



Nov. 9, 2017

CAMPUS CONVERSATION

What we will do today

- / Explain the West Virginia Forward project
- / Discuss WVU strategies
- / Discuss the environment to support STEM grads and business innovation
- / Review the implementation structure
- / Questions and answers

How today will work

- / Hear from Rob and Rocky
- / Open question and answer session

We are focused on understanding West Virginia's strengths and opportunities to develop both short- and long-term strategies to **revitalize the economy, create jobs and prime the state for success in our changing economic and technological landscape.**

The West Virginia Forward analysis made it clear that WVU has opportunities to solve our State's most intractable and important challenges.

Our best chance for success will be enhanced by focusing on solutions based in **objective analyses** and through **collaboration among disciplines** and with **external partners**.

The data and analysis from West Virginia Forward provides insight that provide pathways for alignment of our service, research and scholarly work that will better enable us to fulfill our land-grant mission.

PROPERTY entrepreneurship
risk TAXES RETURN HOME
life sciences
Middle Mile
CARBON FIBER
talent
FINDING
tell our story
BIG DATA
incentives
ROADS
Business
Climate
VISION
SMALL
BUSINESS
SUPPORT
BRAND
Electricity
WEST VIRGINIA
LOYALTY
ADVERTISING
TOURISM compete
AUTOMOTIVE
LET'S FULFILLMENT
GO!!!!!!! CODING
BROADBAND
manufacturing
BE
DISRUPTIVE
INNOVATION
STEM
LEADERSHIP
LIFE SCIENCES
CYBER
SECURITY
TRAINING
HEALTH
ENGAGE
FINE CHEMICALS
value
BOOST
Early Stage Funding
Patents

ECONOMIC SECTORS

Maintain Current Industries

- / Aerospace MRO
- / Auto parts manufacturing
- / Metals manufacturing
- / Fulfillment distribution
- / Building products

Capture New Sectors that Have High Growth Prospects

- / Higher-end tourism
- / Cyber security and cloud services

Differentiate in Growing Sectors Where West Virginia Has a Presence

- / Fine chemicals
- / Carbon fiber reinforced plastics

Keep an Eye on Potential Opportunities

- / Life sciences
- / Vehicle assembly plants

ECONOMIC ENABLERS

Business climate

- / Rebrand WV's strengths
- / Establish plan to combat rising utility costs
- / Eliminate machinery, equipment and inventory tax

Innovation business development

- / Convene innovation actors in the state
- / Increase support to growing startups
- / Enhance small business support resources
- / Change mix of incentive types
- / Expand development office investment attraction capabilities

Infrastructure

- / Create financing mechanisms to fund capital projects
- / Launch site certification program
- / Expand broadband coverage

Human capital

- / Create concerted state-wide human capital effort
- / Expand STEM talent pool
- / Encourage returning/relocating to West Virginia
- / Combat the opioid crisis
- / Train workforce in jobs that are high in demand

