



Strategic Outreach – University Affiliated Research Centers

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UARC Overview

- University Affiliated Research Centers (UARCs) are Department of Defense (DoD) unique organizations university-affiliated with which the DoD has established a long-term strategic relationship to provide and maintain advanced and sophisticated engineering, research, and development capabilities essential to the Department's mission and operations.
- UARCs have no statutory origin, rather, the UARC program was established in 1996 via policy issued by the Director for Defense Research and Engineering. This action formalized DoD relationships with universities that in some cases dated back to WWII.
- Today the DoD UARC Program is established and maintained by the Under Secretary of Defense for Research and Engineering (USD(R&E)) and currently includes fourteen UARCs.
 - Each UARC is a non-profit research organization affiliated with a university and must be requested and sponsored by a DoD component.
 - USD(R&E) approves the designation of UARC only after a thorough review of the sponsor's request.
 - UARCs operate as independent, trusted advisors and honest brokers, agreeing to limit their operations in order to be free from real or perceived conflicts of interest.

UARC Origins

- UARCs support the Department by maintaining long-term advanced and sophisticated engineering, research and development capabilities that cannot be provided as effectively and efficiently by governmental or other private sector sources. The areas that UARCs provide this support include:
 - Basic research
 - Applied research
 - Advanced technology development
 - Advanced component development and prototypes
 - System development and demonstration
 - Research, development, test, and evaluation management support
 - Operational system development

Fourteen (14) DoD UARCs

University Affiliated Research Centers (UARCs)	Original year established and year of UARC designation*
<u>Navy-sponsored UARCs</u>	
Johns Hopkins University Applied Physics Laboratory	1942/1996
Pennsylvania State University Applied Research Laboratory	1945/1996
University of Texas Applied Research Laboratory	1945/1996
University of Washington Applied Physics Laboratory	1943/1996
University of Hawaii Applied Research Laboratory	2004
<u>Army-sponsored UARCs</u>	
University of Southern California Institute for Creative Technologies	1999
Georgia Tech Research Institute	1995/1996
MIT Institute for Soldier Nanotechnologies	2002
University of California Santa Barbara Institute for Collaborative Biotechnologies	2003
<u>MDA-sponsored UARC</u>	
Utah State University Space Dynamics Laboratory	1996
<u>USD(I&S)-sponsored UARC</u>	
University of Maryland Applied Research Laboratory for Intelligence and Security	2003/2017
<u>USD(R&E)-sponsored UARC</u>	
Stevens Institute of Technology Systems Engineering Research Center	2008
<u>USSTRATCOM-sponsored UARC</u>	
University of Nebraska National Strategic Research Institute	2012
<u>(DASD(TRAC))- sponsored UARC</u>	
University of Alaska (Fairbanks) Geophysical Detection of Nuclear Proliferation	2018

DoD UARCs – Approved Technical Competencies

University Affiliated Research Centers (UARCs)	Technical Specialization – Key Core Competencies
<p align="center"><u>Navy-sponsored UARCs</u></p> <p>Johns Hopkins University Applied Physics Laboratory Pennsylvania State University Applied Research Laboratory University of Texas Applied Research Laboratory University of Washington Applied Physics Laboratory University of Hawaii Applied Research Laboratory</p>	<ul style="list-style-type: none"> ➤ Hypersonics, Cybersecurity, Spacecraft, AI, Robotics ➤ Undersea technology/systems R&D ➤ Undersea detection, sensing and C4ISR for Navy needs ➤ Understanding of oceanic environment and sensing/detection ➤ Sensors, ocean environment and renewable energy
<p align="center"><u>Army-sponsored UARCs</u></p> <p>University of Southern California Institute for Creative Technologies Georgia Tech Research Institute MIT Institute for Soldier Nanotechnologies University of California Santa Barbara Institute for Collaborative Biotechnologies</p>	<ul style="list-style-type: none"> ➤ Developing new and improved ways to train forces ➤ Electronic Warfare, Missiles and Missile Defense ➤ Nanotechnology, materials, and their applied use ➤ Biology and related fields, and their applied use
<p align="center"><u>MDA-sponsored UARC</u></p> <p>Utah State University Space Dynamics Laboratory</p>	<ul style="list-style-type: none"> ➤ Space situational awareness and sensing
<p align="center"><u>USD(I&S)-sponsored UARC</u></p> <p>University of Maryland Applied Research Laboratory for Intelligence and Security</p>	<ul style="list-style-type: none"> ➤ Human and behavioral sciences and human-machine systems
<p align="center"><u>USD(R&E)-sponsored UARC</u></p> <p>Stevens Institute of Technology Systems Engineering Research Center</p>	<ul style="list-style-type: none"> ➤ Systems Engineering for DoD Acquisition
<p align="center"><u>USSTRATCOM-sponsored UARC</u></p> <p>University of Nebraska National Strategic Research Institute</p>	<ul style="list-style-type: none"> ➤ WMD detection and countermeasures
<p align="center"><u>(DASD(TRAC))-sponsored UARC</u></p> <p>University of Alaska (Fairbanks) Geophysical Detection of Nuclear Proliferation</p>	<ul style="list-style-type: none"> ➤ Nuclear Event Detection

