



MORGAN
STATE UNIVERSITY™

Research Capabilities Statement



Morgan State University, founded in 1867, is a Carnegie-classified Doctoral University, High Research Activity (R2), an institution providing instruction to a multiethnic, multiracial, multinational student body. As Maryland's Preeminent Public Urban Research University, Morgan fulfills its mission to address the needs and challenges of the modern urban environment through intense community-level study and pioneering solutions.

Nationally, Morgan ranks 1st in the origination of sending undergraduates to pursue Ph.D. degrees in Electrical Engineering and Industrial Engineering for African Americans, 2nd in Civil Engineering and in Communications, and 3rd in Architecture and Related Studies. MSU ranks 2nd, nationally for awarding degrees to African American Students in Architecture, Broadcast Journalism, Family & Consumer Science, Health Education, Hospitality Management, Philosophy, and Transportation Systems. Within the State of Maryland, Morgan ranks 1st for awarding Undergraduate Degrees to African Americans, in Civil Engineering, Electrical Engineering, Industrial Engineering, Journalism, Construction Management, Finance, and Marketing. At the Master's and Doctoral levels, Morgan ranks 1st in more than twelve disciplines.

PAST PERFORMANCE

Government (Federal, State & Local), University Affiliated Research Centers (5), Federally Funded Research & Development Centers (12), Other Universities, Basic (6.1) & Applied Research (6.2) up to TRL 6

CONTRACTS: Prime Contractor DoD, Other Transactional Agreements, IDIQ

COOPERATIVE AGREEMENTS: Over \$150M w/NIH/NASA and other Federal Agencies

GRANTS: Over 40 years of experience

INTERDISCIPLINARY AREAS OF RESEARCH & PROGRAMS

- ASCEND Center for Biomedical Research
- Cybersecurity Assurance & Policy Center (CAP)
- Center for Data Analytics and Sports Gaming Research
- Center for Equitable Artificial Intelligence and Machine Learning Systems (CEAMLS)
- GESTAR II at Morgan State University
- Innovation and Entrepreneurship Center
- National Transportation Center (NTC)
- Patuxent Environmental & Aquatic Research Laboratory (PEARL)
- RCMI Center for Urban Health Disparities Research & Innovation
- Center for Education & Research in Microelectronics
- Center for Urban Health Equity (CUHE)
- Urban Mobility & Equity Center (UMEC)
- National Center for Elimination of Educational Disparities (NCEED)
- Center for Urban Violence and Crime
- Office of Technology & Innovation

INSTITUTIONAL INFORMATION

(EIN): 52 6002033

DUNS #: 879941318

Cognizant Federal Agency DHHS

Unique Entity ID (UEI):

KULSKCCZJT27

CAGE Code: 8U547

NAICS Code: 6113105

SIC Code: 82

Animal Welfare Assurance #: D21-01124

Accreditations: ABET, AACSB, NAAB, CCNE, SEP, PAB, MSDE, NCATE

CONTACT INFORMATION

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For easy access to more information online, please scan this QR code.

RESEARCH CAPABILITIES BY DISCIPLINE

Morgan has made a major commitment to academic excellence and has invested substantial resources in recent years to enhance its research infrastructure and stimulate research development in a broad range of disciplines.

- **Architecture and Planning:** City and Regional Planning, Landscape Architecture, Architecture, Construction Management.
- **Biology:** HIV/AIDS, Molecular and developmental genetics, Environmental toxicology, Computational Biology & Bioinformatics, Bioenvironmental Sciences & Technology, Cellular Mechanisms in Health Disease.
- **ASCEND (A Student-Centered, Entrepreneurship Development Training Model to Increase the Diversity in the Biomedical Research Workforce):** ASCEND's goal to develop a new cadre of diverse biomedical researchers who are both familiar with the root causes of health and health disparity problems and highly competent to address them.
- **Business and Finance:** Block Chain, Supply Chain Analysis.
- **Chemistry:** Polymerization reactions and microgravity, Analytical sensors for monitoring pollutants and biological activity, Synthesis of fluorescent dyes and conductive polypore polymers for biosensors, Computer modeling, Medicinal Chemistry and Natural Products research.
- **Civil Engineering:** Adaptive structures and control technology, Analytical and numerical modeling of land, Remediation of biological warfare agents, Environmental, Earthquake resistant structures, Analytical and experimental studies of adaptive retrofits to bridge girders, Development of counter-rotating fly-wheel actuators, Sustainable infrastructure development.
- **Community Health and Policy:** Behavioral health sciences, Public Health Analysis, Health Policy and Management, Rapid Clinical Assessments, Epidemiological Criminology.
- **Computer Science:** Cybersecurity, Artificial intelligence and Machine learning, Computer modeling, Bioinformatics, Computational sciences, Information Assurance, Geo-spatial reasoning methods for aircraft synthetic vision systems.
- **Electrical and Computer Engineering:** Noninvasive hardware/software reverse engineering and assurance of IoT systems, cybersecurity (Information and Hardware Assurance), Embedded System Design and Security, Adaptable electronics for 5G Communications, Predictive/Data Analytics, Cyber Security Network Analytics, Computer Vision, Robust Distributed Control and Game Theory, High power Conversion device characterization and growth, Artificial Intelligence, Adaptive Beamforming, and Equalization.
- **Industrial Engineering:** Smart structures and active structural control for vibration suppression, Embedded sensors and actuators, Human factors psychology and social marketing, Robotics & Automation, Routing, and scheduling manufacturing systems, Laser-based diagnostic instrumentation Reliability Engineering and Risk Assessment, Operations Research, Supply Chain.
- **Mathematics:** Nonlinear functional analysis, Free boundary problems in fluid mechanics, Automorphy and Periodicity, Lattice Theory, Mathematical Modeling of Biological Systems.
- **Physics:** Advanced Materials, