



# The University FOR Virginia

ECONOMIC  
DEVELOPMENT  
REPORT

The University of Virginia is an engine for inclusive economic growth that improves lives and promotes flourishing communities across the Commonwealth. UVA’s contributions to Virginia are robust, enduring, and true to a fundamental commitment to serve the public good.

STRATEGIC GOAL: THE 2030 PLAN

**MAKE UVA  
SYNONYMOUS  
WITH SERVICE**

*Lead economic development through academic discovery and entrepreneurship*

We will serve the Commonwealth, the nation, and the world by forging partnerships with government and the private sector, making it easier for faculty and students to commercialize their academic discoveries and intellectual property.



**JENNIFER WAGNER DAVIS**  
*Executive Vice President and  
Chief Operating Officer*



**PACE LOCHTE**  
*Assistant Vice President for  
Economic Development*

**UNIVERSITIES ARE OFTEN** referred to as engines for economic growth. The University of Virginia is indeed rich in intellectual capital and physical assets that create fuel for Virginia’s economy. Some of the impact is generated by normal operations – capital projects, procurement, and jobs to name a few. We are also proactively amplifying our economic impact through focused efforts that bring the power of the University to citizens and communities across the Commonwealth:

**Application of Knowledge**

Guided by a founding vision of discovery, our faculty and students address real-world challenges through translatable academic discovery, innovation, and entrepreneurship.

**Targeted Industry Growth**

We join forces with local and state entities to recruit and retain companies in Virginia’s knowledge-based economy, creating high-value partnerships that contribute to vibrant communities.

**Talent Development**

Our faculty create and deliver programs that empower a future-ready workforce with necessary skills at all levels of education and all levels of leadership.

It is an exciting time at the University of Virginia. We enthusiastically embrace our mission to serve the Commonwealth by leading economic development through academic discovery and entrepreneurship. We invite you to join us in advancing robust, enduring, and inclusive economic growth across Virginia.

Best regards,

**Jennifer Wagner Davis**  
*Executive Vice President and Chief Operating Officer  
University of Virginia*

**Pace Lochte**  
*Assistant Vice President for Economic Development  
University of Virginia*

— ECONOMIC IMPACT

**\$5.9 billion**  
Generated for Virginia by UVA every year

— EMPLOYMENT IMPACT

**51,600+ jobs**  
Created and sustained by UVA

— GOVERNMENT REVENUE IMPACT

**\$239.9 million**  
State and local government revenue attributable to UVA

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# The Rise of University-Based Economic Development

Economic development can take many forms. Traditional models emphasize real estate development, incentive packages, and marketing, but today’s knowledge-based economy demands more. Universities are key players in remaking 21st century economic development to create high quality jobs and thriving communities. This new model leverages cutting-edge research and innovation, a skilled and educated talent pool, and a distinct sense of place that attracts and retains workers.

Universities create conditions for a robust economy through their contributions to talent, innovation, and place. The Association of Public and Land Grant Universities created a framework based on these three areas that inspired the model to the right, which shows pertinent examples of programs specific to UVA.

## INNOVATION + TALENT

- Capstone Programs
- PhD Plus Internship Program
- Undergraduate Research Experience
- LinkLab for Cyber Physical Systems
- i.Lab Summer Program
- Greater Washington Partnership
- Emerging Industry Clusters
- McIntire Center for Business Analytics
- Industry-Driven Data Science Challenges
- EdPolicyWorks
- Entrepreneur-in-Residence Program

## INNOVATION

- Basic Research
- Industry-Sponsored Programs
- Entrepreneurship Minor
- Proof-of-Concept Funds, e.g. Coulter, Ivy
- Applied Research Institute
- Licensing & Ventures Group (LVG)
- LVG Seed Fund
- Pan-University Institutes
- Centers of Excellence
- Rapid Prototyping Lab
- Maker Spaces
- Entrepreneurship (“E”) Cup
- 3 Cavaliers Seed Fund
- Commonwealth Center for Advanced Manufacturing
- iCorps Site
- Center for Applied Biomechanics
- Commonwealth Center for Advanced Logistics Systems
- Jefferson Accelerator