UARC – HBCU/MI Outreach Activities

- The 2021 National Defense Authorization Act (FY21 NDAA) calls upon USD(R&E) to develop a plan to *“establish and use contracts, agreements, or other arrangements with institutions of higher education (as defined in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001)), including historically black colleges and universities and other minority-serving institutions (as described in section 371(a) of such Act (20 U.S.C. 1067q(a)) to enable easy and efficient access to research and researchers for Government sponsored basic and applied research and studies at each institution, including contracts, agreements, and other authorized arrangements...”*
- The Combat Capabilities Development Command (CCDC) Aviation & Missile Center (AvMC) is pursuing a long-term strategic partnership with GTRI to accelerate the availability of a diverse workforce and qualified research institutions from among HBCUs and MIs and to leverage GTRI’s UARC Core Competencies to maintain and expand the competencies of its existing workforce.
- USD(R&E)/HBCU Pilot Program with the University of Maryland-College Park Applied Research Laboratory for Intelligence and Security (ARLIS) and three regional HBCUs.
- UARC- HBCU/MI Engagement Workshop is planned for Winter 2021

Georgia Tech Research Institute (GTRI) - Tougaloo College Research and Development Foundation (TCRDF) Research Collaboration

- The Army as the primary sponsor for the UARC is pursuing a long-term strategic partnership with GTRI to accelerate the availability of a diverse workforce and qualified research institutions from among HBCUs and MSIs and to leverage GTRI's UARC Core Competencies to maintain and expand the competencies of its existing workforce.
- During this three-year effort, GTRI is actively seeking out potential research partners among HBCUs and MSIs, matching the competencies with research requirements defined by the DoD in GTRI's portfolio of Task Orders, and forming partnerships, represented by subcontracts, to perform the research and through that build the technical and contracting maturity of the HBCUs and MSIs.
- GTRI has engaged the services of Tougaloo College Research and Development Foundation (TCRDF), an adjunct organization of Tougaloo College (an HBCU) and a consortium of 15+ HBCUs and MSIs formed to facilitate the search for, recruitment, and evaluation of potential research partners for DoD research.

University of Maryland-College Park Applied Research Laboratory for Intelligence and Security (ARLIS) HBCU Research Partnerships

- Established an HBCU Pilot Program with the University of Maryland-College Park Applied Research Laboratory for Intelligence and Security (ARLIS) UARC and 3 regional HBCUs (Howard University, Morgan State University, and University of the District of Columbia) will partner in support of research projects involving: 5G, AI/ML, Cyber Assessment, and Chatbot Testbed.
- Partnership supports the Intelligence Universities for Security (IntelUS) academic research consortium in further support of ARLIS mission as a UARC. HBCU partners will work as subcontractors to accomplish research priorities.
- In FY2020, 2 interns and 2 faculty members from Morgan State University participated in the program. Additionally, from 2010-2018, Morgan State University was awarded \$1.9M in funding through the HBCU/MI for equipment and instrumentation to help build research capabilities.

UARC- HBCU/MSI Engagement Workshop – Winter 2021

- To build a diverse and inclusive STEM workforce, it is imperative that the nations' premier institutions for graduating ethnically and/or racially underrepresented STEM graduates build relationships with institutions and facilities conducting government-sponsored basic and applied research.
- This approach utilizes a data-driven outreach plan by aligning UARC core competencies with HBCU/MI institutional research areas of expertise and matriculation rates of students majoring in relevant STEM subjects to initiate relevant partnerships with specific UARC research domains.
- A workshop will be convened to bring together stakeholders from the HBCU/MI, UARC and primary sponsor ecosystems to discuss mechanisms of partnership and best practices in building relationships with each community.
- The goals of this workshop include UARC and HBCU/MI research needs assessment and areas of overlap, relationship building, dissemination of research capabilities and specializations, and administrative requirements for partnership.