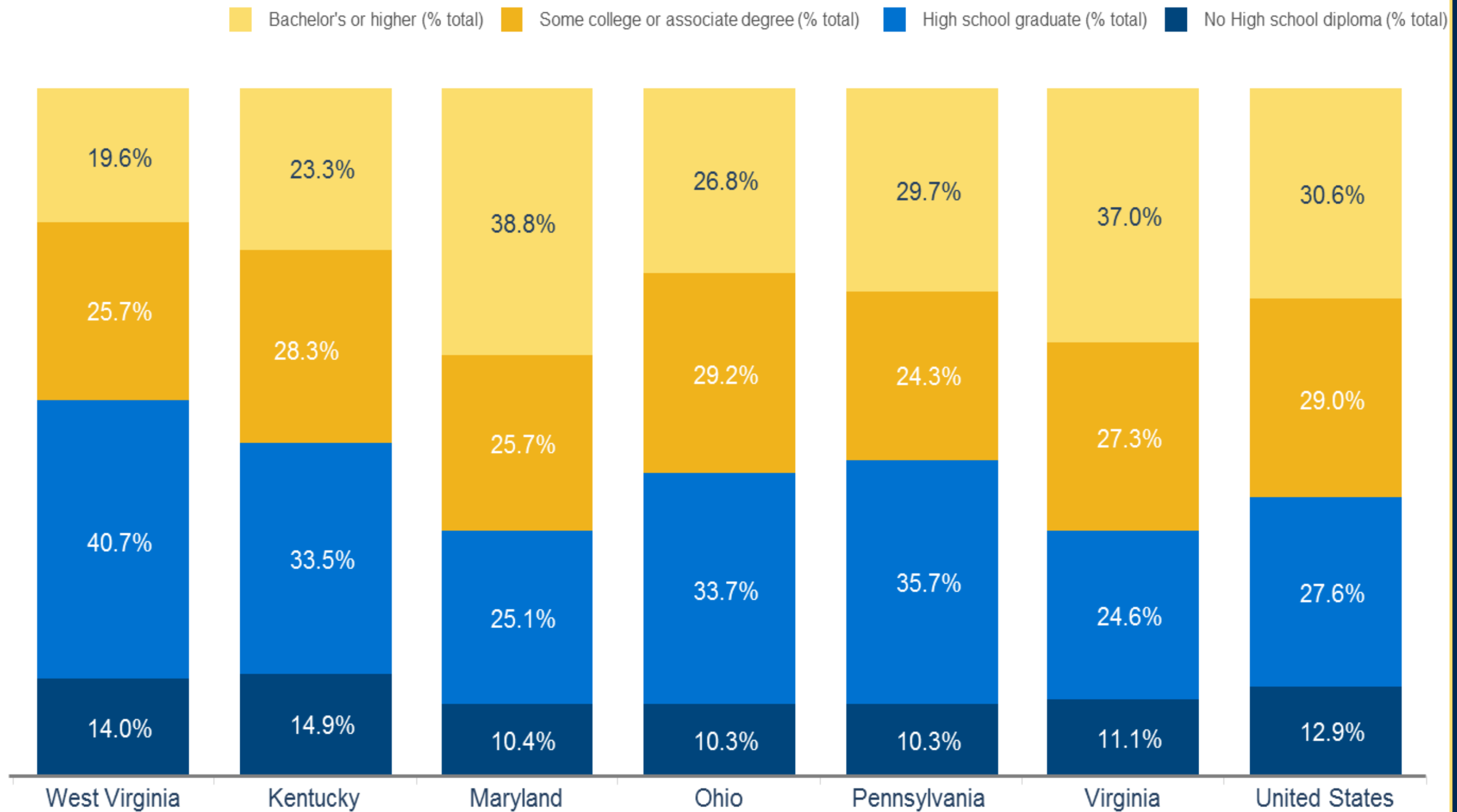
HUMAN CAPITAL CHALLENGES

Investments in human capital are the **most significant opportunity** for improvement.

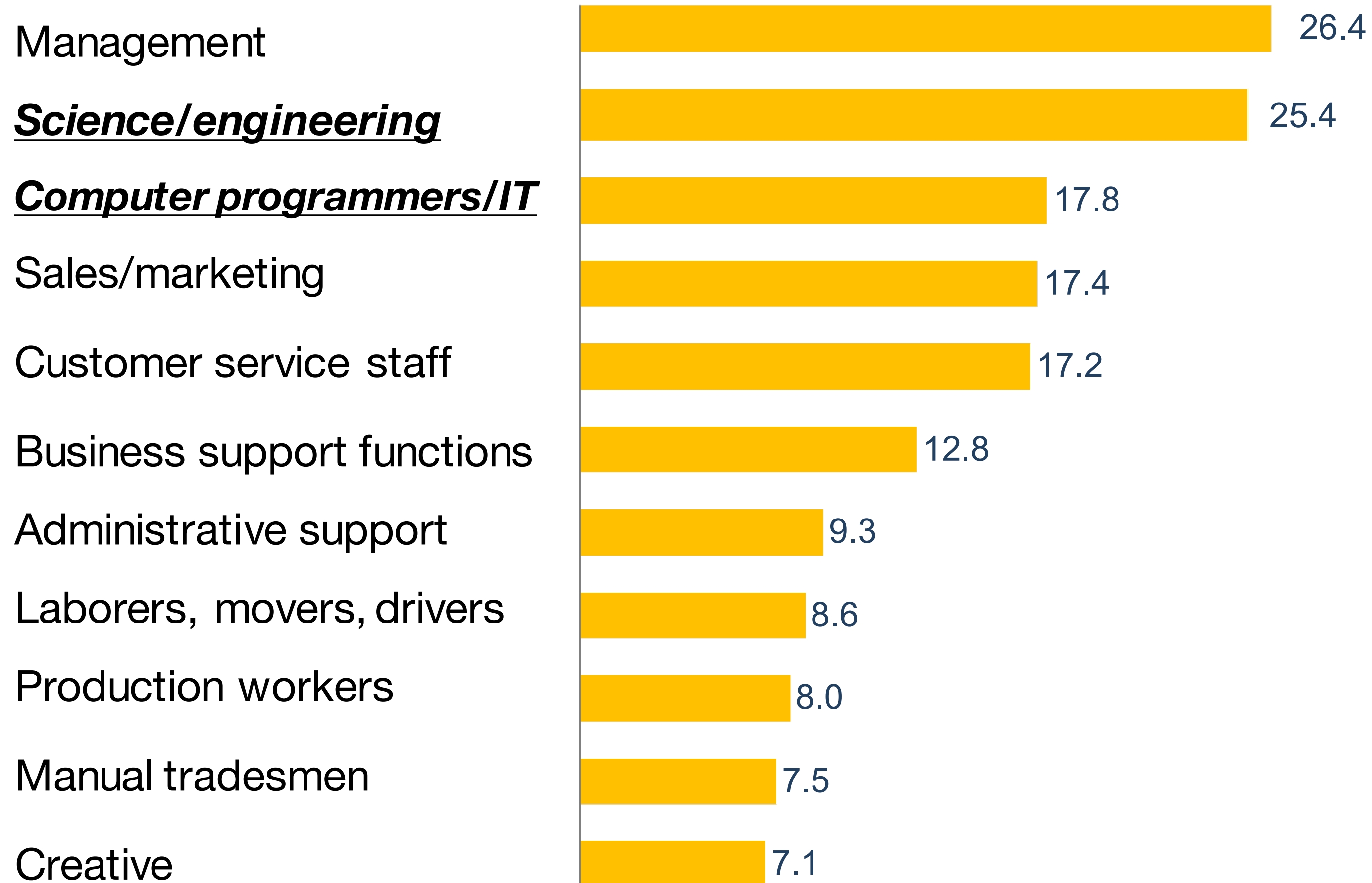
Access to a **specialized workforce** is a major factor **for growth** sectors.

EDUCATIONAL ATTAINMENT

Educational attainment in population 25+, 2014



Companies Report that STEM Grads are Among Most Difficult Employees to Find



QUALITY OF LIFE: PERSPECTIVES

West Virginia can improve on education and health outcomes — key markers of a region's attractiveness.