## INNOVATION + PLACE

- UVA Research Park
- Catalyst Accelerator
- Conference on National Defense and Intelligence
- Cville BioHub
- Morven Farms
- Karen S. Rheuban Center for Telehealth
- Hackathons
- Virginia Higher Ed Opioid Consortium
- Tom Tom Founders Festival
- Healthy Appalachia Institute



# The University for Virginia Economic Development Across the Commonwealth

**CREATING CONTINUOUS GROWTH** and prosperity for Virginia requires a strategy that expands beyond Charlottesville into multiple regions of the state. The University reaffirms its commitment to serving the Commonwealth by setting a strategy for high-impact economic engagement that deploys new initiatives across Virginia.

*\*This strategy map is a work in progress and subject to change to meet evolving priorities and resources. Programs are in various stages of development.*

## ACROSS THE COMMONWEALTH

### Preparing the Virginia Workforce for the Digital Future

#### Address Unmet Educational and Training Needs

Center for K12 Computing Education & Digital Literacy

- Professional development for teachers to integrate coding and other skills
- Repository of vetted computer science curricular materials

Virginia Kindergarten Readiness Program

- Improve children's readiness to learn

Bachelor's Degree Completion Programs

#### Partnering to Create High-Performing School Systems

EdPolicyWorks Policy Partnership Lab

- Answer important questions of educational policy, as identified by schools
- Build a new generation of education leaders who can drive meaningful change

### Recruiting New Business to Virginia

- Partner with state, regional, and local economic development organizations to enhance recruiting initiatives, e.g., Amazon HQ2

## RURAL VIRGINIA

### Partnering to Support Flourishing Communities

#### Health + Education

- UVA Health Clinic at UVA-Wise
- Appalachian Prosperity Project
- Healthy Appalachia Institute
- K20 Education Blueprint for a Digital World

#### Rural Virginia Initiative

- Addressing challenges in rural areas
- Healthcare and Community Well-Being

## CENTRAL VIRGINIA

### Growing an Entrepreneurial Ecosystem

#### Early-Stage Companies

- Catalyst Accelerator
- Venture Central Entrepreneurship Ecosystem
- Entrepreneur-in-Residence Program

#### Small to Medium Enterprises

- Leverage UVA assets to support emerging industry clusters
- GO Virginia projects
- CvilleBioHub

#### Mature Companies

- UVA Research Park
- Internships & Apprenticeships
- Commonwealth Center for Advanced Manufacturing & Commonwealth Center for Advanced Logistics Systems

## NORTHERN VIRGINIA

### Catalyzing the Tech Economy

#### Further Develop UVA's Presence in Northern Virginia

- Amazon HQ2, Tech Talent Investment Fund
- Inova Center for Personalized Health
- Lifelong education opportunities
- Greater Washington Partnership

# Translatable Research, Innovation, and Entrepreneurship

ENTREPRENEURIAL  
ECOSYSTEM SUPPORT

INDUSTRY CLUSTER  
DEVELOPMENT

APPALACHIAN  
PROSPERITY PROJECT

## ENTREPRENEURIAL ECOSYSTEM SUPPORT

UVA is an active and enthusiastic member of the burgeoning entrepreneurial ecosystem that is cultivating and promoting successful startup companies in Virginia. UVA's Office of Economic Development works alongside city, county, and community partners to foster an inclusive innovation environment where entrepreneurs and early-stage companies can quickly access information and resources for growth. The University provides high-value activities that help fill critical gaps within the entrepreneurial ecosystem.



**The Central Virginia region has all of the ingredients for a thriving entrepreneurial ecosystem: engaged entrepreneurs, rich innovations, active venture funding, and unique qualities that make the area special. It takes sincere partnership between private industry, government, and academia to grow an ecosystem to its full potential, and UVA has embraced its multifaceted role as a partner within this complex network."**

—**Jim Cheng**, Chairman, GO Virginia Region 9 Board, Former Virginia Secretary of Commerce and Trade, Co-Founder, CavAngels

### ● **Venture Central**

**Healthy entrepreneurial ecosystems** thrive when there is a centralized place for early- to mid-stage companies to access resources and information. The Venture Central is a community-led, University-engaged initiative that is evolving to become a place where founders, funders, mentors, and advocates can connect and more rapidly build companies, create jobs, and invest in the Commonwealth. Venture Central will become a nexus of startup activity and will showcase the vibrant entrepreneurship community that is flourishing in Central Virginia.

## Catalyst Accelerator

A new University-led, community-engaged accelerator will build upon the success of UVA's i.Lab Summer Program. The Darden School of Business recognized the need to extend services beyond the summer program and worked with partners to build out a longer runway to support early-stage companies with high-growth potential. The Catalyst Accelerator has attracted funding from the City of Charlottesville, Albemarle County, and the state's GO Virginia initiative, creating a unique asset that will provide University-anchored programming, mentorship, and funding for teams developing scalable products and innovative technology.

### STARTUP SUPPORT

- \$20,000 in grant funding
- Access to \$50,000 in additional resources



**WHILE ECONOMIC STIMULATION IS AN EXPECTED OUTCOME OF RESEARCH COMMERCIALIZATION, OUR EFFORTS TO STEWARD UVA DISCOVERIES TO MAXIMIZE THEIR POTENTIAL WITH BUSINESS DEVELOPMENT, INDUSTRY COLLABORATION, COMMUNITY PARTNERSHIPS, AND OUR NEW ENTREPRENEUR-IN-RESIDENCE PROGRAM AIM TO AMPLIFY THE OUTCOMES FOR OUR LOCAL ECONOMY."**

—Michael Straighttiff, Executive Director, UVA Licensing & Ventures Group

## UVA Licensing & Ventures Group

The UVA Licensing & Ventures Group (LVG) is the intellectual property management and research commercialization organization for the University of Virginia. The LVG team of licensing, legal, and business professionals support the development and advancement of the extraordinary ideas produced in every lab, clinic, and classroom across Grounds. In the fiscal year 2019, LVG solicited and/or received 238 invention disclosures, executed 78 commercial transactions, launched nine new ventures, and committed four investments from the LVG Seed Fund.

## INDUSTRY CLUSTER DEVELOPMENT

The University is working with regional partners to help drive the growth of emerging industry clusters in Virginia. UVA research strengths can be leveraged to establish and develop concentrations of related industries in the region, advancing community-driven target markets and encouraging partnership and collaboration among companies.

### CvilleBioHub

The **CvilleBioHub** is a self-organizing network that fuels the growth of the life sciences community in Central Virginia by offering engagement, resourcing, and advocacy to local biotech companies and research groups — many of which are founded on intellectual property emanating from UVA's substantial life science research portfolio. CvilleBioHub seeks to elevate the profile of the biotechnology sector in the region, promoting it as a center for this dynamic industry. UVA partners with the CvilleBioHub to strategically grow this important sector.



### Industrial Hemp

**Research expertise** can help re-establish industrial hemp as an important sector of Virginia's economy. Biologists and engineers at UVA and UVA-Wise are partnering to create industrial hemp varieties suited for traditional tobacco-growing regions of Virginia, and are designing more effective processing technologies. UVA convened growers, manufacturers, government, and higher education to analyze the impact of changing state regulations on the rapidly evolving industry and to identify emerging opportunities.



**History shows us that the mid-Atlantic region is optimal for growing hemp, and we should be encouraging Virginia farmers to start growing it as a new and potentially highly profitable part of their rotation scheme. Our goal is to generate elite varieties of hemp with commercial uses, from grain and fiber to animal feed and aquacultural products, textiles, bioplastics and human consumables that will undoubtedly bring new economic development to the Commonwealth."**

—Michael Timko  
Professor of Biology and Public Health Science,  
University of Virginia

**APPALACHIAN  
PROSPERITY PROJECT**

In a time of increasing consideration for the future of rural communities, academic partnerships can be an important tool for building economic development across the Commonwealth. Co-founded in 2007 by UVA and UVA’s College at Wise, the Appalachian Prosperity Project (APP) is an academic-community-industry alliance that is pioneering novel ways to advance health, education, and economic prosperity in Southwest Virginia.



