New Faculty Welcome

August 17, 2018

Office of the
Vice President for
Research and Innovation
OFFICE OF THE VICE PRESIDENT FOR RESEARCH AND INNOVATION

VICE PRESIDENT OF RESEARCH AND INNOVATION

- Catalyze strategic research programs
- Create and grow holistic industry-university partnerships
- Translate research discoveries into commercial products
- Support state-of-the-art infrastructure and accreditations
- Maintain the highest standards of research integrity
- Deliver effective and efficient research administration
Why does research support matter?

**DISCOVER**
- Ask the right questions

**ENGAGE**
- Collaborate as a community
- Work alongside faculty, undergrads, and graduates
- Serve private and public sector partners
- Create experiential learning

**IMPACT**
- Deliver solutions to greatest challenges
- Disseminate knowledge
- Support the community
- Promote informed culture and policy change
- Commercialize discoveries
- Build the brand

**OECD/UNITED NATIONS**
- Explore topics of human, market, social relevance
- Advance knowledge creation
- Stay on the cutting edge
- Serve national and global interests

**ENGAGE**
- As a member of the community

**IMPACT**
- Deliver regional, state, national, global
Virginia Tech’s contributions to science and technology are a critical and prominent element of our culture. They support the very fabric of who we are and where we hope to go.

In STEM-H disciplines, a strong correlation exists between competitive external funding and other measures of success, including:

- scholarly journal articles
- advisory boards and service
- plenary, keynote, invited presentations
- relevance to society
- fundamental discoveries
- transformative change in industry
GLOBAL TOP 100 Rankings

Becoming a Top-100 Global University is an indicator of excellence and an essential part of becoming a destination for global talent and partners and generating the economic activity Virginia needs.

Most of our peer institutions appear in Top-100 lists. In fact, 18 of Virginia Tech’s 25 SCHEV peers are in the Top-100, as are the U.S. land-grant institutions that we view as aspirational peers. Virginia Tech is currently ranked between #250 and #350 in the most prominent rankings.

Research is critical to global rankings.
VT has sustained strong growth in R&D over 10 years, positioning us to deliver game-changing ideas and technologies.
Extramural Research Support

VT has a diverse portfolio of research support

Major federal funding from broad cross-section of agencies:
- Department of Defense (>20%)
- National Science Foundation (>15%)
- National Institutes of Health/Health and Human Services (>15%)
- United States Department of Agriculture
- Department of Transportation
- Department of Energy
- ...
Virginia Tech has been a leader in interdisciplinary and transdisciplinary, problem-oriented and use-inspired research for decades.

Through investment and thematic institutes, partnerships with industry and universities throughout the Commonwealth, and visionary destination areas, Virginia Tech is committed to investing in that strength.
Virginia Tech’s approach to addressing complex, multi-disciplinary challenges through Destination Areas provides organizing principles, collaboration models, and investments to uniquely prepare our graduates to succeed.

- Adaptive brain
- Data analytics and decision science
- Global systems science
- Integrated Security
- Intelligent Infrastructure for human-centered communities
What are affiliated thematic research units?

Affiliated Thematic Research Units are research institutes or centers in a university that conduct focused research and development in areas of strategic importance to the state and the nation. These units maintain essential "core" capabilities; support long-term strategic relationships with critical sponsors; operate in the public interest, free from real or perceived conflicts of interest; and drive economic development. Integration with the academic colleges expands the resources available to both, resulting in a stronger university research enterprise.
Changing landscape: thematic research institutes/centers

- Virginia Tech Transportation Institute
  - grew out of University Transportation Center in 1998
  - VT T, LLC (SoVA Motion) started in 2010

- Virginia Bioinformatics Institute
  - rebranded as Biocomplexity Institute in 2016

- Virginia Tech Carilion Research Institute

- Hume Center for National Security and Technology

*VTCRI director reports to the Provost*
What are interdisciplinary academic research institutes?

**Definition**

Interdisciplinary Academic Research Institutes provide institutional support to faculty to organize and focus strategic research, education, and outreach efforts around cross-cutting societal problems rather than traditional disciplines. The institutes provide a framework to support interdisciplinary faculty collaboration and communication, which ranges from funding to seed new interdisciplinary research initiatives to managing state-of-the-art facilities and laboratories.
Changing landscape: academic research institutes

- Institute for Critical Technology and Applied Science*
  - 2007

- Institute for Culture, Society, and Environment
  - 2006

- Fralin Life Sciences Institute
  - formed through the merger of: Fralin Biotechnology Center (1995) and Institute for Biomedical and Public Health Sciences (2003)
  - 2008

- Institute for Creativity, Arts, and Technology*
  - 2011

*ICTAS director reports to the Dean of College of Engineering; ICAT director reports to the Provost
Transportation and self-driving vehicles

Driving a wide array of leading edge innovations in transportation through user research, engineering, and technology development with federal, state, and private-sector partners.

