



**THE UNIVERSITY OF VIRGINIA ACADEMIC DIVISION,
UVA HEALTH SYSTEM, AND UVA-WISE**

ECONOMIC IMPACT STUDY FY15

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I. THE UNIVERSITY OF VIRGINIA ECONOMIC IMPACT EXECUTIVE SUMMARY

The University of Virginia (UVA) was founded by America’s Founding Father Thomas Jefferson in 1819. Jefferson set out to create an institution of higher education that would allow Americans the ability to explore “the illimitable freedom of the human mind.” Today, nearly 200 years later, UVA continues to fulfill this mission.

UVA includes the UVA Academic Division (UVA Academic), the UVA Health System (UVA HS), and UVA’s College at Wise (UVA-Wise). The impact of UVA can be felt through its academic rigor, its health care presence, its regional ties as well as its economic activity. UVA Academic, UVA HS, and UVA-Wise are major drivers of the Virginia economy.

- UVA generates **\$5.9 billion** annually within the Commonwealth of Virginia.
- UVA supports **51,653 jobs** throughout the Commonwealth of Virginia.
- **One in every 76 jobs** within the Commonwealth of Virginia is either held directly by a UVA employee or is supported as a result of UVA’s presence.
- State and local government revenue attributable to the presence of UVA totaled **\$239.9 million** in FY15.



THE UNIVERSITY OF VIRGINIA ECONOMIC IMPACTS ON THE COMMONWEALTH, FY15



II. METHODOLOGY

PROJECT OVERVIEW

In May 2016, Pittsburgh-based Tripp Umbach was retained by UVA to measure the economic, employment, and government revenue impacts of operations and research of the University (UVA Academic Division), the University Health System (UVA HS), and the College at Wise (UVA-Wise). The overall economic and fiscal impact that the University of Virginia has on the vitality of the region and state includes the following elements:

- Economic impacts through spending (capital expenditures, operational expenditures, payroll and benefits)
- Direct, indirect and induced employment impacts
- Government revenue impacts at the local and state levels
- The impact of spending by employees in the local economy on goods and services
- The impact of visitor spending on the economy (wage premiums, job creation, etc.)
- The impact of student spending in the region (retail/merchandise, hospitality, etc.)
- The impact of the attraction of external research dollars, the commercialization of research discoveries, and the impacts on the economic development within the region
- The impact that employees and students have on the community through donations and volunteer work

STUDY OVERVIEW

KEY IMPACT FINDINGS PROVIDED FOR:

- THE UNIVERSITY OF VIRGINIA
- THE UNIVERSITY OF VIRGINIA ACADEMIC DIVISION
- THE UNIVERSITY OF VIRGINIA HEALTH SYSTEM
- THE UNIVERSITY OF VIRGINIA'S COLLEGE AT WISE

FINDINGS REPORTED FOR THE FOLLOWING GEOGRAPHIES:

- STATE OF VIRGINIA
- THOMAS JEFFERSON PLANNING DISTRICT COMMISSION (TJPDC)
- LENOWISCO AND CUMBERLAND PLATEAU PLANNING DISTRICTS

IMPACT FINDINGS REPORTED FOR FISCAL YEAR 2015 (FY15)

This economic impact analysis measures the effect of direct, indirect, and induced economic, employment, and government revenue impacts for the UVA Academic Division, UVA Health System, and UVA-Wise operations throughout Virginia, within the Thomas Jefferson Planning District Commission (TJPDC) region, and the LENOWISCO and Cumberland Plateau Planning District regions.

For the purposes of the impact analysis, UVA is defined as the combined impacts of the UVA Academic Division, the UVA Health System, and UVA-Wise. These entities are further defined as:

- UVA Academic Division – The UVA Academic Division impact analysis included all schools and colleges of UVA excluding the UVA School of Medicine, the UVA School of Nursing, and UVA-Wise.
- UVA Health System – The UVA Health System impact analysis included the UVA Medical Center, the UVA School of Medicine, the UVA School of Nursing, the Claude Moore Health Sciences Library, and the University Physicians Group.
- UVA-Wise – The UVA-Wise impact analysis included only the operations of The University of Virginia’s College at Wise.

The Thomas Jefferson Planning District Commission geography is defined as the city of Charlottesville and the counties of Albemarle, Fluvanna, Greene, Louisa, and Nelson. The LENOWISCO and Cumberland Plateau Planning District geography is defined as the city of Norton and the counties of Buchanan, Dickenson, Lee, Russell, Scott, Tazewell, and Wise.

Impact findings were generated for the UVA Academic Division and the UVA Health System at the state and TJPDC geographies; impact findings were generated for UVA-Wise at the state and LENOWISCO and Cumberland Plateau planning district in Southwest Virginia (SWVA).

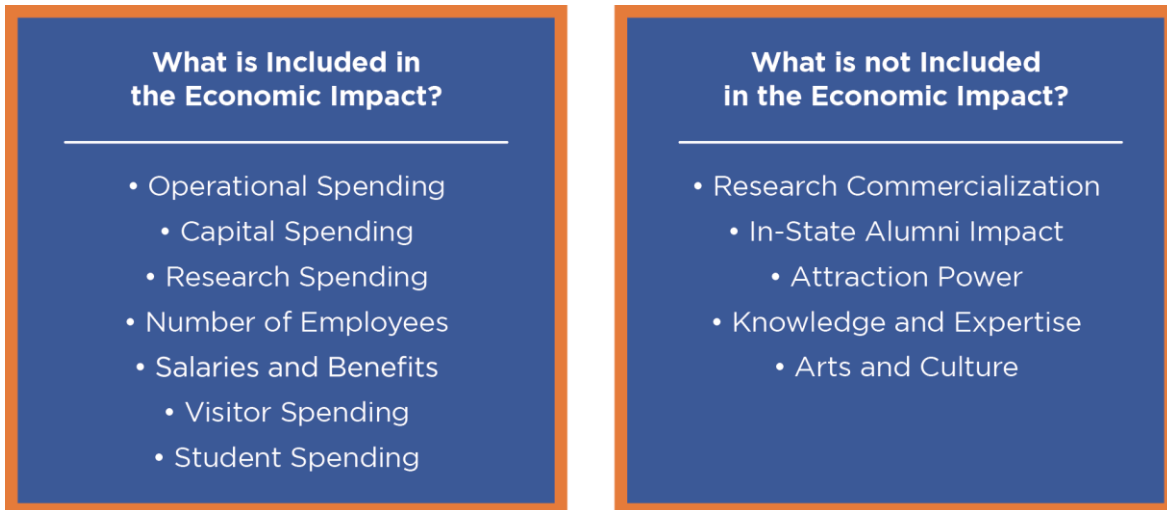
IMPACT METHODOLOGY

The methodology employed in the calculation of these impacts was IMPLAN.¹ Primary data utilized to conduct the analysis was collected from the UVA Academic Division, the UVA Health System, and UVA-Wise. Data included capital expenditures (five-year average), operational expenditures, employment headcounts, payroll and benefits, taxes, and event information for FY15.² The multipliers used in this study were derived from the IMPLAN software. Tripp Umbach’s

¹ Minnesota IMPLAN Group, Inc. (MIG) is the corporation that is responsible for the production of IMPLAN (IMpact analysis for PLANning) data and software. IMPLAN is a micro-computer-based, input-output modeling system. With IMPLAN, one can estimate Input-Output models of up to 528 sectors for any region consisting of one or more counties. IMPLAN includes procedures for generating multipliers and estimating impacts by applying final demand changes to the model.

² Fiscal Year 2015 represents the period of time from July 1, 2014 to June 30, 2015.

approach to economic impact analysis is conservative by way of utilizing the industry standard software, IMPLAN, to conduct the impact analysis as well as using conservative assumptions for individual spending patterns. Tripp Umbach bases assumptions of spending on federal per diem rates.



Economic impact begins when an organization such as UVA spends money. Studies measuring economic impact capture the direct economic impact of an organization’s spending, plus additional indirect and induced spending in the economy as a result of direct spending.

Total economic impact measures the dollars that are generated within the region due to the presence of the UVA Academic Division, the UVA Health System, and UVA-Wise. This includes not only spending on goods and services with a variety of vendors within the region and the spending of its faculty, staff, students and visitors, but also the economic impact generated by businesses that benefit from UVA’s spending. It is important to remember that not all dollars spent by an organization remain in its home state. Dollars that are spent out of the region, in the form of purchases from out-of-area vendors, are not included in UVA’s economic impact on the region. The multipliers utilized in this study were derived from IMPLAN.

Key economic impact findings presented within this study include the total current (FY15) economic impacts of the UVA Academic Division, the UVA Health System, and UVA-Wise operations on employment in Virginia, as well as the revenue impact on state and local governments. It is important to note that all impact values of UVA reported in this study occur on an annual basis.

III. THE UNIVERSITY OF VIRGINIA - TOTAL IMPACT

A. OVERALL IMPACT FINDINGS

UVA is a significant generator of economic, employment, and government revenue activity throughout the Commonwealth of Virginia. UVA spends in a variety of ways and supports jobs across multiple economic sectors. The presence of UVA helps to create a diverse and stable economy locally as well as statewide.

In FY15,

- UVA generated **\$5.9 billion** within the Commonwealth of Virginia.
- UVA supported **51,653 jobs** throughout the Commonwealth of Virginia.
- **One in every 76 jobs** within the Commonwealth of Virginia was either held directly by a UVA employee or is supported as a result of UVA’s presence.³
- State and local government revenue attributable to the presence of UVA totaled **\$239.9 million**.

The presence of UVA also affects the Commonwealth of Virginia through community events and benefits, visitor attraction, student spending, research activity, commercialization of innovation, and economic development initiatives. Multiple additional impacts of UVA are outlined in this report.

The following table outlines the impacts generated by the UVA Academic Division, the UVA Health System, and UVA-Wise.

THE COMBINED ECONOMIC IMPACTS OF UVA ACADEMIC DIVISION, UVA HEALTH SYSTEM, AND UVA-WISE, FY15

Organization	Economic Impact	Employment Impact	Government Revenue Impact*	Community Impact†	Research Economic Impact‡	Research Employment Impact§
UVA Academic	\$ 1.8 billion	23,779 jobs	\$ 92.5 million	\$38.8 million	\$ 213.8 million	3,606 jobs
UVA Health System	\$ 4.0 billion	27,194 jobs	\$143.9 million	\$25.7 million	\$ 428.1 million	7,215 jobs
UVA-Wise	\$ 84.0 million	680 jobs	\$ 3.5 million	\$5.8 million	\$ 2.6 million	24 jobs
TOTAL TO VIRGINIA	\$5.9 billion	51,653 jobs	\$239.9 million	\$70.3 million	\$644.5 million	10,845 jobs

* Government Revenue impacts are in addition to the overall economic impact.

† Community impacts are in addition to the overall economic impact.

‡ Research economic impacts are included in the overall economic impact.

§ Research employment impacts are included in the overall employment impact.

³ U.S. Census Bureau, 2010-2014 American Community Survey. Selected Economic Characteristics.

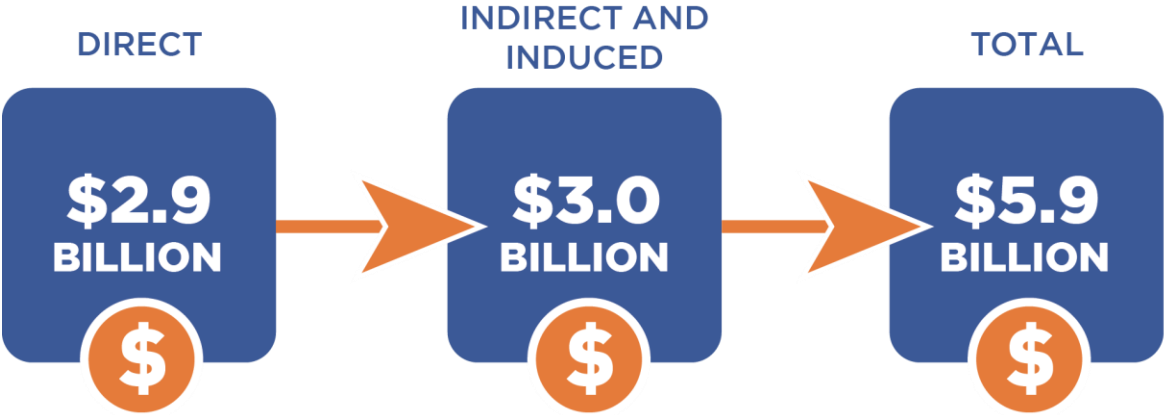
B. ECONOMIC IMPACT OF UVA ON THE COMMONWEALTH

Economic impact is generated when an organization spends money directly in the economy. Direct spending by UVA to vendors and employees also generates additional spending throughout the Commonwealth; known as indirect and induced impact. UVA affects economic growth in Virginia in two ways:

- 1. Direct expenditures for goods and services by UVA, its faculty, staff, students, and visitors. This spending supports local businesses, which in turn employ local individuals to sell the goods and provide the services that UVA constituencies need.
- 2. Indirect or induced spending within the Commonwealth of Virginia. The businesses and individuals that receive direct payments re-spend this money within the Commonwealth, thus creating the need for even more jobs.

