Minutes

ACADEMIC, RESEARCH, AND STUDENT AFFAIRS COMMITTEE

VTC School of Medicine and Research Institute
Room R3012
2:30 – 4:30 p.m.
Sunday, August 26, 2018

Committee Members Present:
Debbie Petrine (chair), Zo Amani (graduate student representative), John Ferris (faculty representative), Anna James, Chris Peterson.

Board Members Present:
Greta Harris, C.T. Hill, Rachel Iwicki (undergraduate student representative), Mehmood Kazmi, Tish Long, Robert Mills, Mehul Sanghani, Robert Sebek (staff representative), Dennis Treacy, Horacio Valeiras, Jeff Veatch, Preston White.

Guests:
Tommy Amal, Bradley Anglin, Patty Becksted, Kim Blair, Rosemary Blieszner, Ralph Byers, Al Cooper, Brian Daniels, Karen DePauw, Michael Friedlander, Ron Fricker, Luisa Havens Gerardo, David Guerin, Dee Harris, Natalie Hart, Kay Heidbreder, Tim Hodge, Rachel Holloway, Rachel Iwicki, Sharon Kurek, Lisa Lee, Theresa Mayer, Steve McKnight, Nancy Meacham, Theresa Mayer, Scot Midkiff, Laurel Miner, Sally Morton, April Myers, Kim O'Rourke, Mark Owczarski, Patty Perillo, Charlie Phlegar, Dwayne Pinkney, Ellen Plummer, Menah Pratt-Clarke, April Myers, Scot Ransbottom, Timothy Sands, Dwight Shelton, Ken Smith, Don Taylor, Judy Taylor, Tracy Vosburgh, Lon Wagner, Sherwood Wilson.

OPEN SESSION

1. **Welcome and Acceptance of Agenda.** Debbie Petrine, chair of the committee, welcomed committee members and attendees to the Open Session. The agenda was accepted.

2. **Consent Agenda.** The committee unanimously approved the items listed on the Open Session Consent Agenda: the minutes of the committee's June 4, 2018 meeting, a report of reappointments to endowed chairs, professorships, or fellowships, ratification of the 2018-2019 Faculty Handbook, a resolution to extend the campus site in Arlington, ratification of the student conduct code, a resolution to comply with the Governor's Executive Order number 12 regarding paid parental leave, and a resolution to update the policy for awarding honorary degrees.

   The committee unanimously approved the items on the Consent Agenda.

3. **Provost's Update.** Cyril Clarke, interim executive vice president and provost, brought several items to the attention of the committee. Implementation of the Partnership for an Incentive Based Budget (PIBB) for fiscal year 2019 is a significant accomplishment. Over the past year the process included discussion with deans and other academic leaders in the identification of budget needs in the context of the university's strategic development. Final budgets were based on the PIBB model, with adjustments made to fund critical needs. Next steps in the development of the PIBB will focus on the scorecard with comprises about 1/3 of the model and addresses faculty and student success factors. Collaborations on the implementation and review of the model include deans, academic leaders, the Faculty Senate, the budget office, and the office of the provost. Key to its success is a commitment to the use of data for decision-making, transparency, consultation, review, and adjustment as needed. Investments include College of Engineering programs in the National Capital Region, the School of Plant and Environmental Sciences in the College of Agriculture and Life Sciences, and investments in enrollment growth in the Myers Lawson School of Construction in the College of Architecture and Urban Studies. Destination Area investments include 13 new lines in the areas of Adaptive Brain and Behavior and Global Systems Science. Inclusion and diversity investments are aimed at institutionalizing commitment in the form of scholarship support, student advising, and faculty hiring. Additional areas of investment include internships in experiential learning, decision support systems, undergraduate admissions reform, working groups in the National Capital Region, stand-up of the Health Sciences and Technology initiatives in Roanoke. The emphasis is on alignment with strategic importance of Beyond Boundaries themes of the VT-Shaped model, access and affordability, and transdisciplinary education and discovery. Discussion included questions regarding the allocation adjustments made after budget review. The PIBB model was adjusted for consistency across colleges. In some instances, the projected PIBB model was high and in others the projection was low. Budgets were adjusted and the distribution normalized. The PIBB will continue to be studied and will incorporate scorecard and other metrics. Committee members supported the on-going review of the PIBB model and encouraged continued communication with academic leaders and faculty.

   In undergraduate enrollments, the provost reported that 6,319 first-time freshmen are enrolled, 54 students above the goal (79 fewer out-of-state students and 133 more in-state students). The total undergraduate enrollment is 27,882. The university is making good progress in enrolling underserved and underrepresented undergraduate students. Enrollment management initiatives include the use of holistic admissions and a strategic financial aid award system. The aim is a finely-honed system informed by data collection and appropriate scholarship funding. Discussion included questions regarding the elements associated with a holistic review. A holistic review supports the university's mission to connect with a wider range of diversity by having applicants provide information about their skills and abilities beyond grades and test scores. For example, how does the applicant approach problem-solving, what type of complex thinker might the applicant be, and how might the applicant engage the university's offerings and institutional resources including cross-disciplinary experiential learning?

   The search for a dean for the Virginia Tech Carilion School of Medicine is well underway. The search committee is comprised equally of representation from Carilion

and the university. Three impressive finalists were selected and have had on-campus interviews. The committee will be making recommendations to President Sands and President Nancy Agee of Carilion Clinic.

The search for a dean for the College of Liberal Arts and Human Sciences is underway. Dean Alan Grant, College of Agriculture and Life Sciences, will serve as the chair of the search committee. The aim is to have a new dean begin in the summer of 2019.

4. **Student Affairs.** Understanding Students' Experiences and Perceptions of Virginia Tech (Gallup Survey). Patty Perillo, vice president for student affairs, presented the results of a 2017 survey conducted by Gallup with sophomore, junior, and senior students. Virginia Tech results were compared with Gallup's nationally representative survey of college graduates. Compared to students nationally, survey results indicate that Virginia Tech students thrive in all elements associated with well-being, are engaged, take advantage of experiential learning and co-curricular opportunities, look out for one another, hold positive opinions about the quality of their education, believe the university is a good place for racial/ethnic minorities and lesbian, gay, bisexual, and transgender students; despite these positive results, the university still has work to do to strengthen its support of all students. Discussion included questions regarding methodology and follow-up. Gallup collected data electronically. The division will use these results and the results of five additional sets of data collected on the well-being, health, and satisfaction of students to further understand student life especially for underserved and underrepresented students. While the university scored above the national average in all areas of the Gallup survey, students who identify as Black or as lesbian, gay, bisexual, or transgendered (LGBT) are not doing as well as their counterparts. Discussion included ways in which the university might learn from students who did not participate in the survey and who may not be engaged. In addition, is there a way in which data can be broken down by major to discern whether there are differences between majors? Students who participated in the survey will receive a report, directly from Gallup, on the results of the survey. Later this academic year, the university will conduct its climate survey that includes all faculty, staff, and students. Discussion included the desire to transfer the very positive on-campus student experiences to alumni enthusiasm and increase alumni support of the university. The data on student well-being can be used to communicate how Virginia Tech differentiates itself from other institutions.

5. **College Update.** College of Science. Sally Morton, dean of the College of Science provided to the committee an update on the college. The college offers instruction in biological sciences, chemistry, economics, geosciences, mathematics, physics, psychology, and statistics and includes areas such as the Academy of Integrated Science, Computational Modeling and Data Analytics, and the School of Neuroscience. Within the college are 116 staff members, 419 faculty members, 4,305 undergraduate students, and 600 graduate students. Research is on the rise with $35.8M in awards during the 2018 year from external sources that include the National Science Foundation, United Technologies, National Institutes of Health, and Exxon Mobil. The college is committed to science literacy for all students and provides more

than 250,000 student credit hours of instruction to students in all colleges. Students in the college are invited to be scientists in service to society and an emphasis is on integrated science. Currently, 70 students are enrolled in an eight-credit program that looks at a large societal problem through various disciplines. The college aspires to expand the program and make it available to students throughout the college and in other colleges. The computational modeling and data analytics degree is a highly collaborative degree with 600 majors. Neuroscience is a fast-growing degree with 600 majors and many research collaborations such as with the Virginia Tech Carilion Research Institute. The college has several initiatives on an undergraduate to graduate continuum of education that include translational degrees across basic, clinical, and behavioral sciences. New degrees are under development to respond to student demand for translational science. The college faces resource challenges to respond to the needs of students and faculty in areas with high demand. The college has succeeded in increasing its external funding by 40% and is the result of strategic decisions made by the college including hiring a grants administrator, providing education to college faculty from funders, supporting grant-writing groups and offering specific feedback on proposals, and offering dean-supported seed grants to faculty.

6. **Virginia Tech Carilion Research Institute and Related Health Sciences and Technology Initiatives.** Mike Friedlander, vice president for health sciences, provided to the committee an update on the Virginia Tech Carilion Research Institute (VTCRI) including faculty research and a steady increase in the number of grants submitted by VTCRI faculty for external funding resulting in an average 23% increase per year since 2013 in extramural grants. Industry partnerships include a brain cancer therapy company, and focused ultrasound technology. The VTCRI is coordinating the Virginia Opioid Integrated Crisis Enterprise (VOICE). The PhD program in translational biology, medicine, and health (TBMH) supports students in research resulting in numerous publications and post-doc positions in industry and academia. The institute continues to support faculty in grant-writing and review processes aimed at developing potential and capacity for large program grants. The VTCRI has hired 30 faculty members and has only lost three. VTCRI faculty are attractive to many other institutions and the institute works hard at retaining faculty by supporting an interdisciplinary and entrepreneurial climate in which translation, commercialization and other incentives return to the researcher. Graduate students are important to the success of the VTCRI, are involved in every aspect of the program, and are supported through professional development, publications, fellowships, and attendance at conferences.

7. **Council of College Deans Update.** Sally Morton, dean of the College of Science and representative to the committee from the Council of College Deans, brought two items to the attention of the committee. First, the college deans continue to work to creatively attend to the challenges of faculty recruitment. Recruitment is impacted by salaries, space, facilities, equipment, and start-ups. There is a need to explore a unified approach to these problems such as sharing equipment across the university. Second, the deans are discussing leadership development and succession planning. Paying additional attention to the development of department heads, associate deans, and

other internal academic leaders will benefit the colleges and university. Leadership positions are attractive because you can impact the academy. Intentional development of leaders is essential for the future of the university. The college deans concur with the provost that the implementation of the PIBB budget model benefits from transparency, collaboration, and communication. The committee discussed the value of succession planning and importance of being able to identify people who can step into academic leadership roles. Within the university, there are a few examples of equipment-sharing that benefit new faculty members who don't have to wait for labs to be completed. Equipment and space-sharing requires university-wide coordination and the investment of resources, including start-ups, to succeed.

8. **Agenda Items for November 2018 Committee Meeting.** The committee expressed its interest in re-instating breakfast or lunch gatherings in which members can learn more about the university. The committee would like to take a holistic approach to its agenda by including presentations that are thematically linked to strategic initiatives. For example, in November, a theme organized around the 5th anniversary of the opening of the Moss Arts Center might include presentations on undergraduate and graduate student engagement and research, outreach, and include information on the Institute for Creativity, Arts, and Technology. Other ideas for committee agenda items are forthcoming.

9. **Adjourn**

Reappointments to Endowed Chairs, Professorships, or Fellowships (9)

August 26, 2018

College of Agriculture and Life Sciences (4)

Richard “Dick” Crowder	C. G. Thornhill Professor of Agricultural Trade
Sally Johnson	Paul B. Mellon Distinguished Professor of Agriculture
Kimberly Morgan	David M. Kohl Junior Faculty Fellowship
Eric Wong	John W. Hancock Professor of Animal and Poultry Sciences

College of Engineering (4)

Roberto Leon	Burrows Professorship of Construction Engineering
John Little	Charles E. Via, Jr Professorship
Naren Ramakrishnan	Thomas L. Phillips Endowed Professorship
Gary Whiting	Joseph H. Collie Professorship of Chemical Engineering

College of Liberal Arts and Human Sciences (1)

Paul Quigley	James I. Robertson, Jr. Professorship in Civil War Studies

ENDOWED PROFESSORSHIP
Thornhill Professor of Agricultural Trade

The Thornhill Professorship for Agricultural Trade was established by C. Gordon Thornhill, Jr. owner of T.K. Exports, Incorporated, to emphasize teaching and Extension activities that increase profitability of global market opportunities for Virginia's food, agricultural, and natural resource products.

In concurrence with the recommendation of the college honorifics committee, the Agricultural and Applied Economics Department honorifics committee, and department head Dr. Matthew Holt, Dean Alan Grant nominates Ambassador, Dr. Richard "Dick" T. Crowder for reappointment to the Thornhill Professorship.

Dr. Crowder brings the world into Virginia Tech's classrooms and administrative offices, corporate and non-profit boards, and to workshops and conferences across Virginia and the United States. His résumé tells a story of being at the intersection of commerce, government, policy, academics, and practice, that is, the real world of diplomacy. Dr. Crowder's experience of serving with Fortune 500 companies, shepherding a revolutionary change in U.S. farm policy with the 1990 farm bill, advising Prime Minister Mikhail Gorbachev on important structural changes to the agricultural economy of the former Soviet Union, and negotiating multi-lateral, regional and bilateral trade agreements are all impressive accomplishments. But it is his unique ability to translate these experiences into effective learning opportunities, inside and outside of the classroom, that qualify him to define the standard for the Thornhill Professorship for Agricultural Trade.

Early in his career, Dr. Crowder was engaged in the international trade of agricultural goods and services by establishing relationships with corporations, governments, nonprofit and nongovernmental organizations (NGOs), and other agencies that facilitated exchange. This experience culminated in his appointment as Ambassador, Chief Agricultural Negotiator in the Office of The United States Trade Representative, Executive Office of the President. Since joining Virginia Tech's Department of Agricultural and Applied Economics in 2008, Dr. Crowder has embraced the challenge of creating and organizing an annual conference on international trade to educate Virginians, citizens of the United States, and others around the world about the role of importance of international trade for food, natural resource, and agricultural products. This conference, now called “Virginia’s Governor’s Conference on Agricultural Trade,” has quickly became a world-class symposium, with Governor Bob McDonnell recognizing the strong partnership among Virginia's agencies, NGOs, and Virginia Tech. A succession of Virginia’s Governors, including the honorable Bob McDonnell, the honorable Terry McAuliffe, and now Governor Ralph Northam have each openly embraced and participated in the Governor’s Conference. It is apparent that only someone with Dr. Crowder’s depth of experience in business, academia, and national service could consistently organize and execute a conference of this type, which routinely garners the attention, participation, visibility, and support of such a wide array of industry, government, and academic leaders. In addition, Dr. Crowder created and continues to teach a capstone course that highlights important skills related to negotiation and leadership and the role they play in business and government. We frequently hear from his students statements similar to this one: “Dr. Crowder’s is hands down the best class

I've had during my time at Virginia Tech." He has received numerous awards for his work and service. A select subset of them are the Virginia Tech Alumnus of the Millennium in 2000, the Distinguished Service Award, the Distinguished Service Award from the American Farm Bureau Federation, Virginia Tech's Alumni Award for Outreach Excellence, the Virginia Agribusiness Council's Alvin W. Blaha Distinguished Service Award, and United States Trade Representative, Executive Office of the President.

REAPPOINTMENT:

The president and interim executive vice president and provost have confirmed the reappointment of Dr. Richard Crowder as the Thornhill Professor of Agricultural Trade for a five-year term through June 30, 2023 with a salary supplement provided by the endowment and, if available, with funds from the eminent scholars match program.

August 27, 2018

ENDOWED PROFESSORSHIP
Paul B. Mellon Distinguished Professor of Agriculture

The Paul B. Mellon Distinguished Professor of Agriculture was established in 1986 by a gift from Mr. Mellon. The purpose of the Professorship is to lead and enhance the research program in equine nutrition, physiology, growth and locomotion. The position involves close collaboration with equine-focused faculty on the Blacksburg campus and the Middleburg Agricultural Research and Extension (MARE) Center.

Dean Alan Grant nominates Dr. Sally Johnson, professor in the Department of Animal and Poultry Sciences (APSC), for reappointment as the Paul B. Mellon Distinguished Professor of Agriculture with the support of Dr. David Gerrard, head of the department, and the college honorifics committee.

Dr. Johnson's research program has three main areas of focus: 1.) Identification of transcriptional networks that regulate stem cell plasticity; 2.) Development of directed differentiation protocols for repair of tendons; and 3.) Dietary modification of muscle stem cell activity during myofiber hypertrophy and post-exercise recovery.

Dr. Johnson has a stellar reputation nationally and internationally as a leading scholar in her areas of research. She has an excellent record of publications in high impact journals. She has also been successful at obtaining funding for her research program and collaborations. Among these grants are a number highly competitive U.S. Department of Agriculture-National Institute of Food and Agriculture (USDA-NIFA) grants which attests to the scientific merit of her research program. A significant number of her extramural grants have been funded by industry groups which attest to the importance and relevance of her research program to the equine industry.

Dr. Johnson has provided outstanding service to the APSC department as graduate program director. Both the size and overall quality of the APSC graduate program have increased since she became chair in 2014. Dr. Johnson has also enhanced the recruitment of minority students into the APSC graduate program. Finally, Dr. Johnson has provided outstanding leadership to our overall equine programing and operations, both on campus and at the MARE Center.

REAPPOINTMENT:

The president and interim executive vice president and provost have confirmed the reappointment of Dr. Sally Johnson as the Paul B. Mellon Distinguished Professor of Agriculture for a five-year term through June 30, 2023 with a salary supplement provided by the endowment and, if available, with funds from the eminent scholars match program.

August 27, 2018

ENDOWED PROFESSORSHIP
David H. Burrows Professor of Construction Engineering

The David H. Burrows Professorship was established in 1986 through a generous gift to the Virginia Tech Foundation from Mr. David H. Burrows, a 1942 graduate of Virginia Tech. The professorship is awarded to an outstanding professor in construction engineering within the College of Engineering. Dean Julia Ross nominates Dr. Roberto T. Leon for re-appointment to the David H. Burrows Professorship in Construction Engineering in the Via Department of Civil Engineering (CEE). The nomination is likewise recommended by the Honorifics Committee of the CEE Department as well as by CEE Department Head, Dr. W. Samuel Easterling.

Dr. Leon is a multi-talented, nationally and internationally recognized faculty member who brings a number of significant strengths in his research, teaching, and service to Virginia Tech. He is acknowledged to be one of the leading researchers in the world in the field of steel-concrete composite structures and seismic design and performance of new and existing steel and composite structures. His work has beneficially impacted numerous national and international design codes. His work as senior author is currently the second most cited one in the commentary to the latest (2016) steel building specification; it was the most cited in the previous version (2010). Dr. Leon has published over 150 peer-reviewed papers, books and book chapters and he has directed or co-directed nearly $7 million of external research funding at Georgia Tech, the University of Minnesota, and Virginia Tech. Additionally, he has been part of large, multidisciplinary teams that have collectively conducted over $120 million in research. The quality of his research has been recognized several times, including his selection by the American Society of Civil Engineers for the Norman Medal and the State-of-the-Art of Civil Engineering Award on two occasions, and his selection to be the 1993 T.R. Higgins Lecturer by the American Institute of Steel Construction. His contributions were also recognized by his election to Distinguished Member of the American Society of Civil Engineers in 2015; this is the highest recognition the profession confers.

Dr. Leon has established himself as a dedicated classroom instructor and research advisor. Over the past 7 years at Virginia Tech, he demonstrated his strong commitment to undergraduate teaching through his work to completely revamp the laboratory course on construction materials, including adding new materials and non-destructive testing topics into the curriculum. Dr. Leon is also well respected and sought out as a graduate advisor as reflected by the number of students that he has advised or co-advised. These include having advised or co-advised to completion 30 Ph.D. students, 33 master's students and over 20 undergraduate research students.

Dr. Leon is a true leader in the field and he clearly understands the importance of service and has exhibited our motto of *Ut Prosim* for many years. He is a past president of the American Society of Civil Engineers Structural Engineering Institute Board of Governors, a past president of the Consortium of Universities for Research on Earthquake Engineering and serves on the American Institute of Steel Construction Committee on Specifications. He has also served in leadership positions on numerous technical committees and currently serves as one of six members of the Advisory Committee on

Structural Safety of the Department of Veterans Affairs Facilities. Dr. Leon has served on the editorial boards of four journals in the field of structural engineering and has chaired or co-chaired the organization and delivery of six international conferences.

