

## CAPABILITIES STATEMENT HAMPTON UNIVERSITY

### **CORPORATE CONTACT:**

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**Location:** Hampton, Virginia – within driving distance of Washington, D.C.

**Geographical Reach:** Global operational capability

**Hampton University** is a national leader in research, innovation, and workforce development and is designated as a Carnegie Classification Research 2 institution, leveraging its strengths as a premier Historically Black College and University (HBCU) with a long-standing commitment to scientific discovery, advanced technology development, and community impact. The university maintains a diverse research portfolio spanning cancer and health sciences; autonomous and classified systems; climate and energy innovation; and digital, AI, and emerging technologies, fostering collaboration that strengthens communities and informs global progress.

### UNIQUE CAPABILITIES AND RESOURCES



**Proton Cancer Institute:** The Hampton University Proton Cancer Institute (HUPCI) is the largest free-standing proton therapy facility in the world, offering state-of-the-art, non-invasive treatment for prostate, breast, brain, spine, head, neck, lung, GI, and pediatric cancers. With five treatment rooms (four gantries, one fixed-beam) and a dedicated research suite, HUPCI integrates clinical care, translational research, and education. Thousands of patients have been treated while advancing discoveries in radiation oncology and cancer disparities.

**Cancer Research Center:** Hampton University Cancer Research Center (HUCRC) HUCRC fosters transdisciplinary cancer research focused on prevention, precision medicine, and reducing cancer disparities. Expertise includes Genetics/Genomics, Molecular Epidemiology, Genomic Editing (CRISPR/Cas), Bioinformatics, Radiation Biology, Clinical-Translational Medicine, and Minority STEM education. HUCRC integrates faculty from the Schools of Science, Pharmacy, and Nursing, as well as Psychology and Sociology, to address the continuum of cancer care from discovery to delivery.

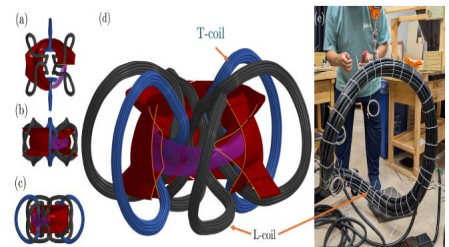




**Center for Atmospheric Sciences:** The Center for Atmospheric Sciences (CAS), in the Department of Atmospheric and Planetary Sciences at Hampton University (HU), has a three-fold focus on closely related objectives: fundamental research; education at the graduate and undergraduate levels; and outreach to the public, university, and K-12 communities. It has established a severe weather research center with a direct broadcast-receiving antenna that captures real time images every hour, providing frequent updates to meteorologists at National Weather Service and other government agencies.

**Research Institute in Tactical Autonomy (RITA) UARC Consortium University:** Hampton University is a member of the Research Institute for Tactical Autonomy (RITA) University Affiliated Research Center (UARC) consortium. The RITA UARC is led by Howard University and consists of nine universities funded by the Department of Defense (DOD). Within the RITA UARC, Hampton University supports applied research that advances autonomous systems, defense mission readiness, and next-generation operational technologies, to ultimately integrate tactical autonomy.

**HU Fusion** – The first center for controlled thermonuclear fusion research at an HBCU collaborates with institutions like Columbia University and the Princeton Plasma Physics Laboratory as well as with DOE and fusion industry leaders. The STAR\_Lite program at Hampton University is advancing experimental and computational investigations into stellarator design, plasma behavior, and next-generation sustainable fusion energy systems.



**Information Assurance and Cyber Security Center** – This Center is designated as a National Center of Academic Excellence in Cyber Defense Education by the National Security Agency and the Department of Homeland Security. This center provides robust programs in cyber defense education, research, and outreach, supporting community colleges and other HBCUs/MSIs.

**Hampton U Well Nest:** The HU CARES Integrated Health and Wellness Center embodies Hampton’s commitment to community-centered, preventive, and interdisciplinary healthcare. Bringing together the School of Pharmacy, the School of Nursing, and the University’s Mental Health Counseling Center, HU CARES delivers a full spectrum of services including chronic disease management, preventive screening, medication therapy management, health education, and counseling.





**Mobile Health Unit (MHU):** Hampton University’s capabilities extend beyond campus through a unit equipped for primary care, immunizations, point-of-care testing, and telehealth, ensuring accessible care across Hampton Roads. The MHU provides comprehensive health screenings and preventive care directly to underserved communities and has administered over 6,200 vaccinations and provided thousands of health screenings to residents of Hampton Roads—demonstrating measurable impact in community resilience and public health capacity.

**Agriculture Research:** Hampton University research focuses on developing disease-resistant soybean varieties and optimizing seed nutritional profiles to meet the demands of modern agriculture, food security, and human health. Through innovative breeding strategies and innovative biotechnology, including holistic and integrated forward and reverse genetics approaches, HU continues to advance the field of legume genetics and contribute to global agricultural sustainability.