In FY15, the direct spending of UVA, in combination with the indirect and induced impacts of dollars being re-spent throughout the state economy, generated more than \$5.9 billion in overall economic impact (\$2.9 billion in direct impact and \$3.0 billion in indirect and induced impacts).

ECONOMIC IMPACT OF UVA ON THE COMMONWEALTH, FY15

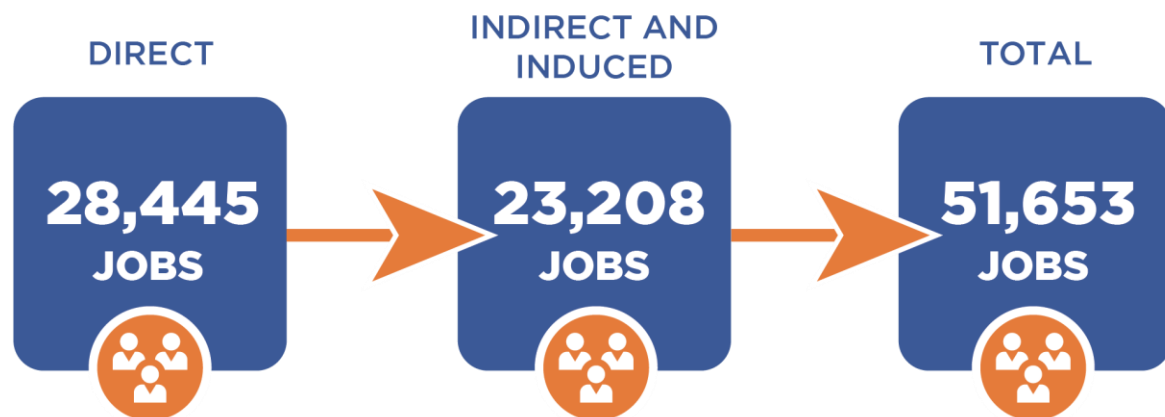


C. EMPLOYMENT IMPACT OF UVA ON THE COMMONWEALTH

In FY15, UVA directly supported 28,445 jobs (full-time and part-time) throughout the Commonwealth of Virginia. In addition to the jobs directly supported by UVA, thousands of additional jobs are indirectly supported as a result of spending by UVA, its employees, visitors, and patients. Indirect and induced employment is generated when an organization spends in the economy, those directly employed by an organization spend their earnings in the economy, and when visitors to the organization spend in the economy.

UVA supports thousands of jobs statewide in virtually every sector of the Virginia economy, including construction, business and professional services, restaurants and hotels, information technology, security, and temporary employment companies.

EMPLOYMENT IMPACT OF UVA ON THE COMMONWEALTH, FY15



In FY15, UVA supported 51,653 jobs in the Commonwealth of Virginia.⁴ These jobs (both full-time and part-time) include not only direct employment by UVA (28,445 jobs), but also indirect and induced jobs (23,208 jobs) that are supported as a result of UVA, employee, student, and visitor spending. One in every 76 jobs within the Commonwealth of Virginia is either held directly by a UVA employee or is supported as a result of UVA’s presence.

⁴ A total of 948 employees hold joint appointments with the UVA School of Medicine and the University Physicians Group and live in Virginia. IMPLAN analysis is conducted to measure jobs/positions (full-time or part-time), not full-time equivalents (FTEs). Each job/position/appointment is counted in the total employment impact value of UVA. These employees were counted as one employment headcount for the purposes of the UVA impact analysis. Further explanation of the employment impacts can be found in Appendix D.

D. STRENGTHENING STATE AND LOCAL GOVERNMENTS

It is a common misperception that public universities and non-profit health systems do not generate tax revenue. **State and local government revenues attributable to the presence of UVA in FY15 totaled more than \$239.9 million.** Through its local spending, as well as direct and indirect support of jobs, the presence of UVA stabilizes and strengthens the local and statewide tax base. UVA is an integral part of the state's economy, generating government revenue, jobs, and spending.

E. CONDUCTING GROUND-BREAKING RESEARCH

UVA is a leader in research in the Commonwealth and the nation. UVA houses 84 centers and institutes of research. Fresh research dollars from outside Virginia affect the Virginia economy from a wide variety of agencies and organizations, including the National Science Foundation, NASA, the Department of Defense, and the Department of Health and Human Services.

UVA RESEARCH IMPACT

In FY15, UVA (UVA Academic, UVA HS, and UVA-Wise) spent more than \$285 million on research activity. This spending translates into a significant economic impact for Virginia. As a result of UVA research activity in FY15, a total **economic impact of \$644.5 million** was generated throughout the Commonwealth of Virginia.

In FY15, the operational and capital expenditures for sponsored research by UVA supported 10,845 jobs. These jobs include not only UVA's direct employment of research professionals, but also indirect jobs created by supply and equipment vendors, contractors, and laborers for the construction and renovation of laboratory facilities, administrators and managers who support the research infrastructure, and jobs created in the community by the disposable income of the scientific workforce. **One in five jobs created or supported by UVA are related to the research activity of the university.**

By maintaining and growing its strong research base, UVA continues to attract and consequently spend increasingly higher levels of research dollars. Likewise, the number of jobs supported will also continue to grow. With continued high levels of research funding and consequent expenditures, UVA will remain a source of support for thousands of high quality local jobs based on its research enterprise. The research activity impacts of UVA are included in the overall \$5.9 billion economic impact and 51,653 jobs.

COLLABORATIVE RESEARCH EFFORTS

In addition to supporting and conducting research on campus, UVA has also taken a lead role in developing collaborative efforts with other institutions of higher education as well as in partnerships with industry and economic development organizations.

Rolls-Royce

In 2007, a powerful partnership was announced between Rolls-Royce, the Commonwealth of Virginia, the University of Virginia and Virginia Tech to focus on advanced technology, materials and manufacturing research to address global challenges. Nearly a decade later, the partnership has yielded three major research centers and investments in prominent faculty hires at the universities, state-of-the-art laboratories, workforce development initiatives and student fellowships and internships.

- One early manifestation of the partnership was the Commonwealth Center for Aerospace Propulsion Systems (CCAPS), a collaborative aerospace research effort established in 2009 between Rolls-Royce, UVA and Virginia Tech. In laboratories at the two universities, faculty and students work to improve the effectiveness and efficiency of aerospace propulsion systems.
- In 2014, Rolls-Royce announced that UVA would join the global Rolls-Royce University Technology Centers (UTC) network, involving research groups in world-class universities engaged in long-term projects to develop key technologies. UVA is one of only three universities in the United States to receive the designation. The University's work focuses on advanced materials systems.
- Rolls-Royce, UVA and Virginia Tech formed the Commonwealth Center for Advanced Manufacturing (CCAM), a 62,000-square-foot applied research center that was the first of its kind in the country when it opened in 2012. The center provides the capability for university and industry partners to accelerate product development and transfer research and technology breakthroughs directly to manufacturing. There are more than 20 member organizations of CCAM including Airbus, Rolls-Royce, Alcoa, Siemens, Canon and Newport News Shipbuilding.
- CCAM has elicited national attention from President Barack Obama in a speech at the opening of a Rolls-Royce factory in Virginia. President Obama referenced CCAM as a model of the kind of education-manufacturing partnerships that will be a key part of the National Network for Manufacturing Innovation into the future.⁵

⁵ The White House. Photos and Video. <https://www.whitehouse.gov/photos-and-video/video/2012/03/09/president-obama-speaks-manufacturing>

UVA - Max Planck Partnership

Formed in 1911, Max Planck is Germany's most recognized and acclaimed research organization, with 32 Nobel laureates among 82 Max Planck Institutes spanning diverse fields (natural sciences, life sciences, social sciences, and the humanities). Times Higher Education rankings of non-university research institutions placed the Max Planck Society as the No.1 non-academic institution in the world for science research.

On March 21, 2016, UVA President Teresa A. Sullivan signed a memorandum of understanding with the Max Planck Society to enter into a consortium, the MAXNET Energy Partnership, with eight of its research institutes. UVA is the only U.S. member. MAXNET was formed to advance research on new, renewable, environmentally friendly, and economical energy sources. The partnership will provide new research and education opportunities for the University's researchers and students. UVA and the Max Planck Society have committed a total of \$4 million (\$2 million each) in seed funding for the project over a five-year timeframe. This funding will support the development of new energy resources to assist with society's most pressing and difficult challenges.

F. TECHNOLOGY TRANSFER & COMMERCIALIZATION

UVA's research operations make tangible and quantifiable economic contributions. Along with creating jobs for research staff and support personnel, UVA scientists are contributing to new product development and technology commercialization. Knowledge and technology transfer have helped to start commercial ventures that promote entrepreneurship, economic development, and job creation.

The UVA Licensing and Ventures Group works with UVA researchers to protect their intellectual property, license University technology to independent companies, and launch new businesses. They offer progressive licensing strategies, an entrepreneur-in-residence program, and recently started investing in early stage start-ups.

The commercialization activities of UVA are impressive and its success in this arena continues to grow.

- National Venture Capital Association ranked **Charlottesville the fastest growing venture capital** ecosystem in the U.S.⁶
- **\$10 million** from the UVA Academic Division and UVA HS invested in current translational research efforts and commercialization that is taking place at start-up companies, to help bring new technologies and products to the marketplace to benefit society.

⁶ Veghte, B. U.S. Venture Capital Investment Spanned 133 MSAs in 2015. National Venture Capital Association. January 27, 2016.

- **More than 50 Active Start-Up Companies** - Seven new start-up companies were launched from UVA faculty or as a result of UVA innovations in FY15, for a total of 53 since 2006 that have been formed and are still active as a result of the connection to UVA. Most of these companies have remained in Virginia.
- **187 Invention Disclosures in FY15** - UVA researchers submitted 187 invention disclosures for commercial consideration to the UVA Licensing and Ventures Group in FY15, generating numerous opportunities for potential partners. This is the highest number of disclosures for one year in UVA history and more than 200 invention disclosures are projected in FY16.
- **28 U.S. patents** – UVA received 28 U.S. patents in FY15, bringing UVA’s patent portfolio to more than 360 issued U.S. patents since 2001.
- **Closed 80 deals** – UVA closed approximately 80 deals or commercialization agreements in FY15.

G. ECONOMIC DEVELOPMENT THROUGH ENTREPRENEURSHIP AND INNOVATION

As a result of the research and commercialization occurring at UVA, numerous businesses have been created, many of which have stayed within the Commonwealth. This innovation activity and access to the University’s faculty expertise attracts more start-ups, corporations, student employment opportunities, and diversification of the local economy.

REGIONAL ADVANCEMENT

- The City of Charlottesville has recently been ranked the No. 4 best city for entrepreneurs by Entrepreneur Magazine.⁷ This ranking looked at the country’s best cities to support new businesses, offering beneficial tax rates, and an educated workforce to support employment.
- Between 2010 and 2015, venture funding in Charlottesville jumped from \$250,000 to \$27.7 million.⁸
- UVA-Wise is launching a cyber-technology accelerator in the town of St. Paul, utilizing a recently donated facility in order to support the development of a cybersecurity industry cluster developing in Southwest Virginia.

⁷ Zunz, S. Charlottesville Named No. 4 in the U.S. for Entrepreneurship. UVAToday. July 27, 2016.

⁸ Veghte, B. U.S. Venture Capital Investment Spanned 133 MSAs in 2015. National Venture Capital Association. January 27, 2016.

UNIVERSITY SUPPORT

The University of Virginia is supporting a growing entrepreneurial ecosystem comprised of courses, competitions, space, and co-curricular programs related to entrepreneurship. In June 2016, UVA was ranked No. 3 in the world for its MBA program for Entrepreneurship in the Darden School of Business by Financial Times,⁹ and the McIntire School of Commerce ranked #6 in the Top 10 Business schools in the U.S. by *U.S. News and World Report*. The McIntire School of Commerce offers nationally-recognized entrepreneurship programs, including a specialized track for undergraduates.

Initiatives driving this entrepreneurial ecosystem include:

- UVA iLab start-up accelerator program available to all members of the University and community
- Galant Center for Entrepreneurship at the McIntire School of Commerce
- Social Entrepreneurship at UVA (SE@UVA) program managed by the Frank Batten School of Leadership and Public Policy
- Technology Entrepreneurship Program managed by the School of Engineering and Applied Science
- Curry School of Education's youth and social innovation major
- School of Architecture's design thinking concentration
- Various efforts within the College and Graduate School of Arts & Sciences

These schools recently collaborated to offer a pan-University entrepreneurship minor, as called for in UVA's Cornerstone Plan. Since its launch in 2015, student demand for the new minor already has increased the need for new faculty, student scholarships, and other program support.

COMMUNITY RESOURCES

iLab

The iLab is a University-wide initiative that provides resources and programs to expand the local community's capacity to innovate, activate new entrepreneurs, and accelerate new ventures—both within and beyond the iLab's 9,600-square-foot core facility. The UVA iLab, is a collaborative effort among the provost's office, the UVA Licensing and Ventures Group, and all of the University's schools "to foster deep cross-collaboration with no boundaries, across disciplines, schools or ways of thinking."

⁹ Ortman, L. New FT Ranking: US Business schools excel at MBA start-up spirit. Financial Times. June 26, 2016.

A central feature of the UVA iLab is its highly competitive start-up accelerator program, followed by a nine-month incubator residency. The iLab is open to UVA faculty and students as well as members of the Charlottesville community. Since 2013, the iLab has fostered nearly ninety ventures, spanning a range of industries (e.g., healthcare, data science, fashion, agriculture, energy, and finance), resulting in both follow-on investments and social benefits. Crucial to the impact of this program has been and will continue to be an increasing capacity to provide start-up funding, legal and financial counsel, day-to-day tools and resources, and an expansive network of advisors and industry experts.

In 2015, 22 ventures were launched from the iLab :

Darden Student Ventures	UVA Faculty and Student Ventures	Community Ventures
<ul style="list-style-type: none"> • <i>10 Thoughts</i> • <i>Cassimir Club</i> • <i>Dream Power</i> • <i>Fit Minds</i> • <i>HiComm</i> • <i>RealFuel</i> • <i>RelishMBA</i> • <i>\$tocklife</i> 	<ul style="list-style-type: none"> • <i>Blue Boy</i> • <i>Clifton Culinary Lodges</i> • <i>Contraline</i> • <i>Modatrova</i> • <i>RouteMine</i> • <i>Sensibility Care</i> • <i>Springbok</i> • <i>Telehealth Management</i> • <i>VotersChoice</i> 	<ul style="list-style-type: none"> • <i>Apprenticeship Connections</i> • <i>Fledgling LLC</i> • <i>The Front Porch</i> • <i>Pure Hibi</i> • <i>Wildrock</i>

Batten Institute for Entrepreneurship and Innovation

The Batten Institute for Entrepreneurship and Innovation at UVA’s Darden School of Business is focused on advancing entrepreneurship in a corporate sense and inspiring innovation and leadership in entrepreneurial activities. The Institute focuses on the following three initiatives:

1. **Inspired education** – To cultivate the next generation of entrepreneurial leaders through rigorous academic and experiential programs.
2. **Transformative research** – To generate thought leadership in entrepreneurship and innovation through research projects of consequence to business and society.
3. **Energized community** – To foster a diverse and collaborative community of scholars, students, alumni and practitioners engaged in the study and pursuit of entrepreneurship and innovation.

THE BATTEN INSTITUTE BY THE NUMBERS:

- 16 mentors
- 8 corporate partners
- \$90,000 in entrepreneurial competition prizes
- 22 new ventures in the i.Lab
- \$175,000 in research grants
- 14 publications
- 34 MBA courses in entrepreneurship & innovation
- \$1 million in full-tuition MBA scholarships
- \$14 million in sponsored faculty
- 21 internships through the Batten Venture Internship Program

SPOTLIGHT ON SOCIAL ENTREPRENEURSHIP

Students throughout the University can pursue a minor in social entrepreneurship through the SE@UVA program, a cross-school initiative housed in the Batten School of Leadership and Public Policy. Social entrepreneurs take innovative and creative approaches to develop sustainable solutions to a range of problems including poverty, malnutrition, homelessness, and lack of access to education and health care. The SE@UVA program creates opportunities for students to learn about social entrepreneurship through experiential classes, workshops, speakers, hackathons, concept competitions, global field experiences, and internships.

SPOTLIGHT ON TECHNOLOGY ENTREPRENEURSHIP PROGRAM

In 2004, UVA's School of Engineering and Applied Science launched the Technology Entrepreneurship Program to provide courses and activities that allow faculty, staff, and students to develop as entrepreneurs and innovators. The Technology Entrepreneurship Program annually offers at least six undergraduate courses that attract 300 students. Complementing the coursework, the program provides a variety of co-curricular activities to help aspiring entrepreneurs. Over the past year, more than 30 student teams have participated in these co-curricular programs, regularly taking top place in competitions such as UVA's E-Cup and the Atlantic Coast Conference's InVenture Prize.

SPOTLIGHT ON SWVA OPPORTUNITY

UVa-Wise leads regional efforts to build a culture of entrepreneurship in Southwest Virginia. Opportunity SWVA, formerly known as My SWVA Opportunity, is a collaborative effort to strengthen entrepreneurship in Southwest Virginia, creating a robust environment for entrepreneurs that retains and attracts talent, capital and ideas. The initiative is piloting the way for the region to align resources, highlighting opportunities for entrepreneurs, supporting their efforts, and expanding the spirit they bring to their communities. Through collaborative partnerships Opportunity SWVA is working to rally existing and emerging economic and community development efforts to create thriving entrepreneurial communities that will accelerate progress for both new and established ventures in the region.

The wide-ranging coalition was formed in 2012 to support and champion the Blueprint for Entrepreneurial Growth and Economic Prosperity in Southwest Virginia.

Building upon existing asset-based initiatives in the region, Opportunity SWVA is focused on three main strategies to empower communities:

- Build the entrepreneurial ecosystem and develop a culture of entrepreneurship

- Grow entrepreneurs and nurture new ventures
- Promote the region as a vibrant entrepreneurial hub

Opportunity SWVA partners, led by UVA-Wise, are organizing entrepreneurial development initiatives and tracking progress across the LENOWISCO and Cumberland Plateau Planning District Commissions, recently expanding to the Mount Rogers PDC and New River Valley PDC. This team of small business support and community development organizations serves as a central point for entrepreneurs, new ventures, and small businesses. The effort has supported over 390 small businesses and entrepreneurs by connecting them to resources and it has sparked the creation of over 30 business plan competitions.

UVA RESEARCH PARK

The UVA Research Park represents an evolution in development planning, uniting the harmony and community of Jefferson's Academical Village with a fully functioning office and research environment. The Park is a 562-acre, 3.7 million square-foot, fully master planned, mixed-use development zoned for office, light industry, hotel/conference center, laboratory/medical/pharmaceutical, and retail/support commercial uses. There are currently eight buildings in the Park totaling approximately 500,000 square feet, with 25 tenants, employing over 1,500 workers on site.

The mission of the University of Virginia Research Park is to provide state-of-the-art facilities that serve as a catalyst for the creation and enhancement of research and business collaboration between the University of Virginia and the public and private sectors, for the economic and societal benefit of the Commonwealth of Virginia, the Central Virginia region and the nation.

One example of collaboration at the Research Park is UVA's Applied Research Institute. Located in the Emerging Technology Center, the Applied Research Institute leverages the University's human and capital assets to support applied research, education and training, with a focus on, but not limited to, homeland security and national intelligence and defense challenges. Faculty in UVA's Engineering School, School of Medicine, and the College of Arts and Sciences are involved in research with numerous industry partners with a presence in the park on a diverse portfolio of projects related to cyber security, unmanned systems, bioinformatics, forensics, infectious disease, and big data.

ECONOMIC IMPACT OF ENTREPRENEURIAL ALUMNI

In 2014, The Batten Institute conducted a survey of alumni to investigate the entrepreneurial activities and related economic impact of UVA alumni.¹⁰ We define entrepreneurial alumni as those who founded new ventures, who are one of the first five employees of a new venture, who serve on the governing or advisory board of a new venture, or who provide capital to entrepreneurial ventures (e.g., angel investors and venture capitalists). Ventures include for-profit businesses as well as non-profit organizations.

The report found that UVA alumni are active entrepreneurs and are making significant contributions to the local, state, national, and international economies. Carefully extrapolated, the responses to this survey suggest that entrepreneurially active alumni have made an impressive economic impact.

- It is estimated that nearly 60,000 of the total UVA alumni have started, supported, invested in, or worked for new ventures in their career.
- Alumni have created approximately 65,000 companies worldwide. These efforts have contributed to the economy – notably, an estimated 2.3 million people have worked at companies founded or directly supported by UVA alumni.
- The organizations that are active today generate global revenues worth \$1.6 trillion annually.
- The Commonwealth of Virginia has benefitted especially well, receiving a high number of these jobs—upwards of 371,000—at companies operating in the Commonwealth. It is estimated that these Virginia-based companies have produced about \$395 billion in calculated annual revenues and spent \$279 billion per year.

H. TIES TO THE COMMUNITY

UNIVERSITY CONTRIBUTIONS

The UVA Academic Division, UVA Health System, and UVA-Wise are strong community partners in Charlottesville, Wise, and across the Commonwealth. The institutions themselves partake in a number of activities that support local businesses and non-profits to be successful. The following are a handful of the community activities in which UVA engages with the immediate as well as broader communities:

¹⁰ Batten Briefing. The Economic Impact of Entrepreneurial Alumni. December 2014.

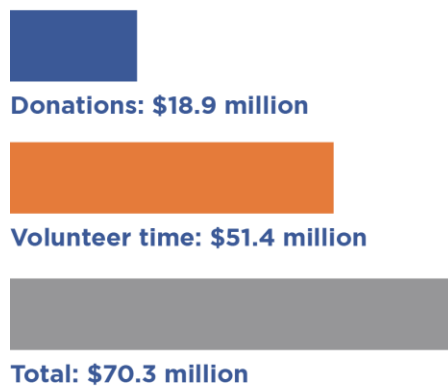
- UVA leadership, faculty, and staff are active on many community boards and planning commissions such as the Central Virginia Partnership for Economic Development, local chambers of commerce, regional planning efforts, tech councils, industrial development authorities, and workforce development boards.
- The University of Virginia’s Weldon Cooper Center for Public Service is a research and training organization focused on the Commonwealth of Virginia. The Center provides objective information, data, applied research, technical assistance, and practical training to state and local officials, community leaders, and members of the public.
- The University stays connected with regional business owners and chambers of commerce in order to gather input and effectively implement workforce training and curriculum alignment. UVA works in collaboration with regional education partners, such as the community colleges, to offer training and coursework that are aligned with the needs of current and future employers. Additionally, the University has an articulation agreement with the Commonwealth that guarantees admission to Virginia Community College System students who earn an associate’s degree and meet certain course and GPA requirements.
- The University offers preK-12 programs and services to members of the local community, such as the Book Buddies tutoring program, Engineering Open House, Saturday and summer enrichment learning experiences, Young Writers Workshop, clinical services for the diagnosis and treatment of language, speech, and hearing disorders, and the Young Women Leaders Program that pairs UVA students with middle school girls.
- The Virginia College Advising Corps (VCAC) was launched in 2005 to address the widening gap in college access for low income, first generation, and under-represented students. VCAC places recent UVA and UVA-Wise graduates in high schools throughout the Commonwealth to work alongside counselors and other college access organizations to encourage and support high school students in continuing their education beyond high school. Since the program’s inception in 2005, VCAC has served more than 94,000 students and helped over 8,000 students enroll in post-secondary institutions.
- The Appalachian Prosperity Project is a collaborative partnership among the UVA Academic Division, UVA Health System, UVA-Wise, and local leaders to advance education, health, and economic prosperity in Southwest Virginia. It includes:
 - Creation of the Cancer Center Without Walls initiative to extend the UVA Health System’s resources to local providers and patients.

- Working with stakeholders to build local, asset-based economies, including the Clinch River.
- Providing professional development opportunities to preK-12 teachers in the region.
- Facilitating the development and implementation of three regional strategic plans
 - Blueprint for Health Improvement and Health-Enabled Prosperity
 - Blueprint for Entrepreneurial Growth and Economic Prosperity
 - Blueprint for Attracting and Sustaining Advanced Manufacturing

STUDENT AND EMPLOYEE CONTRIBUTIONS

In addition to the community outreach conducted by the University, employees and students engage with the community through volunteer work or by making donations to local organizations. Tripp Umbach estimates that UVA employees and students generate more than **\$70.3 million** annually in charitable donations and volunteer services.¹¹ These benefits are in addition to the \$5.9 billion in economic impacts of the UVA Academic Division, UVA HS, and UVA- Wise and include the following:

COMMUNITY IMPACT OF UVA ON VIRGINIA, FY15



Source: Tripp Umbach findings using data obtained by the University of Virginia

DONATIONS TO LOCAL ORGANIZATIONS:

- **\$18.9 million** donated to local charitable organizations by UVA employees and students in FY15.¹²
- **Commonwealth of Virginia Campaign (CVC):**¹³
 - Since 1999, UVA employees have been the top contributors to the state-wide Commonwealth of Virginia Campaign (CVC). The CVC is the annual charity drive of

¹¹ Total community benefit of employees is calculated by Tripp Umbach from the combined impacts of employees and students making monetary donations to organizations and the value of a volunteer hour.

¹² Primary data collection via survey research where faculty, staff, and students provide estimates on spending patterns, including information on the number of volunteer hours and charitable donations in which they provide.

¹³ Commonwealth of Virginia Campaign. University of Virginia. <http://cvc.virginia.edu/>

the employees of the Commonwealth of Virginia. Through the CVC, employees across the state can donate to more than 1,000 organizations.