REAPPOINTMENT:

The president and interim executive vice president and provost have confirmed the reappointment of Dr. Roberto T. Leon to the David H. Burrows Professorship in Construction Engineering, effective August 10, 2018 with a salary supplement and operating budget as provided by the endowment and, if available, with funds from the eminent scholars match program.

August 27, 2018

ENDOWED PROFESSORSHIP
Joseph H. Collie Professorship of Chemical Engineering

The Joseph H. Collie Professorship was established by a generous gift from Joseph H. Collie, a 1950 graduate of Virginia Tech's Department of Chemical Engineering. It was created to attract and retain an eminent scholar in the field of chemicals distribution management for instruction and research. In concurrence with the recommendation of the chemical engineering honorifics committee and Department Head David F. Cox, Dean Julia M. Ross nominates Dr. Gary K. Whiting for re-appointment to the Joseph H. Collie Professorship for a period of five years. Dr. Whiting holds a Bachelor of Science degree in chemistry from Lebanon Valley College, a Master Degree in chemistry from Virginia Tech and a Ph.D. in chemical engineering from Virginia Tech.

Dr. Whiting has more than 30 years of experience in the chemical industry and 25 years of experience as a small business owner and entrepreneur. He retired from DuPont in 2015, with significant experience in marketing, new business development, process and product development, and project engineering. During the first half of his career with DuPont, he worked largely in Research and Development implementing process improvements resulting in patents in the area of reactor design and control. Dr. Whiting was a prolific contributor to the internal DuPont knowledge base, having written well over one hundred technical reports of various types, resulting in technical report of the year honors within DuPont Chemicals. During this period he rose through the technical ranks and was named as a DuPont Titanium Technologies Research/Engineering Fellow in 2004.

As Business Venture Manager leading DuPont Titanium Technologies' effort in the area of nanomaterials, Dr. Whiting's team created a novel nano-titanium dioxide product that was launched as a specialty product useful in UV absorption and scattering in polymer systems. Dr. Whiting is a co-author of the highly regarded Nano Risk Framework, a collaborative effort between DuPont and Environmental Defense Fund for the responsible development, production, use and disposal of nano-scale materials. For this work, he was awarded the DuPont Sustainable Growth Excellence Award in 2008.

Dr. Whiting's most recent role of seven years was Global Product Manager for DuPont Titanium Technologies (now Chemours Titanium Technologies) where he was responsible for the profitability, competitiveness, quality, and sustainability of a more than half-billion dollar global product portfolio. In this role, Dr. Whiting worked daily with team members from many different counties and cultures, including those in Asia, Europe, North America, Latin America, and South America, which provided him with a global perspective and key global contracts.

In March 2016, Dr. Whiting was appointed "Professor of Practice" in the Department of Chemical Engineering. In August 2016, he was appointed as the Joseph H. Collie Professor of Chemical Engineering for a period of two years. Over the past two years, Dr. Whiting has developed and taught a yearly course, "Business and Marketing Strategies in the Process Industries" that is unique among chemical engineering and marketing departments worldwide; he continues to serve as an undergraduate academic and career advisor, and to offer a non-credit course on "Chemical Engineering Job

Search". His outstanding performance in classroom instruction with average student teaching scores of 5.50 out of 6.0 and in academic and career advising has far exceeded the original expectations of his faculty appointment in 2016. Our students have provided overwhelmingly positive, written recommendations for his re-appointment. The Department of Chemical Engineering and the College of Engineering strongly believe that Dr. Whiting's breadth and depth of chemical industry knowledge, including technical, business, and marketing, together with his dedication and patience in helping our undergraduates, will greatly benefit future students in chemical engineering.

REAPPOINTMENT:

The president and interim executive vice president and provost have confirmed the reappointment of Dr. Gary K. Whiting to the Joseph H. Collie Professorship, effective August 10, 2018, for a renewable period of five years, with salary and operating funds given in accordance with the provisions of the endowment and, if available, with funds from the eminent scholars match program.

August 27, 2018

ENDOWED PROFESSORSHIP
John W. Hancock, Jr. Professor of Animal and Poultry Sciences

The John W. Hancock, Jr. Professor of Animal and Poultry Sciences was established in 1985 by John W. Hancock, Jr. to honor the services and assistance provided to him by Gary Minish, George Litton, and Dan Kite, former animal sciences faculty members. The endowment supports a professorship in the college to recognize of a faculty member who is making significant contributions to research and teaching in animal-related programs in the College of Agriculture and Life Sciences.

Dean Alan Grant nominates Dr. Eric Wong for reappointment as the John W. Hancock, Jr. Professor of Animal and Poultry Sciences with the support of Dr. David Gerrard, Head of the Department of Animal and Poultry Sciences, and the College Honorifics Committee.

Dr. Wong's research interests include a molecular analysis of genes that play an important role in regulating growth of farm animals, with an emphasis on poultry. One of his major projects involves an analysis of the development-specific expression of nutrient (amino acids, peptides, sugars) transporters and host defense genes in the yolk sac and small intestine of chickens during the transition from the embryonic to post-hatch stages.

Dr. Wong has an international reputation and is widely recognized as a leader in molecular nutrition in poultry. He has published his research results in numerous high impact journals. Dr. Wong has secured significant amounts of external funds in support of his research program and has consistently demonstrated outstanding achievements in undergraduate teaching, graduate student training and outreach.

Dr. Wong received his bachelor's degree from the Massachusetts Institute of Technology and a Ph.D. from the University of California at San Diego. He completed postdoctoral work at the University of Utah with Dr. Mario Capecchi, Professor of Human Genetics and recipient of the 2007 Nobel Prize in Physiology or Medicine.

REAPPOINTMENT:

The president and interim executive vice president and provost have confirmed the reappointment of Dr. Eric Wong be reappointed as the John W. Hancock, Jr. Professor of Animal and Poultry Sciences for a five-year term through June 30, 2023 with a salary supplement provided by the endowment and, if available, with funds from the eminent scholars match program.

August 27, 2018

ENDOWED PROFESSORSHIP
Charles E. Via, Jr Professorship

This Charles E. Via, Jr Professorship was funded through an endowment established in 1987 by Mrs. Marion Via Bradley and subsequently supplemented by the Via family. Dean Julia Ross, nominates Dr. John C. Little for re-appointment to hold a Charles E. Via, Jr Professorship in the Via Department of Civil Engineering (CEE). The nomination is likewise recommended by the Honorifics Committee of the CEE Department as well as by CEE Department Head, Dr. W. Samuel Easterling.

Dr. Little is a multi-talented, nationally and internationally recognized faculty member who brings significant visibility to Virginia Tech. He is widely published with approximately 140 refereed papers to his credit. Most of his papers are published in journals with a high impact factor with 22 papers in Environmental Science and Technology (impact factor of 6.2) and eight papers in Water Research (impact factor of 6.9) and 6 papers in Water Resources Research (impact factor 4.4), all considered top journals in the environmental and water resources fields. Dr. Little has focused his research in two main areas, indoor air pollution and management of oxygen in reservoirs. Both areas deal with mass transfer processes in environmental systems and Dr. Little is recognized as one of the world's experts in both areas.

Dr. Little has been active in interdisciplinary research and has collaborated extensively with leading experts in China, Switzerland, Taiwan, Australia, and Spain. On campus, he played a central role in securing a $3.1M National Science Foundation IGERT award, serving as Director for half the project period. He also served as co-chair of the Interdisciplinary Program in Environmental Biogeochemistry. This GAANN program was funded for $1.1M and supported 12 PhD students in 3 departments and 3 colleges. Overall, Dr. Little has participated in over $11.8M in funded research, with a personal share of $4.9M. In 1996, he received a National Science Foundation CAREER Award.

Dr. Little has been the advisor for 11 Ph.D. students (three co-advised), seven postdoctoral scholars (three co-advised) and 22 master's students (four co-advised) and is currently advising three Ph.D. students, 1 postdoctoral scholar, and one research associate. One of his Ph.D. advisees was awarded the best dissertation by the Association of Environmental Engineering and Science Professors and another was awarded the Yaglou Award from the Academy of Indoor Air Sciences for being the most promising young researcher in the indoor air sciences (awarded every three years). Three of his Ph.D. students and four of his postdoctoral scholars are in well-respected academic positions.

Dr. Little is a valued colleague and dedicated departmental citizen. He is committed to his teaching and student advising. Dr. Little likewise contributes in significant ways to the service mission of the department and university. In summary, Dr. Little is an internationally recognized scholar and has been very successful in securing interdisciplinary funding which has benefitted the greater university.

REAPPOINTMENT:

The president and interim executive vice president and provost have confirmed the reappointment of Dr. John C. Little to the Charles E. Via, Jr. Professorship, effective August 10, 2018, with a salary supplement and operating budget as provided by the endowment and, if available, with funds from the eminent scholars match program.

August 27, 2018

ENDOWED FELLOWSHIP
David M. Kohl Junior Faculty Fellowship

The Kohl Centre was founded to honor Dr. David M. Kohl for his 25 years as a professor of agricultural finance and small business management/entrepreneurship in the Department of Agricultural and Applied Economics. The hallmark of Dr. Kohl's academic career was to engage students in hands-on research and problem-solving while simultaneously addressing the needs of agricultural and rural entrepreneurs. The David M. Kohl Junior Faculty Fellowship was established to lead the effort through mentoring undergraduate experiential learning opportunities that integrate research and extension to solve real world business problems. The fellowship recipient will work with the department head and undergraduate program director to implement the program, consistent with the center's vision.

In concurrence with the recommendations of the department head, Dr. Matt Holt, the honorifics committee of the Department of Agricultural and Applied Economics, and Alan Grant, dean of the College of Agriculture and Life Sciences, Dr. Kimberly Morgan is nominated for reappointment to the David M. Kohl Junior Faculty Fellowship for a three-year, renewable term.

Dr. Morgan has years of experience in working with students, producers, and industry groups from the Southern region. She currently serves as an assistant professor with teaching and extension responsibilities. Her teaching and extension programs in the areas of small business management, entrepreneurship, risk management, and marketing, work to improve Virginia agriculture. Dr. Morgan has dedicated her teaching career to providing students with practical applications of economic and business principles. Aside from incorporating real-world case studies into her courses, she regularly invites students to participate in extension programs. The students provide farm and agribusiness managers with creative solutions to a variety of business issues based on what they have learned in academic courses, original research they conduct, and a team approach that is based on the experience, knowledge, and skills of diverse student groups.

REAPPOINTMENT:

The president and interim executive vice president and provost have confirmed the reappointment of Dr. Kimberly Morgan as the David M. Kohl Junior Faculty Fellowship, effective October 1, 2018, for a period of three years with a salary supplement and operating budget as provided by the endowment and, if available, with funds from the eminent scholars match program.

August 27, 2018

ENDOWED PROFESSORSHIP
James I. Robertson, Jr. Professorship in Civil War Studies

Funded through a bequest from Vicki Heilig, the James I. Robertson, Jr. Professorship was established to honor the career of Dr. Robertson, who spent more than four decades at Virginia Tech bringing the American Civil War to life not only for thousands of students in his popular classes, but also for millions of others through his award-winning books, television appearances, radio essays, and public speaking engagements. The Department of History honorifics committee and Dean Rosemary Blieszner recommend reappointment of Dr. Quigley to this eminent scholar position and directorship.

Dr. Quigley has continued his scholarship on the Civil War, resulting in publications and conference presentations, while providing leadership for numerous outreach and engagement programs for the Center. These include the annual Civil War Weekend, presentations for community groups, and development of a digital archive for teachers, students, and the public.

Dr. Quigley also supervises the work of a graduate assistant and a postdoctoral associate of the Center and provides professional service to the History Department, Virginia Tech, University of Edinburgh, and professional organizations. In support of and acknowledgement of his outstanding scholarship, Dr. Quigley has received external funding and a number of awards and recognitions.

Dr. Quigley is performing his duties with tireless dedication, contributing to increased understanding of many dimensions of Civil War studies among Virginia Tech's students and external audiences.

REAPPOINTMENT:

The president and executive vice president and provost have confirmed the reappointment of Dr. Quigley to the James I. Robertson, Jr. Professorship in Civil War Studies for a five-year renewable term effective August 10, 2018, with a salary supplement as provided by the endowment and, if available, with funds from the eminent scholars match program.

August 27, 2018

ENDOWED PROFESSORSHIP
Thomas L. Phillips Endowed Professorship

The Raytheon Corporation created the Thomas L. Phillips Professorship in 1992 in honor of its retired chief executive officer (1968 – 1991) and chair of its board of directors (1975 – 1991). Thomas L. Phillips received his bachelor's and master's degrees in electrical engineering from Virginia Tech in 1947 and in 1948, respectively. He joined Raytheon upon his graduation as an electronics design engineer. Dean Julia Ross nominates Dr. Naren Ramakrishnan for renewal as the Thomas L. Phillips Professor in Engineering.

Dr. Ramakrishnan earned his Ph.D. in Computer Sciences from Purdue University in 1997. He received a M.S. in Computer Science and Engineering from Anna University in India in 1993, and a B.S. in Engineering in Electronics and Instrumentation from Annamalai University, India in 1992. He joined the Department of Computer Science in 1998. He was promoted to associate professor with tenure in 2003 and to professor in 2008.

Dr. Ramakrishnan is one of the top researchers in the theory and practice of data mining, the science of finding interesting and actionable patterns hidden in massive data sets. He has published 17 edited books/proceedings and book chapters, 150 journal articles and 194 peer-reviewed conference/workshop papers. He has been PI or co-PI on over 70 grants with combined funding of $78.7 M ($37.2M as PI). Moreover, Dr. Ramakrishnan is an outstanding teacher and research mentor; he has served as advisor for 22 Ph.D. graduates and 16 master's graduates.

Dr. Ramakrishnan served as associate department head for graduate studies in the Department of Computer Science from 2008 to 2012. In 2011 he became the founding director of the Discovery Analytics Center at Virginia Tech. He has served on the editorial boards of six journals in his field and serves on the Editorial Advisory Panel of IEEE Computer, the flagship publication of the IEEE Computer Society. He has served on numerous program committees for top conferences, including as program chair of the IEEE International Conference on Data Mining (2007) and general chair for that conference in 2008.

Dr. Ramakrishnan has received numerous honors and professional recognitions, including Virginia Tech's Alumni Award for Excellence in Research (2011), and Dean's awards for Excellence in Teaching (2005) and Research (2010). In 2009, Dr. Ramakrishnan was named an Association for Computing Machinery (ACM) Distinguished Scientist. Dr. Ramakrishnan is a rare faculty member—an excellent researcher, a strong mentor, a respected leader, and a consensus-building colleague.

REAPPOINTMENT:

The president and interim executive vice president and provost have confirmed the reappointment of Dr. Naren Ramakrishnan be reappointed to the Thomas L. Phillips Endowed Professorship, effective August 10, 2018, with a salary supplement and operating budget provided by the endowment and, if available, with funds from the eminent scholars match program.

August 27, 2018

Attachment D

Understanding Students' Experiences and Perceptions of Virginia Tech (Gallup Survey)

PATRICIA A PERILLO
Vice President for Student Affairs

VIRGINIA TECH™

What is the Gallup Survey?

In fall 2017, Virginia Tech partnered with Gallup to examine a range of topics including:

- Student well-being;
- Student engagement;
- Student experiences;
- Campus climate; and,
- Perceptions about educational value and quality.

Key Finding

Virginia Tech students **are more likely than students nationally** to be thriving in each well-being element; particularly related to purpose and community.

DRIVERS OF WELL-BEING

Purpose

- **Support factors:**
  - Professors make them excited about learning
  - Faculty/staff are committed to helping students find rewarding careers
  - Professors care about them as individuals
- **Experiential learning factors:**
  - Significant involvement in co-curricular activities
  - Developed sense of strengths

Community

- **Support factors:**
  - Students look out for one another
  - Have inspiring professor or mentor who encourages goals and dreams
  - Perceptions of campus climate
- **Experiential learning factors:**
  - Significant involvement in co-curricular activities
  - Developed sense of strengths

VIRGINIA TECH

Key Finding & Drivers

Student Engagement

- Virginia Tech students **are more likely than students nationally** to be engaged.

  (Surpassing national average by 15% and large institutions by 18%)

Drivers

- Students' relationships with their professors, faculty, staff and mentors
- Students' interactions with other students

Key Finding

Virginia Tech excels in providing experiential learning opportunities, and its students are extremely involved in co-curricular activities.

(13 percentage points higher than college students nationally and doubles that of students at other large institutions)

VIRGINIA TECH.

Key Finding

Virginia Tech students believe fellow students look out for one another.

(More than doubles national average and that of students at large institutions)

Key Finding

Majority of students say Virginia Tech is a good place for racial/ethnic minorities and lesbian, gay, bisexual and transgender students; for some, it is clear that we still have work to do.

Key Finding & Driver

Virginia Tech students hold more positive views than college students nationally about the quality of their education. *(16 percentage points higher than college students nationally and 14 points ahead of students at other large institutions)*

Primary Driver: Faculty and staff at Virginia Tech are committed to helping students find a rewarding career.

VIRGINIA TECH.

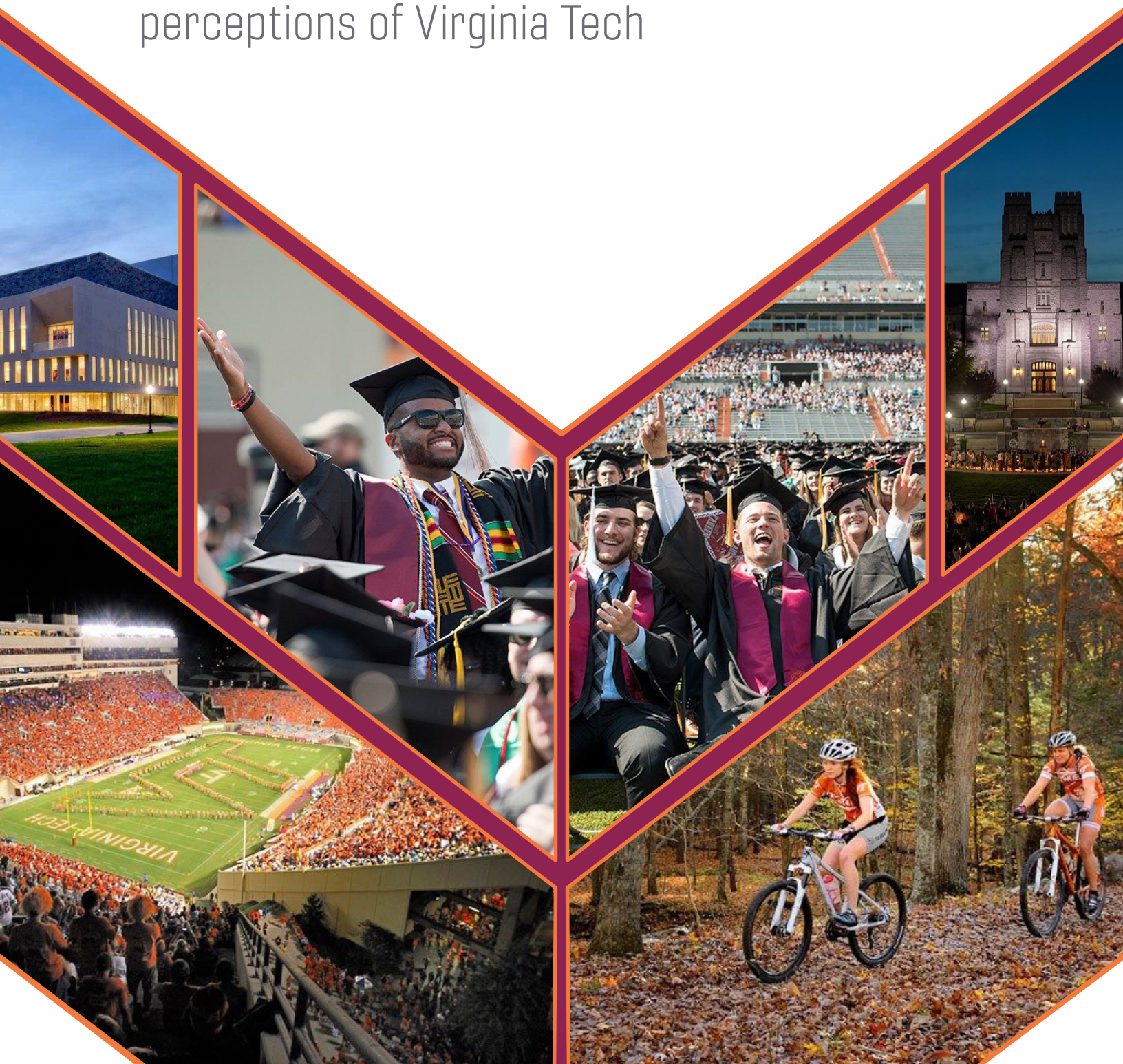
Summary

- Students are well and engaged
- We are a caring community
- We are deeply invested in holistic learning (curricular and co-curricular)
- Our current plans align with the data

GALLUP | VIRGINIA TECH

VIRGINIA TECH STUDENT SURVEY

Understanding students' experiences and perceptions of Virginia Tech



INTRODUCTION

Although alumni salaries and graduate placement rates have some merit for measuring the value of a college education, these factors do not holistically convey the experience and impact of a college education, nor do they reflect the primary reasons students attend college: to secure a career in which they are truly engaged and to prepare for meaningful and lifelong contribution to society.

Gallup's research in higher education has found that *where* you go to college matters far less than *how* you go to college — that is, students' experiences during their time in college shape their lives after graduation. Gallup finds that high-impact support and experiential learning opportunities are linked with long-term outcomes including lifelong well-being, workplace engagement and alumni's attachment to their alma mater.

Because experiences during college are so closely related to critical outcomes after college, assessing the experiences and attitudes of current students can help institutions better understand how they are promoting their students' success now and preparing them to succeed *after* college.

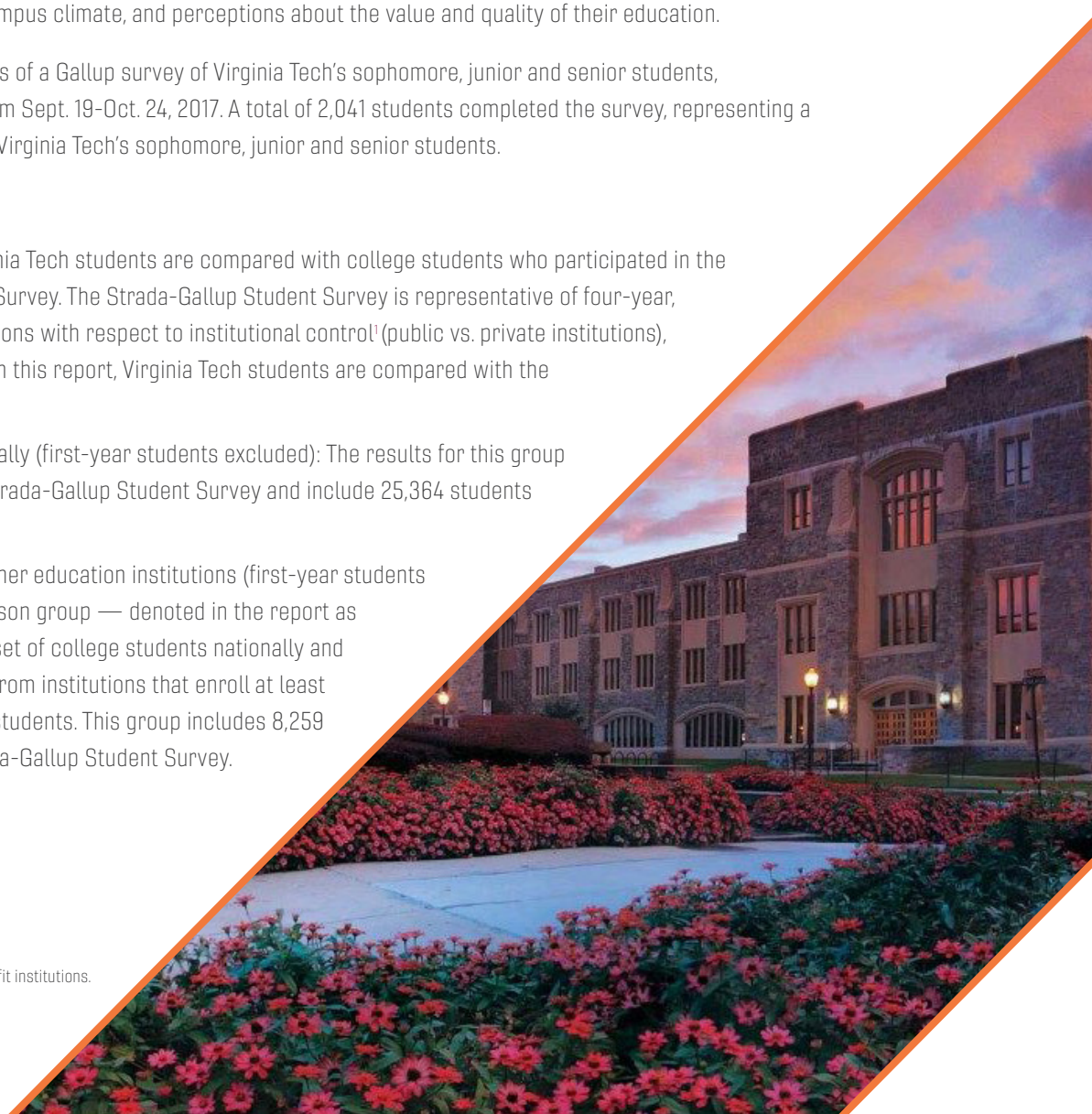
This study explores the experiences of Virginia Tech's undergraduate students (sophomores, juniors and seniors) and how those experiences relate to important outcomes and attitudes, such as student well-being, student engagement, views about campus climate, and perceptions about the value and quality of their education.

This study reports the results of a Gallup survey of Virginia Tech's sophomore, junior and senior students, administered via internet from Sept. 19-Oct. 24, 2017. A total of 2,041 students completed the survey, representing a participation rate of 10% of Virginia Tech's sophomore, junior and senior students.

Comparison Groups

Results of this study of Virginia Tech students are compared with college students who participated in the 2017 Strada-Gallup Student Survey. The Strada-Gallup Student Survey is representative of four-year, degree-granting U.S. institutions with respect to institutional control[1] (public vs. private institutions), enrollment size and region. In this report, Virginia Tech students are compared with the following groups:

- College students nationally (first-year students excluded): The results for this group were collected in the Strada-Gallup Student Survey and include 25,364 students from 43 institutions.
- Students from large higher education institutions (first-year students excluded): This comparison group — denoted in the report as "large IHEs" — is a subset of college students nationally and only includes students from institutions that enroll at least 20,000 undergraduate students. This group includes 8,259 students from the Strada-Gallup Student Survey.



1 The study excludes private, for-profit institutions.

EXECUTIVE SUMMARY

In 2017, Virginia Tech partnered with Gallup to examine the experiences and perceptions of its sophomore, junior and senior undergraduate students — comparing them with the perceptions and experiences of key groups from Strada-Gallup's nationally representative survey of college graduates. Specifically, the study examines a range of topics including student well-being, student engagement, student experiences, campus climate, and perceptions about educational value and quality.

Key findings of the study include:

Virginia Tech students are more likely than students nationally to be thriving in each well-being element

- In each of the five elements of well-being that Gallup measures, Virginia Tech students are more likely than college students nationally and students at other large institutions to be thriving.
- Key support and experiential learning experiences — like believing professors care about them and being extremely active in co-curricular activities — drive student well-being among Virginia Tech students.

Virginia Tech students are more likely than students nationally to be engaged with school

- Nearly half of Virginia Tech students are classified as engaged — surpassing college students nationally by 15 percentage points and students at other large institutions by 18 percentage points.
- Four of the top eight predictors of student engagement center on students' relationships with their professors, faculty, staff and mentors.

Virginia Tech excels in providing experiential learning opportunities, and its students are extremely involved in co-curricular activities

- The 32% of Virginia Tech students who strongly agree that they are extremely active in co-curricular activities and organizations surpasses the rate among college students nationally by 13 percentage points and doubles the rate of students at other large institutions.
- Virginia Tech's first-generation college students are more likely than their peers nationally and at other large institutions to strongly agree to having each of the key experiential learning opportunities Gallup measures.

Virginia Tech students believe fellow students look out for one another

› The 42% of Virginia Tech students who strongly agree that their fellow students look out for one another more than doubles the percentage of college students nationally and students at other large institutions who say the same.

Majority of students say Virginia Tech is a good place for racial/ethnic minorities and lesbian, gay, bisexual and transgender students

› When asked if the university is a good place for students who are members of racial and ethnic minority groups, two-thirds of Virginia Tech students say that it is a "good place."

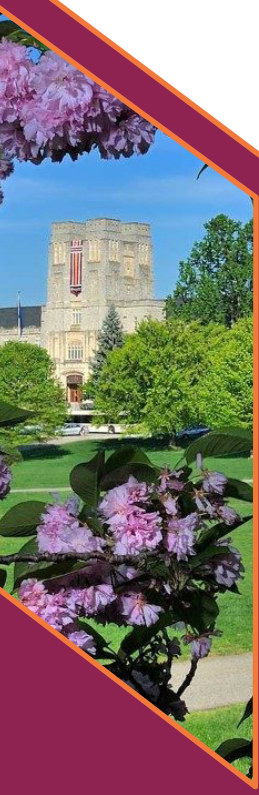
› When asked if the university is a good place for lesbian, gay, bisexual or transgender students, almost six in 10 Virginia Tech students say that it is a "good place."

Virginia Tech students hold more positive views than college students nationally about the quality of their education

› Half of Virginia Tech students strongly agree that they are receiving a high-quality education — 16 percentage points higher than college students nationally and 14 points ahead of students at other large institutions.

› The 31% of Virginia Tech students who strongly agree that their education is worth the cost is about on par with the sentiments of college students nationally (27%) and students at large institutions (28%).

STUDENT WELL-BEING



STUDENT WELL-BEING

Virginia Tech students are more likely than students nationally to be thriving in each well-being element

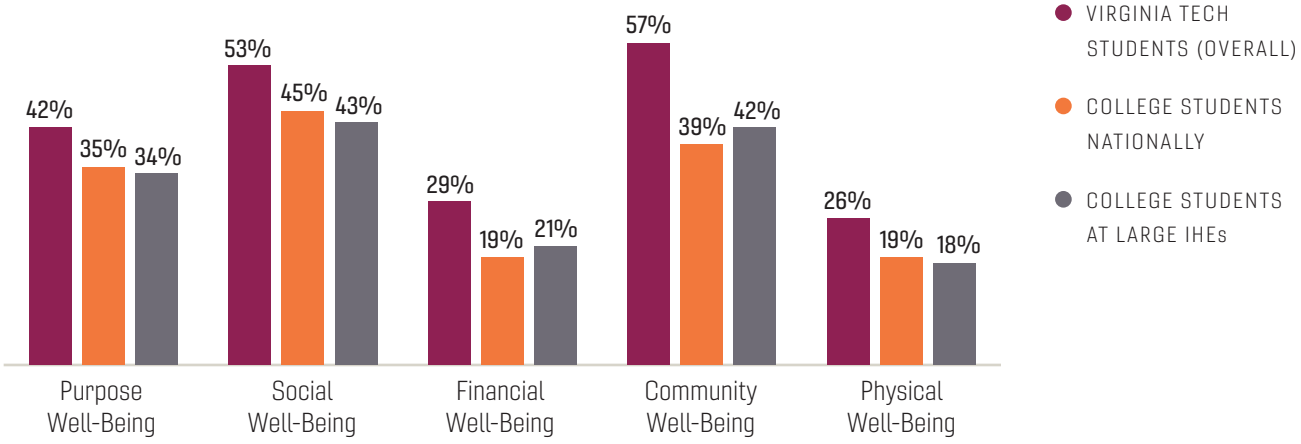
Gallup has conducted decades of research on measuring and understanding human well-being. Well-being is measured in five distinct, but interconnected, elements: purpose, social, financial, community and physical.

Gallup categorizes individuals as "thriving," "struggling" or "suffering" in each element according to how they respond to long-tested questions that relate to each facet of their well-being. "Thriving" in a well-being element means that an individual is strong and consistent in that element, while those who are "struggling" in an element are moderate and less consistent in that element. Those classified as "suffering" are low and inconsistent in that particular element.

In each of the five elements of well-being, Virginia Tech students are more likely than college students nationally and students at other large institutions to be thriving. Virginia Tech students particularly excel in purpose well-being, meaning they enjoy what they do each day and are motivated to achieve their goals. The 42% of Virginia Tech students thriving in purpose well-being outpaces college students nationally and students at large institutions by seven and eight percentage points, respectively.

Virginia Tech students are also particularly likely to be thriving in community well-being — they lead college students nationally and students at large institutions in this element by 18 and 15 percentage points, respectively. The nearly six in 10 Virginia Tech students who are thriving in community well-being are highly engaged with people around them, feel safe in their environment and take pride in where they live. That Virginia Tech students have especially high community well-being aligns directly with the school's core motto of Ut Prosim ("That I May Serve"), which emphasizes self-development through a dedication to serving others.

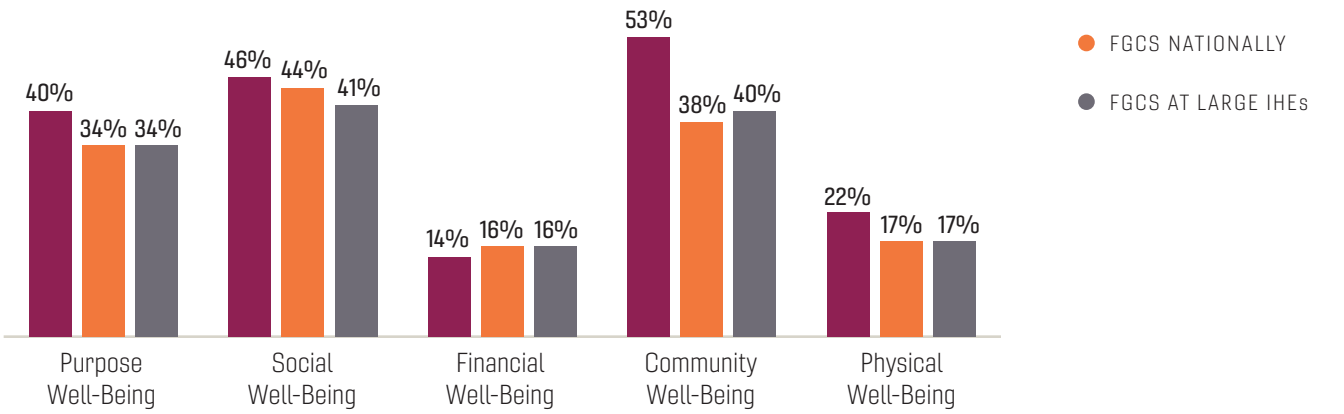
Student Well-Being



The well-being of first-generation college students (FGCS) is the subject of increased attention at colleges and universities in the U.S., with studies finding that this student group reports higher levels of stress and depression and a lower sense of belonging on campus than do non-first-generation students.[2] Virginia Tech's own first-generation college students are about as likely as Virginia Tech students overall to be thriving in purpose, community and physical well-being. However, Virginia Tech's first-generation college students are less likely than Virginia Tech students overall to be thriving in social and financial well-being.

Compared with FGCS nationally and at other large institutions, Virginia Tech's FGCS are more likely to be thriving in purpose, community and physical well-being. Given research showing that first-generation students are more likely than their peers to feel out of place during college, the high level of community well-being among Virginia Tech's first-generation students is particularly notable. More than half of the school's first-generation students are thriving in community well-being, compared with 38% of college students nationally and 40% of college students at other large institutions.

Student Well-Being: FGCS



2 Stebleton, M. J., Soria, K. M., & Huesman, R. L., Jr. (2014). First-generation students' sense of belonging, mental health, and use of counseling services at public research universities. Journal of College Counseling. Retrieved from https://onlinelibrary.wiley.com/doi/pdf/10.1002/j.2161-1882.2014.00044.x

DRIVERS OF PURPOSE AND COMMUNITY WELL-BEING AT VIRGINIA TECH

Among Virginia Tech students, key support and experiential learning experiences drive well-being

Given that Virginia Tech students particularly excel in purpose and community well-being relative to their peers, understanding the experiences and perceptions that drive "thriving" in those elements can illustrate how the Virginia Tech experience promotes well-being among its students. Logistic regression models predicting the likelihood that students are thriving in each of those well-being elements reveal that, after accounting for student demographics and characteristics, a key set of experiences and attitudes drive purpose and community well-being.

The models in this section and throughout the report focus on a series of predictors that fall into six thematic categories represented in the following chart. The items they represent are included as inputs that can help explain key outcomes, such as students' well-being.

- The **SUPPORT-BASED EXPERIENCES** focus on meaningful relationships between students, faculty and mentors.
- The **EXPERIENTIAL LEARNING EXPERIENCES** are focused on opportunities to learn through projects, internships and co-curricular activities.
- The **SELF-AWARENESS** items measure students' awareness and application of their own strengths.
- The **CAMPUS CLIMATE** items gauge students' perceptions about the environment on campus with respect to openness and beliefs about the university's commitment to safety.
- The **DEMOGRAPHIC CHARACTERISTICS** measure key student characteristics such as gender, race, year in school and others.
- The **SKILL DEVELOPMENT** items measure students' beliefs about the degree to which their education is preparing them to succeed in their careers after college.

Among Virginia Tech students, the top drivers of purpose well-being center on distinct but interrelated supportive experiences from professors and fellow students. Three of the top six drivers of purpose well-being relate to support from faculty and staff — strongly agreeing that they have a professor who makes them excited about learning, that the faculty and staff are committed to helping students find rewarding careers, and that their professors care about them as individuals. Additionally, the third-strongest driver of purpose well-being is strongly agreeing that students at Virginia Tech look out for one another.

In addition to supportive relationships, involvement in co-curricular activities and a developed sense of their own strengths also represent significant drivers of purpose well-being among Virginia Tech students. These insights underscore the importance of meaningful interactions — with professors, faculty and fellow students — and self-awareness to students' purpose well-being.

Drivers of Purpose Well-Being Among Virginia Tech Students

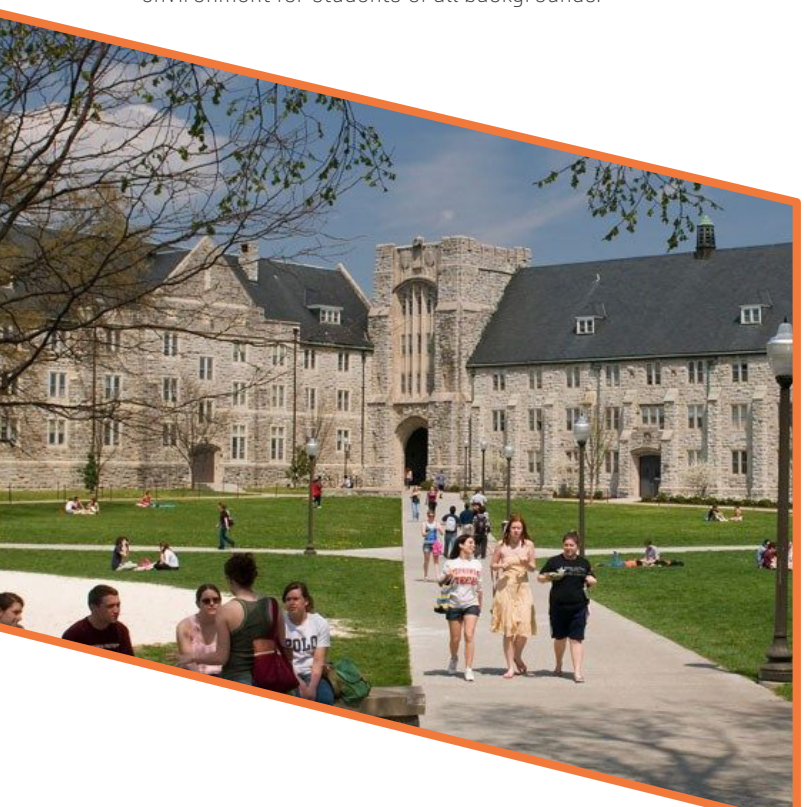
1. I have at least one professor at Virginia Tech who makes me excited about learning.
2. The faculty and staff at Virginia Tech are committed to helping students find a rewarding career.
3. Students at Virginia Tech look out for one another.
4. I am extremely active in co-curricular activities and organizations.
5. I accomplish a lot by using my strengths.
6. My professors at Virginia Tech care about me as a person.
7. I find ways to use my strengths at school every day.

DRIVER CATEGORY KEY

- SUPPORT-BASED EXPERIENCES
- EXPERIENTIAL LEARNING EXPERIENCES
- SELF-AWARENESS
- CAMPUS CLIMATE
- DEMOGRAPHIC CHARACTERISTICS
- SKILL DEVELOPMENT

Community well-being among Virginia Tech students is also related to supportive experiences. The top driver of community well-being is strongly agreeing that students look out for one another, while the third and sixth drivers relate to having an inspiring professor and a mentor who encourages goals and dreams.

Two of the top seven drivers of community well-being relate to perceptions of campus climate. Students who believe that Virginia Tech is a good place for students who are members of racial and ethnic minorities and are confident that the school would do the right thing in an instance of discrimination on campus are significantly more likely to be thriving in community well-being. These findings highlight the importance of an institutional commitment to creating a welcoming campus environment for students of all backgrounds.



Attachment D

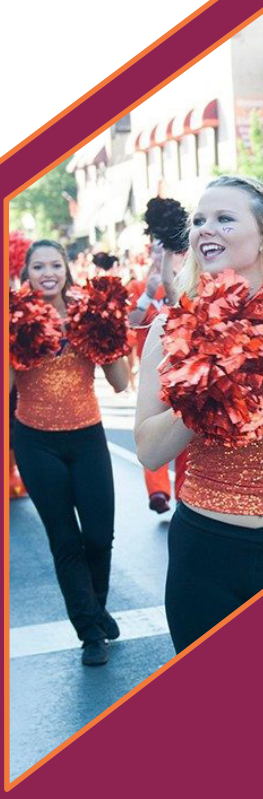
Drivers of Community Well-Being Among Virginia Tech Students

1. Students at Virginia Tech look out for one another.
2. Is Virginia Tech a good place or not a good place for students who are members of racial and ethnic minorities?
3. I have at least one professor at Virginia Tech who makes me excited about learning.
4. I know my strengths.
5. White vs. minority
6. I have a mentor at Virginia Tech who encourages me to pursue my goals and dreams.
7. If I raised an issue about discrimination on campus, I am confident Virginia Tech would do what is right.
8. I am extremely active in co-curricular activities and organizations.

DRIVER CATEGORY KEY

- SUPPORT-BASED EXPERIENCES
- EXPERIENTIAL LEARNING EXPERIENCES
- SELF-AWARENESS
- CAMPUS CLIMATE
- DEMOGRAPHIC CHARACTERISTICS
- SKILL DEVELOPMENT

STUDENT ENGAGEMENT



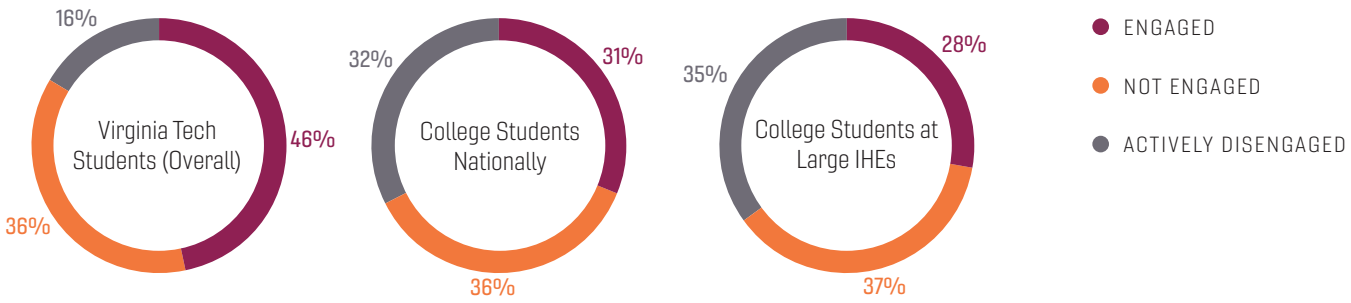
STUDENT ENGAGEMENT

Virginia Tech students are more likely than students nationally to be engaged with school

Gallup defines student engagement as involvement in and enthusiasm for school. The index is generated using a series of measures that assess how students feel about their environment, their classes and whether they have the chance to do what they do best every day. Engaged students feel safe on campus, are plugged into their community, believe their coursework is important and have received positive feedback in their classes.

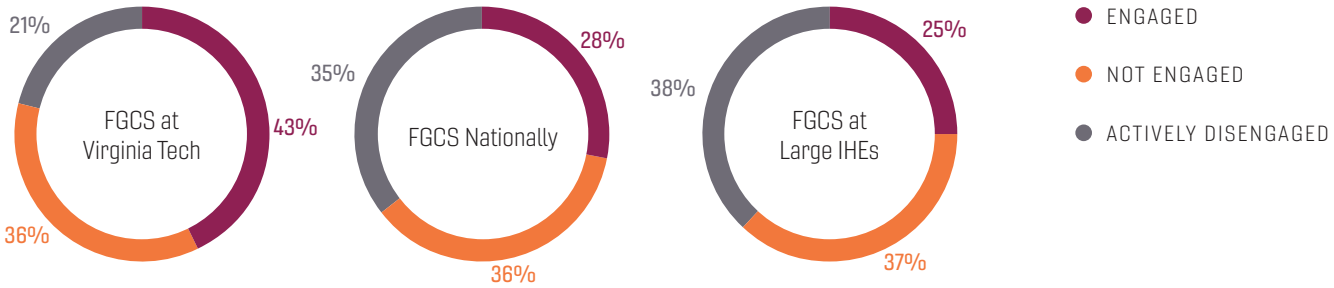
Nearly half of Virginia Tech students are classified as engaged, which far outpaces their peer groups. In fact, the 46% of Virginia Tech students who are engaged surpasses college students nationally by 15 percentage points and exceeds the rate of students at other large institutions by 18 percentage points.

Student Engagement



The substantial gap in the rate of engagement between Virginia Tech students and students at comparison group schools remains when considering each group's first-generation college students. Forty-three percent of Virginia Tech's first-generation students are engaged at school, compared with 28% of FGCS nationally and 25% of FGCS at other large institutions.

Student Engagement: FGCS



Attachment D

Among Virginia Tech students, professor and student interactions drive student engagement

Engagement among Virginia Tech students is driven by supportive experiences — to an even greater degree than supportive experiences drive well-being. Four of the top eight predictors of student engagement center on students' relationships with their professors, faculty, staff and mentors. Students who strongly agree that the faculty and staff are committed to helping them find a rewarding career, that they have at least one professor who inspires them, that they have a mentor who encourages their goals and dreams, and that their professors care about them as individuals have elevated odds of being classified as engaged.

Interactions with other students also drive student engagement among Virginia Tech students and account for three of the eight engagement predictors. Students who strongly agree that their fellow students look out for each other are more likely to be engaged, as are those who are actively involved on campus in organizations and intramural sports. Fostering an environment at Virginia Tech that encourages and creates meaningful interactions between students and professors — whether inside or outside of the classroom — increases the chances that students will be engaged in their college experience.

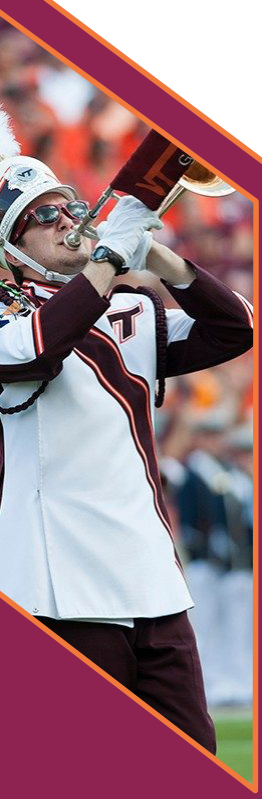
Drivers of Student Engagement Among Virginia Tech Students

1. The faculty and staff at Virginia Tech are committed to helping students find a rewarding career.
2. I have at least one professor at Virginia Tech who makes me excited about learning.
3. I have a mentor at Virginia Tech who encourages me to pursue my goals and dreams.
4. Students at Virginia Tech look out for one another.
5. Do you participate in intramural sports?
6. Female vs. male
7. My professors at Virginia Tech care about me as a person.
8. I am extremely active in co-curricular activities and organizations.

DRIVER CATEGORY KEY

- SUPPORT-BASED EXPERIENCES
- EXPERIENTIAL LEARNING EXPERIENCES
- SELF-AWARENESS
- CAMPUS CLIMATE
- DEMOGRAPHIC CHARACTERISTICS
- SKILL DEVELOPMENT

STUDENT EXPERIENCES



STUDENT EXPERIENCES

A variety of supportive experiences and experiential learning opportunities have consistently emerged as some of the strongest drivers of well-being and student engagement among Virginia Tech students. Gallup's examination of college students and college graduates at a national level has demonstrated that six particular college experiences are consistently linked to a host of critical outcomes, like well-being and beliefs about the value and quality of their education.

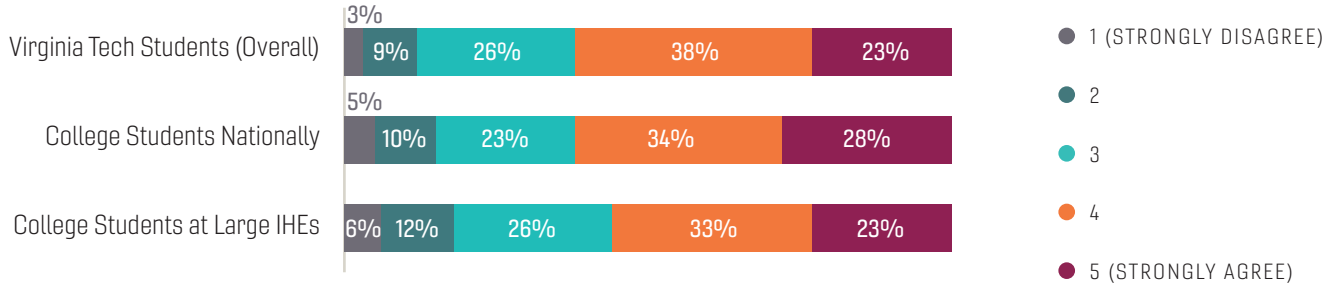
An understanding of institution-level performance on these measures provides leaders with insights about where their institution excels and where it can improve the student experience. While the findings in this report have already established the link many of these experiences have to well-being and engagement among Virginia Tech students, this section provides a broader view of these supportive experiences and experimental learning opportunities.

Virginia Tech students are about as likely as college students nationally to have had key support experiences

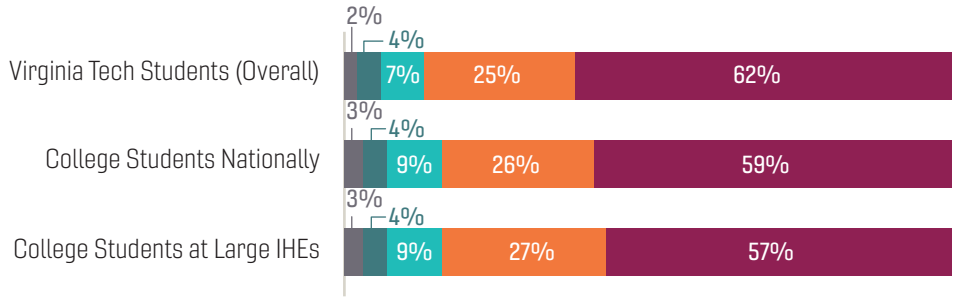
Overall, Virginia Tech students are about as likely as college students nationally and students at large institutions to have had each of the three core supportive experiences: having professors who care about them, a professor who makes them excited about learning and an encouraging mentor. Twenty-three percent of Virginia Tech students strongly agree that their professors care about them as a person — on par with students at other large institutions (23%) and slightly lower than college students nationally (28%). Just more than six in 10 Virginia Tech students (62%) strongly agree that they have at least one professor who makes them excited about learning, on par with college students nationally (59%) and slightly higher than students at other large institutions (57%). Additionally, 23% of Virginia Tech students strongly agree that they have a mentor who encourages their goals and dreams, compared with 25% and 21% of college students nationally and students at large institutions, respectively.

Support Experiences

My professors at Virginia Tech care about me as a person.

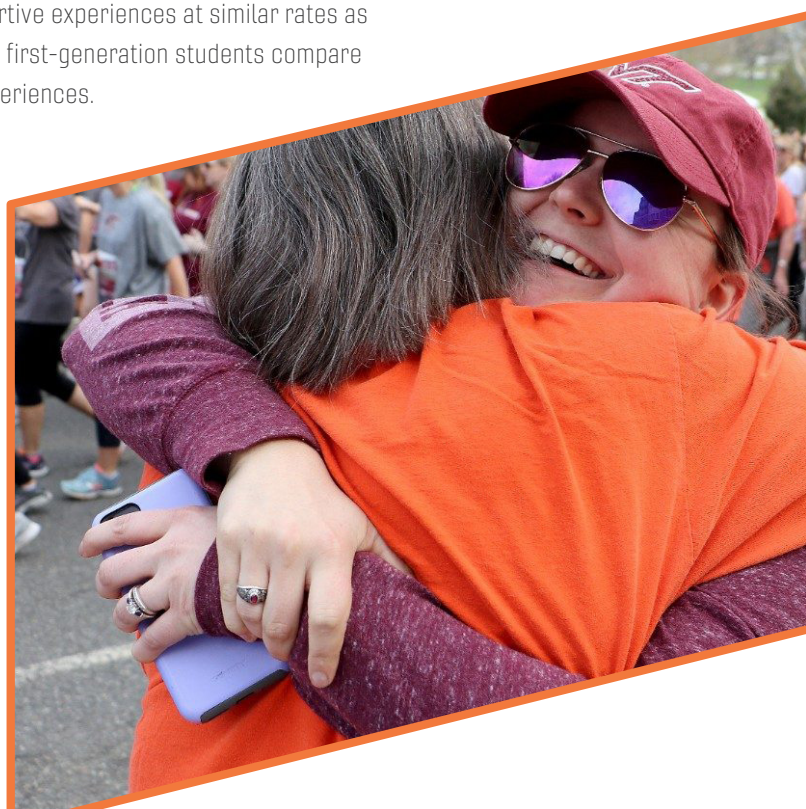


I have at least one professor at Virginia Tech who makes me excited about learning.



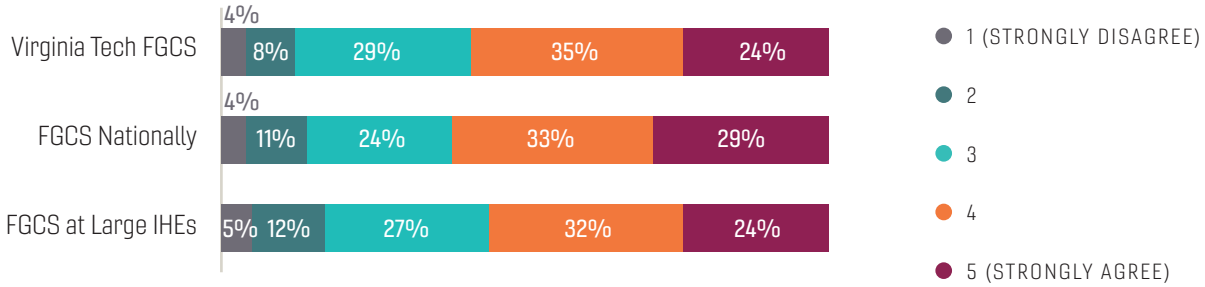
I have a mentor at Virginia Tech who encourages me to pursue my goals and dreams.

Virginia Tech's first-generation college students have these supportive experiences at similar rates as the school's overall student population. Additionally, Virginia Tech's first-generation students compare similarly with other first-generation college students on these experiences.

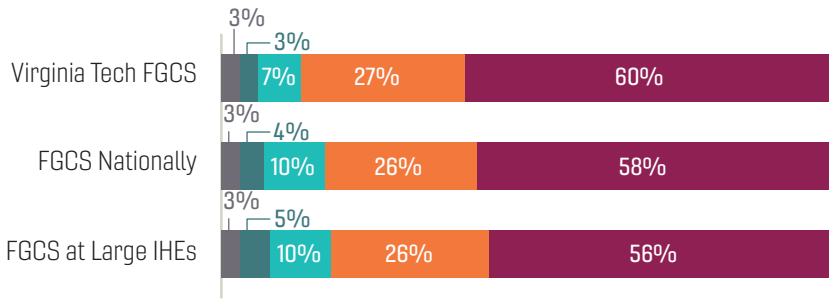


Support Experiences: FGCS

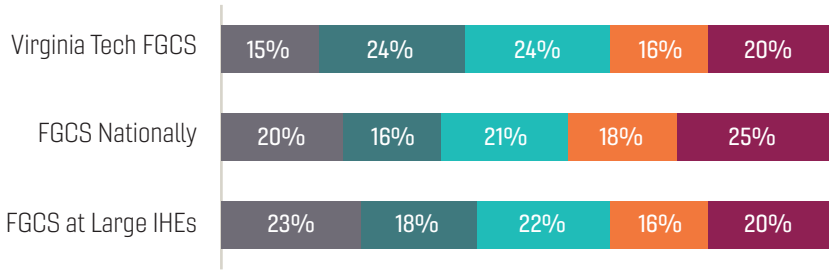
My professors at Virginia Tech care about me as a person.



I have at least one professor at Virginia Tech who makes me excited about learning.



I have a mentor at Virginia Tech who encourages me to pursue my goals and dreams.



Virginia Tech excels in providing experiential learning opportunities, and its students are extremely involved in co-curricular activities

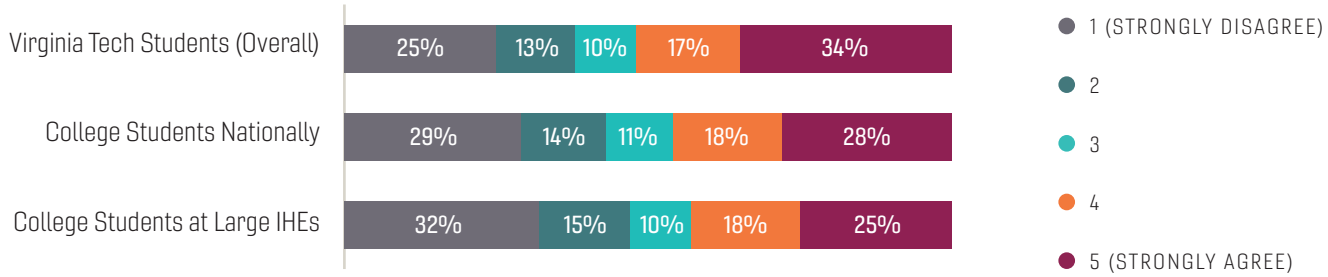
Relative to their peers, Virginia Tech students are particularly likely to have had experiential learning opportunities. More than half of Virginia Tech's students (52%) — including 72% of its seniors — have had a job or internship where they could apply what they were learning in the classroom, about six or seven percentage points higher than college students nationally and students at other large institutions.

Just more than a third of Virginia Tech's students (34%) — including 44% of its seniors — strongly agree that they have worked on a project that took a semester or more to complete, compared with 28% of college students nationally and 25% of students at other large institutions.

Virginia Tech students are particularly active in co-curricular activities. The 32% of Virginia Tech students who strongly agree that they are extremely active in co-curricular activities and organizations surpasses the rate among college students nationally by 13 percentage points and doubles the rate of students at other large institutions.

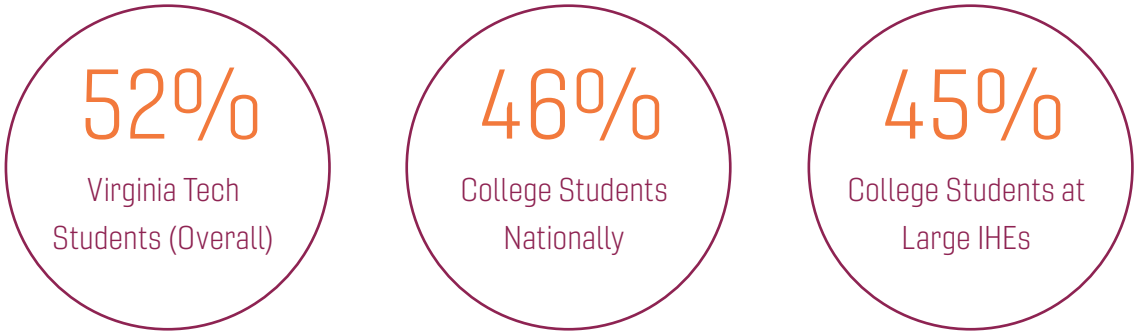
Experiential Learning Opportunities

While attending Virginia Tech I have worked on a project that took a semester or more to complete.