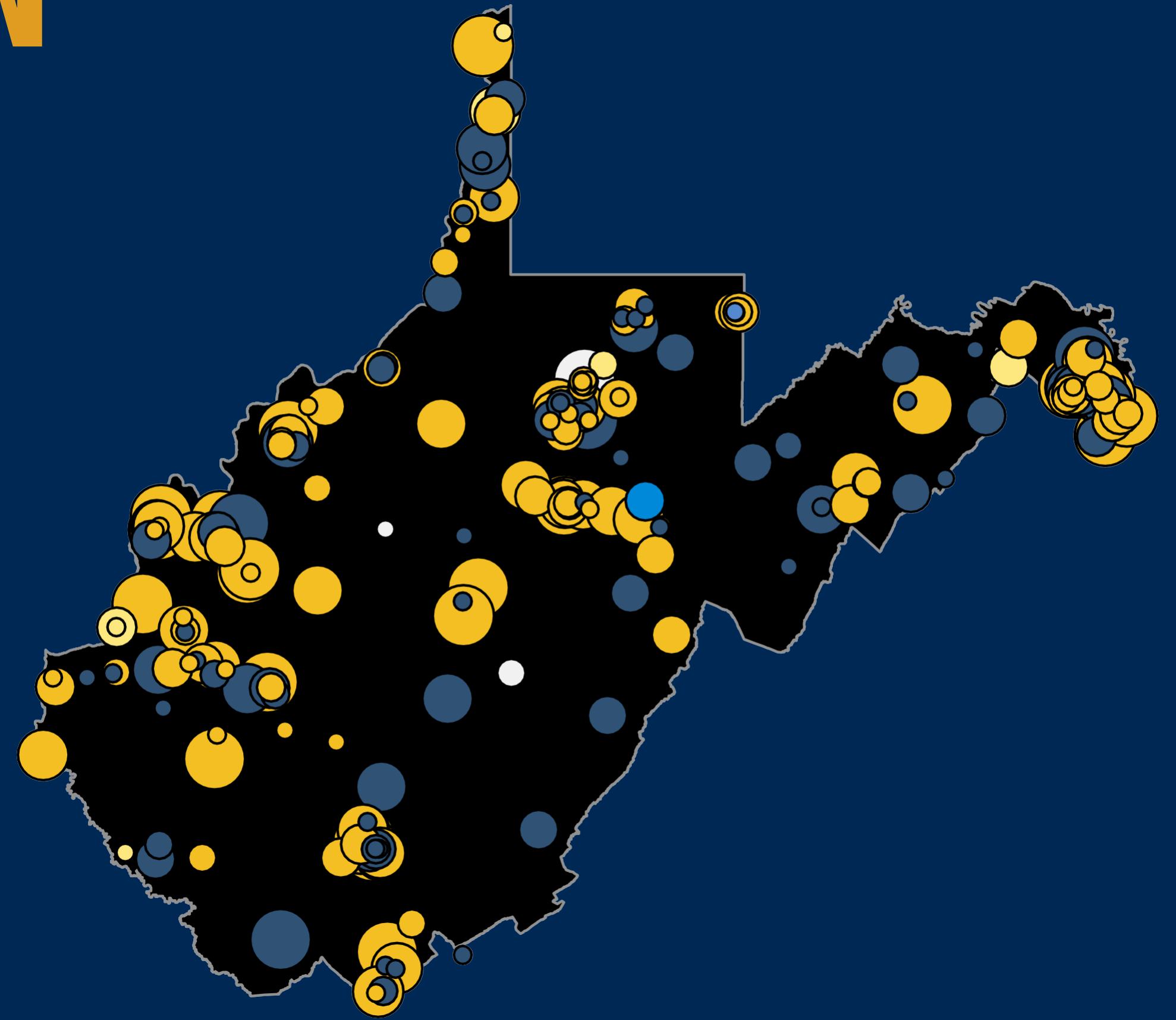
- / Housing**
- / Neighborhood**
- / Transportation**
- / Environment**
- / Health**

ENHANCE WEST VIRGINIA TOURISM

- 1 Capture more tourism spend.
- 2 Adopt a regional strategy:
 - / Expand **adventure** options in the **southern region**;
 - / Attract second home buyers in the **eastern region**;
 - and / Attract **higher-income retirees** in the **north**.

SITE CERTIFICATION

/ Development-ready industrial sites that have completed a rigorous review and development process by the State and an independent, third-party engineering firm.



WVU STRATEGIES

/ INNOVATION AND R&D LEADERSHIP: Develop an enriching innovation environment for students, faculty and local startups that effectively generates and commercializes the University's intellectual property.

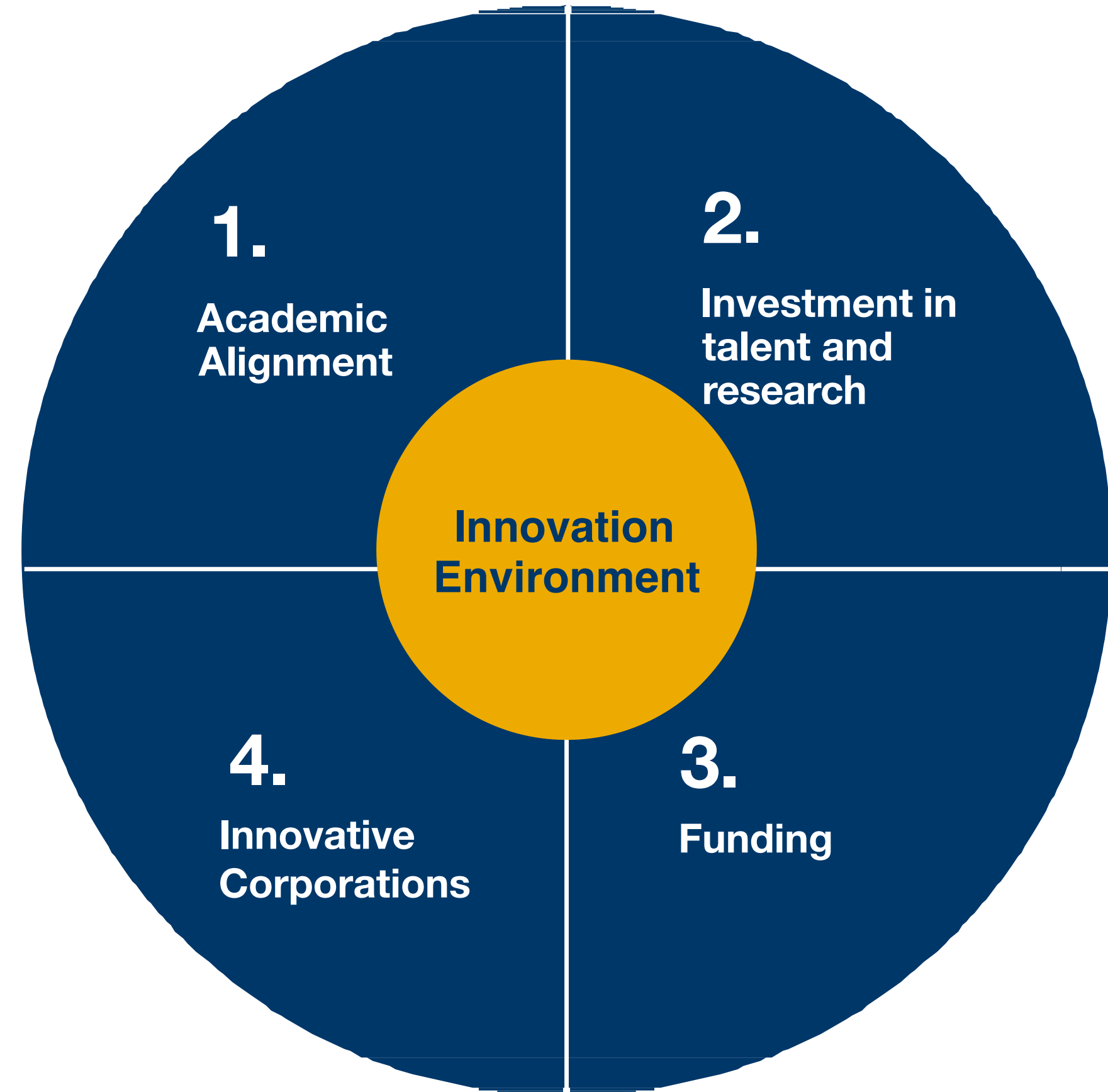
/ TALENT EXPANSION: Create the educational programs required to expand the talent pipeline for West Virginia, especially in new sectors that will diversify the economy such as cybersecurity, advanced materials and life sciences.