- In FY15, UVA employees donated more than \$996,000 during the campaign. All donations benefit non-profit organizations throughout the Commonwealth, in Charlottesville and in Southwest Virginia.
- This continues the on-going record that UVA holds as the #1 state agency contributor to the CVC in all years except one since 1999. Since 1999, UVA has given more than \$13 million to this important campaign, supporting non-profits across the Commonwealth and beyond.

VOLUNTEER ACTIVITIES OF EMPLOYEES AND STUDENTS:

- **\$51.4 million** in value of volunteer time provided to area communities by UVA employees and students in FY15.¹⁴
- **Madison House:**
 - Much of the student volunteer activity is managed and coordinated through the Madison House program. Madison House was founded in 1969 by students interested in giving back to their community. Forty-five years later, the drive to connect remains strong. Madison House works with organizations to identify volunteer opportunities, place student volunteers in programs, and train students to be volunteer managers.
- **United Way Day of Caring:**
 - Each year more than 1,000 UVA employees volunteer for the United Way Day of Caring, a community-wide volunteer service day. Employees complete more than 100 community projects for non-profit organizations and schools in the region.
- **Athletic Teams:**
 - Student athletes, coaches, and staff engage with the community in unique ways. The UVA Cavaliers are active in sponsoring blood drives, supporting local Special Olympics events, signing autographs for fans at the annual 'Meet the Team Day', and by opening up the sporting facilities to the public.
 - The student-athletes at UVa-Wise volunteer in the community in a variety of ways. The teams have raised funds to provide school snacks for youngsters, read to children in primary schools, and cleaned up area playgrounds and athletic fields.

¹⁴ The rate of \$23.56 per hour was used to calculate the value of volunteer services. This amount was calculated independently by Independent Sector. https://www.independentsector.org/volunteer_time

SPOTLIGHT ON MADISON HOUSE

In FY15, **3,179 students volunteered through the Madison House program**. A total of **111,135 volunteer hours were logged** by these students at a wide-variety of organizations including but not limited to:

- Local schools
- Health clinics
- Faith organizations
- Habitat for Humanity
- Food pantries
- Community centers
- United Way
- Therapy centers

The impact of Madison House volunteer work on the region and state is estimated at **\$2.5 million** for FY15.¹⁵ With more than 30,000 alumni of Madison House, the impact of this public service mindset extends beyond graduation to communities throughout the country and the globe.

I. STUDENTS CONTRIBUTE TO THE ECONOMY OF THE COMMONWEALTH

UVA's total impact on the Commonwealth of Virginia goes beyond its annual operational expenditures. Economic impact studies typically capture only the impact that can be assigned a quantitative number, but the qualitative value and impact of the University goes far beyond its annual multi-billion-dollar economic impact. Through its academic programs, UVA is helping to grow the Commonwealth by educating the highly-skilled workforce that will be needed to compete in a global economy. Providing the next generation of innovators with a firm foundation upon which to grow their own ideas, UVA is helping to build the next generation of scholars, innovators, and entrepreneurs. Moreover, UVA provides the larger community with access to faculty experts, adds richness and diversity to the region's cultural offerings, and is recognized internationally as a center of distinct and innovative health care services.

UVA EDUCATES THE FUTURE WORKFORCE OF VIRGINIA

UVA confers approximately 6,000 undergraduate, graduate, and doctoral degrees each year, providing a quality education to the next generation of leaders.

The contributions of UVA graduates are critically important to the economic vitality of the Commonwealth, across the United States, and internationally. The university's alumni number more than 226,000 and reside in all 50 states, the District of Columbia, and virtually every country in the world. Today, there are approximately 91,530 UVA graduates living in Virginia generating impact every day.

¹⁵ Tripp Umbach estimate from proprietary models. This impact value is included in the overall community impact of UVA.

UVA provides graduates with a high-quality educational, experiential, and entrepreneurial base to pursue their careers locally and globally. The value of a UVA education cannot be quantified, but students around the world are able to apply their learnings in the diverse economy and culture of the world.

J. VISITORS TO THE AREA

Universities are hubs of cultural, educational, and social activity. UVA hosts and supports a number of events in Charlottesville and Wise that attract visitors, such as professional conferences, summer camps for middle and high school students, art exhibits, and renowned speakers. A few examples in Charlottesville include: Society of Women Engineers High School Visitation Weekend, summer sports camps, and the Investing Conference at Darden. Some examples in Wise include: summer band camps for high school students and Pro-Art Association programs and performances.

In FY15, the economic impact of visitors to the Commonwealth due to the presence of UVA amounted to **\$352.9 million**. This impact is generated when visitors come to the region and spend on hotels/motels, restaurants, personal goods, entertainment, parking, and much more. When visitors spend in the region, part of the dollars being spent go to supporting local jobs. As a result of out of area visitors coming to the state, a total of **3,918 jobs** were supported across the Commonwealth. The Commonwealth benefits from the visitors that are attracted to the region by UVA in the form of increased government revenues. In FY15, the state and local government revenues attributable to the out of area visitors spending in the state amounted to **\$23.0 million**.

Visitors come to Charlottesville and Wise for a wide range of activities. Some of the events occurring throughout the region include:

- **UNESCO World Heritage sites: Monticello and The Rotunda at the University of Virginia**
 - Monticello was the plantation home of Thomas Jefferson, author of the American Declaration of Independence and third President of the United States. He designed both the plantation home and his ideal Academical Village, situated eight kilometers away in Charlottesville. The Academical Village still forms the heart of the University of Virginia, and exhibits a unique U-shaped plan dominated by the Rotunda with pavilions, hotels, student rooms, and gardens arrayed in rows to its south.¹⁶

¹⁶ UNESCO World Heritage Convention. Monticello and the University of Virginia in Charlottesville. Description. <http://whc.unesco.org/en/list/442>

- **Entertainment at the John Paul Jones Arena**
 - The John Paul Jones arena seats 14,593, is home to the University Men's and Women's Basketball teams, and hosts a myriad of attractions including concerts, family shows, exhibits, trade shows, and community events. John Paul Jones Arena has hosted many of the biggest acts in live entertainment, including Dave Matthews Band, The Police, Eric Clapton, The Eagles, Lady Gaga, Kenny Chesney, Jimmy Buffett, Justin Timberlake, Jay-Z, Elton John, Bruce Springsteen, Keith Urban, George Strait, The Grateful Dead, Phish, Jason Aldean, and The Red Hot Chili Peppers.
- **Athletic events**
 - University athletics are a significant generator of impact to an area. Athletic events draw students, families, alumni, community members, and employees together for a common purpose, to support their team. Every year, UVA teams rank highly nationally in a variety of sporting events – baseball, soccer, lacrosse, tennis, rowing, football and basketball. The impact of university athletics on a region is felt through the spending of visitors to the area as well as the intangible culture of oneness that comes with sporting events.
- **Graduation**
 - Every year, UVA hosts multi-day, event-filled graduation celebrations that are a large draw for visitors. It is estimated that every year, 30,000 visitors descend on Charlottesville for Final Exercises and approximately 2,800 visitors travel to Wise for Commencement. Families, friends, and loved ones are welcome for a variety of activities and events that span two to three days in celebration of their student.
- **Virginia Film Festival**
 - The Virginia Film Festival at the University of Virginia has been celebrating the magic of the movies and inspiring audiences for over 25 years.¹⁷ Every autumn, the Festival showcases celebrated new features and documentaries, fresh perspectives on timeless classics, and local filmmakers from right here in Virginia. The Festival brings in a fascinating selection of guests, from internationally acclaimed directors and actors to professors and leading cultural experts who lead discussions that stimulate, educate, and engage. Today, the Festival stands as one of Virginia's most important cultural landmarks, and one of the most respected regional destination film festivals in the United States.

¹⁷ Virginia Film Festival. Who We Are. <http://virginiafilmfestival.org/history/>

- **Tom Tom Founders Festival**
 - Tom Tom Founders Festival is a week of music, art, and innovation held in Charlottesville each April that converges hundreds of bands, start-ups, artists, and visionaries with the purpose of celebrating creative founding.¹⁸
 - UVA sponsors many events at the Tom Tom Festival, providing a venue for students, faculty, staff, and community members to engage with other entrepreneurs and promote a robust entrepreneurial eco-system.
 - In 2016, Tom Tom had attendance of more than 38,200 and showcased more than 400 community organizations.

- **Virginia Festival of the Book**
 - The Virginia Festival of the Book (VFB) brings readers and writers together for a five-day celebration of books, reading, literacy, and literary culture.¹⁹ VFB will be celebrating its 23rd year in 2017. Produced by the Virginia Foundation for the Humanities (VFH), the largest of the 56 state (and territory) humanities councils, the Festival is a program of the Virginia Center for the Book, an affiliate of the Center for the Book in the Library of Congress.
 - The Festival is presented through a unique partnership of contributors that includes VFH, foundations, corporations, bookstores, schools, libraries, area businesses and organizations, and committed individuals. This partnership results in programs on a wide range of topics taking place at a variety of venues throughout the City of Charlottesville, County of Albemarle, and the University of Virginia.
 - The Festival is the largest community-based book event in the Mid-Atlantic region and has attracted audiences of more than 20,000 for each of the past thirteen years.

- **David J. Prior Convocation Center at UVA-Wise**
 - The David J. Prior Convocation Center, which seats 3,000 for sporting events and 3,600 for concerts or convention activities, opened in September 2011. The \$30 million, 78,000-square-foot center annually hosts athletic contests, concerts, graduations/commencements, proms/after-prom parties, dances, conferences, conventions, trade shows, weddings/wedding receptions, and many other events. In FY15, a total of 1,001 events with 242 unique occurrences were held at the Prior Convocation Center with an estimated 79,000 visitors. Of this total, 8,000 people visited from outside the region.

¹⁸ Tom Tom Founders Festival. About. <http://tomtomfest.com/about/>

¹⁹ Virginia Festival of the Book. About Us. <http://vabook.org/about-us/>

IV. THE UNIVERSITY OF VIRGINIA ACADEMIC DIVISION – TOTAL IMPACT

INTRODUCTION

The UVA Academic Division is distinctive among public institutions of higher education as it selects only students that show the exceptional promise Jefferson envisioned. The UVA Academic Division is made up of eleven schools in Charlottesville

For 2017, the UVA Academic Division was ranked the No. 2 best public university by *U.S. News and World Report*. In the 18 years since *U.S. News* began ranking public universities as a separate category, the UVA Academic Division has ranked in the top three and continues to rank in the Top 30 among the best of all national universities, public and private.

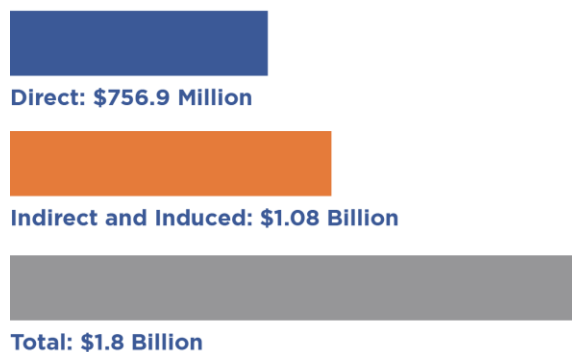
This high-quality reputation brings with it exceptional faculty, staff, and students from around the globe to conduct excellent and ground-breaking education, research, and discovery. With more than 22,000 currently enrolled students as well as almost a quarter of a million alumni from all 50 United States, the District of Columbia, and 147 countries, the reach of students and their outstanding educational experience is expansive. Students can choose from 121 majors across eleven undergraduate and graduate schools.

GENERATING ECONOMIC IMPACT FOR THE COMMONWEALTH

The UVA Academic Division is a powerhouse for economic activity. The UVA Academic Division spends in a variety of ways, across multiple economic sectors throughout the Commonwealth of Virginia. The presence of the UVA Academic Division helps to create a diverse and stable economy locally as well as statewide.

Direct spending by the UVA Academic Division to vendors and employees helps to generate additional spending in the area as well as throughout the state. Operations of the UVA Academic Division directly or indirectly impact residents throughout Virginia every day. **In FY15, the direct spending of the UVA Academic Division, in combination with the indirect and induced impacts of dollars being re-spent throughout the state economy, generated more than \$1.8 billion in overall economic impact.**

ECONOMIC IMPACT OF UVA ACADEMIC DIVISION ON VIRGINIA, FY15



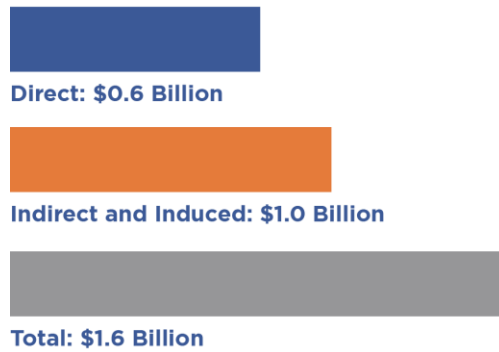
Source: Tripp Umbach findings using IMPLAN results from data obtained by the University of Virginia

As a result of expenditures on goods and services by the UVA Academic Division, its faculty, staff, students, and visitors, the overall economic impact of the UVA Academic Division operations on the Commonwealth of Virginia in FY15 was **\$1.8 billion (\$756.9 million in direct impact and \$1.08 billion in indirect and induced impact).**

GENERATING IMPACT IN THE REGION

Direct spending by the UVA Academic Division also generates significant economic activity throughout the region. The UVA Academic Division is located in Charlottesville and the impacts can be felt throughout the Thomas Jefferson Planning District Commission (TJPDC) region.²⁰ In FY15, the direct spending of the UVA Academic Division in combination with the indirect and induced impacts of dollars being re-spent throughout the regional economy, generated **\$1.6 billion** in overall economic impact to the TJPDC region (\$635 million direct impact and \$1.0 billion indirect and induced).

ECONOMIC IMPACT OF UVA ACADEMIC DIVISION ON THE TJPDC REGION, FY15

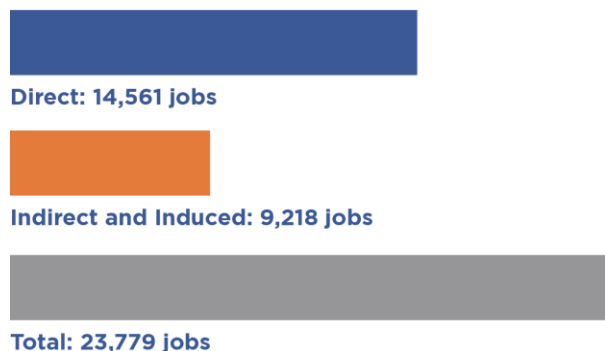


Source: Tripp Umbach findings using IMPLAN results from data obtained by the University of Virginia

CREATING AND SUSTAINING JOBS THROUGHOUT THE COMMONWEALTH

In FY15, the UVA Academic Division supported **23,779 jobs** in the Commonwealth of Virginia. These jobs (both full-time and part-time) include not only direct employment by the UVA Academic Division (14,561 jobs), but also indirect and induced jobs (9,218) that are supported as a result of the UVA Academic Division, employee, student, and visitor spending.

EMPLOYMENT IMPACT OF UVA ACADEMIC DIVISION ON VIRGINIA, FY15



Source: Tripp Umbach findings using IMPLAN results from data obtained by the University of Virginia

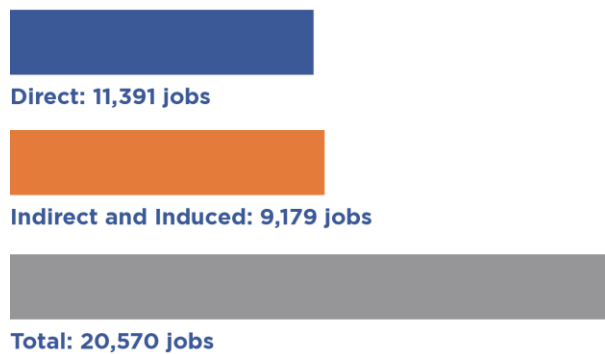
²⁰ The Thomas Jefferson Planning District Commission geography is defined as the city of Charlottesville and the counties of Albemarle, Fluvanna, Greene, Louisa, and Nelson.

The UVA Academic Division directly supported **14,561 jobs** (full-time or part-time) during FY15. The UVA Academic Division supports thousands of jobs statewide in virtually every sector of the Virginia economy, such as construction, business and professional services, restaurants and hotels, information technology, security, and temporary employment companies. These indirect and induced jobs (9,218 jobs) support the more than 14,561 jobs held by Virginia residents directly employed by the UVA Academic Division.

SUPPORTING JOBS IN THE REGION

In FY15, the UVA Academic Division directly employed 11,391 individuals (full-time or part-time positions) living, and therefore spending dollars, in the TJPDC region. This direct employment generates additional spending throughout the region that in turn supports additional indirect and induced jobs created when UVA Academic Division, its employees, students, and visitors spend in the region. In total, UVA Academic Division supports **20,570 jobs** throughout the TJPDC region.

EMPLOYMENT IMPACT OF UVA ACADEMIC DIVISION ON THE TJPDC REGION, FY15



Source: Tripp Umbach findings using IMPLAN results from data obtained by the University of Virginia

STRENGTHENING STATE AND LOCAL GOVERNMENTS

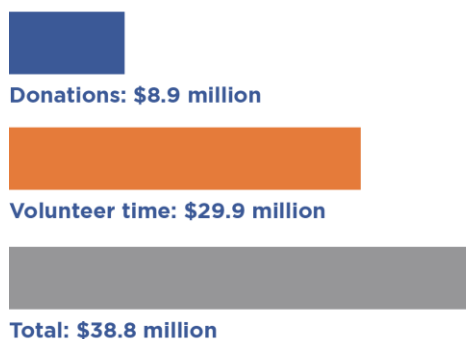
It is a common misperception that public universities do not generate tax revenue. **State and local government revenues attributable to the presence of the UVA Academic Division totaled more than \$92.5 million in FY15.** Through its local spending, as well as direct and indirect support of jobs, the presence of the UVA Academic Division stabilizes and strengthens the local and statewide tax base. The UVA Academic Division is an integral part of the state’s economy – generating revenue, jobs, and spending.

State and local government revenues attributable to the presence of the UVA Academic Division totaled **\$87.6 million** in FY15 for the TJPDC region.

GIVING BACK TO THE COMMUNITY

Not only does the UVA Academic Division directly and indirectly affect the economy of the Commonwealth and support jobs throughout the state, it also touches the lives of residents by way of community support. The UVA Academic Division, its employees, and students all take active roles in engaging with the local as well as larger communities; donating time and dollars to support their community.

COMMUNITY IMPACT OF UVA ACADEMIC DIVISION EMPLOYEES AND STUDENTS ON VIRGINIA, FY15



Tripp Umbach estimates that the UVA Academic Division faculty, staff, and students generate more than **\$38.8 million** annually in charitable donations and volunteer services. These benefits include:

Source: Tripp Umbach findings using data obtained by the University of Virginia

- **\$8.9 million** donated to local charitable organizations by the UVA Academic Division faculty, staff, and students.
- **\$29.9 million** in value of volunteer time provided to area communities by UVA-Academic faculty, staff, and students.

Students can engage with the community through the Madison House program that coordinates volunteer activity for students and regional organizations. Students, staff, and faculty also engage with their community on their own through volunteer work, donations to non-profits, charity events, clean-up efforts, tutoring, and many more avenues. These community impacts are in addition to the economic impact totals.

ATTRACTING VISITORS

The UVA Academic Division attracts a wide-variety of individuals to the state and the region by way of its presence and offerings. In FY15, it is estimated that **\$162.5 million** was generated in economic impact as a result of visitors coming to the state for the UVA Academic Division, spending dollars that otherwise would not have been spent in the state.²¹ Visitors also supported **1,749 jobs** across the state and generated **\$10.9 million** in state and local government revenue impact. Visitors spend on goods and services including hotels/motels, restaurants, merchandise, events, personal goods, and much more. The spending of visitors to the UVA Academic Division contributes to a stronger local and state-wide economy.

²¹ All visitor impacts are included in the overall economic impact values of UVA Academic Division.

STUDENTS GENERATING IMPACT

Students, those living on and off campus, spend in the local economy that in turn supports jobs and generates tax revenue impacts. In FY15, the UVA Academic Division enrollment surpassed 22,000 undergraduate, graduate, and professional students. As students attend the UVA Academic Division, they spend on goods and services such as food, clothing, personal goods, and housing. If not for students attending the UVA Academic Division, this spending would not be realized in the local and state economies. In FY15, the economic impact attributable to student spending reached **\$130.4 million**, supported **1,338 jobs**, and generated more than **\$7.0 million** in state and local government revenue.²²

RESEARCH DISCOVERY CHANGING LIVES

The UVA Academic Division is classified as a *Research University with Very High Research* by the Carnegie Foundation. This focus on research drives the university and the state forward in discoveries across many fields. In FY15, the UVA Academic Division attracted \$311 million in research funding from external sources such as the Department of Health and Human Services the National Science Foundation, NASA, the Department of Defense, industry, and foundations.

In FY15, the UVA Academic Division spent more than \$94.5 million on research activity. This spending translates into a significant economic impact for Virginia. As a result of the UVA Academic Division research activity in FY15, a total **economic impact of \$213.8 million** was generated throughout the Commonwealth of Virginia.²³ The research occurring at the UVA Academic Division supported a total of **3,606 jobs** throughout the Commonwealth (2,706 direct and 897 indirect and induced jobs). As a result of the UVA Academic Division research activity, **\$7.6 million** were generated in state and local government revenue in FY15. Specific research projects and their impacts are further outlined later in this report. From the UVA Brain Institute to the Global Infectious Diseases initiative, research efforts from the UVA Academic Division affect individuals around the globe.

²² All student impacts are included in the overall economic impact values of UVA Academic Division.

²³ All research impacts are included in the overall economic impact values of UVA Academic Division.

V. THE UNIVERSITY OF VIRGINIA HEALTH SYSTEM – TOTAL IMPACT

INTRODUCTION

The study of health and medicine has been central to UVA since its founding as Medicine was one of the original disciplines studied at the University. Today, the University continues this commitment in innumerable ways, including through the schools, research and clinical units that make up the UVA Health System.

The University of Virginia Health System (UVA Health System or UVA HS) is a leading academic medical center linked to the UVA Academic Division. UVA HS is located in Charlottesville. UVA HS also operates a number of satellite centers throughout the Commonwealth, including Culpeper, Amherst, Augusta, Campbell, Fluvanna, Louisa, Nelson, and Orange counties.

Collectively, UVA HS serves a tripartite mission to provide patients in the Commonwealth and the nation with advanced and compassionate care, and expand scientific knowledge through bench and translational research. In addition, the consideration of multiple factors that contribute to physical, mental, and societal health are threaded through every part of UVA. From the study of health policy, to signature programs like ‘Be Safe’ that work to improve patient safety and patient outcomes, to research findings that have the potential to re-frame the understanding of disease, UVA HS is engaged in meaningful work intended to improve the human condition.

UVA HS is highly ranked locally as well as nationally.

- *U.S. News and World Report’s* 2016-2017 “Best Hospitals” guide recognized eight UVA HS specialties and ranked UVA HS as the No. 1 hospital in Virginia. The three UVA HS specialties that were ranked among the top 50 in the U.S. include Cancer, Urology, and Nephrology. Only approximately 3 percent of U.S. hospitals have a ranked specialty. Five additional specialties at UVA HS were honored as “high performing,” placing them among the top 10 percent of their respective specialties.²⁴
- These honors for UVA HS follow recognition from *U.S. News* for UVA Children’s Hospital, which has four specialties – urology, cardiology/heart surgery, neonatology and nephrology – recognized in the 2016-2017 “Best Children’s Hospital” guide.

²⁴ U.S. News Ranks UVA No. 1 Hospital in Virginia, Honors 8 Specialties. UVA today. August 02, 2016. <https://news.virginia.edu/content/us-news-ranks-UVA-no-1-hospital-virginia-honors-8-specialties>

In addition to the exceptional care provided through its multiple locations across the Commonwealth, health care professionals of the future are trained at the School of Medicine and School of Nursing. The UVA Health System includes five components:

1. **The University of Virginia Medical Center** – The University of Virginia Medical Center provides primary, specialty, and emergency care throughout the Commonwealth in a variety of care settings including clinics, hospitals, and outpatient care centers. The main hospital (UVA Medical Center) is located in Charlottesville with 585 inpatient beds, and a 45-bed neonatal intensive care unit. UVA Medical Center is an academic medical center – providing the clinical education for the health care leaders of the future (physicians, nurses, pharmacists, etc.). Patients seen at UVA Medical Center receive exceptional care from physicians who are also faculty members at the UVA School of Medicine, residents training to become physicians, nursing students, as well as a wide range of other medical professionals – all with the goal of patient health and well-being. In FY15, the UVA Medical Center treated 27,920 inpatients and had a total of 875,414 outpatient visits.
2. **The University of Virginia School of Medicine** - The UVA School of Medicine officially opened in March 1825 as the 10th medical school in the United States. The UVA School of Medicine has more than 1,000 faculty members who perform three main tasks: providing care to patients, educating medical students and residents, and performing scientific medical research that may lead to improved care for patients at UVA Health System and elsewhere. The medical school graduates an average of 150 medical students every year with approximately 40% of those (60 students) remaining in the state for their residency training. Attracting and retaining medical students in the Commonwealth is important in addressing health care needs of the state.
3. **The University of Virginia School of Nursing** – Soon after the opening of UVA’s first hospital, a nurse training program was developed. This program would be formally established in 1956 as The University of Virginia School of Nursing. The UVA School of Nursing is a national leader in nursing education with a firm commitment to clinical excellence, robust research and evidence-based practice. A celebrated interprofessional education program teams nursing and medical students in the classroom, in simulation exercises, and in clinical experiences. Nursing students are actively engaged in research activity either independently or as part of a team. The 2017 *U.S. News Best Graduate Schools* ranks the UVA School of Nursing: #2 for the Clinical Nurse Leader program, #7 for the Psychiatric-Mental Health Nurse Practitioner program, #18 for the Doctor of Nursing Practice program, and #20 for the Family Nurse Practitioner program nationally.

