

## University of Virginia's Progress Toward Top Jobs Act Objectives

*The University of Virginia has made significant progress in the past two years toward achieving the objectives of the Virginia Higher Education Opportunity Act of 2011 (HEOA), also known as the Top Jobs Act, or TJ21. A selective list of the many activities in which the University is engaged follows.*

### Educating More Virginians

The Board of Visitors approved a growth plan that calls for enrolling 1,673 new undergraduates by the 2018–19 academic year, an increase of 11.9% from 2010–11. Of these, 1,171 students (70%) will be Virginians. As of fall 2012, there were an additional 144 Virginia undergraduates on Grounds.

The University of Virginia has experienced growth of 26% in STEM (Science, Technology, Engineering, and Mathematics) degrees and growth of 25% in STEM-H (including the health field) degrees over the past decade. Looking ahead, 33% to 40% of U.Va.'s new enrollment growth is expected to be in STEM and health-related disciplines.

Beginning in January 2013, the University will offer six free “massive online open courses,” or MOOCs, to students around the state—and worldwide—through the online education pioneer, Coursera. These courses currently have a combined enrollment in excess of 220,000.

As part of the University's strategic planning process, each school is examining additional opportunities to offer online education. For example, the School of Nursing is currently developing an agreement with the Virginia Community College System (VCCS) to collaborate on an RN-to-BSN program, effective fall 2013.

“Engineers PRODUCED in Virginia,” a collaborative distance-learning program with the Virginia Community College System, enables students to earn associate's degrees and bachelor's degrees in engineering science. The first eight PRODUCED in Virginia engineers earned their BSE degrees last May and another 23 students are currently enrolled in the program. The School of Engineering and Applied Science is planning to offer a bachelor of science in mechanical engineering degree through the PRODUCED program, effective fall 2013. This will represent the first ABET-accredited degree program to be offered through PRODUCED.

Building on the success of the U.Va.-Piedmont Virginia Community College (PVCC) partnership for an associate's degree in radiography, U.Va. is developing an online bachelor of professional studies (BPS) program with an initial focus on allied health fields, to open in fall 2014. The School of Continuing and Professional Studies (SCPS) has been developing the proposed program in close collaboration with the Medical Center and several community colleges around the Commonwealth.

Since 2008, when U.Va. signed the Guaranteed Admission Agreement with the Virginia Community College System, 1,612 Virginia community college students have transferred to bachelor's degree programs at U.Va.

The bachelor of interdisciplinary studies (BIS) program, a part-time program at U.Va. for working adult students, enrolled 251 students in fall 2010 at locations around Virginia—in Charlottesville, Hampton Roads, and Northern Virginia. By 2012, the program had expanded to Loudoun County and Richmond and now enrolls 346 students, a 38% increase. The School of Continuing and Professional Studies is currently in discussions to bring the BIS program to Thomas Nelson Community College, effective fall 2014.

The University's “3+1 accelerated degree program” allows motivated students to earn both a bachelor's and a master's degree in certain programs in four years. The University has identified 3+1 pathways in commerce, Middle Eastern and South Asian studies, public policy, statistics, and teacher education. In addition, the Graduate School of Arts & Sciences is exploring professional master's degree programs in chemistry, environmental sciences, French, and religious studies (conflict resolution), for which 3+1 pathways are likely to exist. In 2012, 80 students completed a bachelor's degree within

three years; 14 students graduated with a bachelor's and master's degree within four years. These numbers will very likely increase as students take advantage of identified 3+1 pathways.

Last April, the Board of Visitors estimated that roughly 34% of in-state students and 32% of out-of-state students qualified for some level of financial aid. U.Va. is one of only two public universities in the country to meet 100 percent of students' financial need, according to the 2012–13 *Kiplinger's Personal Finance* magazine list of the "100 Best Values in Public Colleges."

U.Va. has a retention rate of 97% for undergraduate students, and a six-year graduation rate of 94%. In addition, the University has the highest graduation rate for African-American students among all major public universities in the country, at about 86%, a level that has been maintained for nearly two decades.

## **Diversifying Research and Promoting Economic Growth**

Faculty research, through direct and indirect grant support from federal and state agencies, corporations, and private foundations, is expected to provide approximately \$290 million, or 11.7%, of the University's budget in 2012–13. Every \$1 million of research funding directly supports 17 full-time jobs (13 at the University and four jobs in the community through purchases from suppliers). Thus, U.Va.'s research funding alone supports about 5,300 full-time jobs in Central Virginia.