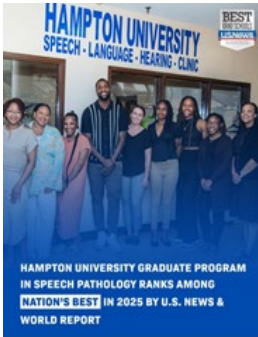
**Microelectronics:** Hampton University’s research focuses on photonic integrated circuits, hybrid organic/inorganic devices, lab-on-chip technologies, AI-assisted microelectronic design and fabrication, detection of cybersecurity breaches in microelectronic devices, and fostering microelectronics manufacturing businesses. Hampton University is part of the HBCU CHIPS consortium.

**Partnership to Enhance General Aviation Safety, Accessibility and Sustainability (PEGASAS)** – The Department of Aviation is a partner in the Federal Aviation Administration (FAA) Center of Excellence for General Aviation. We are currently evaluating how to reduce the number of runway incursions at commercial airports. Runway incursions are one of the primary runway safety concerns in the flying community.



**Mental Health** - The Hampton University Student Counseling Center leads the way in promoting a culture of mental wholeness and wellness on campus. By utilizing culturally competent individual therapy, group therapy, and strategic outreach and educational programming we emphasize and integrate the importance of HBCU culture while enlightening and empowering the student body and Hampton University community. The SCC operates under six primary pillars: (1) Individual Support

and Psychotherapy (2) Group Therapy (3) Training and Outreach (4) Peer Support (5) Integrative Wellness (6) Bereavement Services Program.



**Department of Communicative Sciences and Disorders (CSAD)** provides speech, language, and hearing services through an on-campus clinic specializing in early intervention, autism, and communication rehabilitation. The clinic has specialized expertise in supporting children with autism and adults with language disorders, and in delivering innovative, family-centered early intervention (EI) services and augmentative and alternative communication (AAC) solutions. The aim is to expand the efforts in community-based research and implementation science, focusing on enhancing speech, language, and hearing services, particularly in diverse and rural communities.

**Marine and Environmental Science:** *The Marine Mammal Molecular Ecology Lab* is interested in all aspects of marine mammal ecology, behavior and evolution and works with a variety of molecular markers and tools to investigate research questions, including characterizing epigenetic markers involved in aquatic adaptations to large scale population genomics. The *NOAA - Living Marine Resources Cooperative Science Center* advances research on coastal and ecological challenges, with a focus on areas like aquaculture, climate change, and conservation biology. This effort has supported over \$3M in student scholarships and research.



**The Hampton University Workforce Development Enterprise (WDE)** is a multifaceted, future-focused ecosystem designed to meet the educational and economic needs of the Hampton Roads region and beyond. WDE encompasses Suite 1400: The Business Networking and Culinary Center, Suite 1100: The Center of Innovation and Entrepreneurship, The Digital AI Immersive Experience Center (D-AIX) and the Community Health and Vocation Center. The initiative is rooted in Hampton University's legacy of excellence and its

commitment to advancing educational innovation, workforce resilience, and community impact. For example, over three years, a predecessor initiative served 2,800+ Virginians, created 1,300+ jobs, and generated \$31M in revenue through mentorship and education.

Hampton University is establishing the **Hampton Technology and Artificial Intelligence Center (HTAiC)**, a 10,000-square-foot, flexible research and learning facility designed to serve as a campus-wide hub for artificial intelligence education, research, innovation, and workforce development in a partnership including corporate entities. The Center will support collaboration across science, engineering, humanities, and technology; provide dedicated space for training, webinars,



conferences, and testing emerging technologies; and operate using a scalable hub-and-spoke model that connects AI activities across campus. Initially anchored in the Student Center as the central hub, HTAiC will integrate key nodes into a unified and adaptable AI ecosystem that maximizes institutional assets and industry engagement.

**Leadership Excellence Advancement and Development (LEAD) Initiative:** The LEAD Initiative is a bold, research-focused effort designed to reshape how leaders are prepared, supported, and elevated across academia. Built on evidence-based practices and informed by national data, the LEAD Initiative tackles a critical gap in higher education: the persistent underrepresentation of diverse voices in influential roles. Hampton, recognized as Virginia’s top-ranked HBCU for economic impact, is leveraging its strength to build a leadership model that reflects cultural relevance, academic rigor, and the lived experiences of the communities HBCUs were built to serve.

**National Coastal Resilience Initiative Network** – Hampton’s School of Architecture represents the Mid-Atlantic region in a coalition that helps communities adapt to natural challenges like sea level rise.

**OTHER AREAS OF EXPERTISE** • Cancer Biology • Biomedical Research • Preventive & Community Health • Radiation Therapy • Mental Health & Wellness • Health Disparities • Genomics & Precision Medicine • Media Research • Public Health Outreach • Pharmaceutical Sciences • Bioinformatics • Implementation Science • Cybersecurity • Atmospheric Sciences • Workforce Development • Health Innovation & Entrepreneurship • Strategic Communications • Business and Finance • Transportation • Teaching and Learning

