



Capability Statement

Howard University

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Capability Statement

Established in 1867, Howard University is a culturally diverse, comprehensive, research intensive and historically Black private university. The University is dedicated to providing an educational experience of exceptional quality to students of high academic standing and to attracting and sustaining a cadre of faculty who, through their teaching, research and service, are committed to the discovery of solutions to human problems domestically and globally. Howard University is accredited by the Middle States Association of Schools and Colleges and recognized by the Carnegie Foundation as a high research institution. Additionally, a number of our programs are individually accredited or are members of prestigious professional organizations.

Howard University is comprised of thirteen schools and colleges: **College of Arts & Sciences; School of Business; School of Communications; College of Dentistry; School of Divinity; School of Education; College of Engineering, Architecture, & Computer Sciences; Graduate School; School of Law; College of Medicine; College of Nursing & Allied Health Sciences; College of Pharmacy; and School of Social Work.** Through these schools and colleges, Howard University enrolls nearly 11,000 students in 120 areas of studies and offers a wide range of research opportunities and expertise on its 258-acre campus that spans across Northwest Washington, DC and Beltsville, MD.

As part of the University's strategic vision, the Board of Trustees approved a set of priority research areas. Many of these areas represent long-standing strengths of the University and central to mission and vision of the University, faculty across schools and colleges are actively engaged in research and creative productions related to these priorities. These priorities include: **Health Disparities, Atmospheric Science, Stem Cell/Human Genome, STEM Faculty Diversification and Education Pipeline Development, HIV/AIDS, Nanotechnology, and New Media.**

Our campus continues to grow. In an effort to promote the growth and cultivation of our research priorities, the University has opened the new Interdisciplinary Research Building on Georgia Avenue, which is being hailed by District of Columbia Mayor Muriel Bowser as the "Innovation Corridor". The 80,000 square-foot, Silver LEED certified facility will serve as a space to foster team science initiatives throughout campus and promote collaborative and cross-disciplinary approaches to solving research questions about particular phenomena. The building includes wet and dry laboratories, instructional space, research support space, and centralized offices for faculty, students and academic staff.

In addition to our new building, our research centers enhance opportunities for students and faculty to engage in research and learning. Those centers include but are not limited to: **Center for Drug Abuse Research; Center for Integrated Quantum Materials; Cancer Center; Center for Sickle Cell Disease; Georgetown-Howard Universities Center for Clinical and Translational Science; Howard University Research Centers in Minority Institutions (RCMI) Program, NOAA Center for Atmospheric Sciences.**

Private and public funding of projects has allowed Howard University to collaborate on national and international programs and to excel in the administration of quality, cost-effective research. This is demonstrated by government grants and contracts from entities such as the National Institutes of Health (NIH), National Science Foundation (NSF), Department of Defense, the District of Columbia Department of Health (DOH), and the District of Columbia Department of Transportation (DDOT), Centers for Disease Control and Prevention (CDC), Health Resources and Services Administration (HRSA) USAID.

Center for Urban Progress

CUP employs 30 personnel, including project directors, administrative staff, affiliated research faculty, and student interns. CUP began operations on July 1, 1995 under the leadership of Dr. Rodney D. Green and has raised over \$32 million in external funding, developed partnerships with 80 community-based organizations, and placed 125 students as interns in community-based organizations. CUP's activities range widely, including carrying out applied research and evaluation for public and private agencies engaged in community development and educational activities; developing affordable housing; providing direct services to the community; and developing scholarly work on the challenges of urban life. CUP leads Howard University's effort to encourage community development content in the curriculum, directs urban

and culturally contextual research activities, operates multiple community service programs, provides technical support to Washington, DC public and private community development and educational organizations, and collaborates extensively with other units of the University in achieving its mission.

Center for Drug Abuse Research

The Center for Drug Abuse Research (CDAR) was established in 1994 to build Howard University's capability to conduct drug abuse research, and to serve as a repository and resource for Historically Black Colleges and Universities (HBCUs) in the area of drug abuse research on African Americans. Within its overall mission, CDAR's focus is on the epidemiology and prevention of drug abuse among African Americans from the prenatal period through adulthood. In recent years, CDAR has been a resource to international researchers, particularly in southern Africa, who are interested in developing culturally appropriate research for African populations.

CDAR is a link for coordinating interdisciplinary teams for responding to external sponsored research opportunities, and provides technical, scientific, and administrative assistance in the preparation of research and other grant applications. CDAR has convened several regional, national and international conferences on substance abuse and related issues.

Center for Integrated Quantum Materials

Our Center for Integrated Quantum Materials is a collaboration between Harvard University, Howard University Massachusetts Institute of Technology, Museum of Science, Boston, and our College Network Partners with a vision to take extraordinary new quantum materials to enable atomic-scale electronics and photonics that transform signal processing and computing.