2019 APP Fellows - Pictured: Frackson Mumba, Associate Professor of Science Education, UVA and Josephine Rodriguez, Assistant Professor of Biology, UVA-Wise. Not pictured: Bryan Berger, Associate Professor of Chemical Engineering, UVA; Priscilla Brame, Associate Professor of Education, UVA-Wise; Ryan Huish, Assistant Professor of Biology, UVA-Wise; Manuel Lerdau, Professor of Environmental Science, UVA; Michael Timko, Professor of Biology and Public Health Science, UVA

**FACTS**

- Almost \$23 million secured over the past 11 years to bring programs and services to the residents of Southwest Virginia
- \$3.5 million from UVA’s Strategic Investment Fund awarded to UVA-Wise for enrollment and entrepreneurship initiatives
- Over 18 million miles and \$10.5 million saved through specialty care services delivered by the UVA Center for Telehealth

**Appalachian Prosperity Project 2019 Fellows**

APP named seven faculty members from UVA and UVA-Wise as APP Fellows. These fellows will work in teams to tackle challenges in Southwest Virginia, explore opportunities for public impact-focused research, and recommend solutions.

The 2019 APP Fellows are initially focused on two areas: 1. broadening STEM participation in K-12 schools and 2. spurring economic development by capitalizing on the rich botanical resources in the region.

Expansion of the UVA and UVA-Wise research portfolio in Southwest Virginia creates additional public health and economic development resources that increase prosperity for rural Virginians.

**Appalachian Prosperity Project Initiatives**

**Building Capacity**

- Virginia College Advising Corps
- Darden i.Lab Entrepreneurship Programs
- Weldon Cooper Center local government programs
- Research Program Manager position based in Wise, VA
- APP Fellows to seed faculty interaction and public impact-focused research
- Friends of Appalachia Student Group

**Building Healthy Communities**

- Telehealth and Connected Care Services
- Black Lung Program
- Cancer Center without Walls
- Healthy Appalachia Institute
- Virginia Higher Education Opioid Consortium

**Spurring Economic Development, Entrepreneurship, and Innovation**

- Oxbow Field Station in St. Paul
- Industrial Hemp Economies
- The Nest Entrepreneur Space
- Entrepreneurship Cup
- Clinch River Valley Initiative



**Rural Virginia Initiative**

UVA is actively engaged in connecting rural and urban communities in Virginia. Recent legislation named UVA as a leader in convening Virginia Tech, Virginia State University, and UVA-Wise to analyze challenges in rural Virginia and offer strategic recommendations for improvement.

The universities delivered a high-level report that catalyzed continued collaboration with a broader, diverse stakeholder group. Working groups are forming to create actionable plans that will be applied to challenges in rural communities across the state. These working groups are focused on: 1) innovation, entrepreneurship, and job creation; 2) workforce, education, and talent development; 3) civic innovation, public management, and leadership development; 4) agriculture and place-based development; and 5) healthcare and community well-being.

Dr. Karen Rheuban (UVA) and Dr. Sue Cantrell (Virginia Department of Health) are co-leading the Healthcare and Community Well-Being Working Group that will recommend steps toward a future in which all Virginians have access to quality healthcare and benefit from communities that actively promote health and well-being.

# Targeted Industry Growth

AMAZON HQ2

UVA RESEARCH PARK

GO VIRGINIA

INOVA CENTER FOR  
PERSONALIZED HEALTH

amazon



## AMAZON HQ2

Amazon will bring more than 25,000 high-paying jobs and \$2.5 billion in capital expenditures to Virginia. The state's HQ2 proposal placed major emphasis on talent and education as key components to Northern Virginia's appeal. Critical collaboration with institutions of higher education helped craft a bold vision for a historic tech-talent pipeline initiative that ultimately drew Amazon to Virginia. Institutions of higher education in Virginia committed to doubling the state's tech graduates.



“

**AS FAR AS WE KNOW, NO OTHER STATE MADE HIGHER EDUCATION THE FOCUS WE DID. IT WAS THE FIRST TIME IN VIRGINIA WE'VE DONE SOMETHING OF THIS SCALE WITH ECONOMIC DEVELOPMENT AND EDUCATION.”**

—Stephen Moret  
President and CEO  
Virginia Economic Development Partnership





## UVA RESEARCH PARK

The 562-acre UVA Research Park provides state-of-the-art facilities to create and enhance research and business collaboration between the University and the public and private sectors. A 253-acre site at the UVA Research Park is now certified by the Commonwealth as “infrastructure-ready” through the Virginia Business Ready Site Program (VBRSP). The availability of large, project-ready sites is critical to attracting new investment to Virginia and opens the door for many economic development opportunities.

**FACTS** — 9 buildings totaling 600,000 square feet — 35+ tenants — 1,500 employees



**We are making critical investments in customworkspaces, cutting-edge research facilities, and unique recreational and social amenities in a naturally inspiring setting that brings researchers and industrial partners together.”**

—Deborah van Eersel  
Chief Administrative Officer  
UVA Research Park/UVA  
Foundation

## GO VIRGINIA



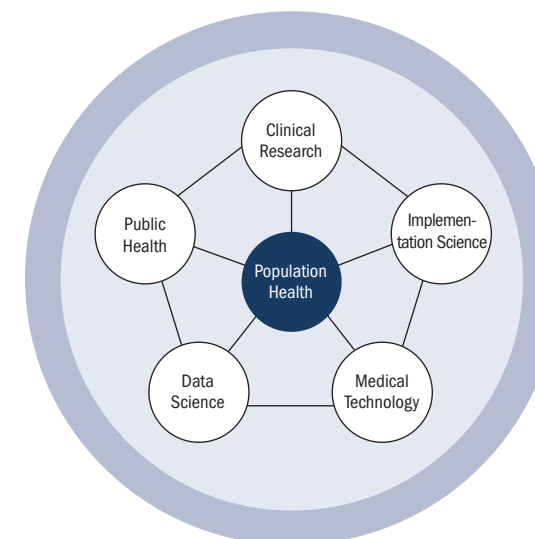
**GO Virginia is a bipartisan, business-led economic development initiative that is changing the way Virginia’s regions collaborate on economic and workforce development activities. UVA is helping to shape and support GO Virginia proposals across the Commonwealth in many areas, including entrepreneurship, biotech, and coastal resiliency.**

### UVA/GO Virginia Collaborations:

- Virginia Sea Grant
- Cville BioHub
- Catalyst Accelerator
- Venture Central

### GO Virginia Project Highlight:

GO Virginia funding will identify key gaps in water technologies and coastal resiliency through the Virginia Sea Grant. UVA researchers will contribute to important work that impacts coastal communities in Virginia and beyond.



## INOVA CENTER FOR PERSONALIZED HEALTH

**UVA embraces opportunities** to further develop its presence in Northern Virginia. University investment in the emerging development at the Inova Center for Personalized Health in Fairfax, Virginia will help create a destination for health innovation and discovery that will improve quality of life for residents and attract new economic development. Support for this research partnership will enhance a new model for healthcare with population health as a unifying focus.

# Empowering a Future- Ready Workforce

## TECH TALENT PIPELINE

- PRE-K-12
- DEGREE PROGRAMS & INTERNSHIPS
- LIFELONG EDUCATION

## TECH TALENT PIPELINE

The availability of a skilled and educated workforce is critical to employers for site selection and business expansion. By preparing more students than ever for in-demand jobs, UVA addresses long-term needs for the tech talent pipeline in Virginia. UVA educators empower students of all ages with critical thinking skills and relevant competencies for today's tech economy.

### Center for K-12 Computing Education

**UVA will create** and deploy a statewide system of curricular resources to ensure K-12 students learn computer science skills. The Center for K-12 Computing Education within the Curry School of Education will play a leadership role in delivering teacher training to improve student success in Virginia's K-12 computer science standard. Researcher Jennifer Chiu and colleagues at the Curry School are developing methods for integrating technology-enhanced engineering design projects and STEM curricula into early education.



### Virginia Kindergarten Readiness Program

The Curry School of Education and Human Development manages the implementation of a statewide assessment of every entering kindergartner's skills in key areas of readiness to learn (literacy, math, language development, social behavior, self-regulation). These assessments yield actionable data for teachers, parents, school leaders, and state policy-makers focused on ensuring the impact of investments in early learning. The Curry team is also partnering with state leaders to design and deliver programs to improve children's readiness skills.