I am extremely active in co-curricular activities and organizations.

Have Had Applied Job or Internship (% Yes)



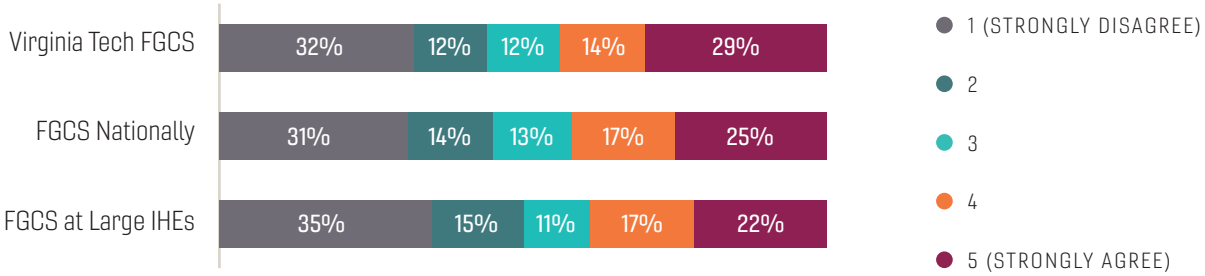
At the national level, first-generation college students are slightly less likely to have had these key experiential learning opportunities. This could be partly attributable to FGCS being more likely than non-first-generation students to work while enrolled (76% vs. 62% among Virginia Tech's students). Given the competing demands on their time, first-generation college students are often unable to commit additional time and effort to participate in experiential learning and co-curricular activities. However, engaging in these opportunities may be particularly important for first-generation college students, as studies have linked involvement in co-curricular activities with persistence in college.[3]

While Virginia Tech's first-generation college students are more likely than FGCS nationally and at other large institutions to strongly agree to having each of these experiential learning opportunities, Virginia Tech's FGCS have worked on long-term projects and have had applied jobs/internships at slightly lower rates compared with Virginia Tech students overall.

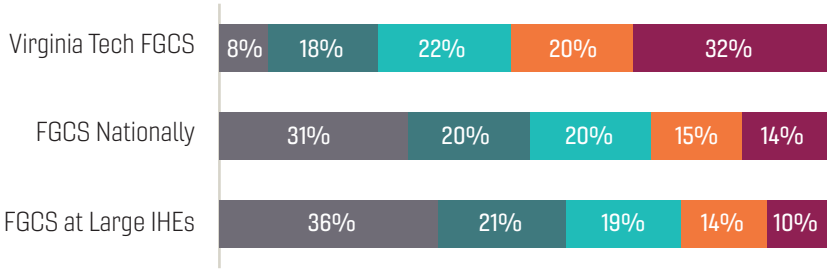
3 Fischer, M. (2007). Settling into campus life: Differences by race/ethnicity in college involvement and outcomes. The Journal of Higher Education, 78(2), 125-156. Retrieved from https://muse.jhu.edu/article/213593

Experiential Learning Opportunities: FGCS

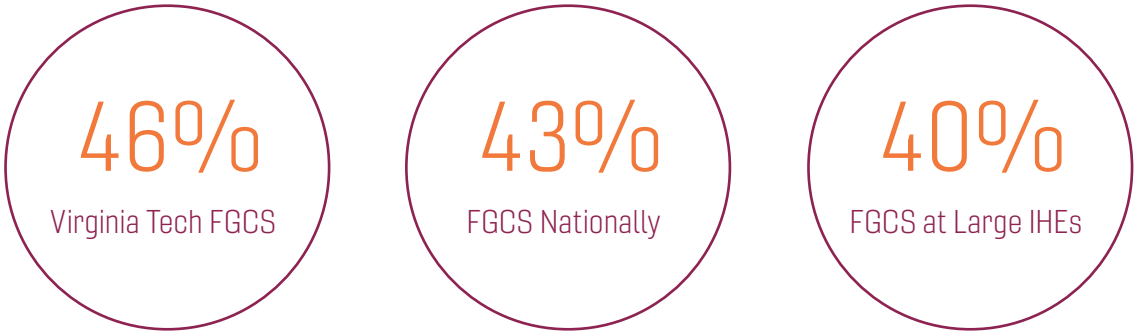
While attending Virginia Tech I have worked on a project that took a semester or more to complete.



I am extremely active in co-curricular activities and organizations.



Have Had Applied Job or Internship: FGCS (% Yes)

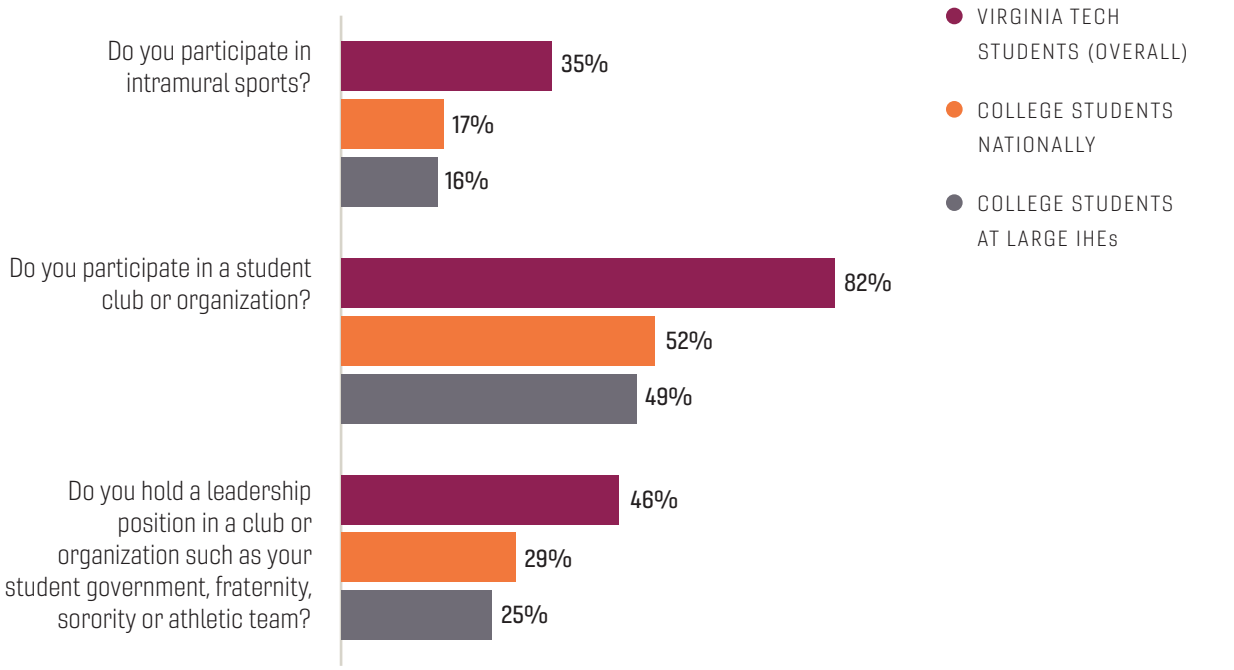


The high rate of co-curricular activity among Virginia Tech students can also be seen through the lens of particular *types* of co-curricular opportunities. Virginia Tech students are more than twice as likely as college students nationally and students at large institutions to participate in intramural sports. Additionally, the 82% of Virginia Tech students who participate in a student club or organization exceeds the rate of college students nationally by 30 percentage points and surpasses the rate among students at other large institutions by 33 points.

Virginia Tech students aren't just highly involved in clubs and organizations — they also take on leadership roles in those organizations at higher rates than do their national and large school peers. Nearly half of Virginia Tech's students (46%) hold a leadership position in a club or organization, compared with 29% of college students nationally and 25% of students at other large institutions.

Activities on Campus

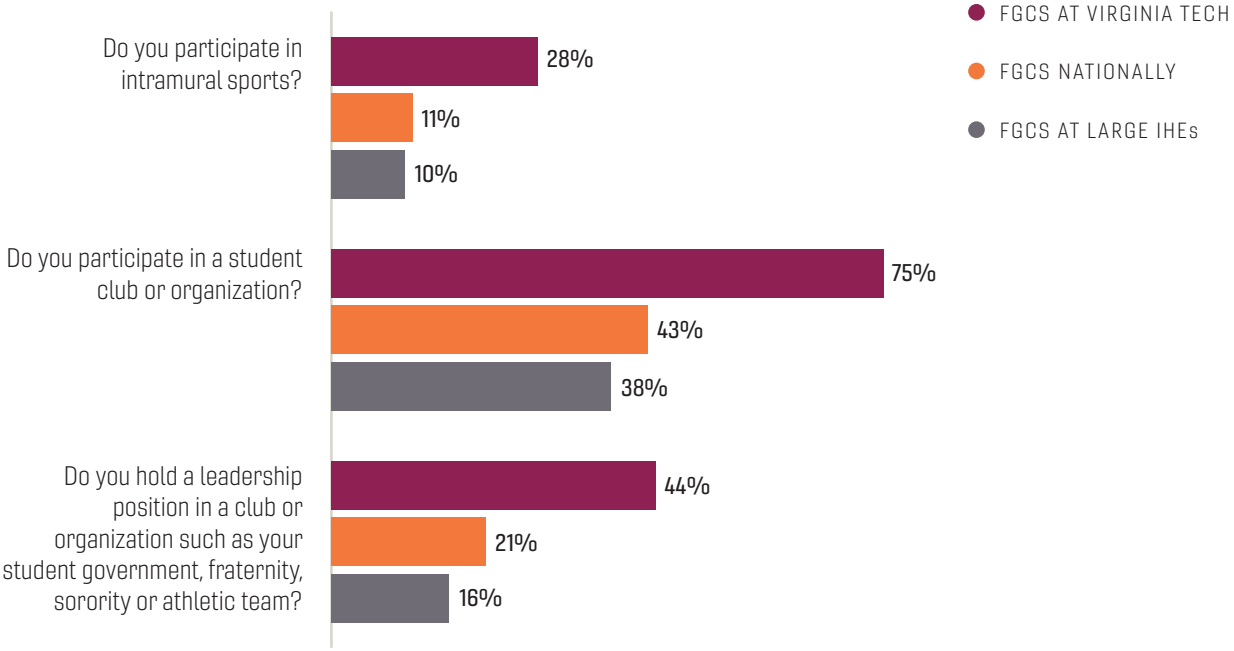
% Yes



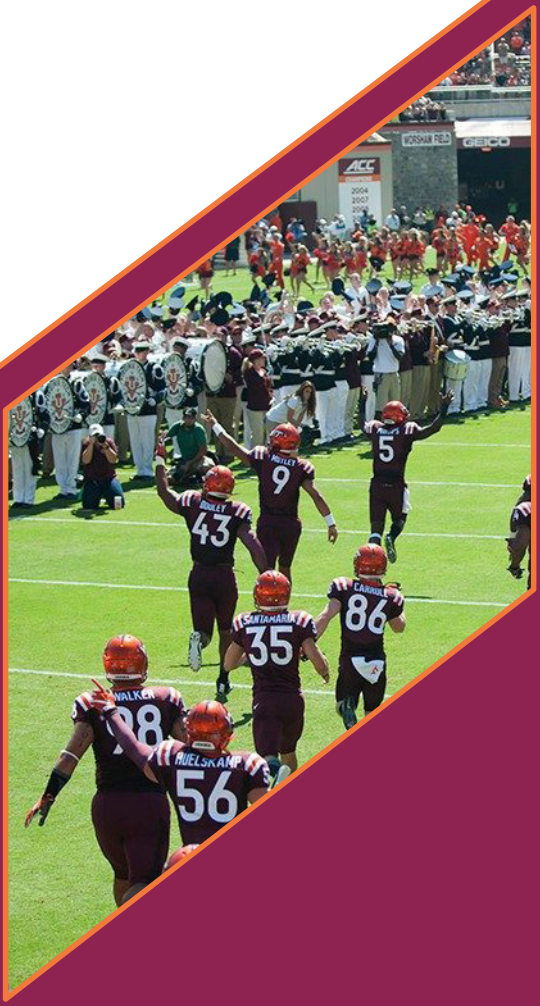
Following the overall pattern of co-curricular involvement, Virginia Tech's first-generation college students are slightly less likely than its students overall to participate in each of these activities. However, they are substantially more likely than first-generation students in their comparison groups to play intramural sports, be members of student organizations and hold leadership positions in those clubs.

Activities on Campus: FGCS

% Yes



CAMPUS CLIMATE



CAMPUS CLIMATE

In recent years, colleges and universities in the U.S. have been giving increased attention to creating an open and welcoming campus environment for students of all backgrounds. Recent high-profile incidents about issues of discrimination, speech on campus and other related issues have only underscored the importance of understanding how students perceive the climate on college campuses. To that end, the Strada-Gallup survey of college students introduced a series of questions aimed at understanding campus climate.

Virginia Tech students believe fellow students look out for one another

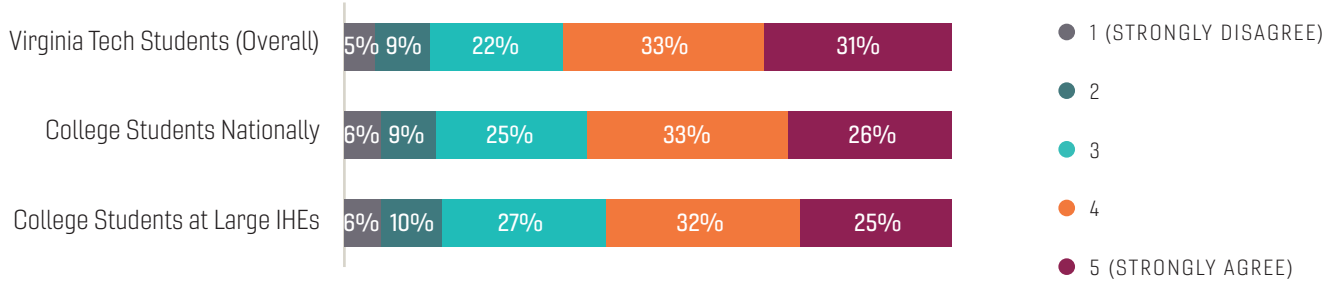
When faced with issues of discrimination or sexual assault on campus, Virginia Tech students are more likely than their peers to be confident that their university would do what is right. In fact, Virginia Tech students are, on average, six percentage points more likely than students in the comparison groups to strongly agree the university would do what is right in instances of discrimination on campus. They are, on average, 12 percentage points more likely than college students nationally and students at large institutions to strongly agree the university would do what is right in instances of sexual assault on campus.

Virginia Tech students are particularly likely to believe that their fellow students look out for one another. The 42% of Virginia Tech students who strongly agree that their fellow students look out for one another more than doubles the percentage of college students nationally and students at other large institutions who say the same.

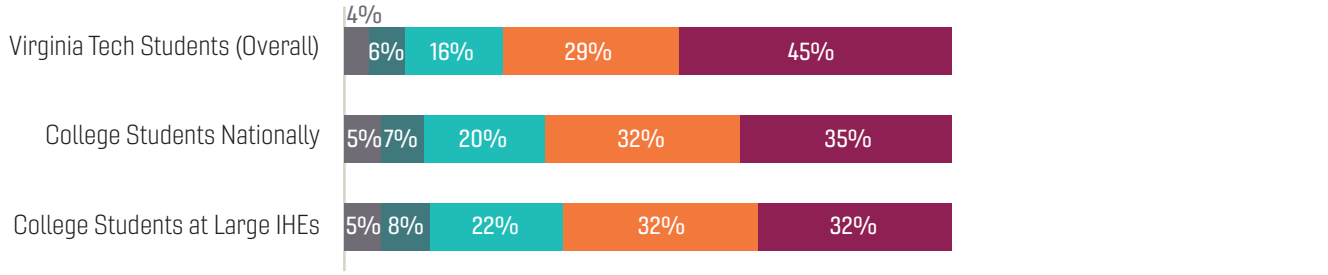
Like college students nationally and college students at large intuitions, Virginia Tech students do express some reservations about offering minority opinions in class. About two in 10 Virginia Tech students (20%), students nationally (22%) and students at large institutions (20%) strongly agree that they feel very comfortable sharing ideas or opinions in class that are probably held by a minority of people.

Institutional Response

If I raised an issue about discrimination on campus, I am confident Virginia Tech would do what is right.

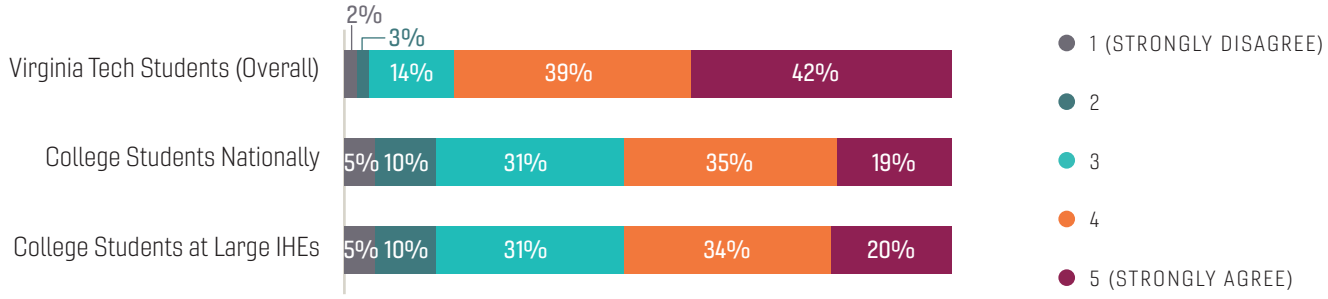


If I raised an issue about sexual assault on campus, I am confident Virginia Tech would do what is right.

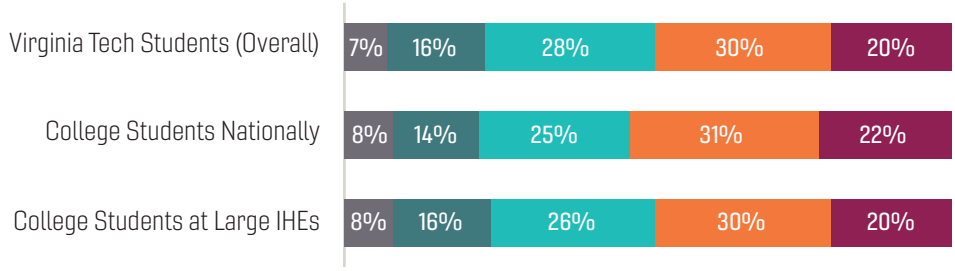


Campus Climate

Students at Virginia Tech look out for one another.



I feel very comfortable sharing ideas or opinions in class that are probably only held by a minority of people.



Confidence in how the university would respond to issues of sexual assault and discrimination do, however, vary somewhat by key student demographics. For example, Virginia Tech's LGBTQ+ students express less confidence than other groups in how the university would respond to issues of sexual assault (34%), as do female (40%) and nonwhite students (38%). On issues of discrimination on campus, Virginia Tech's LGBTQ+ students (24%) also report a somewhat lower level of confidence than other groups in how the institution would respond.

How Institutions Address Issues on Campus, by Demographic Groups (% Strongly Agree)

If I raised an issue about sexual assault on campus, I am confident Virginia Tech would do what is right.