The Center has 4 main research projects that arise from Quantum Materials' specific physical factors - strong quantum phenomena in atomic layers that are only one atom/molecule thick, topological locking of the electron spin and momentum directions in topological insulators due to the strong spin-orbit coupling, and the ability to store 1 bit of information on an NV electron spin for > 1 msec at room temperature, due to isolation provided by the diamond crystal.

Cancer Center

The unique aspect of Howard University Cancer Center (HUCC) is our natural ability and strength to address cancer disparities with an emphasis on those cancers that disproportionately impact African-Americans, in particular. There are three overarching programmatic areas in the Cancer Center: (1) cancer biology; (2) cancer etiology; and (3) cancer prevention, control, and population sciences; whereby cancer disparities represent the underlying theme of the research focus.

HUCC has had a long history of serving minorities and underserved populations and addressing disparities. Thus, the mission of HUCC is to reduce the burden of cancer through research, education, and service, with emphasis on the unique ethnic and cultural aspects of minority and underserved populations.

Center for Sickle Cell Disease

The Center has a long history of major participation and leadership in national and international research projects that have led to the development of effective therapies for sickle cell disease. With many of the basic molecular issues in sickle cell disease being better understood, major research efforts now focus primarily on clinical issues such as treatment for the disease. Much of the Center's research is also devoted to the prevention and treatment of excess body iron, high blood pressure in the lungs, and to the study of a natural chemical called nitric oxide. Low nitric oxide levels impair the flow of blood so nitric oxide administration is being investigated for possible therapeutic applications in sickle cell disease. The role that vitamin deficiencies play in the manifestations of sickle cell disease is also being investigated.

Georgetown-Howard Universities Center for Clinical and Translational Science

The Georgetown-Howard Universities Center for Clinical and Translational Science, or "GHUCCTS", welcomes you to look at each of our programs and what we offer. We represent a unique consortium of academic and medical institutions across the greater Washington DC area, as described under

our [“Member Institutions”](#). The formation of GHUCCTS was inspired by the National Center for Research Resources (NCRR) Clinical and Translation Science Award (CTSA) initiative to improve how academic medical centers perform clinical research and translational science. This initiative will empower researchers to develop new treatments and cures for diseases more quickly, and to make them available to our patients and our communities more efficiently. The Georgetown-Howard Universities Center for Clinical and Translational Science was funded by NCRR on July 1, 2010, thereby becoming one of just 55 CTSA-funded centers in the U.S.

GHUCCTS was founded on the CTSA philosophy of interdisciplinary communication and exchange that encourages partnerships and collaborations amongst organizations (academic, government and industry) involved with health care across our geographic region, as well as across our nation. Through multiple partnerships and collaborations, GHUCCTS is committed to transforming clinical and translational research by facilitating the adoption of new scientific advances into improvements in health care, particularly to underserved groups in our communities, including minorities, the disabled, and the elderly.

Howard University Research Centers in Minority Institutions (RCMI) Program

The Howard University RCMI Program focuses on enhancement and further development of necessary research infrastructure that will ensure Howard University’s ability to contribute to the resolution of those diseases which disproportionately affect disadvantaged and minority populations. These diseases include, but are not limited to:

- Cancer
- HIV/AIDS
- Neurological Disorders
- Cardiovascular Disorders

Howard University RCMI resources in Computational Biology & Bioinformatics, Imaging, and Proteomics are important infrastructure components in developing a working understanding of the complex biomedical phenomena and processes associated with these diseases.

NOAA Center for Atmospheric Sciences.

The NOAA Center for Atmospheric Sciences (NCAS) is a unique multidisciplinary research program on the Howard University campus. NCAS supports the research of over thirty graduate students, postdoctoral fellows, and faculty spanning four colleges and eight departments on the Howard University campus and an additional thirty students, postdoctoral fellows, and faculty at the five partnering academic institutions: Jackson State University, University of Maryland, the University of Puerto Rico, the University of Texas El Paso, and the State University of New York Albany. NCAS research integrates disciplines such as journalism, psychology, and sociology into applied STEM research (e.g. marine sciences, climate change, and atmospheric chemistry) to address 21st century challenges for science, technology and society with respect to climate, precipitation, air quality, and human impacts. NOAA investments in NCAS have enabled the development of a research and talent pipeline that addresses current workforce, scientific, and operational challenges for the NWS pertaining to key regional issues with focus on regional air quality prediction, climate change and variability in sensitive regions, aerosol forcing, and data assimilation. NCAS has demonstrated capacity and expertise for developing a diverse group of students into highly trained professionals for the NOAA and for the national atmospheric and environmental sciences workforce.