/ TALENT INVESTMENT: Partner with leading firms in diversification sectors, (e.g., cybersecurity, advanced materials, life sciences) to develop tailored training programs that meet their human capital needs and offer exit opportunities for University graduates.

/ ALUMNI OUTREACH: Establish connections with University alumni across the country in order to create business partnerships, attract investments and attract talent to the state.

/ BUSINESS SUPPORT: Offer business and legal support services to small businesses in partnership with the State Commerce Department.

Creating an enabling environment to support STEM grads and innovation to create new businesses involves focusing on four levers:



Deliver Best in Class Academic Opportunities for WVU Students



Innovative WVU Faculty Inspire Student Success

Increasing the STEM Grad Pool: Ideas on Design, Training, and Delivery

Sector specific curricula

- **Activity-based courses and degrees for priority** competencies in priority sectors (e.g. cybersecurity, material sciences degrees)

Industry-relevant delivery models

- **Skill-based modules** that **stack up** or **stand alone**
- **Train on skills** (technical & behavioral) **that matter most** to employers (20% of skills differentiate top performers)
- **Link classes** to industry-recognized **skills qualifications & certificates**

↑ capacity, affordability of vocational training

- Increase **practical, hands-on learning opportunities** through simulations
- Expand “**open access**” institutions
- Deliver **highly standardized curriculums** using **nontraditional** channels (i.e. Internet)

Value prop to attract & keep faculty

- **Develop positioning with** benefits packages and incentives
- **Invest in R&D and commercialization** to attract faculty
- Explore **innovative teaching methods**

McKinsey: Business Incubators and Accelerators are Fragmented and Have Limited Capacity; Small Business Support is Lacking

WVU: Increase incubation and business assistance for researchers, students and entrepreneurs across West Virginia

Researchers	Students	WV Businesses
<ul style="list-style-type: none">/ Health Sciences Innovation Center/ Patenting and Licensing Services/ Commercialization Training Seminars	<ul style="list-style-type: none">/ LaunchLabs and MakerLabs/ IDEA Fellows/ Student Intellectual Property Services/ WVU Young Innovators/ Innovators-in-Residence/ Innovation Living-Learn Community/ Competitions and Hackathons	<ul style="list-style-type: none">/ BrickStreet Center/ Women's Business Center/ Entrepreneurship and Innovation Law Clinic/ New B&E Accelerator program



McKinsey: West Virginia's Research Investments and SBIR Awards are Lower than Peer States

WVU: Recruit Innovative Researchers in Key Fields

2010-13: WVU Mountains of Excellence “cluster hires”

- / Radio Astronomy
- / STEM Education
- / Regional Health Disparities
- / Shale Gas Utilization
- / Water Resources