Virginia Tech (Overall)	45
College Students Nationally	35
White Virginia Tech Students	47
Nonwhite Virginia Tech Students	38
Male Virginia Tech Students	53
Female Virginia Tech Students	40
LGBTQ+ Virginia Tech Students	34
Virginia Tech FGCS	54

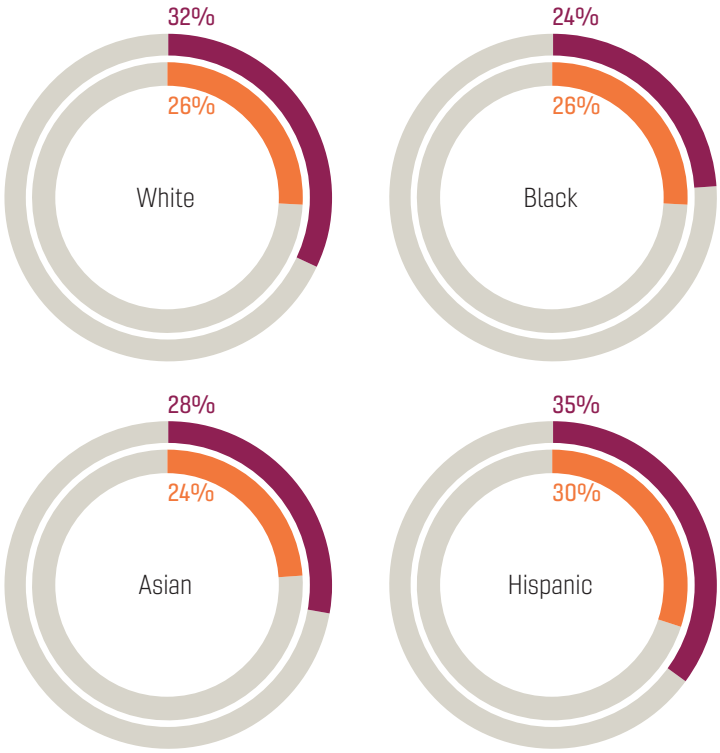
If I raised an issue about discrimination on campus, I am confident Virginia Tech would do what is right.

Virginia Tech (Overall)	31
College Students Nationally	26
White Virginia Tech Students	32
Nonwhite Virginia Tech Students	29
Male Virginia Tech Students	32
Female Virginia Tech Students	31
LGBTQ+ Virginia Tech Students	24
Virginia Tech FGCS	39

Perceptions about institutional response to discrimination on campus among Virginia Tech's minority populations compare similarly with those among similar populations nationally. Virginia Tech's white, Asian and Hispanic students are somewhat more likely than their peers nationally to believe their school would do what is right in response to an issue of discrimination on campus. Among black students, perceptions about institutional response to issues of discrimination on campus are similar for Virginia Tech students and college students nationally.

Institutional Response, by Race (% Strongly Agree)

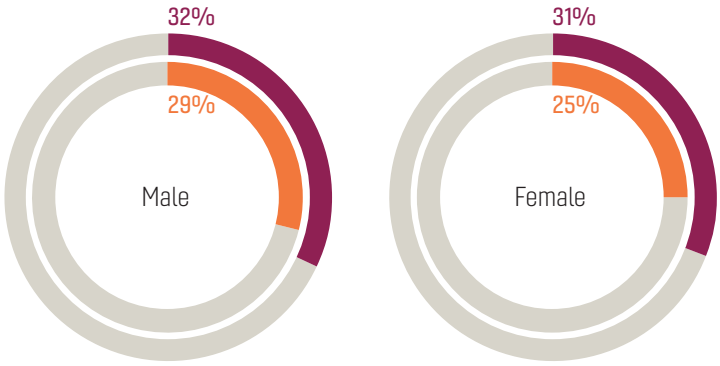
If I raised an issue about discrimination on campus, I am confident Virginia Tech would do what is right.



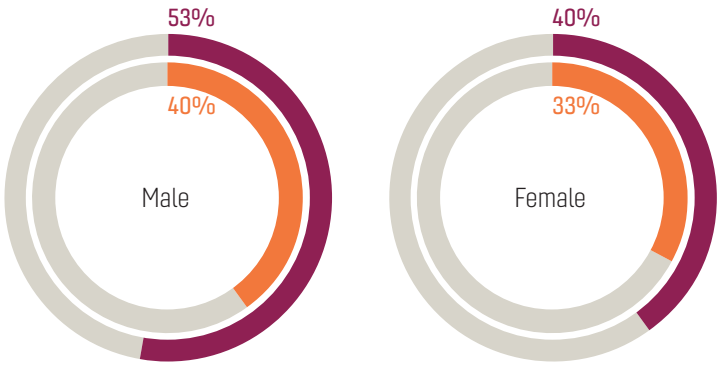
Female students at Virginia Tech are somewhat more likely than female students nationally to believe that the institution would do what is right concerning issues of discrimination on campus. In response to sexual assault issues on campus, Virginia Tech men and women are both more likely than their peers nationally to believe their school would do the right thing.

Institutional Response, by Gender (% Strongly Agree)

If I raised an issue about discrimination on campus, I am confident Virginia Tech would do what is right.



If I raised an issue about sexual assault on campus, I am confident Virginia Tech would do what is right.



The strong belief among Virginia Tech students, overall, that fellow students look out for one another remains fairly consistent across student subgroups, with only nonwhite students (29%) and LGBTQ+ students (32%) reporting a somewhat lower level of agreement. Virginia Tech students also hold fairly consistent views about their level of comfort sharing opinions in class that are probably only held by a minority of people, with the exception of female students who, at 16%, express the lowest level of comfort of all subgroups.

Campus Climate, by Demographic Groups (% Strongly Agree)

Students at Virginia Tech look out for one another.

Virginia Tech (Overall)	42
College Students Nationally	19
White Virginia Tech Students	45
Nonwhite Virginia Tech Students	29
Male Virginia Tech Students	41
Female Virginia Tech Students	43
LGBTQ+ Virginia Tech Students	32
Virginia Tech FGCS	41

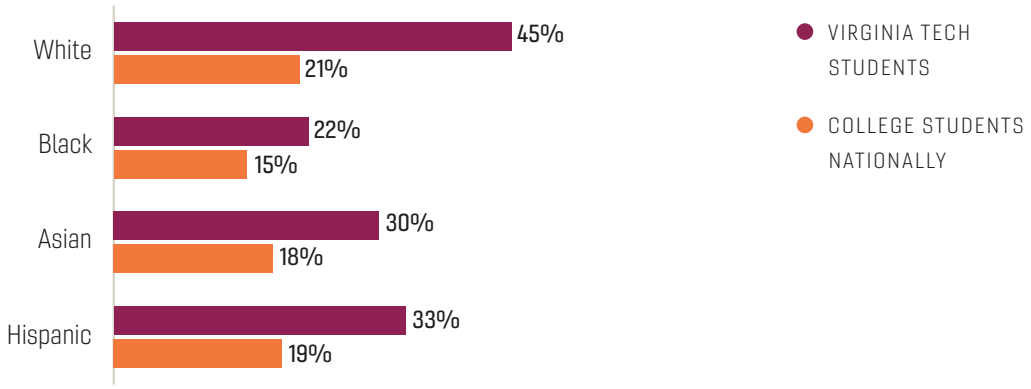
I feel very comfortable sharing ideas or opinions in class that are probably only held by a minority of people.

Virginia Tech (Overall)	20
College Students Nationally	22
White Virginia Tech Students	20
Nonwhite Virginia Tech Students	21
Male Virginia Tech Students	24
Female Virginia Tech Students	16
LGBTQ+ Virginia Tech Students	21
Virginia Tech FGCS	21

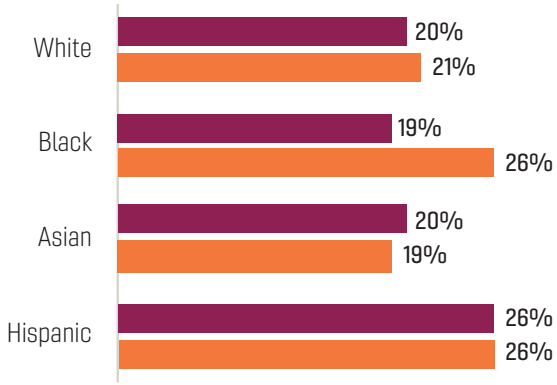
Across all race and ethnicity groups, Virginia Tech students are more likely than their peers nationally to believe that their fellow students look out for one another. Across all groups, Virginia Tech students are, on average, 14 percentage points more likely than their peers nationally to strongly agree to that statement. Virginia Tech's white, Asian and Hispanic students compare similarly with their peers nationally in their level of comfort sharing ideas or opinions in class that are probably only held by a minority of people. However, Virginia Tech's black students are seven percentage points less likely than black students nationally to strongly agree that they feel comfortable sharing such ideas or opinions in class.

Campus Climate, by Race (% Strongly Agree)

Students at Virginia Tech look out for one another.



I feel very comfortable sharing ideas or opinions in class that are probably only held by a minority of people.

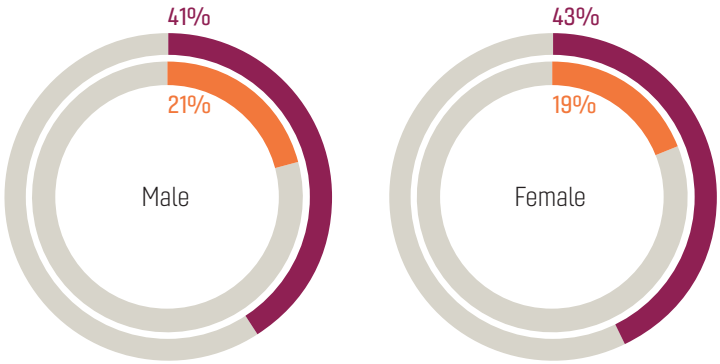


Male and female students at Virginia Tech are about twice as likely as their peers nationally to strongly agree that their fellow students look out for one another. Additionally, while Virginia Tech's male students are on par with male students nationally in their level of comfort sharing ideas or opinions in class that are probably only held by a minority of people, Virginia Tech's female students express somewhat less comfort than their peers nationally.

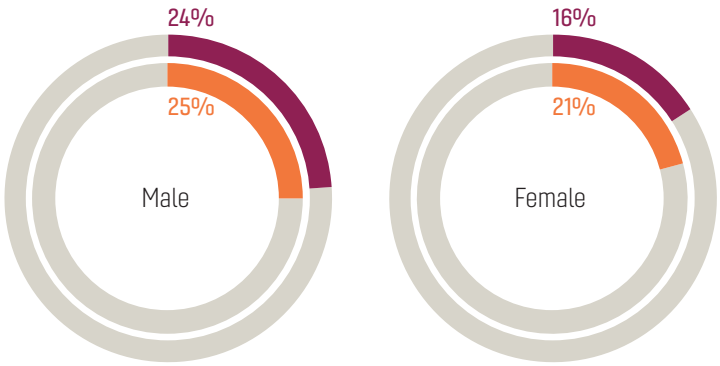
Attachment D

Campus Climate, by Gender (% Strongly Agree)

Students at Virginia Tech look out for one another.



I feel very comfortable sharing ideas or opinions in class that are probably only held by a minority of people.

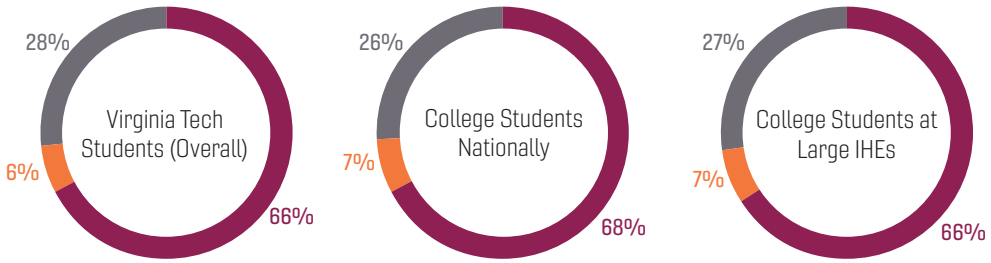


- VIRGINIA TECH STUDENTS
- COLLEGE STUDENTS NATIONALLY

Majority of students say Virginia Tech is a good place for racial and ethnic minorities

When asked if the university is a good place for students who are members of racial and ethnic minority groups, two-thirds of Virginia Tech students say that it is a "good place," 6% say it is "not a good place" and 28% say they "don't know." This distribution of answers among Virginia Tech students mirrors — almost exactly — the distribution of answers among college students nationally and among students at other large institutions.

Is Virginia Tech a good place or not a good place for students who are members of racial and ethnic minorities?



- GOOD PLACE
- NOT A GOOD PLACE
- DON'T KNOW

The percentages of Virginia Tech's Hispanic (74%), Asian (78%) and white (64%) students who say the school is a "good place" are on par with their peers nationally and at other large institutions. However, Virginia Tech's black students (52%) are less likely to say the university is a good place for students of racial/ethnic minorities than Virginia Tech students overall (66%), black students nationally (74%) and black students at large institutions (65%).

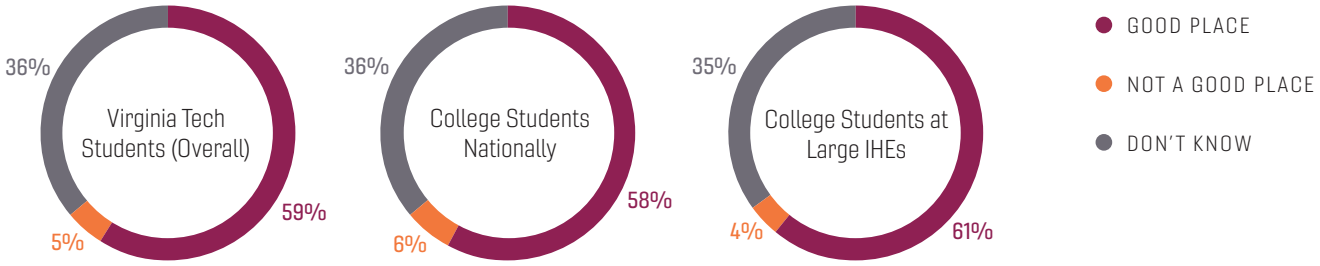
Is Virginia Tech a good place or not a good place for students who are members of racial and ethnic minorities?

White	% Good Place	% Not a Good Place	% Don't Know
Virginia Tech	64	5	32
College Students Nationally	64	5	31
Large IHEs	61	5	34
Black			
Virginia Tech	52	25	22
College Students Nationally	74	12	14
Large IHEs	65	17	19
Asian			
Virginia Tech	78	7	15
College Students Nationally	79	7	14
Large IHEs	79	8	14
Hispanic			
Virginia Tech	74	11	15
College Students Nationally	79	7	15
Large IHEs	79	8	13

Majority of students say Virginia Tech is a good place for lesbian, gay, bisexual or transgender students

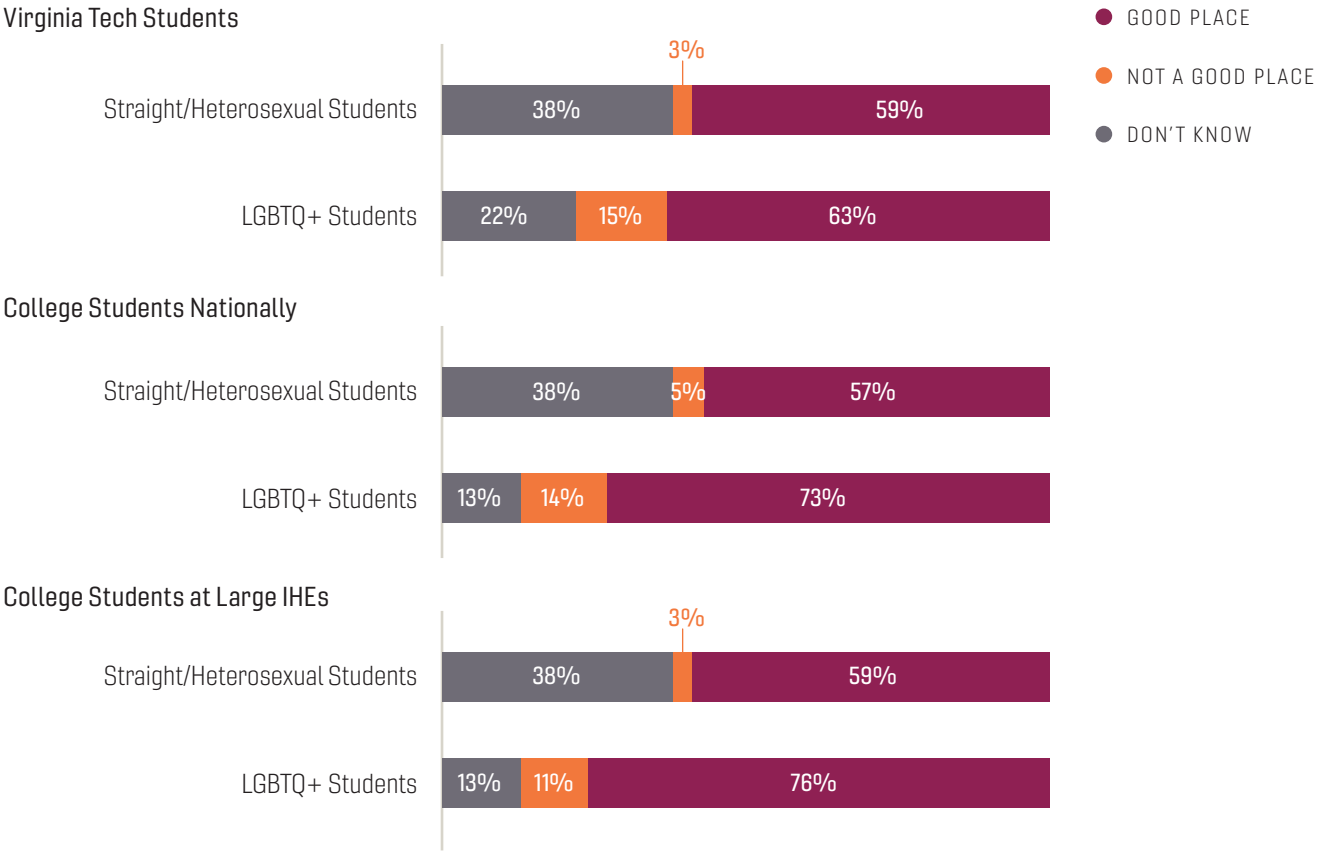
When asked if the university is a good place for lesbian, gay, bisexual or transgender students, almost six in 10 Virginia Tech students say that it is a "good place," 5% say it is "not a good place" and 36% say they "don't know." These perceptions among Virginia Tech students compare similarly to those of college students nationally and students at other large institutions.

Is Virginia Tech a good place or not a good place for lesbian, gay, bisexual or transgender students?



The percentage of Virginia Tech's straight/heterosexual students who say the school is a "good place" for lesbian, gay, bisexual or transgender students (59%) is on par with their peers nationally and at other large institutions. However, Virginia Tech's LGBTQ+ students are less likely to say the university is a good place for lesbian, gay, bisexual or transgender students (63%) than LGBTQ+ students nationally (73%) and LGBTQ+ students at other large institutions (76%).

Is Virginia Tech a good place or not a good place for lesbian, gay, bisexual or transgender students?



EDUCATIONAL VALUE AND QUALITY

EDUCATIONAL VALUE AND QUALITY

Having detailed a variety of their specific experiences and attitudes, what remains is to understand Virginia Tech students' broader perceptions about the quality and value of their education. To assess those views, students were asked to respond to three statements:

- I am receiving a high-quality education at Virginia Tech.
- The education I am receiving at Virginia Tech is worth the cost.
- If I had to do it all over again, I would still enroll at Virginia Tech.

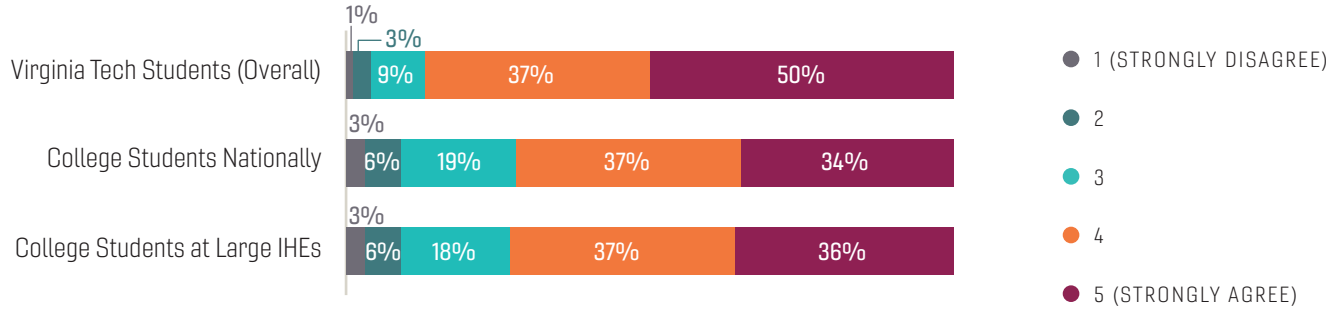
Virginia Tech students hold more positive views than college students nationally about the quality of their education

Half of Virginia Tech students strongly agree that they are receiving a high-quality education — 16 percentage points higher than college students nationally and 14 points ahead of students at other large institutions. In terms of the *value* of the education they are receiving, the 31% of Virginia Tech students who strongly agree that their education is worth the cost is about on par with the sentiments of college students nationally (27%) and students at other large institutions (28%).

