# RITA RESEARCH INSTITUTE FOR Tactical Autonomy

Howard University

# CAPABILITIES BRIEF

HOWARD UNIVERSITY · BOWIE STATE UNIVERSITY · DSU · FLORIDA MEMORIAL UNIVERSITY · HAMPTON UNIVERSITY · JSU JACKSON STATE UNIVERSITY · NORFOLK STATE UNIVERSITY · TOUGALOO COLLEGE · TUSKEGEE UNIVERSITY

# WHO WE ARE

# RESEARCH INSTITUTE FOR TACTICAL AUTONOMY AT HOWARD UNIVERSITY

Established in 2023, the Department of Defense (DoD) **Research Institute for Tactical Autonomy**, University Affiliated Research Center (UARC) is the 15th UARC and the first sponsored by the Department of the Air Force. Led by **Howard University**, the center operates as a consortium of nine universities focused on advancing applied research, development, testing, and evaluation for new and existing DoD capabilities, while also expanding the workforce in the field of tactical autonomy.

# OUR MISSION

The mission of the **Research Institute For Tactical Autonomy (RITA)** is to develop partnerships between academia, government, and industry to solve real-world tactical autonomy challenges and problems that are critical to our national security through systematic research and development.

# FOCUS AREAS

## TRUST IN MISSION AUTONOMY

Enable a reliable shared understanding in autonomous systems (AS) within contested, degraded, and operationally limited (CDO) environments. Providing cross-domain trust in autonomous systems at scale.

## COLLABORATION BETWEEN PLATFORMS

Enhance collaboration amongst a family of systems/platform (e.g. NGAD and CCAs). Address interoperability, reliability, composability, complexity, and adaptability for cross-domain solutions in CDO environments

## HUMAN-MACHINE TEAMING

Advance the deployment and maneuverability human-machine teams in CDO environments. Jointly advance and mature AS technology and calibrate human-machine trust across all components of the national security enterprise

# OUR OBJECTIVE

## PIONEER TRANSFORMATIVE RESEARCH AND INNOVATIONS IN AUTONOMY

Bridging theoretical exploration with practical applications, thereby driving progress in technology, security, and sustainable development;

## ESTABLISH ESSENTIAL RESEARCH AND DEVELOPMENT CAPABILITIES

for the Department of Defense to deliver operationally relevant autonomy by catalyzing community growth involving AI and autonomy research organizations;

## ACCELERATE RITA RESEARCH AND DEVELOPMENT

by rapidly transferring its research to seed a unique science, research, and development ecosystem of small and large businesses, academia, and the Department of Defense;

## TRANSFORM AI AND AUTONOMY PRACTICE

throughout the government by creating innovative techniques, technologies, models, and tools that address critical challenges to meet mission outcomes

## GROW THE AVAILABLE POOL OF SCIENTISTS AND ENGINEERS

to support the Defense Department and establish a source of organic technical and operational excellence.

# WHAT WE DO

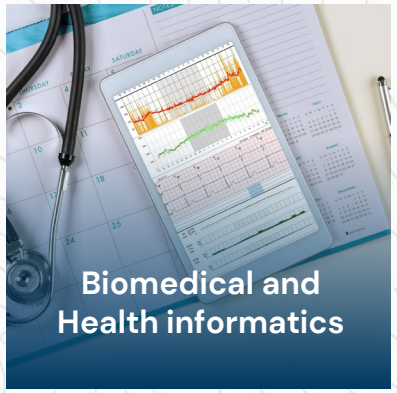
## Research, Development, Test & Evaluation Capabilities

# OUR EXPERTISE

**In-house capabilities and fostering DoD relationships that allows RITA to:**

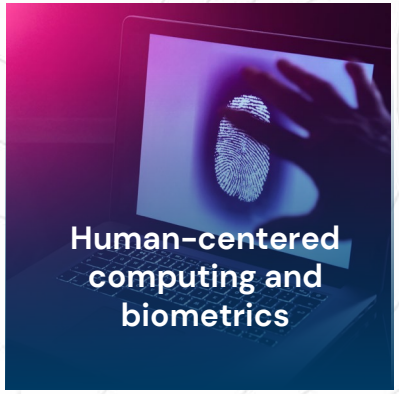
- Bring the classroom, lab, and research closer to the battlespace
- Keep material cost low by leveraging testing conducted by others
- Create a sustainable environment of innovation














# OUR PROCESS

## 1 INVESTIGATIVE RESEARCH

- Updateable AI models to enable tactical autonomy.
- Tactical/real-time trust estimates.
- Enhance multi-domain situational awareness.
- Reduce cognitive workload.
- Enable force protection.

## 2 HARDWARE/SOFTWARE (HW/SW) RESEARCH, DEVELOPMENT, AND ASSESSMENT

- Support cyber defense.
- Augment logistics.
- Automate maneuverability and mobility
- Interoperability, composability, adaptability between various autonomous agent

## Test with the Speed of Innovation

The purpose of our strategic research partnerships is to develop and demonstrate autonomous technologies that will advance national security priorities and support various Department of Defense autonomous systems missions. We are particularly interested in delivering tactical autonomy research products in several key areas:

## 3 MISSION LEVEL ANALYSIS OF AUTONOMOUS SYSTEMS

## 4 TEST, EVALUATION, VALIDATION & VERIFICATION (TEV/V)

# OUR RESEARCH

Tapping into RITA's Strong Research Foundation and Academic Thrust

**200+**

**Autonomy and National Security Relevant Dissertations/Theses over the past 5 years.**

- Applying RITA's strong research foundation to national security problems
- Applicable research for autonomous systems and
- Cutting-edge work in ethical AI and diversity in data sets
- Multiple flight/testing hours for autonomous systems
- Physical/Natural sciences and autonomy

# OUR ACADEMIC REACH

**25+** Active RITA UARC task order projects in year two

**55+** Associated research labs and centers

**90+** Autonomy related research doctorates

**40K+** Students enrolled

**$155M** Consortium universities combined executed research

RITA boasts of more than 55 associated research labs and centers, specializing in key domains that enhance national capabilities. These include:

- Research Autonomous Technologies Labs
- Interdisciplinary Data Science Labs
- Affective Biometrics Laboratory
- Aerodynamics Research Laboratory
- HPC Modernization Program
- Data Analysis and Visualization Labs
- Aerospace Education, Research and Innovation Center
- Raytheon Skyler Radar
- Classified Research Facilities (2025)

# RITA HQ STAFF

# RITA LEADERSHIP

**SONYA T. SMITH**

Executive Director

**DONNELL WALTON**

CTO & Deputy Director

**REBECA PANNICK**

Director of Operations

**D. ANTHONY SPANN**

Chief of Security/FSO

**JAMESE SIMS**

Chief Scientist

**LESHELL HATLEY**

Director of Programs

# NEXT STEPS

# PARTNER WITH RITA

RITA HQ staff can help facilitate initial interactions to get your next Autonomy efforts started

RITA has an Indefinite Delivery Indefinite Quantity (IDIQ) Task Order type contract with the Air Force Research Laboratory

## STAGE 1

PLANNING AND CAPABILITIES BRIEF

## STAGE 2

PROGRAM OPPORTUNITY ANNOUNCEMENT GENERATION & COMMUNICATION

## STAGE 3

WHITE PAPER SUBMISSION & REVIEW

## STAGE 4

RFP & AWARD PROCESS

# THANK YOU FOR YOUR INTEREST

Contact us:

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