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**NVTC sat down with University of Virginia President Teresa Sullivan to discuss the university's plans for adopting new technologies, expanding research, fostering innovation and working to support the next generation workforce.**

**By Sarah Jones**

**nvtc** **What is your strategic plan for the university's future?**

When Thomas Jefferson laid the cornerstone of U.Va.'s first building in 1817, he envisioned a new kind of institution of higher learning that would prepare its students for the practical work of upholding democracy and sustaining the nation's prosperity. Our mission is really the same today. Our strategic plan, which we call the Cornerstone Plan, represents the work of more than 10,000 University stakeholders, and it provides a vision and strategic direction that will equip the University for success in its third century.

The Cornerstone Plan is organized around five pillars. It builds on the University's core strengths while also positioning us to better serve our students and society. One of the top priorities in the Cornerstone Plan is to assemble and support a distinguishing faculty. Like many American universities, U.Va. is facing a generational turning point over the next few years, as hundreds of the professors who led U.Va.'s rise to eminence in recent decades now face retirement. If we want to continue to attract top students from across the nation, we must successfully recruit world-class faculty to teach and mentor them.

As part of our strategic plan, we must also preserve U.Va.'s distinct residential culture which emphasizes honor, ethics, self-governance, diversity, and service to others. This pillar is organized around student leadership development, a comprehensive advising structure for students, and lifelong alumni engagement. We have begun planning for our Meriwether Lewis Institute for Citizen Leadership this year, and this is just one example of how the strategic plan is coming to life. The program builds on our rich history of student leadership development, and it offers an innovative, new approach to leadership development that incorporates academic, experiential, and applied learning elements.

Research, scholarship, creative arts, and innovation are also crucial to U.Va.'s culture and our future. As part of our mission, we must focus on both the discovery and the dissemination of knowledge. The Cornerstone Plan will reinforce our capacity to pursue important intellectual and social challenges wherever they may lead, forming cross-disciplinary partnerships and advancing cutting-edge research.

The Cornerstone Plan also calls for high-impact educational experiences by encouraging students to internalize knowledge and make it their own. This can be done any number of ways – through a research project, starting a company, or learning to see the world through a global lens. Equally important, this pillar of the Cornerstone Plan calls on the University not to simply develop innovative programs but to measure their effectiveness.

The last pillar of the plan is devoted to financial and organizational strategies required to achieve our goals. The Cornerstone Plan demonstrates that academic excellence and affordable access are not only compatible, but mutually supportive.

### **nvtc** What technologies is the university adopting to enhance education?

Technology spans all aspects of the University and pervades our teaching, research, service, and clinical care mission. Given the rapid rate at which technology, society and our students evolve, we are strategically investing in technology so that we are able to best use technology to enhance teaching and learning. Through our strategic plan we are experimenting with new technology to teach students both on Grounds and in remote locations, defining and supporting scholarship in the digital age, and harnessing tools so that we can lead in areas such as Big Data. I can highlight a few examples.

This fall, we launched a new high-performance computing cluster that has the combined computational power of 4,800 individual central-processing units, and 1,400 times the disk space of a single PC. Using the cluster is like devoting nearly 5,000 computers to a single task, all at once. Because “high-performance computing cluster” is a mouthful, we gave the machine a name — we named it Rivanna. Rivanna will help our faculty and students advance their research in many different fields, including astronomy, genome modeling, chemistry simulations, ocean current modeling, and a range of problems related

to engineering, data mining and large-scale text analysis.

Across the University's eleven schools, faculty continues to incorporate online learning as a complement to classroom instruction. Professors at the Darden Graduate School for Business Administration, for instance, employ a wide variety of technology enhanced learning tools, such as interactive simulations, to engage executive MBA students in real-world exercises. They also produce digital content to complement the curriculum, and this includes multimedia case studies. For over thirty years, our School of Engineering and Applied Science (SEAS) has used advanced technologies to increase the quality of education and to broaden its educational research. Since 1983, SEAS has offered masters degrees through distance learning, and we now offer six engineering disciplines through this program.

With a goal of helping faculty create technology enhanced courses, our Teaching Resource Center organized a “Hybrid Challenge” during the past two academic years. A professor who teaches elementary Chinese took this challenge and transformed the way he taught. By incorporating a series of grammar tutorial videos that students reviewed prior to class, the professor was able to focus the in-class meetings on interactions that nurtured the students' skills in critical thinking, problem solving and collaborative learning.

We also continue to evaluate how massive open online courses (MOOCs) can enhance the residential student experience on Grounds. MOOCs have been valuable in raising awareness of the University, encouraging big data research, improving residential course quality, and promoting global perspectives in the classroom. The U.Va. MOOCs have reached approximately 1.5 million learners with over 50,000 participants in over 200 countries. Our ongoing experimentation with MOOCs will continue in the spring semester 2015. In his Kennedy Half Century MOOC, Professor Larry Sabato will pair U.Va. students with international participants to create a project that aligns with the legacy of John F. Kennedy.