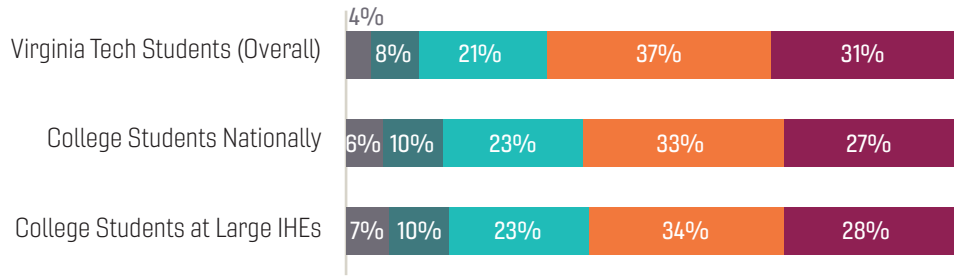
Taken together, though, the vast majority of Virginia Tech students believe they made the right decision by choosing Virginia Tech and would do it again. While about half of college students nationally (47%) and students at large institutions (52%) strongly agree that they would enroll at the same institution if they had to start again, 67% of Virginia Tech students say they would choose Virginia Tech again.

Perceptions of Education Quality and Value

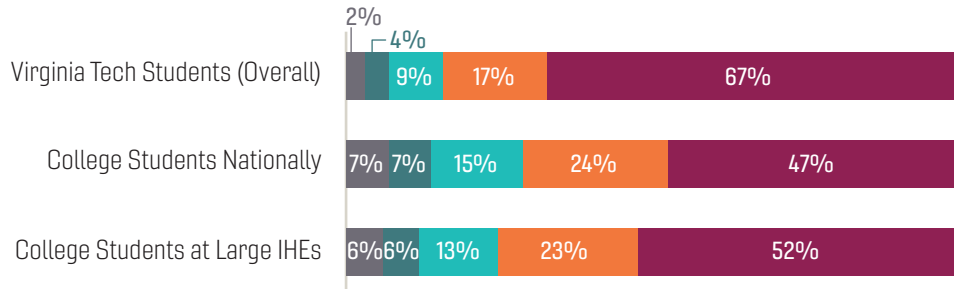
I am receiving a high-quality education at Virginia Tech.



The education I am receiving at Virginia Tech is worth the cost.



If I had to do it all over again, I would still enroll at Virginia Tech.



Among Virginia Tech students, attitudes about preparation for the workforce drive views about education value and quality

For Virginia Tech students, several of the top drivers of the perception that their education is worth the cost relate to career preparation. In fact, the top predictor is the belief that the faculty and staff at Virginia Tech are committed to helping students find rewarding careers. Additionally, students who are confident that they will graduate from Virginia Tech with the knowledge and skills they need to be successful in the job market and workplace are particularly likely to believe their education is worth the cost.

The education I am receiving at Virginia Tech is worth the cost

1. The faculty and staff at Virginia Tech are committed to helping students find a rewarding career.
2. I am confident I will graduate from Virginia Tech with the knowledge and skills I need to be successful in the job market.
3. My professors at Virginia Tech make me feel my coursework is important.
4. At Virginia Tech, I have the opportunity to do what I do best every day.
5. In the last seven days, I have received recognition or praise for doing good school work.
6. I am confident I will graduate from Virginia Tech with the knowledge and skills I need to be successful in the workplace.
7. I feel safe at Virginia Tech.
8. Have you participated in a study-abroad or exchange program while attending Virginia Tech?

DRIVER CATEGORY KEY

- SUPPORT-BASED EXPERIENCES
- EXPERIENTIAL LEARNING EXPERIENCES
- SELF-AWARENESS
- CAMPUS CLIMATE
- DEMOGRAPHIC CHARACTERISTICS
- SKILL DEVELOPMENT

A nearly identical theme emerges when considering the drivers of students' perceptions about the quality of their education. In fact, here too, the top predictor of students' beliefs about the quality of their education is whether the faculty and staff at Virginia Tech are committed to helping students find a rewarding career. And, similar to beliefs about the ***value*** of their education, students who believe that they will graduate from Virginia Tech with the knowledge and skills they need to be successful in the job market and workplace are also particularly likely to say they are receiving a high-quality education.

Virginia Tech students' perceptions about the value and quality of their education are closely linked to how well they believe the university is preparing them to succeed *after* college. Students value the development of skills that will allow them to obtain and thrive in their careers, but they also value guidance and support from the institution — and faculty in particular — about how to navigate those career-related considerations.

I am receiving a high-quality education at Virginia Tech

1. The faculty and staff at Virginia Tech are committed to helping students find a rewarding career.
2. My professors at Virginia Tech make me feel my coursework is important.
3. I am confident I will graduate from Virginia Tech with the knowledge and skills I need to be successful in the workplace.
4. I am confident I will graduate from Virginia Tech with the knowledge and skills I need to be successful in the job market.
5. At Virginia Tech, I have the opportunity to do what I do best every day.
6. Students at Virginia Tech look out for one another.
7. Has at least one professor, faculty or staff member at Virginia Tech initiated a conversation with you about your career options?

DRIVER CATEGORY KEY

- SUPPORT-BASED EXPERIENCES
- EXPERIENTIAL LEARNING EXPERIENCES
- SELF-AWARENESS
- CAMPUS CLIMATE
- DEMOGRAPHIC CHARACTERISTICS
- SKILL DEVELOPMENT

METHODOLOGY

The 2017 Virginia Tech undergraduate student survey was administered Sept. 19 through Oct. 24, 2017, to all currently enrolled sophomore, junior and senior undergraduate students. The results in this report reflect 2,041 completed surveys. Virginia Tech provided the list of email addresses for all currently enrolled sophomore, junior and senior undergraduate students. Students were included in the study if the institution had an email address on file. The survey was administered via the web in English only, and students received the invitation to participate directly from Gallup. Gallup sent three reminder emails to nonresponders to encourage students to participate in the survey. Virginia Tech also sent a prenotification email to all students to encourage participation.

Strada-Gallup Student Survey

Results for this Gallup College Student Survey are based on web surveys conducted March 21-May 8, 2017, as part of the Strada-Gallup study of currently enrolled college students. Gallup randomly selected colleges and universities to participate in the study from the Integrated Postsecondary Education Data System (IPEDS). Colleges and universities were eligible for selection if they were degree-granting institutions awarding four-year degrees and if they were private not-for-profit and public colleges and universities. Forty-three universities participated in the study and provided Gallup email addresses for a random sample of all students enrolled either part or full time at their institution. Gallup sent an email invitation and a series of reminders to students to encourage participation.

The data are weighted to correct for unequal selection probability and nonresponse. The data are weighted to match institution characteristics by enrollment size, census region and institution control. Institution weighting targets are based on the most recent IPEDS database.

For results based on the total sample of 25,364 currently enrolled sophomore, junior and senior college students, the margin of sampling error is ±0.9 percentage points at the 95% confidence level. All reported margins of sampling error include computed design effects for weighting.

For results based on the total sample of 8,259 currently enrolled sophomore, junior and senior students at large institutions of higher education, the margin of sampling error is ±1.5 percentage points at the 95% confidence level. All reported margins of sampling error include computed design effects for weighting.

ABOUT VIRGINIA TECH

Virginia Polytechnic Institute and State University, better known as Virginia Tech, is a public land-grant university with a 2,600-acre main campus in Blacksburg, Virginia. Virginia Tech pushes the boundaries of knowledge by taking a hands-on, transdisciplinary approach to preparing students to be leaders and problem-solvers. As the commonwealth's most comprehensive university and its leading research institution, Virginia Tech offers about 280 undergraduate and graduate degree programs to more than 34,000 students and manages a research portfolio of more than $521 million. The university fulfills its role as a land-grant by fostering a collaborative environment that integrates technology into all disciplines, so that the Virginia Tech community can serve as a force for positive change around the commonwealth, the country, and the world.

As a public land-grant university serving the Commonwealth of Virginia, the nation and the world community, the discovery and dissemination of new knowledge are central to its mission. Through its focus on teaching and learning, research and discovery, and outreach and engagement, the university creates, conveys and applies knowledge to expand personal growth and opportunity, advance social and community development, foster economic competitiveness and improve the quality of life.

Virginia Tech attracts motivated, high-achieving students, staff and faculty who excel in an academically energized, technologically creative and culturally inclusive learning community. The university's bold spirit, climate of innovation and service, open boundaries of study and research, and entrepreneurial approach positively transform lives and communities.

ABOUT GALLUP

Gallup delivers analytics and advice to help leaders and organizations solve their most pressing problems. Combining more than 80 years of experience with its global reach, Gallup knows more about the attitudes and behaviors of employees, customers, students and citizens than any other organization in the world.

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COLLEGE OF SCIENCE:

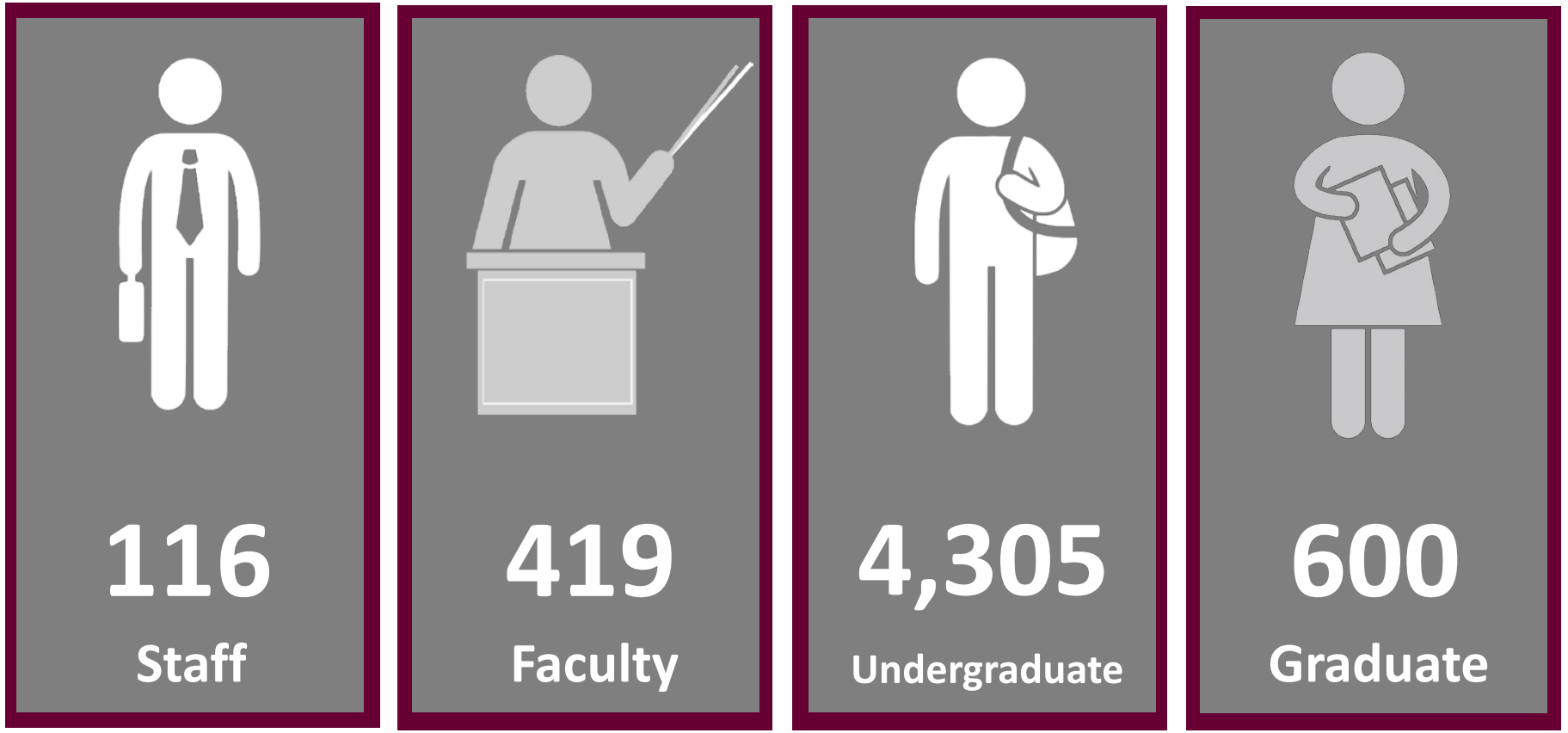
Re-Imagining Science and Education

Sally C. Morton, Dean

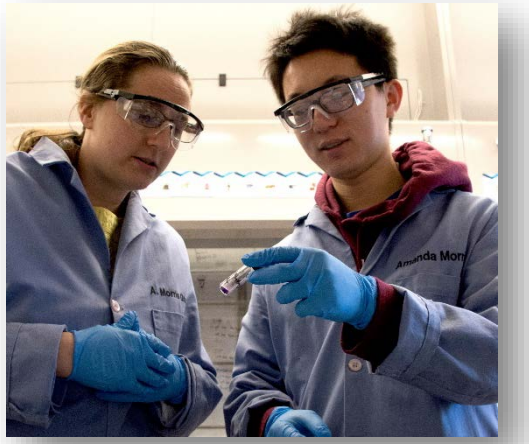
VIRGINIA TECH™

IMAGINE

WHO WE ARE



WHAT WE DO



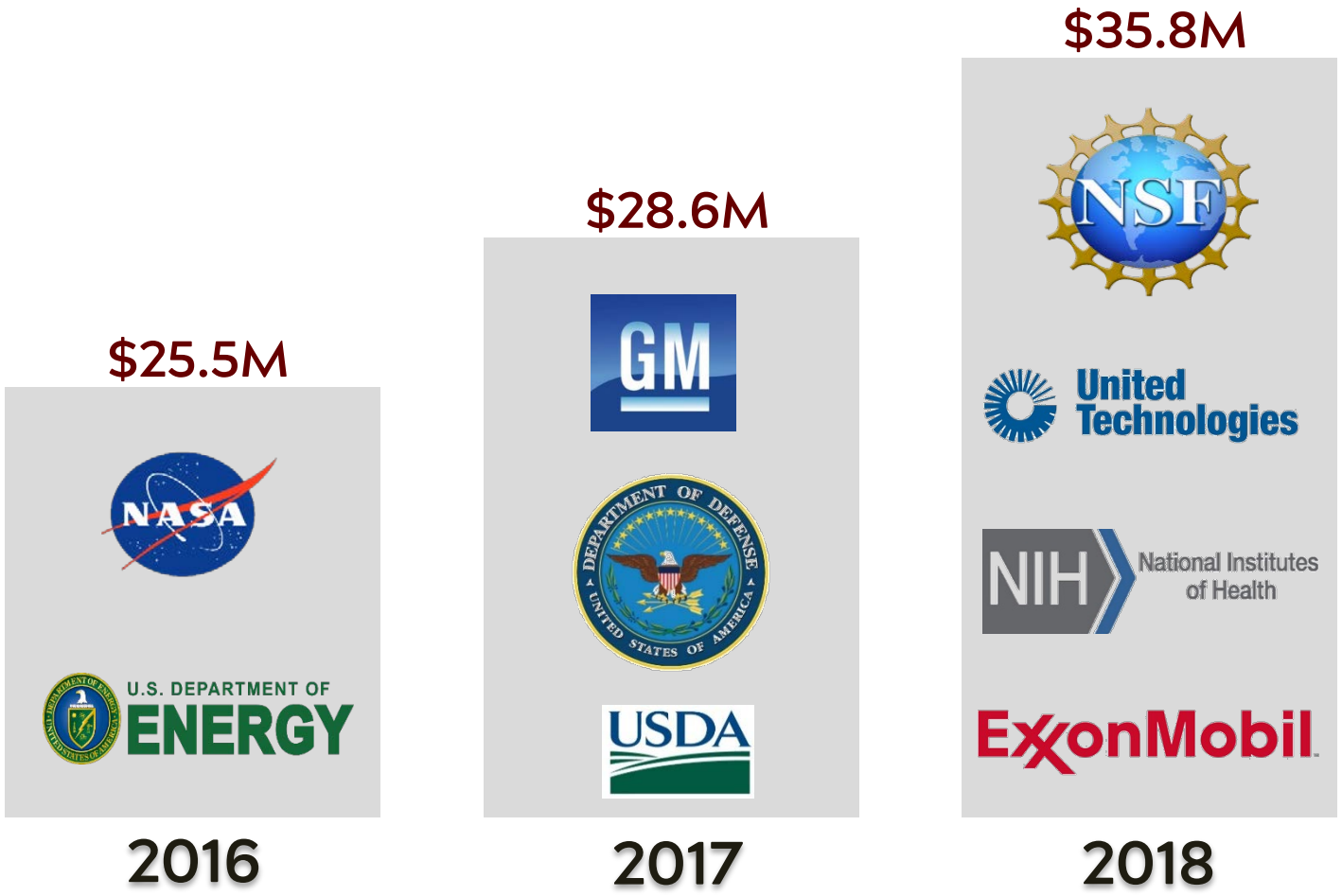
DISCOVER

CREATE

INSPIRE

INFORM

Research on the Rise



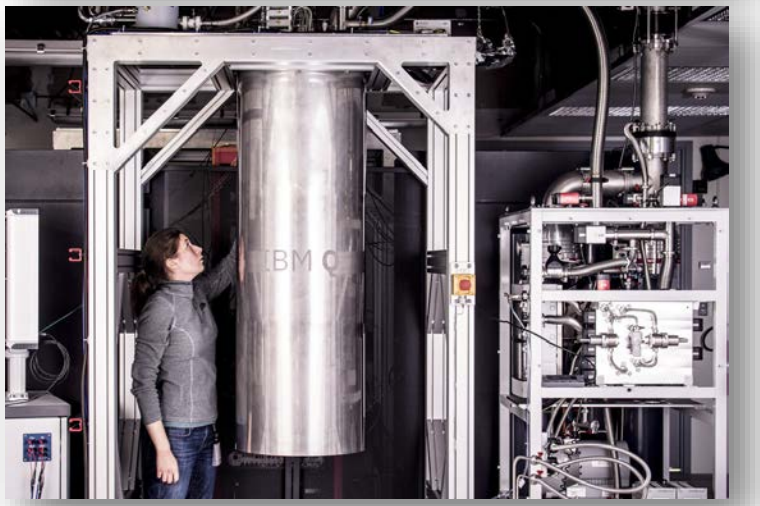
AWARDS

SCIENCE RE-IMAGINED

INTEGRATED SCIENCE

WOMEN IN THE SCIENCES

QUANTUM COMPUTING



COASTAL MITIGATION

VIRGINIA TECH

The Virginia Tech Carilion Research Institute and Related Health Sciences and Technology Initiatives

Michael J. Friedlander, Ph.D.