4. **The Claude Moore Health Sciences Library** – The Claude Moore Health Sciences Library licenses over 4,400 journal titles in the basic and clinical sciences and provides access to over 44,000 electronic and print books and 1,700 multimedia programs. For interdisciplinary research, UVA faculty, staff, and students have access to the entire University of Virginia online holdings, including over 462,000 eBooks, 174,000 journals, and 1,000 databases. The library serves as a biomedical information resource for the University at large, the local community, and the Commonwealth through proactive outreach services, and the nation through cooperative programs with other libraries and agencies.

5. **The University Physicians Group** – The UVA Physicians Group is the physician group practice of the UVA HS, representing doctors and other allied health professionals who provide care within the UVA HS and regional primary and specialty care practices. It was founded in 1979 as a nonprofit supporting organization of UVA to serve the financial and administrative needs of clinical staff. The Physicians Group performs billing and collections functions for physician professional services; manages primary and specialty care practices; oversees physician payroll and benefits, including a pension plan; negotiates commercial payer contracts; participates in clinical outreach business development; and offers legal and financial services. The Physicians Group works collaboratively with the other UVA Health System partners to provide high-quality patient care.

The impact analysis of the UVA HS included all five component parts of the organization; the UVA Medical Center, the UVA School of Medicine, the UVA School of Nursing, the Claude Moore Health Sciences Library, and the University Physicians Group. In addition to the overall impact analysis for the UVA Health System, separate impact analyses were conducted for the UVA College of Medicine and the UVA College of Nursing. These impact analyses can be found in Appendices A and B.

ECONOMIC IMPACT FOR THE COMMONWEALTH

Direct spending by the UVA Health System generates economic activity throughout the Commonwealth. In FY15, the direct spending of the UVA Health System in combination with the indirect and induced impacts of dollars being re-spent throughout the economy generated **\$4.0 billion** in overall economic impact (\$2.1 billion direct impact and \$1.9 billion indirect and induced).

Economic impact is generated by the UVA Health System when it spends on goods and supplies, when research is being conducted, and when it pays its employees. These employees then generate indirect and induced impacts when they spend their paychecks on goods and services in the local economy such as food, personal goods, and mortgage/rent. The total impact of all of this spending amounts to the \$4.0 billion economic impact of UVA Health System in the Commonwealth.

ECONOMIC IMPACT OF THE UVA HEALTH SYSTEM ON VIRGINIA, FY15



Direct: \$2.1 Billion



Indirect and Induced: \$1.9 Billion



Total: \$4.0 Billion

Source: Tripp Umbach findings using IMPLAN results from data obtained by the University of Virginia

ECONOMIC IMPACT FOR THE REGION

Direct spending by the UVA Health System generates economic activity throughout the TJPDC region.²⁵ In FY15, the direct spending of the UVA Health System in combination with the indirect and induced impacts of dollars being re-spent throughout the economy generated **\$3.2 billion** in overall economic impact (\$1.8 billion direct impact and \$1.4 billion indirect and induced).

ECONOMIC IMPACT OF THE UVA HEALTH SYSTEM ON THE TJPDC REGION, FY15



Direct: \$1.8 Billion



Indirect and Induced: \$1.4 Billion



Total: \$3.2 Billion

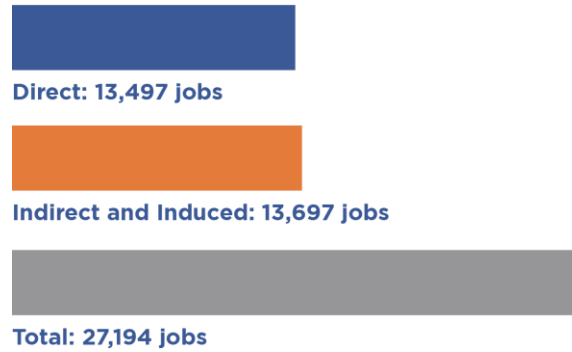
Source: Tripp Umbach findings using IMPLAN results from data obtained by the University of Virginia

²⁵ The Thomas Jefferson Planning District Commission geography is defined as the city of Charlottesville and the counties of Albemarle, Fluvanna, Greene, Louisa, and Nelson.

EMPLOYMENT IMPACT IN THE COMMONWEALTH

In FY15, the UVA Health System directly employed 13,497 individuals (full-time or part-time positions). This direct employment generates additional spending throughout the Commonwealth that in turn supports additional indirect and induced jobs created when the UVA Health System, its employees, health professional students, patients, and visitors spend in the region and state. In total, UVA Health System supports **27,194 jobs** (13,497 direct and 13,697 indirect and induced jobs) throughout the Commonwealth of Virginia.

EMPLOYMENT IMPACT OF THE UVA HEALTH SYSTEM ON VIRGINIA, FY15

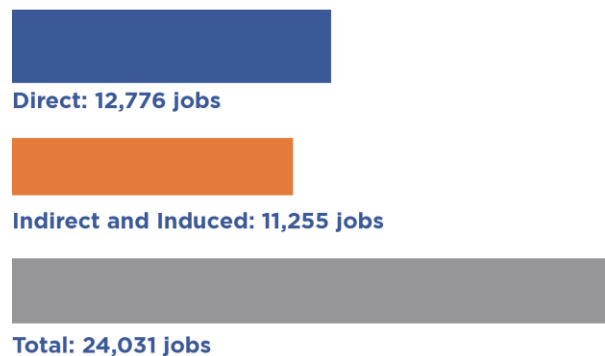


Source: Tripp Umbach findings using IMPLAN results from data obtained by the University of Virginia

EMPLOYMENT IMPACT IN THE REGION

In FY15, the UVA Health System directly employed 12,776 individuals (full-time or part-time positions) living, and therefore spending dollars, in the TJPDC region. This direct employment generates additional spending throughout the region that in turn supports additional indirect and induced jobs created when the UVA Health System, its employees, health professional students, patients, and visitors spend in the region. In total, UVA Health System supports **24,031 jobs** throughout the TJPDC region.

EMPLOYMENT IMPACT OF THE UVA HEALTH SYSTEM ON THE TJPDC REGION, FY15



Source: Tripp Umbach findings using IMPLAN results from data obtained by the University of Virginia

GOVERNMENT REVENUE IMPACT FOR THE COMMONWEALTH

Government revenues attributable to the presence of the UVA Health System totaled more than **\$143.9 million** in FY15. This income is generated when UVA Health System, its employees, health professional students, patients, and visitors spend on goods in the region (i.e., restaurants, retail, hotels/motels, etc.).

GOVERNMENT REVENUE IMPACT FOR THE REGION

Government revenues attributable to the presence of the UVA Health System totaled **\$111.6 million** in FY15 for the TJPDC region.

SPOTLIGHT ON THE KAREN S. RHEUBAN CENTER FOR TELEHEALTH

Telehealth at UVA has been an area of exploration and development for over 20 years. The Karen S. Rheuban Center for Telehealth provides timely access to specialty medical services that are otherwise unavailable in communities throughout Virginia and around the world. Services provided range from dentistry to urology and cover more than 32 primary care and specialty care disciplines. Telehealth is utilized throughout the Commonwealth as well as internationally in a variety of ways. Telehealth can be a consultation with a doctor, the determination of a diagnosis, the transfer of medical records, teleradiology services, educational seminars, or the monitoring and delivery of care via home health appliances.

Using standards-based, broadband technologies, the Karen S. Rheuban Center for Telehealth has supported thousands of hours of distance learning for patients and health care professionals and provided assistance to facilities looking to implement new telemedicine services.

In addition to the care provided via Telehealth, The Center collaborates with faculty and students from UVA's Schools of Medicine, Nursing, Engineering, Law, Business, Architecture, Commerce, Public Policy, and Education as well as the University's Healthy Appalachia Institute to generate interdisciplinary research and programmatic solutions to populations' health problems.

The Karen S. Rheuban Center for Telehealth by the numbers:

- Established **152 Telemedicine Partners** across Virginia
- Supported **50,000+** clinical patient encounters
- Provided care in **60+** medical subspecialties
- Saved Virginia patients **16 million miles of travel**

The Center for Telehealth also serves the international community in researching and working collaboratively with health projects throughout the world. The international projects in which the Karen S. Rheuban Center for Telehealth are currently involved include:

- Tanzanian Women’s Global Health Initiative
- National University of Rwanda – UVA Surgical Case Conference
- The UVA – Guatemala Initiative
- Mbarara University of Science and Technology – UVA Collaboration
- Swinfen Charitable Trust

The range of care provided by the Karen S. Rheuban Center for Telehealth goes unparalleled. The impacts that the Center has on the Commonwealth and the world are difficult to quantify as the presence of this technology reduces care costs, is helping to provide preventative care to patients, and reduces travel for patients, physicians, and staff. The health care industry is growing into the Telehealth arena and UVA has been at the forefront of this movement for two decades.

CONNECTING WITH THE COMMUNITY

The UVA Health System is intimately engaged with the community through a number of events, donating to local organizations, and volunteering time to provide care to residents.

In addition to all of the care provided to the community by the organization, the employees and students of UVA Health System engage in community outreach on their own time as well. It is estimated that the UVA Health System physicians, staff, and students generate more than **\$25.7 million** annually in charitable donations and volunteer services every year. These benefits are in addition to the \$4.0 billion annual economic impact of the UVA Health System and include the following:

COMMUNITY IMPACT OF THE UVA HEALTH SYSTEM ON VIRGINIA, FY15



Source: Tripp Umbach findings using data obtained by the University of Virginia

- **\$8.9 million** donated to local charitable organizations in FY15.
 - The UVA Health System employees and students support many charitable organizations such as the Salvation Army, Jefferson Area Board for the Aging, Shelter for Help in Emergency, the UVA Children’s Miracle Network, Thomas Jefferson Food Bank and the Susan G. Komen for the Cure Foundation.
- **\$16.8 million** in value of volunteer time provided to area communities in FY15.
 - United Way Day of Caring
 - Ronald McDonald House
 - Camp Holiday Trails
 - Local schools
 - Free clinics

VISITOR SPENDING

In FY15, the economic impact of visitors coming to the Commonwealth in association with the UVA Health System amounted to **\$184.3 million**.²⁶ The economic activity of such visitor activity helped to support **2,102 jobs** throughout the Commonwealth. Also, **\$11.6 million** in state and local government revenue were generated as a result of visitor spending to the UVA Health System.

CONDUCTING INNOVATIVE RESEARCH

The UVA Health System is conducting ground-breaking research on a daily basis. Students, faculty, and staff are exploring research avenues to pursue the betterment of the human condition in areas such as cancer, immunology, diabetes, public health, transplant, genomics, and many more.

In FY15, the UVA Health System had a total of \$189 million in research expenditures. As research is conducted at the UVA Health System, spending affects local businesses and supports additional jobs. The economic impact of the research activity occurring at the UVA Health System in FY15 amounted to **\$428.1 million**, supported **7,215 jobs**, and generated **\$15.2 million** in state and local government revenue for the Commonwealth.²⁷

²⁶ All visitor impacts are included in the overall economic impact values of the UVA Health System.

²⁷ All research impacts are included in the overall economic impact values of the UVA Health System.

VI. THE UNIVERSITY OF VIRGINIA'S COLLEGE AT WISE – TOTAL IMPACT

INTRODUCTION

Before The University of Virginia's College at Wise was founded, there was a growing need for a public college in Virginia's southwestern region. The region's residents found access to higher education difficult as the closest Virginia public college was in Radford, making a postsecondary education nearly out of reach for many families.

Local residents boldly asked leaders at the University of Virginia to establish a college in Wise in December 1953. Clinch Valley College of the University of Virginia opened its doors in fall 1954 on a farm donated by Wise County. The College had 109 full-time students in its pioneer class. Two-thirds of the class had just returned from the Korean War.

The Commonwealth of Virginia provided \$5,000 to open, staff and operate the two-year school for its first year and promised another \$5,000 for the second year. The College survived its first year and has since thrived.

Clinch Valley College continued as a two-year school for several years, but many graduates and others in the region expressed keen interest to transform the College to a four-year senior institution. The Virginia General Assembly approved legislation in 1966 to allow the College to offer baccalaureate degrees. The legislature boosted the school again in 1999 by changing its name to The University of Virginia's College at Wise. The College celebrated its 50th anniversary in 2004 and now boasts more than 10,000 alumni from all parts of Virginia and beyond.