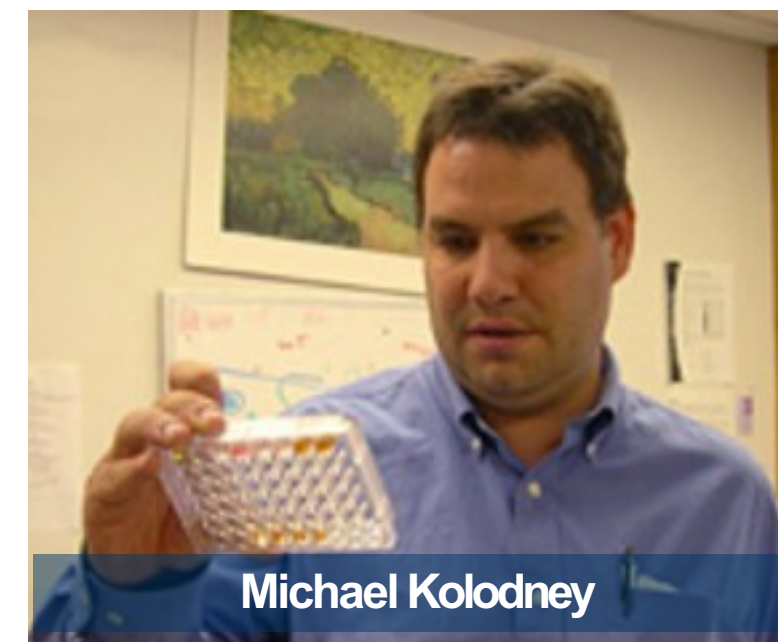
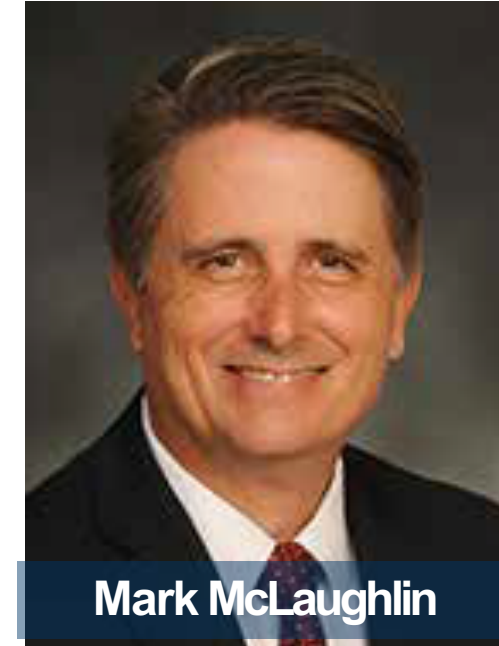
2015-17: WVU Medicine Signature Programs

- / Neurosciences
- / Children
- / Cardiovascular
- / Critical Care
- / Cancer
- / Surgical Services

2016: Achievement of Research “R1” Status



New Hires are Bringing Startups and IP to WVU





McKinsey: Venture Capital Funding is Extremely Limited, with Zero Early-Stage VC Funding in West Virginia

WVU: Create internal pools of funds for students and researchers; partner with private investors for angel and venture capital funding

Internal WVU Funding:

- / Huntington Bank Student Seed Fund \$50 K/yr**
- / Mountaineer Innovation Fund \$1 million**

External Private Funding:

- / West Virginia Growth Investment (Angel Fund): \$1.6 million**
- / Mountain State Capital (Venture Fund): \$25 million target**

McKinsey: The Large, Patent-Generating Corporations in West Virginia are Focused on Aerospace, Defense and Pharmaceuticals

WVU: Change the way we work with companies to enable deeper, more strategic cross-campus relationships

- / Created central Corporate Relations office to deliver concierge service for corporations with cross-campus potential
- / Created the WVU Innovation Corporation to facilitate “commercial” applied research projects with corporate customers and DOD

IBM

VOLVO


BOEING



leidos

NORTHROP GRUMMAN

IMPLEMENTATION STRUCTURE

- / MOU between WVU, the Commerce Department and Marshall University
- / Will create a structure of accountability
- / Engage stakeholders
- / Steering committee
- / Implementation work groups

\$83.7 BILLION ENERGY INVESTMENT BOOSTS STATE, WVU ON WORLD STAGE

- / Agreement between the State of West Virginia and China Energy Investment Corporation Limited (China Energy)**
- / Signed by Woody Thrasher and China Energy witnessed by Presidents Trump and Xi in Beijing**
- / WVU will work closely with the state Department of Commerce and other state officials to help coordinate the investment, with funding focused on developing an Appalachia Storage and Trading Hub, itself a key piece of reinvigorating the state's and region's petrochemical industry**

QUESTIONS

**FOR MORE INFORMATION,
PLEASE VISIT**

WVFORWARD.WVU.EDU

www.bureaucracybusters.wvu.edu

**/ You may continue to submit questions to
campusconversations@mail.wvu.edu**

**/ Next Campus Conversation: Thursday, November 16, 1 p.m.
to 2 p.m., Salon C, Erickson Alumni Center (Live-Streamed at
webcast.wvu.edu)**