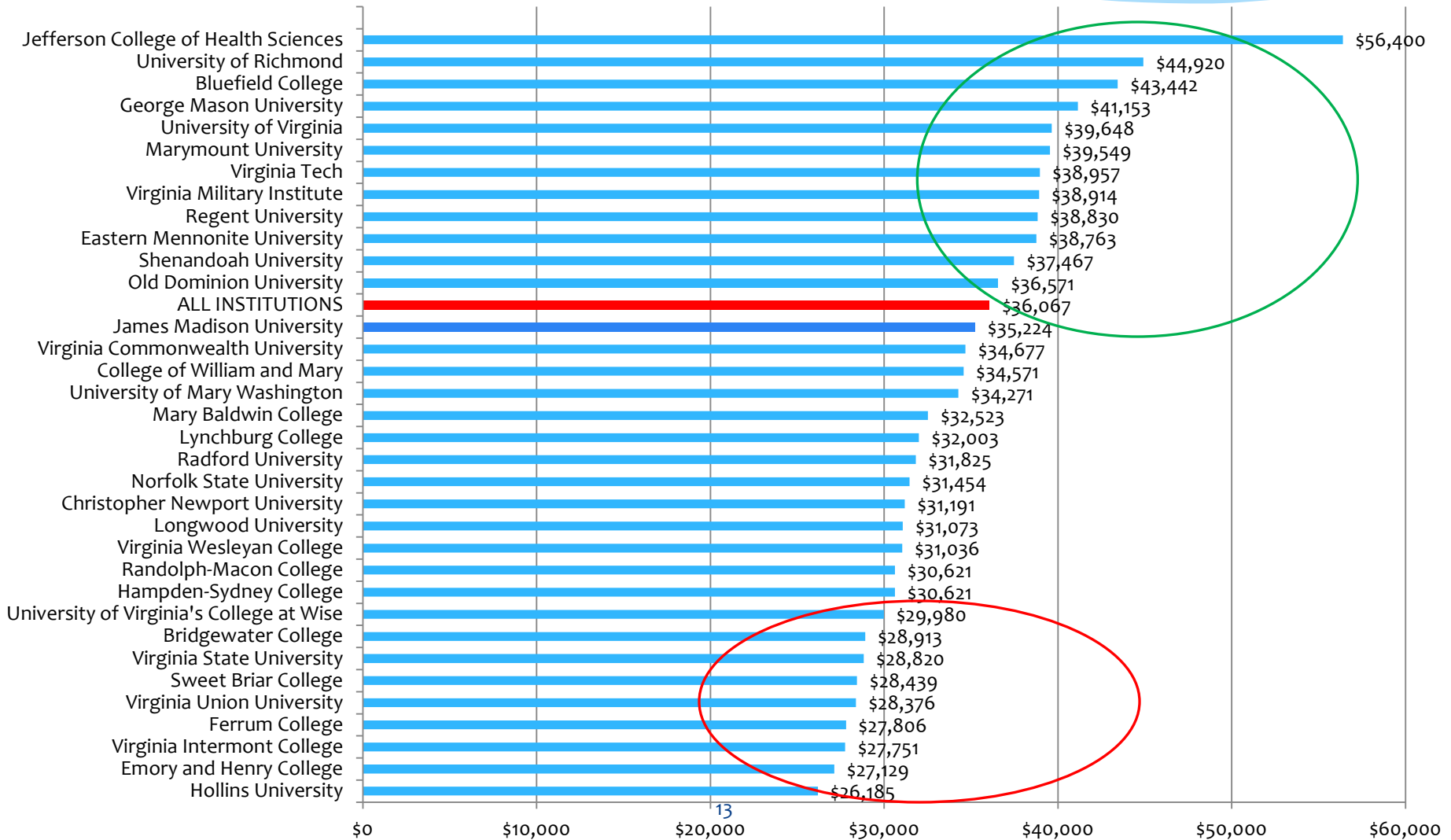


Average First Year Wages for Graduates of Two-Year Community Colleges

Key: ■ Associate's Degree Oriented towards Bachelor's Credit ■ Occupational/Technical ▲ Wage Differential