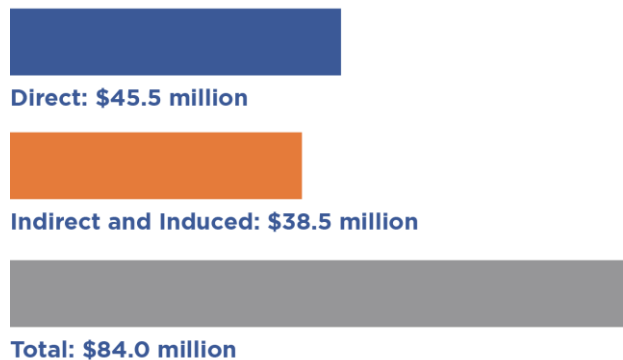
UVa-Wise is committed to promoting students and faculty exchanges and to expanding students' understanding and appreciation of communities near and far. It continues to have a transformative impact on its students, and is an economic driver for the entire southwestern region. Its dedicated and generous donors have helped make the College affordable by providing scholarships that have propelled UVa-Wise to the top spot among the nation's public college for graduating students with low debt.

With a headcount of more than 2,000 students and approximately 387 faculty and staff, UVa-Wise fulfills its mission to provide educational opportunities to residents of Southwest Virginia while attracting students from all of Virginia. The College continues to bring business opportunities to the region as well. What was once a small, rural, two-year college is a widely recognized, nationally competitive school that operates on a global scale.

GENERATING ECONOMIC ACTIVITY IN THE COMMONWEALTH

Direct spending by UVA-Wise generates economic activity throughout the Commonwealth. In FY15, the direct spending of UVA-Wise in combination with the indirect and induced impacts of dollars being re-spent throughout the economy generated **\$84.0 million** in overall economic impact (\$45.5 million direct impact and \$38.5 million indirect and induced).

ECONOMIC IMPACT OF UVA-WISE ON VIRGINIA, FY15



Source: Tripp Umbach findings using IMPLAN results from data obtained by the University of Virginia

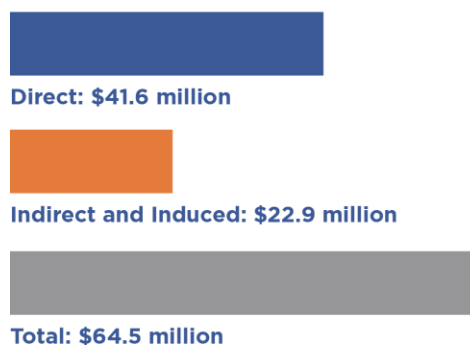
Economic impact is generated by UVA-Wise when it spends on goods and supplies, educating students, and when it

pays its employees. These employees then generate indirect and induced impacts when they spend their paychecks on goods and services in the local economy such as food, personal goods, and mortgage/rent. The total impact of all of this spending amounts to the \$84.0 million economic impact of UVA-Wise in the Commonwealth.

ECONOMIC IMPACT IN THE LENOWISCO AND CUMBERLAND PLATEAU REGIONS

Direct spending by UVA-Wise generates economic activity throughout the LENOWISCO and Cumberland Plateau Planning District regions.²⁸ In FY15, the direct spending of UVA-Wise in combination with the indirect and induced impacts of dollars being re-spent throughout the regional economy generated **\$64.5 million** in overall economic impact to the area (\$41.6 million direct impact and \$22.9 million indirect and induced).

ECONOMIC IMPACT OF UVA-WISE ON THE LENOWISCO AND CUMBERLAND PLATEAU PLANNING



Source: Tripp Umbach findings using IMPLAN results from data obtained by the University of Virginia

²⁸ The LENOWISCO and Cumberland Plateau Planning District geography is defined as the city of Norton and the counties of Buchanan, Dickenson, Lee, Russell, Scott, Tazewell, and Wise.

PROVIDING AND SUPPORTING JOBS IN THE COMMONWEALTH

In FY15, UVA-Wise directly employed 387 individuals (full-time or part-time positions). This direct employment generates additional spending throughout the Commonwealth that in turn supports additional indirect and induced jobs created when UVA-Wise, its employees, students, and visitors spend in the region and state. In total, UVA-Wise supports **680 jobs** (387 direct and 293 indirect and induced jobs) throughout the Commonwealth of Virginia.

EMPLOYMENT IMPACT OF UVA-WISE ON VIRGINIA, FY15



Direct: 387 jobs



Indirect and Induced: 293 jobs



Total: 680 jobs

Source: Tripp Umbach findings using IMPLAN results from data obtained by the University of Virginia

EMPLOYMENT IMPACT IN THE LENOWISCO AND CUMBERLAND PLATEAU REGIONS

In FY15, UVA-Wise directly employed 374 individuals (full-time or part-time positions) living, and therefore spending dollars, in the LENOWISCO and Cumberland Plateau Planning District regions. This direct employment generates additional spending throughout the region that in turn supports additional indirect and induced jobs created when UVA-Wise, its employees, students, and visitors spend in the region. In total, UVA-Wise supports **586 jobs** throughout the LENOWISCO and Cumberland Plateau Planning District regions.

EMPLOYMENT IMPACT OF UVA-WISE ON THE LENOWISCO AND CUMBERLAND PLATEAU PLANNING DISTRICT REGIONS, FY15



Direct: 374 jobs



Indirect and Induced: 212 jobs



Total: 586 jobs

Source: Tripp Umbach findings using IMPLAN results from data obtained by the University of Virginia

GENERATING GOVERNMENT INCOME FOR THE COMMONWEALTH

Government revenues attributable to the presence of UVA-Wise totaled nearly **\$3.5 million** in FY15. This income is generated when UVA-Wise, its employees, students, and visitors spend on goods in the region (i.e., restaurants, retail, hotels/motels, etc.).

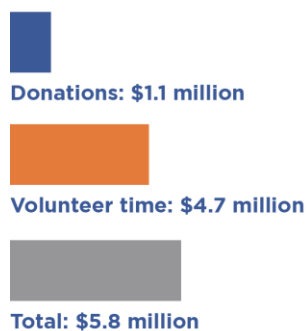
GOVERNMENT INCOME FOR THE LENOWISCO AND CUMBERLAND PLATEAU REGION

Government revenues attributable to the presence of UVA-Wise totaled **\$2.7 million** in FY15 for the LENOWISCO and Cumberland Plateau Planning District regions.

CONNECTING WITH THE COMMUNITY

UVA-Wise is intimately engaged with the community through a number of events, donating to local organizations, and volunteering time at local non-profits. It is estimated that UVA-Wise faculty, staff, and students generate more than **\$5.8 million** annually in charitable donations and volunteer services every year. These benefits are in addition to the \$84.0 million annual economic impact of UVA-Wise and include the following:

COMMUNITY IMPACT OF UVA-WISE ON VIRGINIA, FY15



Source: Tripp Umbach findings using data obtained by the University of Virginia

- **\$1.1 million** donated to local charitable organizations in FY15.
 - United Way
 - Local schools
 - Habitat for Humanity
 - American Cancer Society – Relay for Life
 - Food banks
- **\$4.7 million** in value of volunteer time provided to area communities in FY15.
 - STREAM Science, Technology, Research, Engineering, and Math initiatives
 - Girl’s Day in STEM-H – Introduces local young girls/women to careers in STEM fields
 - Cavaliers Care: A Day of Service
 - In its sixth year, UVA and UVA-Wise host the annual Cavaliers Care: A Day of Service.

- Hundreds of students, staff, and faculty join together to volunteer with a number of different projects to spruce up the community including:
 - Campus beautification
 - High School cleanup
 - Clothing and household donations
 - Wise County Fair Grounds cleanup
 - Kids Central revitalization
 - The UVA-Wise David J. Prior Convocation Center, in conjunction with the VHSL (Virginia High School League), has been deemed a supersite for VHSL contests including volleyball, basketball, and wrestling. Over its 5-year existence, the Prior Center has hosted volleyball conferences and quarterfinals, wrestling regionals and quarterfinals, and basketball regionals, quarterfinals and semi-final contests. These events have attracted visitors from across the Commonwealth (from Southern Virginia north to Shenandoah Valley and as far east as the Tidewater Region). Average attendance at these contests has surpassed 2,500. The 2013 State quarterfinals filled all 3,600 seats for each of the six games that were hosted.

VISITOR SPENDING

One important component of economic impact analysis is the individuals that are drawn to a region as a result of an organization. On-campus events, student and family visitors, and business visitors, all spend dollars in the local economy as a result of UVA-Wise's presence. In FY15, the impact of visitors to the area was \$6.1 million in economic impact, supported 67 jobs across the Commonwealth, and generated more than \$403,000 in state and local tax revenue.²⁹

STUDENT SPENDING

UVA-Wise was born out of the desire of local residents to have an institution of higher education in their community. UVA-Wise has been successfully achieving this mission for more than 60 years. The impact of attracting students to a region grows the economy as students spend on food, merchandise, and personal goods. The economic impact of the students attending UVA-Wise in FY15 was \$5.2 million, supported 58 jobs in the community, and generated more than \$287,000 in state and local tax revenue impacts for the area and the Commonwealth.³⁰

²⁹ All visitor impacts are included in the overall economic impact values of UVA-Wise.

³⁰ All student impacts are included in the overall economic impact values of UVA-Wise.

RESEARCH IMPACT

Research being conducted at the college has had an important impact on the students and faculty of the school. In FY15, 21 students presented at the National Council for Undergraduate Research Conference in Asheville, North Carolina.

- “This shows that scholarship is important, faculty are interested, and students are more and more eager to have the opportunity to conduct research and learn outside the classroom.” - Academic Dean Amelia Harris

In FY15, UVA-Wise had a total of \$1.3 million in research expenditures. The impact of this research activity at UVA-Wise in FY15 amounted to \$2.6 million in economic impact and supported 24 jobs.³¹

ECONOMIC DEVELOPMENT

The UVA-Wise Office of Economic Development (OED) was established in 2007 and was formed to build upon the strong historical role the College has played in economic development for over half a century. Specifically, the office was formed to do the following:

- Engage businesses and industries to create opportunities for students and faculty, as well as support educational programs.
- Enhance partnerships with the local economic development community, state, regional planning district commissions, and county and city economic development professionals.
- Develop internship programs with businesses and industries.
- Operate the UVA-Wise Abingdon Center located in the Southwest Virginia Higher Education Center to provide academic and professional programs to the region.
- Operate the Healthy Appalachia Institute, the only public health institution in Southwest Virginia.

Although the College has been an economic driver in the region for over half a century, its role in economic development became more critical with the passage of the Higher Education Restructuring Act. The Restructuring Act requires colleges to be involved in economic development activities. A few examples of UVA-Wise’s economic development partnerships in southwest Virginia include:

- Rally Southwest Virginia is an action learning program which builds leadership capacity in towns undertaking downtown revitalization projects. Throughout the program, teams

³¹ All research impacts are included in the overall economic impact values of UVA-Wise.

learn and develop vital leadership skills needed to carry out community strategies and during the learning process, apply their new skills to complete a meaningful community development project. Launched in the summer of 2015, Rally SWVA has completed two phases with five Southwest Virginia communities: Cleveland, Damascus, Dungannon, Haysi and Pocahontas. Phase three is underway in the communities of Coeburn, Tazewell and Chilhowie.

- Frontier Communications, a strategic partner of Intuit recently announced the creation of 500 jobs in Wise County. UVA-Wise is providing customized pre-employment training in order to assist college alums enhance skills and take advantage of the excellent career opportunities.
- Micronic Technologies is a woman-owned small business originally founded in 2008 in Sterling, Virginia, now located in Wise, Virginia. Micronic Technologies has researched, developed, and is now commercializing sustainable water desalination and purification technology around the world and was recently one of four companies (out of one hundred from 23 countries) selected in an Open Innovation Challenge led by General Electric and Statoil of Norway. UVA-Wise was instrumental in recruiting the company to the region. The college is providing third-party laboratory testing and helping the company prepare for commercialization through scalability modeling and conducting environmental and economic return on investment analysis.

SPOTLIGHT ON SWVA ECONOMIC FORUM

The SWVA Economic Forum was initiated in 2015 in an effort to bring together over 50 individuals and organizations working on economic development initiatives in the region. The first event was supported by UVA-Wise and a 26-member planning committee of businesses, organizations and individuals throughout the region. The purpose of the forum was to raise awareness of ongoing initiatives being undertaken by businesses, economic developers, governmental agencies, and community organizations throughout the SWVA region. More than 350 participants from four states attended to learn new economic development strategies and to respond to the call for action.

Six action teams with over 150 individuals, organized as a result of the Economic Forum, are continuing to gather information, connect organizations and individuals and create strategies to help promote the need for a regional advancement in economic development. Today UVA-Wise coordinates the work of action teams focused on Youth, Health & Wellness, Business Support and Attraction, Agriculture and Natural Resources, Entrepreneurship, and Regional Promotions and Communications.

APPENDIX A: THE UNIVERSITY OF VIRGINIA SCHOOL OF MEDICINE – TOTAL IMPACT

The following impact values for the UVA School of Medicine are a subset of the impact values presented in the UVA Health System section of this report. The UVA School of Medicine is one of five components of the UVA Health System presented previously. It is important, however, to understand the individual impacts generated solely by the UVA School of Medicine to understand the impacts of medical students and residents, research activity, and the academic medical nature of UVA.

GENERATING ECONOMIC ACTIVITY

Direct spending by the UVA School of Medicine generates economic activity throughout the Commonwealth. In FY15, the direct spending of the UVA School of Medicine in combination with the indirect and induced impacts of dollars being re-spent throughout the economy, generated **\$665.4 million** in overall economic impact to the Commonwealth (\$325.6 million direct impact and \$339.8 million indirect and induced).