## Enrollment in Computer Science-Related Fields

In response to growing demand for access to courses and degrees in computational sciences, UVA has made significant investment in faculty hiring, infrastructure, and scholarships. Enrollment in computational science programs increased substantially over a five-year period, with computer science undergraduate and graduate enrollment each doubling. The University is committed to increasing enrollment in computer science-related fields moving forward.



**We are building on UVA's 200-year history—its commitment to developing leaders, to building programs that enrich and shape society, and to cultivating research that leads to ground-breaking discoveries."**

—Phil Bourne  
Dean, School of Data Science  
Professor, UVA Biomedical Engineering

## School of Data Science

Building on a strong foundation set in place by the UVA Data Science Institute, the new School of Data Science positions the University as a leader in training students for 21st century jobs. The school will help meet surging demand for data science skills in the Commonwealth and create a new model for interdisciplinary research, teaching, and partnerships with private sector and government entities.

## Student Internships with Virginia Employers

Internships and job shadowing opportunities provide novel connections to companies and equip students with introductory skills required for job functions. In an effort to integrate internships with employer demand, the UVA Career Center has established creative recruiting efforts with localities and startups to connect students with Virginia employers. Additionally, there are numerous industry-focused academies, industry treks, skill-development programs, and virtual internships under development to further enhance the University's career-ready education offerings.



## SCPS Degree Completion Programs

There are over 1.1 million Virginians with some college credits but no degree—these are working adults who need another path to a great education and good jobs. The UVA School of Continuing and Professional Studies is growing its Bachelor's completion programs for working adults who need an accessible, affordable, and flexible education. SCPS will help more Virginians finish their degree, promote career readiness in key sectors, and develop the thinking and communications skills that are the hallmark of a strong liberal arts education.

## Lifelong Education

UVA offers continuing and executive education opportunities in Northern Virginia that include programs and facilities operated by the Darden School of Business, the McIntire School of Commerce, the School of Continuing and Professional Studies, and UVA Engineering.

## Members

Senior leaders at the University serve in an advisory role for the Office of Economic Development, ensuring that initiatives align with University priorities.

**Jennifer "J.J." Wagner Davis, Co-Chair**

Executive Vice President and Chief Operating Officer

**M. Elizabeth Magill, Co-Chair**

Executive Vice President and Provost

**Sally N. Barber**

Special Advisor to the Executive Vice President for Health Affairs & Director of State and Federal Relations

**Shannon R. Blevins**

Associate Vice Chancellor of Economic Development & Engagement, UVA-Wise

**Gregory B. Fairchild**

Associate Dean for Washington, D.C., Area Initiatives

**Denise Herndon**

Program Director for Economic Development

**Archie L. Holmes, Jr.**

Vice Provost for Academic Affairs

**Karen C. Johnston, MD**

Associate Vice President for Clinical & Translational Research

**Michael Lenox**

Senior Associate Dean and Chief Strategy Officer, Darden

**Pace Lochte**

Assistant Vice President for Economic Development

**Louis P. Nelson**

Vice Provost for Academic Outreach

**Pamela N. Norris**

Executive Dean, UVA Engineering

**Robert C. Pianta**

Dean, Curry School of Education and Human Development

**Melur (Ram) K. Ramasubramanian**

Vice President for Research

**Margot Rogers**

Senior Advisor to the President, Strategic Initiatives

**Colette Sheehy**

Senior Vice President for Operations

**Michael P. Straighttiff**

Executive Director, UVA Licensing & Ventures Group

**Deborah van Eersel**

Chief Administrative Officer and Director of Marketing, UVA Foundation

**Carl P. Zeithaml**

Dean, McIntire School of Commerce



UVA is uniquely positioned to serve Virginia in intentional ways that address today's most pressing challenges and create impact beyond the confines of Grounds.”

JENNIFER WAGNER DAVIS

EXECUTIVE VICE PRESIDENT AND CHIEF OPERATING OFFICER



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