U.Va., in partnership with Rolls-Royce and six other corporate partners, as well as with Virginia Tech, Virginia State University, and John Tyler Community College, recently opened the Commonwealth Center for Advanced Manufacturing (CCAM), a research facility in Prince George County that is working to help the state rebuild its manufacturing sector through the development and adoption of advanced technology. The facility, which is expected to provide 60 full-time high-paying jobs and represents more than \$30 million in new investment in the Petersburg area, will provide research, workforce development, and continuing education services for CCAM industry members. The CCAM project has generated almost \$10 million in funding for the University of Virginia School of Engineering and Applied Science for faculty, graduate students, internships, laboratories, and research.

U.Va. helped launch the Commonwealth Center for Advanced Logistics Systems (CCALS), an applied research consortium modeled after CCAM that will provide transformational improvements in the design and analysis of logistics systems for use by the military, commercial, consumer, manufacturing, and emergency-response sectors. U.Va. will partner with VCU, VSU, and Longwood University to focus on integrating solutions in these diverse areas to develop logistics systems that are dependable and cost effective.

The University, in partnership with the College of William & Mary and Old Dominion University, launched the Virginia Nanoelectronics Center, or ViNC, to advance research aimed at developing next-generation electronics. Research funding of \$6 million over three years conducted at the center will help produce faster, smaller, and more affordable computer applications in everything from mobile devices and computers to automobiles and energy-efficient homes.

University faculty in architecture and engineering, in partnership with industry in Southside and Southwest Virginia, received a \$2.4 million project grant from the Virginia Tobacco Commission Indemnification and Community Revitalization Commission. The project involves the design and manufacture of highly energy-efficient housing systems for disaster recovery (the "Breathe House," designed for healthful living in off-the-grid, disaster-affected regions), and for highly energy-efficient, affordable housing (ecoMOD, designed as a passive-energy, affordable home), in South Boston and in Abingdon. The Breathe House disaster recovery prototype was successfully manufactured, shipped, and assembled in Haiti last summer, and has since demonstrated its strength during two hurricanes. The market for this novel, low-cost housing product is estimated at \$6 billion in the U.S. alone; moreover, Japan has approached the group for a cold-weather design, which would expand the market internationally.

In April 2011, U.Va. executed a Collaborative Research and Development Agreement (CRADA) with the Department of Defense to secure funding for research projects in the sciences, engineering, and medicine, as well as in other areas such as the arts, business, and humanities.

Dominion Virginia Power has made a two-year \$150,000 award to U.Va. engineering faculty to partner in developing an off-shore wind turbine system with the potential to meet future large-scale energy-generation and -storage requirements (20 megawatts) at significantly lower manufacturing and maintenance costs than the current generation of off-shore wind systems. The worldwide market for these systems is estimated at more than \$5 billion.

The University is embarking on a Big Data initiative designed to help faculty, staff, and students across academic disciplines and administrative units come together and develop services, curricula, and new research activities related to complex data. Because of advances in computing, almost every discipline is becoming data intensive—not only the traditional data-heavy fields of engineering, physics, and bioscience, but also an array of non-science-related fields that includes the humanities, education, and architecture. New tools are needed to extract the new knowledge from massive data sets. To address the big data challenge nationwide, the Obama administration this year announced a \$200 million request for grant applications to develop big data infrastructure. U.Va. is partnering with the Northern Virginia Technology Council to determine priorities and will be competing against peer institutions for this funding.

Vonage, a leading communications services provider, formed a partnership with U.Va. last September. The partnership challenged U.Va. students to invent the next generation of social messaging through the Vonage-OpenGrounds Future of Social Messaging Concept Competition. The company awarded \$28,000 in prizes to four student groups for their innovative ideas. Vonage will also sponsor a second, \$75,000 research-related award to U.Va. faculty researchers to help study what makes things “go viral” in social media. This research will continue through 2013.

U.Va. is leading the Virginia Innovation Partnership, one of only seven multi-institution initiatives to win federal funding as part of the U.S. Department of Commerce’s i6 Challenge in 2012. The partnership is a statewide network designed to accelerate innovation and economic growth by bringing together universities, community colleges, corporations, investment capital, and other resources to drive promising research discoveries forward.

The University has partnered with U.Va.’s College at Wise, the Virginia Coalfield Coalition, the private sector, and the Commonwealth in the Appalachian Prosperity Project, to advance education, health, and prosperity in an economically challenged part of Virginia. In the past four years these programs have drawn to the area \$9.8 million in funding for a nurse-managed health clinic, an extensive professional development program for history teachers, strategic planning sessions for place-based economic development, and an in-region engineering degree program for both traditional students and working adults.

