

Virginia Polytechnic Institute and State University, commonly known as Virginia Tech, is a leading public research university dedicated to teaching and learning, discovery, innovation, and service to humanity. Virginia Tech pushes boundaries of knowledge by taking a hands-on, transdisciplinary approach to preparing students to be leaders and problem solvers. Through experiential learning, future-focused research, and an inclusive, spirited culture, Virginia Tech strives to accomplish the charge of its motto *Ut Prosim* (That I May Serve).



- Virginia Tech is responding to **critical issues that impact the human condition** through our transdisciplinary communities.



127 new cluster hires and existing faculty are working across disciplinary boundaries

- Teams of faculty are engaging departments, institutes, and centers in a **collaborative effort to address complex problems**. Efforts are generating new solutions and innovative educational experiences for students.



Engaging internally as the communities collaborate with 8 research institutes, 9 colleges, and over 75 departments



Engaging externally as the communities have received support from alumni, private donors, industry partners, and major agencies like NSF, NIH, and the USDA

“

Virginia Tech is committed to serving humanity, particularly within the context of technological leadership.

SYLVESTER JOHNSON
Assistant Vice Provost for Humanities



VIRGINIA TECH: A GLOBAL LAND GRANT UNIVERSITY

Virginia Tech is looking for external partners to engage in our transdisciplinary research and learning efforts. Collaborative partnerships are needed as VT seeks to develop solutions to complex problems that impact the human condition and expand learning opportunities for students entering the 21st century workforce.

learning + discovery + engagement provost.vt.edu/destination_areas

ADAPTIVE BRAIN AND BEHAVIOR Join ABB in understanding the causes and implications of brain injury and how to prevent and treat concussions, the genetic and environmental components of autism, the degenerative disease of Alzheimer’s, the neurological disorders of Parkinson’s, and how behaviors and decisions influence overall health. Students in our courses are looking for real world problem sets that deal with the complex behaviors of healthy eating, addiction, obesity, and integrative practices like meditation to address brain related functions.

CREATIVITY AND INNOVATION C+I is looking for partners that are interested in exploring how intentional integration of arts, design, humanities and innovative technologies, such as virtual reality and immersive audio, can be leveraged to identify and address newfound opportunities and thereby reflect and improve upon the human condition. Students in the Innovation Minor are looking for hands-on experiences that allow them to critique innovative work and design products and services that meet current and future market needs.

DATA AND DECISIONS DD seeks to foster collaborations between researchers and external partners to evaluate how data is used in decision making, and to understand the impact of data centered transdisciplinary work in society. Additional resources for analytics include the Global Business Analytics Complex, Discovery Analytics Center, Center for Business Intelligence and Analytics, Social and Decision Analytics Laboratory, and the Statistical Applications and Innovations Group. Students in the Data and Decision Minor are looking to engage with external projects that can yield insights to patterns of human behavior and interactions and help partners evaluate risks from multiple perspectives.

ECONOMICAL AND SUSTAINABLE MATERIALS ESM is looking to collaborate on complex problems that link disciplinary knowledge in materials to challenges in advanced manufacturing from atoms to systems through novel discovery of materials in many fields including health, energy, environment and resilient infrastructure. Students in our classes are looking for hands-on experiences that explore practices like green engineering, medical devices and other technologies that serve society through novel and resilient products and job creation. Finally there is a key emphasis on world class instrumentation for Materials Characterization campus wide.

EQUITY AND SOCIAL DISPARITY FOR THE HUMAN CONDITION Join ESDHC as they explore opportunities to illuminate issues of inequality and inequity in increasingly complex societies. This includes recognizing the significance of traditional scholarship and new approaches on these topics for the development of transdisciplinary solutions to existing and emerging issue areas, including

but not limited to systems of surveillance and data accumulation, applications of technology to social issues, changes to the nature of work, climate change, and health. Students in this area are working on finding solutions to the uneven distributions of power and resources to improve quality of life and human well-being.

GLOBAL SYSTEMS SCIENCE Join GSS in exploring the complicated factors that impact the spread of Lyme’s disease and other vector borne disease, how threats to the microbiome impact populations differently based on socioeconomic status, and how to combat invasive species in freshwater systems. Students are looking for real-world projects that intersect with agricultural practices, land use, coastal mitigation, and food production and safety.

INTEGRATED SECURITY IS is seeking partners interested in leveraging and utilizing our interdisciplinary strengths in cyber security, privacy and ethics, governance, and global security in modern society. IS is represented by faculty from nine university colleges and organizations who teach, conduct research, and mentor future security professionals in the Integrated Security Education and Research Center (ISERC). Modeled after government and industry security operations centers, partners can utilize the ISERC for research and educational opportunities that offer current and prospective employees first-hand simulated experience with the critical need to integrate decision-making processes among stakeholders during security incidents.

INTELLIGENT INFRASTRUCTURE FOR HUMAN-CENTERED COMMUNITIES IIHCC is looking for partners to find solution to the increasing interdependency among humans, community, and infrastructure in order to ultimately improve quality of life. IIHCC brings together humanists and technologists to create a framework for innovation– “intelligent infrastructure” –to reinvent community and address societal problems through sustainable, human-centered technological advancements. Students in this area are exploring topics such as sensory data analysis for inclusive work environments; ways to create intelligent urban planning and sustainable and affordable housing options; and the impact of robots and autonomous vehicle in our communities.

POLICY Policy seeks to involve partners in the art and science of collective and complex decision-making in ambiguous circumstances, focusing on technology, health, environment and energy. With an emphasis on interdisciplinary research, we link governance of science and society through novel pedagogical approaches and engagement with STEM-H disciplines in addressing policy dilemmas.

GET INVOLVED

To join our transdisciplinary research and learning efforts, please email LSIE@vt.edu