### **nvtc** What research areas are the University of Virginia investing in?

Today's complex social challenges will only be addressed through collaborative partnerships that engage stakeholders from across multiple disciplines. For example, we know that more than 90 percent of all data created in human history was created during the past two years. Many problems that society faces today – in health care, engineering, sciences, and the humanities – require us to understand and make better use of this unprecedented amount of information. We recently launched a new Data Science Institute to train students for work in this emerging field of Big Data. This summer we enrolled the inaugural class of students in our new Master of Science in Data Science program, or MSDS; this program is administered through the Data Science Institute. The MSDS is an 11-month professional program that equips students for leadership in this field. 48 students enrolled in our in-

augural MSDS class, and we have already been contacted by companies in Virginia to ask about recruiting our MSDS graduates..

U.Va. is partnering with leaders in education, government and manufacturing through the Commonwealth Center for Advanced Manufacturing, known as CCAM. As a leader in global manufacturing operations, CCAM finds better ways to make research fit the needs of major companies like aeronautics leaders Rolls-Royce and Airbus. Our success with Rolls-Royce has led to new opportunities. Last spring U.Va. became one of only three American universities to join the Rolls-Royce University Technology Centers (UTC) global network. This network connects research groups that are conducting high-tech research at universities around the world. The UTC at U.Va. specializes in the study of advanced-material systems and flow modelling. This partnership will result in our receiving about \$1 million in research funding.

As a collegiate research university, we are also focused on creating high-impact educational experiences for our students. One way we are fostering this culture is through student-led research. More than half of our students engage in some form of research, and I think this is because U.Va. combines the relatively small scale of a liberal arts college with the intellectual resources of a major research university. This uncommon scale enables intensive student-teacher interaction and research collaboration.

As we look to the future, we remain committed to leveraging the size and resources of the University by fostering an array of research opportunities - from student and faculty interactions to pan-University research institutes that focus on cutting-edge, cross-disciplinary opportunities. We will continue to invest in transformational research and collaborative partnerships.

**nvtc** How does the university support innovation and entrepreneurship? Can you tell me about U.Va.'s "New Culture of Innovation?"

The entrepreneurial spirit is alive and well among our students, faculty and staff as we work to nurture an ecosystem that advances a culture of innovation. Our "U.Va. Innovation" program encompasses a set of projects designed to enhance our ability to disseminate knowledge via commercialization and corporate partnerships. As part of this effort, and in partnership with the Commonwealth, we established the U.Va. Economic Development Accelerator (UVEDA), a program to enhance proof-of-concept research, promote economic development and accelerate university innovations toward new products, services and companies. Private, federal and foundation contributions will match a \$1 million investment by the Commonwealth to develop the UVEDA. This year, new ventures created at U.Va. received over \$2 million

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“ We have a historical precedent to be the training ground for national, and increasingly global, leaders. ”



in funding from partners such as Apple, NEA (New Enterprise Associates) and Pfizer.

In 2013, we welcomed our inaugural “Entrepreneur-in-Residence” who is charged with identifying new venture opportunities and mentoring University researchers who are pursuing innovation-based ventures. Also in 2013, we expanded our innovation lab — i.Lab, for short — to include an incubator. The newly expanded i.Lab will serve all eleven of our schools. We know that the solutions to today’s most complex global problems often appear not in intellectual silos, but at the nexus of two or more disciplines — medicine and engineering, business and architecture, technology and design, and so on. The i.Lab is structured to draw disciplines together to create a melting pot for entrepreneurship and innovation.

Our Entrepreneurship Cup (E-Cup) is a concept competition open to all U.Va. students that seeks to enrich the area’s entrepreneurial community by encouraging new ventures with the potential to address unmet needs, solve social and economic problems, and do so in an interdisciplinary way. The McIntire School of Commerce’s Galant Challenge is a \$250,000 “live fire” venture pitch competition that invites angel investors and venture capitalists to evaluate pitches and offer student entrepreneurs up to \$250,000 in seed financing. Most recently, two third-year commerce students entered both the E-Cup and Gallant Challenge to pitch a new mobile app, “VotersChoice.” This new app is scheduled for release this

winter and creates a platform for political representatives to survey their constituents’ opinions on issues of importance.

**nvtc** How do you plan to expand U.Va.’s global footprint?  
How will U.Va. fit into the global community?

We seek opportunities that promote the exchange of ideas and discovery across borders, so that we can best prepare students for the responsibilities of global leadership. We want all of our students to become fluent in cross-cultural communication and to be comfortable working in diverse teams, so they are equipped to thrive in a global economy. Our Cornerstone Plan focuses on global experiences for students and faculty.