As part of Governor Robert F. McDonnell’s Year of the Entrepreneur initiative, U.Va. President Teresa A. Sullivan joined the governor and a group of about 60 business leaders, entrepreneurs, investors, scholars, educators, policy makers, and elected officials last fall for the Jefferson Innovation Summit for the Commonwealth, a summit hosted by the Batten Institute at the Darden School of Business in partnership with the Office of the Governor, to discuss how best to create and sustain a society of entrepreneurs and innovators in the Commonwealth.

## **Increasing Efficiency**

For more than 20 years, *U.S. News & World Report* has ranked U.Va. among the top 25 institutions, public and private, in the country. The extent to which an institution with a low expenditure ranking can attain a high reputational ranking is a proxy for efficiency and effectiveness. During the past 15 years, U.Va. has performed well above its peers when comparing its expenditure ranking with its reputational ranking. In 2012, U.Va.’s expenditure ranking was 53rd while its reputational ranking was 18th.

Established in 1994, Process Simplification is the University’s formal, pan-institutional approach to continuous improvement that seeks to enhance the quality, effectiveness, and efficiency of processes and services. Project outcomes include the simplification of steps in a process, the elimination of duplicative efforts, and optimization of available resources. This effort has facilitated significant, tangible improvements over the years in administrative areas, student services, and

academic administrative support areas. For example, a Records Management project examined current practices for the retention and destruction of records throughout the University and proposed improvements for more efficient, compliant, and systematic management. As a result, compliance with regulations and schedules has increased and 16,292 cubic boxes of records (paper), or 326 tons, have been destroyed, the institution's liability has been reduced by increasing the security of confidential records, the need and cost for storage space has been reduced, and staff time invested in managing records has decreased.

U.Va. has joined with three other Virginia public institutions—Virginia Tech, James Madison, and George Mason—and CISCO Systems to deploy CISCO's TelePresence technology to share instructional resources and expand dual-enrollment offerings around the Commonwealth. To date the consortium has: 1) held virtual, inter-university workshops on research topics such as big data, high-performance computing, data visualization, and managing research data; 2) shared advanced courses in Chinese, Persian, and intelligence analysis; and 3) organized a conference for 60 biology faculty from approximately 30 Virginia institutions of higher education to discuss strategies for improving student success in this critical STEM discipline. In addition, the University is exploring an instruction-sharing partnership with Duke University in less commonly taught languages, using TelePresence technology.

Delta Force, a U.Va. Facilities Management initiative, targets the retro-commissioning of inefficient, high-energy consuming buildings. In 2012, strategies implemented in 15 buildings avoided costs of approximately \$3.6 million.

In 2005, the University established a January Term, or J-Term, as an opportunity for students to take an intensive two-week course and earn three credits. Enrollment in J-Term courses on Grounds and abroad has grown from 267 in 2005 to 1,225 in 2013, a 359% increase. In J-Term 2013, classes are meeting in 15 different facilities on Grounds, resulting in better utilization of facilities. Likewise, hundreds of students advance their academic standing through summer school courses, which use U.Va. facilities during the summer months.

University units regularly re-examine their operations to identify areas of potential savings or processes that can be streamlined. Examples include reorganizations, consolidations, and shared services. Departments in the School of Medicine have collaborated to share administrative management, and the School of Continuing and Professional Studies has centralized certain administrative services that used to be duplicated in regional centers. The Curry School is engaged in a number of efforts, resulting in the reallocation of approximately \$650,000 over the biennium to advance degree production and achieve more efficient faculty workload.

## **Building Momentum**

The New Internal Financial Model, currently under development, should incentivize schools and units to deploy resources more efficiently. The new model will better align resource allocation with academic decision-making, create greater accountability, and encourage entrepreneurship.

The Streamlining Work Group of the strategic planning initiative is considering opportunities to deploy more efficient business practices and create policies that would ensure the University follows best practices. Results from this work group are expected by May 2013.

Complementing its strategic planning initiative, in January 2013 the University launched a targeted solicitation of cost-saving ideas from the University community, a tactic that has proven successful in the past to identify opportunities for additional efficiencies.

As part of its most recent Six-Year Plan, the University anticipates cost-savings from efficiency efforts of \$7.4 million in 2012–13 and \$8.6 million in 2013–14. These funds will be reallocated to other needs and priorities.