PROVIDING AND SUPPORTING JOBS

In FY15, the UVA School of Medicine directly employed more than 3,554 individuals (full-time or part-time positions). This direct employment generates additional spending throughout the Commonwealth that in turn supports additional indirect and induced jobs created when the UVA School of Medicine, its employees, students, and visitors spend in the region and state. In total, the UVA School of Medicine supports **6,060 jobs** throughout the Commonwealth of Virginia.

GENERATING STATE AND LOCAL GOVERNMENT INCOME

State and local government revenues attributable to the presence of the UVA School of Medicine totaled nearly **\$31.8 million** in FY15.

RESEARCH IMPACT

The UVA School of Medicine plays an important role in securing research funding for UVA and serves as a bridge between the university, the health system, and the health care industry in researching and delivering innovative care techniques and devices. In FY15, the UVA School of Medicine's research activity generated an economic impact to the Commonwealth of \$425.4 million, supported 7,169 jobs, and generated \$15.1 million state and local government revenue impact.

APPENDIX B: THE UNIVERSITY OF VIRGINIA SCHOOL OF NURSING – TOTAL IMPACT

The following impact values for the UVA School of Nursing are a subset of the impact values presented in the UVA Health System section of this report. The UVA School of Nursing is one of five components of the UVA Health System presented previously.

GENERATING ECONOMIC ACTIVITY

Direct spending by the UVA School of Nursing generates economic activity throughout the Commonwealth. In FY15, the direct spending of the UVA School of Nursing in combination with the indirect and induced impacts of dollars being re-spent throughout the economy generated **\$37.7 million** in overall economic impact (\$14.8 million direct impact and \$22.9 million indirect and induced).

PROVIDING AND SUPPORTING JOBS

In FY15, the UVA School of Nursing directly employed 286 individuals (full-time or part-time positions). This direct employment generates additional spending throughout the Commonwealth that in turn supports additional indirect and induced jobs created when the UVA School of Nursing, its employees, students, and visitors spend in the region and state. In total, the UVA School of Nursing supports **482 jobs** throughout the Commonwealth of Virginia.

GENERATING STATE AND LOCAL GOVERNMENT INCOME

State and local government revenues attributable to the presence of the UVA School of Nursing totaled nearly **\$1.9 million** in FY15.

APPENDIX C: DEFINITION OF TERMS

Study Year	Fiscal year was defined as FY15, July 1, 2014 – June 30, 2015
Total Industry Output	The total impact of an organization includes the spending of the organization, the labor income expenditures, and the value-added to the economy as a result of the organizational spending, this is described as the total industry output.
Total Economic Impact	The total impact of an organization is a compilation of the direct impact, the indirect impact, and the induced impact generated in the economy as a result of the organization.
Direct Economic Impact	Direct impact includes all direct effects the organization has on the region due to the organization’s operations. These include direct employees, organizational spending, employee spending, and spending by patients and visitors to the organization.
Indirect Economic Impact	The indirect impact includes the impact of local industries buying goods and services from other local industries. The cycle of spending works its way backward through the supply chain until all money is spent outside of the local economy, either through imports or by payments to value added.
Induced Economic Impact	The response by an economy to an initial change (direct effect) that occurs through re-spending of income received by a component of value added. IMPLAN’s default multiplier recognizes that labor income (employee compensation and proprietor income components of value added) is not lost to the regional economy. This money is recirculated through the household spending patterns causing further local economic activity.

Multiplier Effect	The multiplier effect is the additional economic impact created as a result of the organization’s direct economic impact. Local companies that provide goods and services to an organization increase their purchasing by creating a multiplier.
Government Revenue	Government revenue that is collected by governmental units in addition to those paid directly by an organization, including taxes paid directly by employees of the organization, visitors to the organization, and vendors who sell products to the organization.
Direct Employment	Total number of employees, both full-time and part-time, at the organization based on total jobs.
Indirect Employment	Indirect employment is the additional jobs created as a result of the organization’s economic impact. Local companies that provide goods and services to an organization increase their number of employees as purchasing increases, thus creating an employment multiplier.

APPENDIX D: TECHNICAL APPENDIX

To provide more insight into the impact analysis, the following topics are outlined in greater detail.

ORGANIZATIONAL DEFINITIONS

For the purposes of the impact analysis UVA is defined as the combined impacts of the UVA Academic Division, the UVA Health System, and UVA-Wise. These entities are further defined as:

- UVA Academic Division – The UVA Academic Division impact analysis included all schools and colleges of UVA excluding the UVA School of Medicine, the UVA School of Nursing, and UVA-Wise. The UVA Foundation and Alumni Association are both included in UVA Academic Division calculations.
- UVA Health System – The UVA Health System impact analysis included the UVA Medical Center, the UVA School of Medicine, the UVA School of Nursing, the Claude Moore Health Sciences Library, and the University Physicians Group.
- UVA-Wise – The UVA-Wise impact analysis included only the operations of The University of Virginia’s College at Wise.

EMPLOYMENT DEFINITIONS

IMPLAN analysis is conducted to measure jobs/positions (part-time or full-time), not full-time equivalents (FTEs). Full-time and part-time employees generate impact in the economy and support additional indirect and induced employment throughout the Commonwealth. Employment data of the UVA Academic Division, UVA Health System, and UVA-Wise was provided as an output of all individuals who received a W-2 form from the respective institution. This includes all full-time, part-time, and employed faculty, staff, and students.

A total of 948 employees hold joint appointments with the UVA School of Medicine and the University Physicians Group and live in Virginia. This issue of joint appointment across two organizations was accounted for in the analysis and, therefore, these employees were not double counted.

The UVA Research Park attracts companies to the campus and these companies employ individuals in the region. The direct employment of these individuals by these companies is not directly attributable to UVA as the individual does not receive their paycheck from UVA; however, these employees represent a portion of the indirect and induced employment impacts of UVA to the region through organizational and employee spending.

ECONOMIC IMPACT VALUE DEFINITION

The overall economic impact values provided in this report for UVA, UVA Academic Division, UVA Health system, and UVA-Wise include the following impact values that were broken out as sub-analyses:

- Organizational spending – capital and operational
- Visitor spending
- Student spending
- Research expenditures

The impact values of UVA, UVA Academic Division, UVA Health System, and UVA-Wise that were presented in this report that are not included in the overall economic impact value and are therefore, in addition to the economic impact of the organization are:

- Government revenue impacts
- Entrepreneurial alumni impacts
- Alumni impacts
- Business spin-off impacts
- Community benefit impacts
- Technology transfer and Commercialization impacts
- Economic development impacts

VISITOR DEFINITIONS

Impact analysis looks to quantify the impact of the attraction of “fresh” dollars to a region. Therefore, when including visitor spending in the impact analysis of a university, health system, or other organization, the analysis will only include those visitors coming to a region from outside of said region. Visitors to events that also live in the region would have spent their dollar in that region otherwise, therefore this dollar was not attracted to the region as a result of the organization being analyzed.

For UVA, the impact analysis looked at impacts to the Commonwealth of Virginia, the Thomas Jefferson Planning District Commission region, and the LENOWISCO and Cumberland Plateau Planning District region. Visitors to UVA were only counted if they were from outside of said region being analyzed.

VISITOR SPENDING

Tripp Umbach uses federal per diem rates to estimate visitor spending in an area. Per diem rates can be found here by area: <http://www.gsa.gov/portal/content/104877>. Tripp Umbach has utilized per diem rates to estimate visitor spending as it can be considered a conservative measure (i.e., visitors generally spend more than the per diem rates in any given area).

The rates utilized specifically for this analysis were:

- Charlottesville = \$125 for lodging; \$56 for meal and incidental expenses
- Standard for VA = \$83 for lodging, \$46 for meal and incidental expenses

COMMUNITY BENEFITS

Community benefits provided in this report outline two forms of impact – monetary donations made by employees and students to local non-profits as well as volunteer hours that are valued at a monetary value.

- Tripp Umbach has conducted survey research to estimate the amount of monetary donations a student, staff, faculty, and physicians will spend in a year. This amount differs per individual but ranges from \$500 - \$700. Tripp Umbach also understands that not all individuals donate, therefore this is adjusted as well.
- The value of a volunteer hour has been quantified by Independent Sector to be \$23.56 per individual per hour. Tripp Umbach utilized this value with the understanding (also from survey research) of the average number of hours a faculty, staff and students engage in volunteer activity (estimated 100 hours per year, for 50% of the employees and students).

APPENDIX E: FAQ'S REGARDING ECONOMIC IMPACT ASSESSMENT

What is economic impact?

Economic impact begins when an organization spends money. Economic impact studies measure the direct economic impact of an organization's spending, plus additional indirect spending in the economy as a result of direct spending. Economic impact has nothing to do with dollars collected by institutions, their profitability or even their sustainability, since all operating organizations have a positive economic impact when they spend money and attract spending from outside sources.

Direct economic impact measures the dollars that are generated within Virginia due to the presence of UVA. This includes not only spending on goods and services with a variety of vendors within the state, and the spending of its employees and visitors, but also the economic impact generated by businesses within Virginia that benefit from spending by UVA. It is important to remember that not all dollars spent by UVA stay in Virginia. Dollars that "leak" out of the state in the form of purchases from out-of-state vendors are not included in the economic impact that UVA has on the Commonwealth of Virginia.

The total economic impact includes the "multiplier" of spending from companies that do business with UVA. Support businesses may include lodging establishments, restaurants, construction firms, vendors, temporary agencies, etc. Spending multipliers attempt to estimate the ripple effect in the state economy where the spending occurs. For example: Spending by UVA with local vendors provides these vendors with additional dollars that they re-spend in the local economy, causing a "multiplier effect."

What is the multiplier effect?

Multipliers are a numeric way of describing the secondary impacts stemming from the operations of an organization. For example, an employment multiplier of 1.8 would suggest that for every 10 employees hired in the given industry, eight additional jobs would be created in other industries, such that 18 total jobs would be added to the given economic region. The multipliers used in this study range from 1.8 to 2.0.

The Multiplier Model is derived mathematically using the input-output model and Social Accounting formats. The Social Accounting System provides the framework for the predictive Multiplier Model used in economic impact studies. Purchases for final use drive the model. Industries that produce goods and services for consumer consumption must purchase products,

raw materials and services from other companies to create their product. These vendors must also procure goods and services. This cycle continues until all the money is leaked from the region's economy. There are three types of effects measured with a multiplier: the direct, the indirect, and the induced effects. The direct effect is the known or predicted change in the local economy that is to be studied. The indirect effect is the business-to-business transactions required to satisfy the direct effect. Finally, the induced effect is derived from local spending on goods and services by people working to satisfy the direct and indirect effects.

- **Direct effects** take place only in the industry immediately being studied.
- **Indirect effects** concern inter-industry transactions: because UVA is in business, it has a demand for locally produced materials needed to operate.
- **Induced effects** measure the effects of the changes in household income: employees of UVA and suppliers purchase from local retailers and restaurants.
- **Total Economic Impacts** the total changes to the original economy as the result of the operations of UVA. i.e., Direct effects + Indirect effects + Induced effects = Total Economic Impacts

What methodology was used in this study?

IMPLAN (IMpact analysis for PLANning) data and software. Using classic input-output analysis in combination with regional specific Social Accounting Matrices and Multiplier Models, IMPLAN provides a highly accurate and adaptable model for its users. The IMPLAN database contains county, state, zip code and federal economic statistics which are specialized by region, not estimated from national averages and can be used to measure the effect on a regional or local economy of a given change or event in the economy's activity.

What is employment impact?

Employment impact measures the direct employment (employees, staff, faculty, administration) plus additional employment created in the economy as a result of the operations of UVA.

Indirect and Induced employment impact refers to other employees throughout the region that exist because of the University's economic impact. In other words, jobs related to the population – city services (police, fire, EMS, etc.), employees at local hotels and restaurants, clerks at local retail establishments, and residents employed by vendors used by UVA.

What is the difference between direct and indirect taxes?

Direct tax dollars include sales taxes and net corporate income taxes paid directly by the institution to the state, while indirect taxes include taxes paid to the state by vendors that do business with UVA and individuals.

Is this a one-time impact or does the impact repeat each year?

The results presented in the University of Virginia economic impact study are generated on an annual basis. The economic impact in future years can either be higher or lower based on number of employees, students, capital expansion, increases in external research and state appropriations.

What are Tripp Umbach's qualifications to perform an Economic Impact Study for the University of Virginia?

Tripp Umbach is the national leader in providing economic impact analysis to leading healthcare organizations, universities and academic medical centers. Since 1990, we have completed more than 150 economic impact studies for clients such as: The Pennsylvania State University, The Ohio State University, the University of Washington, The University of Iowa, The University of Alabama at Birmingham, the Cleveland Clinic, the University of Florida Health Shands Hospital, the University of North Carolina Hospitals, the University of Pennsylvania Health System, the University of Pittsburgh Medical Center and The Ohio State University Medical Center.