One product of our strategic plan is our new Center for Global Inquiry and Innovation. The purpose of the Center is to galvanize global research and innovation that involves faculty and students at U.Va. We have many existing strengths in global research, but those strengths are often hidden in disciplinary silos. We want to pull together multidisciplinary teams of students and faculty to address complex problems that exist at the intersections of their disciplines. The Office of the Vice President for Research’s INSPIRE<sub>LA</sub> initiative provides another example. INSPIRE<sub>LA</sub> seeks to create a U.Va./Latin America science, technology and business-based “innovation ecosystem” based on interdisciplinary partnerships with leading Latin American industries, academia, technological institutions and government. The initial

focus is on Brazil and in the coming year, INSPIRE<sub>LA</sub> intends to expand its programs into other Latin American nations including Chile, Mexico and Colombia.

Along with the Center for Global Inquiry and Innovation, this fall we launched a new Global Studies major. This is an interdisciplinary major composed of four concentrations: Global Development; Global Public Health; Environments and Sustainability; and Security and Justice. We also launched a new Global Internships program to place students in internships overseas or in globally-oriented companies in the U.S.

We are fortunate that the U.Va. community extends well beyond Charlottesville. We established a Shanghai office in 2013, and it is focused on strengthening U.Va.'s presence and capacity in this region of the world by supporting research partnerships, academic programs, internships, advancement, alumni engagement, and admissions. Our efforts in Shanghai are further complemented by a robust global network of U.Va. clubs. These clubs connect alumni, parents, friends, and students around the world and are thriving in locations like Argentina, London, Germany, the United Arab Emirates, Turkey, Taiwan, Indonesia, and Hong Kong.

#### **nvtc** How is the university working to prepare the next generation workforce?

One product of U.Va.'s Cornerstone Plan is a new, comprehensive student-advising program that we call "total advising." Through this program we are mapping students' choice of major to their career options, and putting greater emphasis on internships and experiential learning to help students develop skills that align with employer needs in the Commonwealth and beyond.

Across all of our schools, our deans and faculty are focused on developing curricula and programs that support students as they apply their education in the working world. In our Curry School of Education, for example, faculty members are using an online assessment system to support the preparation of new teachers. This system allows new teachers to create a portfolio of their work by including videos of their classroom teaching and other work samples. This portfolio allows the teacher to more easily make connections between courses, fieldwork, and professional competencies. In addition, the portfolios can be shared with supervisors, teaching mentors, and Curry faculty who can provide high-quality, specific feedback.

Through our office of University Career Services (UCS), students are able to access technological platforms that allow them to complete self-assessment inventories, access resumé building applications, and even practice interviewing skills. In the coming weeks and months, we will introduce additional tools such as a mobile app to help students track their job search progress and an e-portfolio that will allow students to present their University accomplishments. Additionally, in the spring semester, UCS is preparing to open an Internship Center and will offer two Career Summits for students engaged in the job and internship search.

We are also creating online "career communities" to build networks between students and alumni who are working in careers of interest to students. This fall we launched our first pilot career community in Creative Arts, Media and Design. Two of our career advisors are building this community for students in collaboration with the College of Arts & Sciences, the Architecture School, and our Arts@U.Va. program. Also, this fall, we launched Virginia Alumni Mentoring, a pilot program to connect third-year students in our College of Arts & Sciences with alumni mentors.

When Thomas Jefferson founded U.Va. nearly 200 years ago, he did so with a specific purpose – to create an educated citizenry to sustain the Republic. We have a historical precedent to be the training ground for national, and increasingly global, leaders. Our comprehensive approach to advising and career preparation positions us to continue this comprehensive tradition as we head into our third century.

#### **nvtc** How does U.Va assist veterans seeking higher education?

Yes, our veterans are very much part of the University community. We work diligently to make sure they are receiving support and assistance from the time they apply through the time they earn their degree. The majority of our veterans pursue graduate or professional degrees - the Batten School of Public Policy, the School of Law, and the Darden Graduate School of Business Administration enroll the majority of our veterans in a given year. Regardless of the school of enrollment, we support our veterans, active duty military personnel, and their dependents in obtaining their educational benefits. We have a professional staff member who is dedicated to serving as a liaison between the student and the Department of Veterans Affairs.

As part of this ongoing commitment, we recently affirmed the Department of Education's "8 Keys to Veterans' Success," which encourages the use of best practices to support veterans. Our faculty and staff in each school, as well as members of our Dean of Students staff, work collaboratively to ensure that there is a supportive infrastructure that will allow our veterans to succeed. For instance, our Military Student Priority Enrollment policy allows veterans, active duty, reservists, and ROTC students to register early for classes to accommodate the special demands on their time.

This support also extends to our faculty and staff. In the past year, employees established a Military Veterans Community Group. This group has been instrumental in serving as a liaison for new employees who are veterans and has assisted our human resources colleagues in advancing strategies for recruiting veterans.

The perspective, experience and insight offered by all of our veterans truly adds to the fabric of the U.Va. community. This positive impact is felt inside and outside the classroom, and we are proud that many veterans call U.Va. home.

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