For decades, Virginia Tech has contributed breakthrough innovations in driver safety and mobility.

Now, we are taking our 2.5 petabytes worth of data and using it to develop self-driving cars that avoid accidents and minimize time wasted in traffic — cars that are being tested on real-life roads like the 95 and 495 Express Lanes, as part of an agreement with Virginia’s Commonwealth Transportation Board.
Data analytics and decision sciences

Deriving insight out of complex data sets for private and public sector partners to help tackle some of the most pressing challenges of our time.

For over a decade, Virginia Tech has helped decision-makers answer the “What if?” questions that keep them awake at night:

From identifying the warning signs of an Ebola outbreak to coordinating effective response strategies for ongoing outbreaks

From ensuring a reliable power grid to identifying regions that are ripe for solar power development

From revealing the role of political entrepreneurs and organizations in galvanizing public opinion to predicting trigger events for civil disturbances
Flexible, reliable, and green power

Uniquely tackling critical needs in power grids to deliver efficiencies, mitigate risks, and improve access to green technologies.

For the last 30 years, Virginia Tech has partnered with industry and government to radically transform the electronics that are used to power everything from cell phones to electric cars to airplanes.

Now we are taking this power electronics technology and scaling it to transform the grid from the equivalent of a fixed network of one-way streets for electricity into a fully programmable network of bidirectional streets, which is a must for stable and reliable grids that are fed by renewables.
The Virginia Tech Research Center — Arlington, is a highly visible state-of-the-art facility designed to further the university’s mission to expand its research portfolio in the National Capital Region. The region offers great opportunity for partnerships with corporate research entities and close proximity to government agencies and other public and private-sector organizations. The building is a short distance from many of the leading science and research agencies of the federal government and many high-technology companies.
The Center for Advancing Industry Partnerships

Where breakthroughs break through
LINK – the essentials

- Founded in Summer 2017 as a Presidential Priority
- Partnership between Research, Advancement, Colleges, Institutes
- Replaced Corporate and Foundation Relations and selected staff in Research and Innovation
- Recruited Executive Director, Dr. Brandy Salmon, with 20+ years of business development and innovation management experience
- Center has been staffed with Director, two Associate Directors, and two Project Coordinators
- Key operations are underway and team is supporting full range of industry engagement activities
We recognized the need for a better partner experience and focus on value delivered.
Industry Partnership Highlights @ Virginia Tech
As member of selected group of universities, Virginia Tech excels as a Ford Alliance Partner, continuing to win numerous sponsored research programs as part of competitive award process.
Mahindra Group, one of the world’s largest farm equipment producers, joins the Virginia Tech Corporate Research Center to become its largest internationally headquartered tenant and begins comprehensive sponsored research partnership with Virginia Tech.
Block.one donated $3M to support new curricula to enhance blockchain programming skills. The first step in what we hope will be a comprehensive partnership and platform for blockchain education and research.
Qualcomm maintains its support for Think-a-bit Labs, which has touched ~5000 students and teachers, primarily from underserved and underrepresented communities in the D.C. area since its inception in 2016. The Labs are a model for pathway programs supported through industry-university partnership.
Introductions

• Meet a new colleague
  – Name
  – Department
  – Description of Research
  – What you would like to learn from today’s session or would have known soon after becoming a faculty member at Virginia Tech.

• Introduce colleague to the group
OVPRI Resources

- Export and Secured Research Compliance, https://www.oesrc.researchcompliance.vt.edu/
- Human Resources, https://www.research.vt.edu/ovpr-hr/
- Research Compliance, https://www.researchcompliance.vt.edu/
- Research Integrity, https://www.research.vt.edu/research-integrity-office/
- Sponsored Programs, http://osp.vt.edu/
- University Veterinarian, https://www.research.vt.edu/university-vet/
Additional Resources

College, Department and Institute Offerings

- Office of the Vice President for Research and Innovation, [www.research.vt.edu](http://www.research.vt.edu)
  - Advocacy and Coaching

  - PMBA Program

  - Certificate Programs, Cohort Programs, Consulting Services
  - Diversity Development Institute
  - Online Learning, [www.Lynda.com](http://www.Lynda.com)

- Women’s Center, [http://www.womenscenter.vt.edu/womenscenter.html](http://www.womenscenter.vt.edu/womenscenter.html)

- Network Learning Initiatives (NLI), [www.nli.tlos.vt.edu](http://www.nli.tlos.vt.edu)

- Future Faculty Development Program, [http://provost.vt.edu/faculty_affairs/faculty_recruitment/future_faculty.html](http://provost.vt.edu/faculty_affairs/faculty_recruitment/future_faculty.html)
  - January 8-11, 2018

- Faculty Handbook, Research Faculty Chapter 6, [https://provost.vt.edu/faculty_affairs/faculty_handbook/chapter06/chapter06.html](https://provost.vt.edu/faculty_affairs/faculty_handbook/chapter06/chapter06.html)

Questions?