



APPLIED RESEARCH LABORATORY FOR
**INTELLIGENCE
AND SECURITY**



ARLIS & INSURE:

Strengthening the Intelligence and Security University Research Enterprise

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A UARC's Objectives

- Develop and maintain **essential government-defined research, development or engineering capabilities** and provide those to DoD through a long-term strategic relationship.
- Develop a **strategic relationship with their sponsor** that gives them **knowledge of their sponsor's needs and access to their information**;
- Operate in the **public interest as strategic partners** with their DoD sponsors, rather than in the interest of corporate shareholders, and conduct its business in a manner befitting its special relationship with DoD, combining **technical excellence with objectivity**.
- **Respond quickly** to sponsor needs, serving as subject matter experts that function as **independent, trusted advisors** and honest brokers, **answerable only to their DoD customers**.

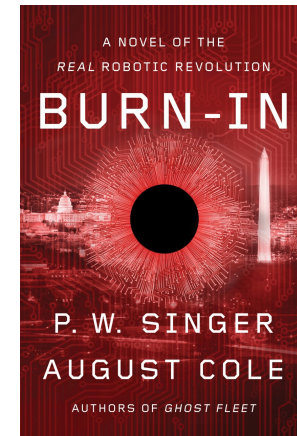
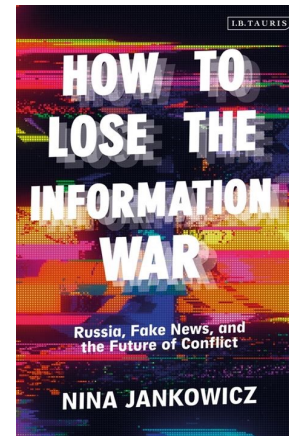
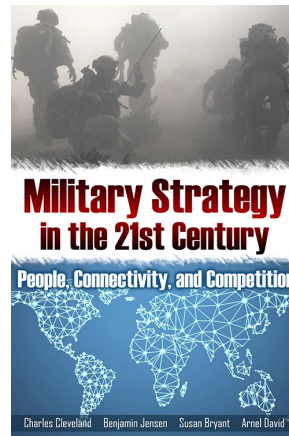
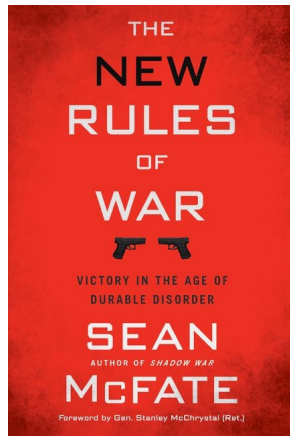
from Engagement Guide Department of Defense University Affiliated Research Centers, informational doc released April 2013



From the electro-magnetic to the information spectrum

From kinetic warfare to the Human Domain

Conflict among great powers is an all of nation and whole of government challenge; new science, technology, and capabilities are needed.



New threat surfaces emerging from complex, digitized human-technology interactions increasingly challenge our capabilities to defend the US, our people, our societal systems, and our allies.

New thinking, skillsets, and RDT&E are required for the Information Spectrum & the Human Domain.

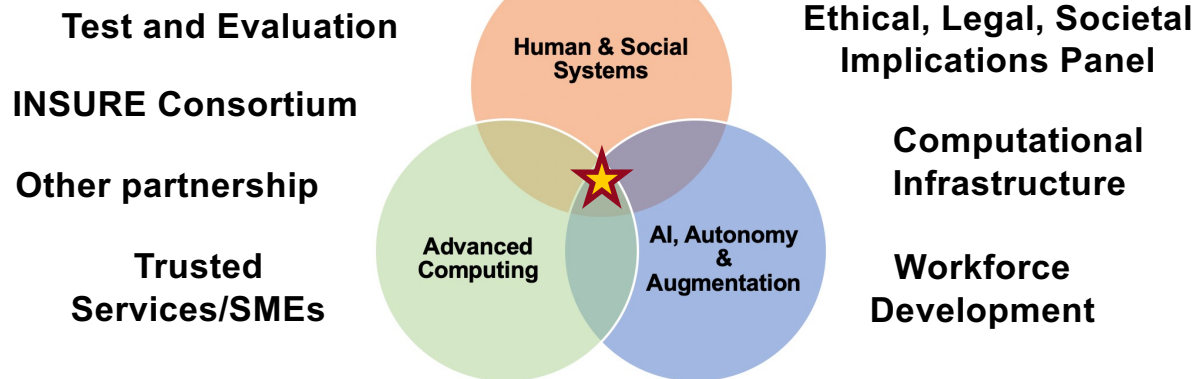


WHY

Providing Sociotechnical Solutions for US Advantage in the “Human Domain”

HOW

Integrating social and behavioral sciences, AI/ML, and computing for new applied research and development capabilities for Sociotechnical Systems



WHAT

**Analytics
& Tools for
Languages
and Social
Systems**

**Augmenting
Collective
Intelligence**

**Enabling
Cognitive
Security**

**Ensuring
Trustworthy
Supply
Chains**

**Operationalizing
AI, Autonomy, &
Augmentation**

**Modeling &
Mitigating
Insider Risk**



ARLIS by the numbers

- **75+ active projects**
- **80+ FTE scientists and engineers**
psychology, linguistics, rhetoric, computer science, anthropology, social science, information science, human-machine interaction, systems engineering, manufacturing
- **50+ ARLIS affiliates and associates**
- **45+ Summer Students**
- **5 involved Colleges at the University of Maryland**
- **12+ INSURE member Universities**
- **100+ DoD/IC professionals trained in**
Insider Risk, Technology-Law, Tradecraft, etc
- **Supported by ~15+ DoD/DNI agencies, State of Maryland, private philanthropy**



INSURE: Strengthening the Intelligence & Security University Research Enterprise



SAINT LOUIS
UNIVERSITY
— EST. 1818 —



Mizzou
University of Missouri



USC University of
Southern California



ASU Arizona State
University



TEXAS A&M
UNIVERSITY



WISCONSIN
UNIVERSITY OF WISCONSIN-MADISON



UNIVERSITY OF
ILLINOIS
URBANA-CHAMPAIGN



MORGAN STATE UNIVERSITY



UNIVERSITY OF
MARYLAND



HOWARD
UNIVERSITY



UNIVERSITY OF THE
DISTRICT OF
COLUMBIA
1851



GEORGE
MASON
UNIVERSITY



UNIVERSITY OF
SOUTH CAROLINA

Goals

Bring the right team to every problem ARLIS supports.

Be the connector (and translator) for I&S communities to engage university talent.

Build a robust and diverse future workforce.

13 member institutions ♦ 3 HBCUs ♦ 6 w/ secure facilities + cleared researchers
31,827 faculty ♦ 448,490 students ♦ over \$6.3B in federal research expenditures

Who, What, and How

Partners are admitted to INSURE based on:

- **Institutional strengths**
- Track record conducting **applied, quick-turn, mission-relevant** R&D
- Existing relevant intelligence and security **partnerships to integrate** into INSURE stakeholder community
- Capabilities for training the current workforce and expanding the **workforce of the future**
- **Institutional leadership engagement** and buy-in

INSURE projects:

- Must be within scope of ARLIS core competencies and of UARC character
- Must include an ARLIS lead to track progress, connect relevant stakeholders, and integrate the effort into the corresponding ARLIS portfolio

Pathways to funding:

1. Member(s) engage potential sponsor directly about work and jointly develop programming
2. Members conduct joint program development, leveraging interinstitutional strengths
3. USG agency requests R&D effort needing ARLIS partners' strengths



Ways Applied/UARC Work is Different

- Proposals **generated in coordination with USG** informed by their needs, not ground-up.
- Most projects are 12-18 months duration.
- Many projects have **limitations on non-US citizen involvement** and require security review before publication.
- Projects are **contracts** -- finite duration, quantifiable metrics and goals to measure progress, and **success noted with milestones and deliverables**

– but –

- Scale tends to be bigger.
- More direct impact on today's challenges.
- Work with operational organizations otherwise inaccessible.
- Potential role of trust with the USG sponsor.
- Build 1:1 relationships with government funders.



UARC Project Types

- Seedlings
(9mo or less)
- Studies
(9-12mo)
- Pilots
(12-18mo)
- Multi-year projects
(12+ mo)
- Education/Training & National Security Pipeline
(12+ mo)
- Prototyping
- Testbeds & sandboxes
- Instrument development
- Services
 - USG Support
 - Test & Evaluation
 - Cyber-infrastructure
 - Data curation



HBCU Partners in the Current INSURE Portfolio

ARLIS Portfolio Link

Information and Influence	Chatbot Testbed Pilot Project (DDR&E HBCU/MSI Office) Lead: Amit Arora, University of District of Columbia (with Howard and Morgan State)
Applied AI, Autonomy, and Augmentation	Synchronized Analysis of Video, Imagery and Audio (OSD Test Resrc Mgmt Ctr) Lead: Kofi Nyarko, Morgan State University
	AI Engineering Initiative Seedlings (Office of the Director of National Intelligence) Lead: Kofi Nyarko, Morgan State University
	AL/ML Systems Engineering Workbench Pilot Project (DDR&E HBCU/MSI Office) Lead: Kofi Nyarko, Morgan State University (with Howard)
	Machine Learning Experimentation Pilot Project (DDR&E HBCU/MSI Office) Lead: Paul Cota, University of District of Columbia
Defense Security	Cyber Assessment of AI Tools Pilot Project (DDR&E HBCU/MSI Office) Lead: Gloria Washington, Howard University (with Morgan State)
	5G Technology Assessment Pilot Project (DDR&E HBCU/MSI Office) Lead: Kevin Kornegay, Morgan State University (with Howard University)
	Acquisition and Industrial Security and 5G (OUSD (Intelligence & Security)) Lead: Kevin Kornegay, Morgan State University (with UMD)



The ARLIS RISC Initiative:

Research for Intelligence & Security Challenges

- Flagship effort to engage students in mission-driven research for the Defense Intelligence & Security Enterprise
- Virtual program supports teams of students nationwide, from undergraduate to PhD and across a breadth of disciplines
- Two components:
 - 10-week summer internship program
 - Third summer internship coming Summer 2022 – growth from 38 to ~110!
 - Culminating with a classified capstone briefing; all interns will be considered for a SECRET clearance
 - Continuation into the academic year
AY 2021-2022: 14 of 38 interns continued work; 8 cleared.
- Topics driven by USG mission needs and USG mentors
- HBCU connections: recruited interns, recruited faculty mentors



Thank you!

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