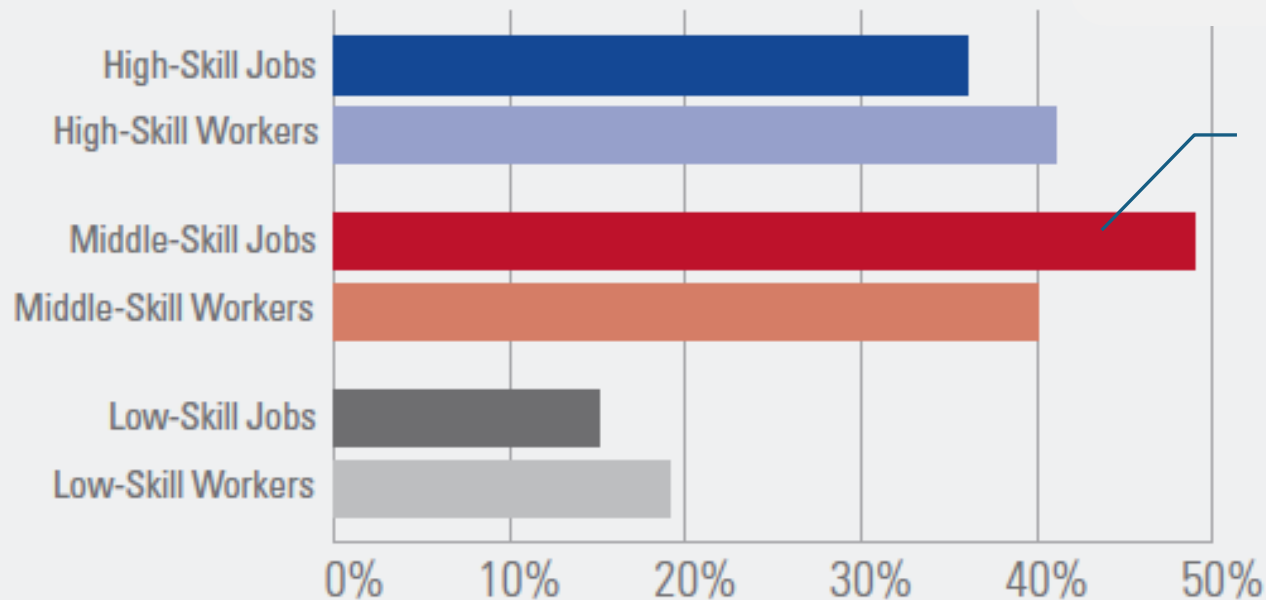
Average First Year Wages of Bachelor Degree Graduates



Source: College Measures Economic Success Metrics

Type of Training or Degree Matters

Jobs and Workers by Skill Level, Virginia, 2012



Middle-skill jobs account for 49 percent of Virginia's labor market, but only 40 percent of the state's workers are trained to the middle-skill level.

By 2017 an estimated 2.5 million "New Blue Collar" jobs are expected to be added to the workforce.

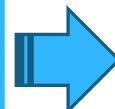
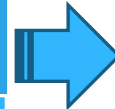
Source: USA Today Sept 30, 2014

Source: NSC analysis of Bureau of Labor Statistics Occupational Employment Statistics by State, May 2012 and American Community Survey data, 2012.

Middle Skills Jobs: 80% require some training or certification

Demand Varies Despite Higher Education Delivery

<p>Engineering Medical Professional Science</p> <p>Nearly 100% fit for Employment Needs</p>	<p>Radiation Tech Manufacturing - Machinists Construction HVAC Elevator Maintenance Nursing Assistants</p>	<p>History Drama Liberal Arts English Sociology Hospitality Management Linguistics and Foreign Languages Fine and Studio Arts Family and Consumer Sciences</p>
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JOBS IN DEMAND

Machinist/CNC machinist: \$25.17
 General laborer: \$15.34
 Engineers: \$32.56
 Sales representatives: \$32.44
 Welders: \$18.38
 Maintenance mechanic: \$20.05
 Information technology: \$31.23

Source: 2015 Wisconsin Manufacturing Vitality Index

Source: Washington Post, Sept 29, 2014

Efforts to Reinvent Higher Education in Order to Maintain Market Relevance are Ongoing

- * 2011 - Virginia Higher Education Opportunity Act
- * 2015 – House Joint Resolution No. 555
- * 2015 – Joint Subcommittee on the Future Competitiveness of Virginia Higher Education
- * 2015 – HB1676 Local school board agreements with institutions of higher education to offer career and technical education curriculum (marketable skills)
- * 2015- HB1335 Consultation between Secretary of Education and his agencies; DOE liaison to SCHEV and SBCC liaison to Board of Education
- * Workforce Investment Act
- * VA Workforce Network (§ 2.2-2472) - Career Pathways Workgroup
- * SCHEV Summit on Quality & Value in VA's System of Higher Education – June 9, 2015 in Richmond