Virginia Tech Vice President for Health Sciences and Technology
Executive Director, Virginia Tech Carilion Research Institute
Senior Dean for Research, Virginia Tech Carilion School of Medicine

Professor of: Biological Sciences, College of Science
School of Biomedical Engineering and Sciences
Psychiatry and Behavioral Medicine, School of Medicine

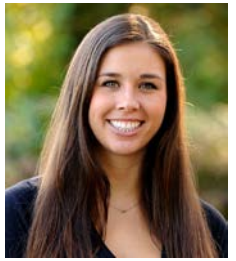
- Role and impact of VTCRI faculty on the Roanoke HS&T campus
- VTCRI's first 8 years – extramural grant portfolio growth
- Industry partnerships and commercialization
- Biomedical technology-health science innovation
- Next generation of biomedical/health scientists
- Growing the HS&T campus and innovation corridor

What VTCRI faculty do

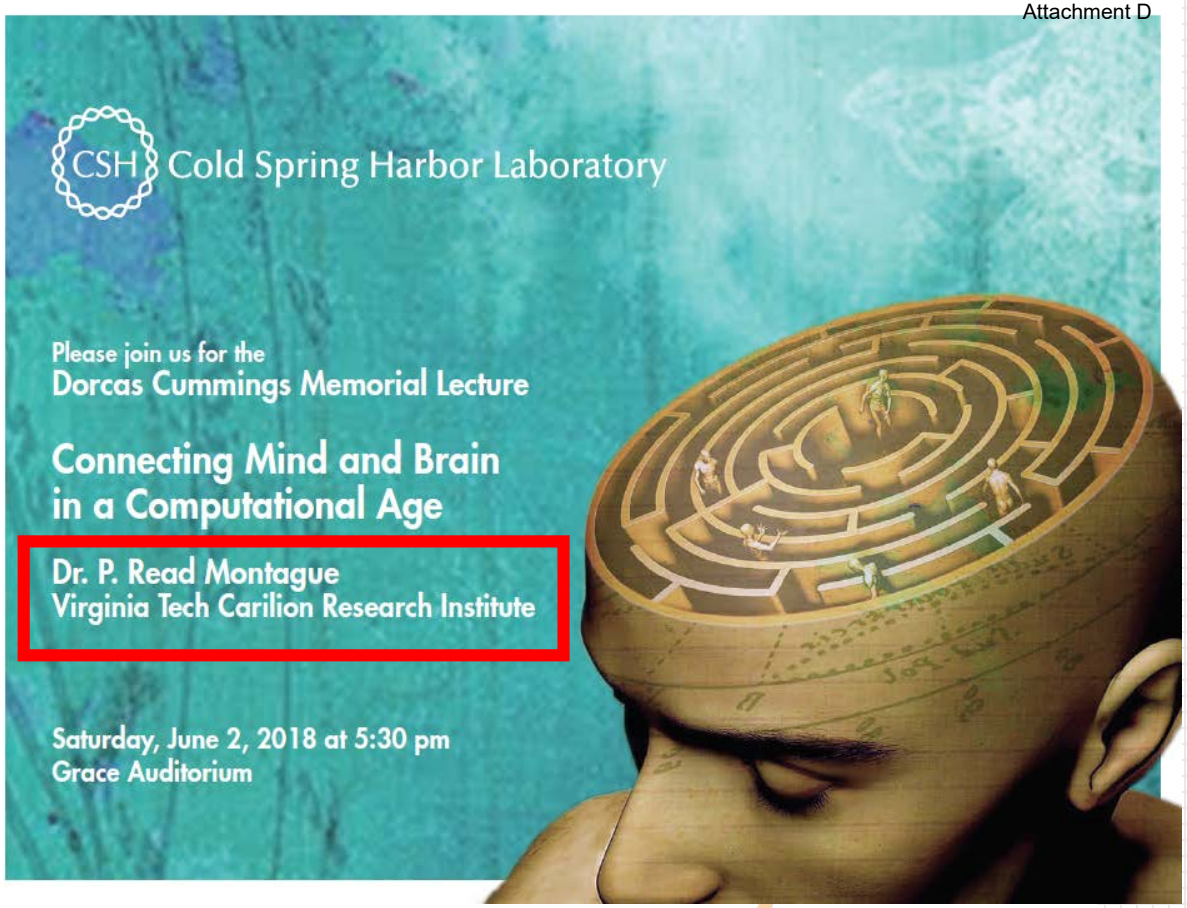
- Carry out and publish fundamental and translational biomedical research
- Cover at least 50% (up to 80%) of salary from extramural grants
- Collect pilot data, write and submit multiple grant proposals
- Teach in graduate programs, mentor graduate, medical, undergraduate, high school students, residents, postdocs
- Develop intellectual property and start up companies
- Departmental, college, university, institute committee service

Newest VTCRI Faculty

Sharon Swanger, Ph.D.
Emory University
Began 8/1/18
VTCRI and DBSP, CVM



Shannon Farris, Ph.D.
NIEHS
Begins 10/18
VTCRI and DBSP, CVM



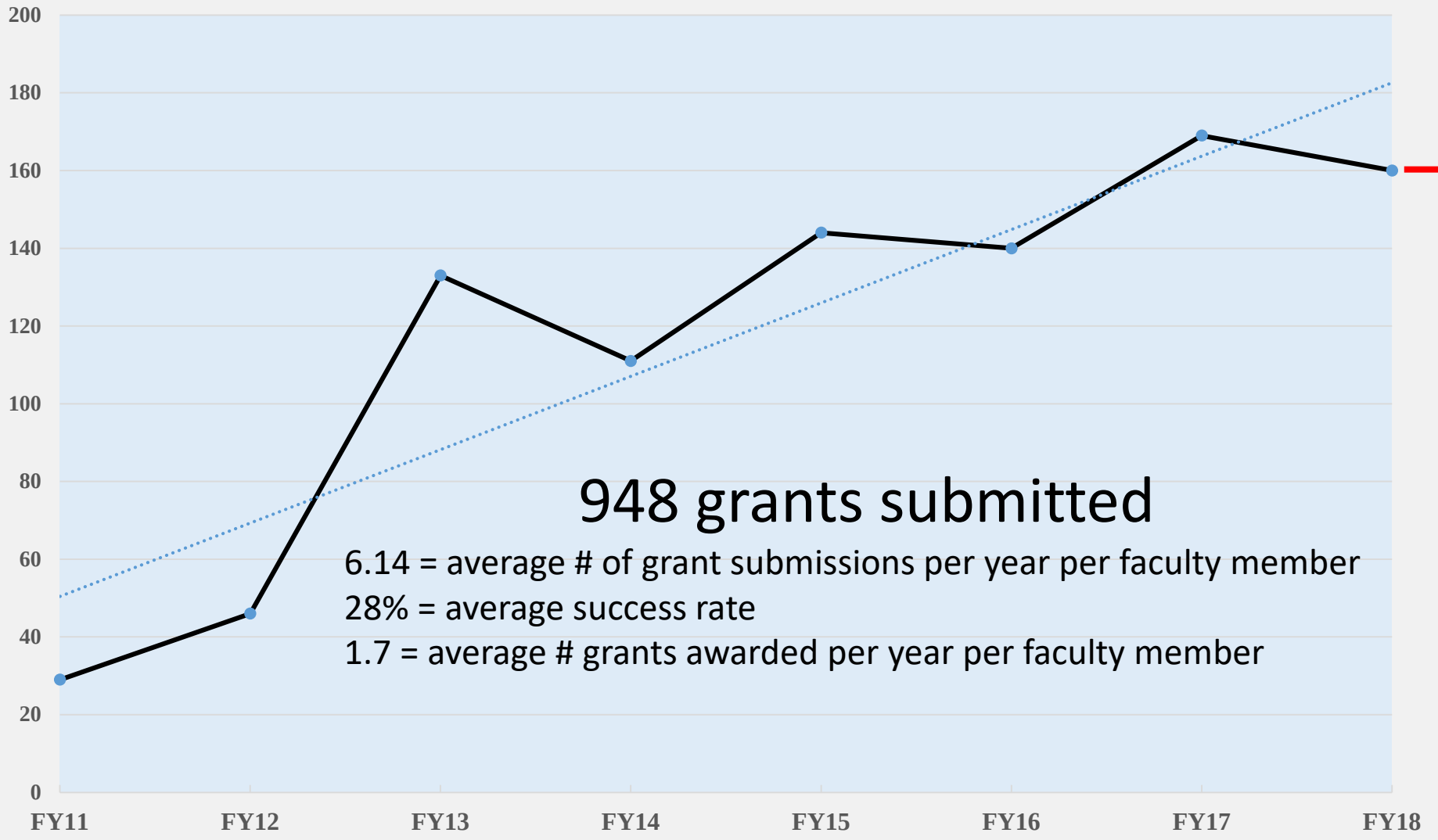
Stockholm, Sweden, July 14, 2018

The VTCRI's Warren Bickel delivers a Keynote address at the 27th International Joint Conference on Artificial Intelligence and the 23rd European Conference on Artificial Intelligence

Previous Dorcas Cummings Memorial lecturers include:

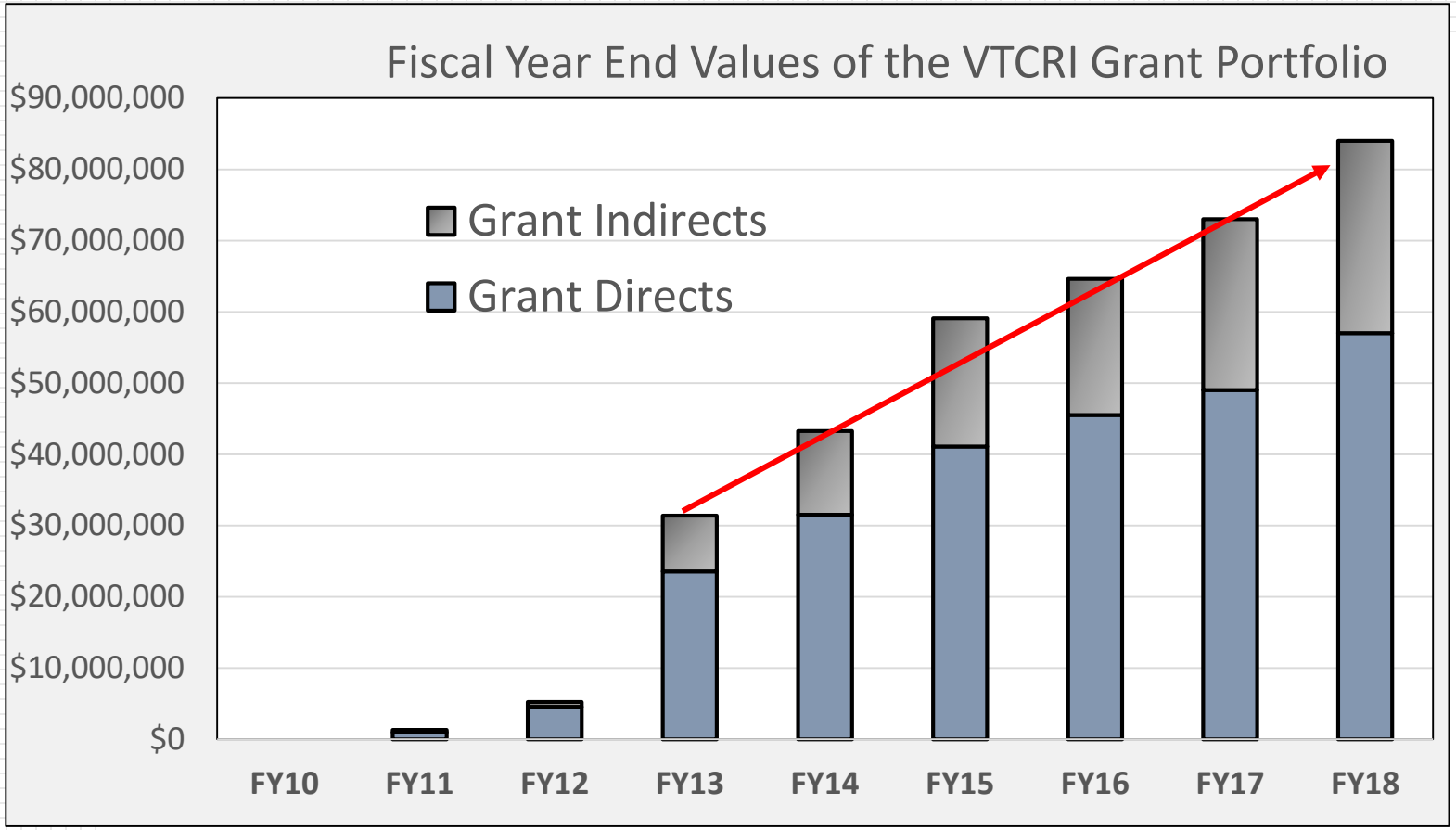
Francis Crick: Nobel laureate - structure of DNA
Francis Collins: Director, National Institutes of Health
Rene Dubos: Pulitzer winning microbiologist

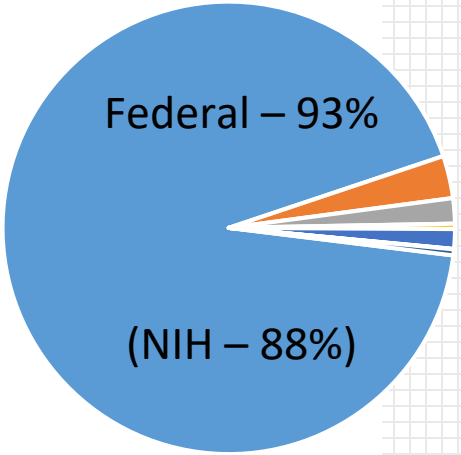
Grant Submissions



6.4 grant submissions per faculty member in FY18

Total value of VTCRI extramural grant portfolio: average 23% increase per year over last 5 years





***19 grants currently slated to be awarded in FY19 @ $33.9M**

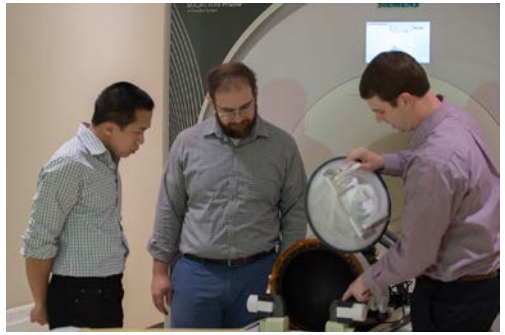
* Includes 2 grants for which fundable scores and verbal affirmation of funding were received

VTCRI faculty translate & commercialize discoveries; develop industry partnerships

VTCRI spinoff brain cancer therapy company recognized by APLU and AAU; wins STTR technology transfer grant

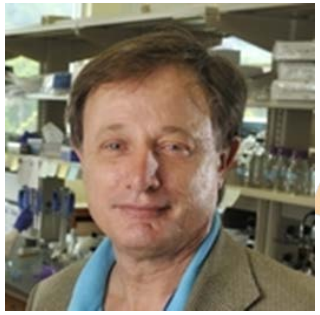
VTCRI's Samy Lamouille,
CEO of Acomhal Research Inc.

VTCRI partners with Israeli company Insightec to develop focused ultrasound technology



VTCRI's Stephen LaConte
working with Israeli industry partners integrating FUS into Siemens MRI

FirstString Research, received a Tibbett's award from the U.S. small business administration in ceremony at the White House

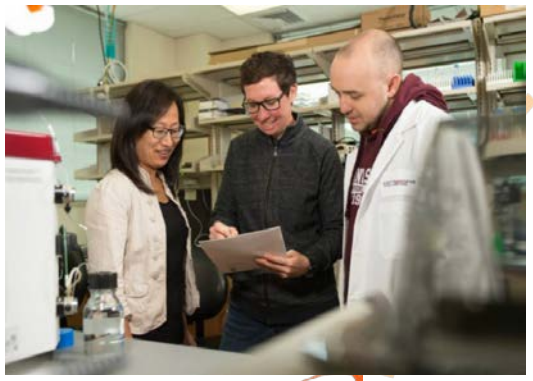


VTCRI's Rob Gourdie
FirstString Co-founder

Health technology innovation at VTCRI

VTCRI OPM facility will be first in U.S.
VTCRI's Read Montague

VTCRI's Deb Kelly wins third National Cancer Institute grant ($6M total active); launches structural oncology



MDLinx

On the Horizon

Key changes to mutated BRCA1 could restore cancer-fighting abilities

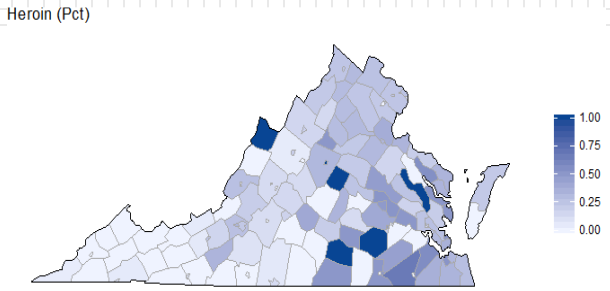


Figure 1. Percentage of Opioid Overdose Deaths Related to Heroin

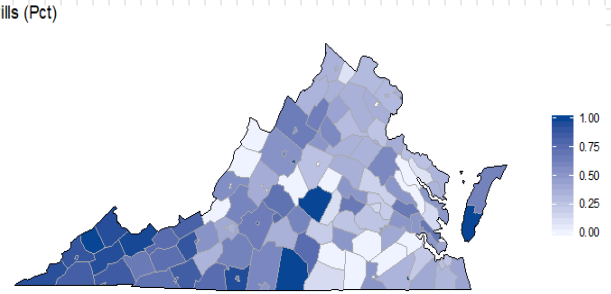


Figure 2. Percentage of Opioid Overdose Deaths Related to Prescription Opioids

"VOICE" (Virginia Opioid Integrated Crisis Enterprise)

Coordination of treatment, education and research with the judicial system

(RFI submission to NIH/SAMHSA, July 18, 2018)

Mike Friedlander, PhD VT VP HS&T
Bob Trestman, MD/PhD, VTCSOM Chair of Psychiatry
Warren Bickel, PhD Professor and Director, VTCRI Addiction Recovery Research Center
Read Montague, PhD, Professor and Director, VTCRI Computational Psychiatry Unit
Gerald Moeller, MD, VCU Addiction Center Director
Robert Ballou, Federal Magistrate
Michael Urbanski, Chief US District Judge, US District Court for Western Virginia
James L. Olds Ph.D. – University Professor of Neuroscience and Public Policy, George Mason University
William A. Hazel, Jr. M.D. – Senior Advisor for Strategic Initiatives and Policy for Office of the Provost, George Mason U.
David L. Driscoll, Ph.D. – Director of Research Development, University of Virginia
Robert H. Lipsky, Ph.D. – Director, Translational Research, Inova Neuroscience Institute
Virginia Bioscience Health Research Corporation (The Catalyst)
Doug Culling, DO, MS, CPE – Corporate VP, Sentara Healthcare / President, Sentara Medical Group

Translational Biology, Medicine and Health (TBMH) PhD Program

Selected as one of the 7 original National NIH BEST Program Sites;
Recipient of AAMC Innovative Biomedical Research Training Award

Audra Van Wart
Program
Co-Director

Steve Poelzing
Program
Co-Director

TBMH Students' Achievements in first 4 years

39 publications
31 national/international presentations; 21 awards; 8 fellowships
2 American Association of Immunologists Career Fellow Awards
American Association of Cancer Research Scholars in Training Award
NSF Fellows East Asia Award
American Association for Virology Award
American Association for Neural Therapy and Repair Award
Microscopy and Microanalysis Society Scholar's Award

First TBMH doctoral degrees awarded May, 2018

Nithya Ramalingam
Postdoctoral position
Community-Family Medicine
Oregon Health Sciences University

Kevin Pridham
Novel therapeutics for brain cancer and leukemia
Pharma industry

Experiential learning through biomedical research: mentorship of medical students & undergraduate students

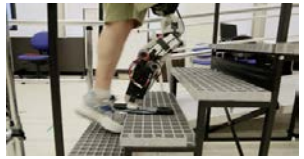
Global reach of VTCRI
cerebral palsy neurorehabilitation research
Hue, Vietnam May, 2018

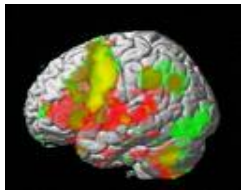
VTCRI NIH funded ($500K)
undergraduate summer
research fellows program

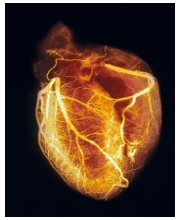
The VTC Biomedical Research Addition Health Sciences and Technology Campus

Attachment D

Opening April, 2020; 25-30 new research teams; 300-400 employees and students







Biomaterials/ body-device interfaces

Data and Decisions DA

brain health and disorders

Adaptive Brain & Behavior DA

cardiovascular science

Comparative Oncology Research

Immunity/ infectious disease

Global Systems Science DA

metabolism/ obesity

HS&T program focus areas

VTC | Virginia Tech Carilion Research Institute

VIRGINIA TECH

THE ROANOKE TIMES

Economist says Tech, Carilion Roanoke campus will contribute at least $465 million to economy within 8 years

The Roanoke Innovation Corridor

- VTCRI research teams are changing the science of medicine/health while receiving global recognition
- ROI on initial investments is strong with strong impact on VT extramural portfolio
- Keys to success: entrepreneurial researchers and students, translational science, industry partnerships, spinoffs
- HS&T campus entering major growth with enhanced connectivity to Bburg campus, economic impact on valleys