Visions and Goals Require Alignment, Success Requires Prioritized Actionable Ideas

The College Board studied the pipeline as a single continuum with the goal of at least 55% of citizens holding a postsecondary degree by 2025 (2012 Progress Report):

- * Low-Income Preschool
- * Middle & High School Counseling
- * **Dropout Prevention**
- * Align K-12 standards with international & college admission expectations
- * **Teacher Quality**
- * Simplify college admission process
- * **Need-based aid**
- * **Keep college affordable**
- * Reduce college dropouts
- * **Provide post-secondary opportunities to adults**

The Virginia Chamber of Commerce facilitated development of *Blueprint Virginia: A Business Plan for the Commonwealth* (Sept. 2013):

- * STEM-H and soft skills
- * Question basic assumptions
- * **High quality early childhood education**
- * **Strengthen linkages between classroom and workplace**
- * Financial education
- * Community colleges as critical gateway
- * Adapt to technological innovations
- * Data and dissemination
- * **Collaborative partnerships**
- * Apprenticeships
- * **Regional solutions**

Milstein Foundation-Miller Center's *Building a Nation of Makers* (June 2014) included six innovative actionable ideas for creating middle class manufacturing jobs:

- **Talent Investment Loans**
- **Upside-Down Degrees**
- Skills Census
- Mapping the Manufacturing Supply Chain
- **High School “Tech Ed” Certifications**
- “Big Trends-Small Firms”

What Could We Try?

Front-load Investments for Maximum “Compound Interest”

- Encourage early post-secondary aspiration (and thus preparation) by “seeding” 529 plans for economically disadvantaged pre-school students; brain research on early music instruction.
- Elevate the teaching profession by recruiting more of the right people (leading organically to more autonomy/prestige/pay) and making the best use of the most effective teachers.

Common Sense Options to Remove Barriers

- Develop a Higher Ed Ladder program, including stackable credits/credentials, an internship/apprenticeship opportunity matching database, and other components.

Strategic Realignment and Collaboration

- Funding for early-stage proof-of-concept research for small business formation.
- Innovation Districts – apply economic gardening strategies to specific regional ties to universities, federal labs, and medical/technology resources.

Collaboration of All Higher Education Service Delivery Partners Will Be Critical to Long-term Global Competiveness

- * Employers, Educators, and Policy Makers
- * Foster collaboration among players to develop a system that works with employers, training providers and help individuals make informed career choices.
- * Identify skill gaps and anticipate future skills Virginia workers will need given changing technology and employer needs.
- * Oversee an integrated, industry-responsive and future oriented system of education and lifelong learning.
- * Account for sector specific skill and manpower needs alignment

COLLABORATION AROUND INDUSTRY SECTORS WILL BE CRITICAL

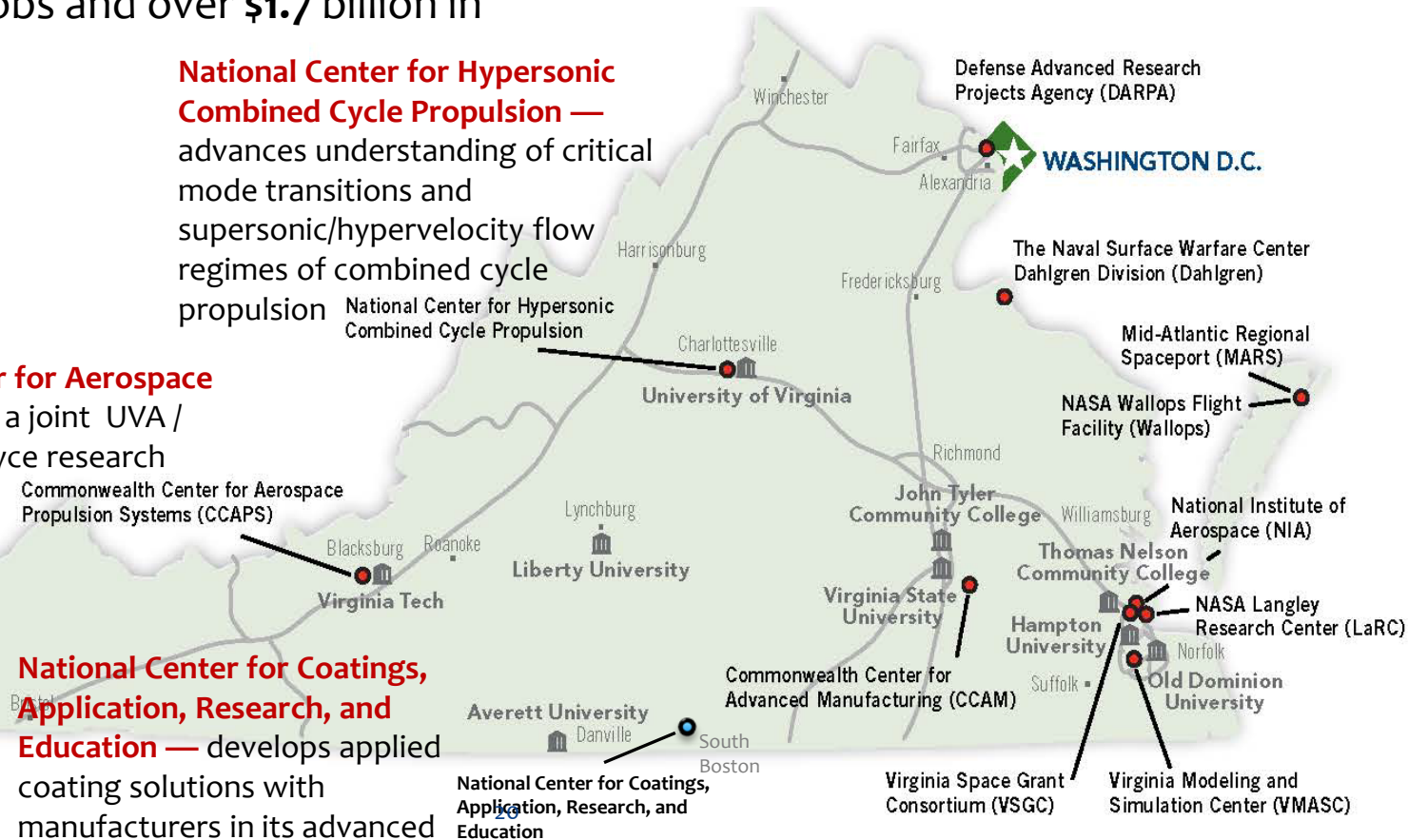
There are **255** aerospace firms employing **30,300** people, which creates a direct economic output of **\$7.2** billion. In the past ten years, **67** aerospace industry companies have announced almost **7,400** jobs and over **\$1.7** billion in investments.

National Institute for Aerospace — conducts research and awards advanced degrees in aerospace engineering through a partnership with nine universities

National Center for Hypersonic Combined Cycle Propulsion — advances understanding of critical mode transitions and supersonic/hypervelocity flow regimes of combined cycle propulsion

Commonwealth Center for Aerospace Propulsion Systems — a joint UVA / Virginia Tech / Rolls-Royce research effort

National Center for Coatings, Application, Research, and Education — develops applied coating solutions with manufacturers in its advanced manufacturing laboratories



Actions to Move Forward

- * Catalyze **Regional** Strategies in Talent and Innovation Capabilities.
 - * Provide support to map regional capabilities and workforce to use as baseline to drive strategies that ensure sustainable and healthy economies (Planning District Commissions, EDAs, State Partners, Business Leaders)
 - * Support regional economic development initiatives and organizations that ensures connectivity with business leaders (Various state agencies)

Actions to Move Forward

- * Align and Invest in **Talent** Development Coalitions and Capabilities
 - * Support strategic investments in:
 - * Non-credit training & certifications – VCCS, DOE
 - * Apprenticeships – DOLI
 - * Distributed education – PRODUCED in Virginia (UVA); Commonwealth Graduate Engineering program (VT, UVA, VCU, GMU, ODU)
 - * Higher Education Equipment Trust Fund
 - * Assess the impact of a Virginia Talent Investment Loan Program (VSBFA)

Three Things Educators May Wish to Consider

- ✓ Less exclusionary messaging on STEM—it really is never too late, even if you take Algebra in your thirties.
- ✓ Discard the phrase “mid-skill;” there’s nothing mid-skill about welding a \$5 billion pipeline, operating advanced manufacturing equipment, restoring power after a hurricane, or constructing a modern building.
- ✓ Recognize that employers are more focused on what an applicant can do than what degree they hold.
 - By the time you get a new degree program set up for the hot field of the moment it may well have peaked already.

Bottom Line: Know What You Do and Do It Well

- * We need graduates with skills and competencies valued across **all** workplaces.
 - * Critical Thinking
 - * Communication
 - * Collaboration
 - * Creativity
 - * Innovation
- * Provide a set of technical expertise that are relevant to targeted high growth industries.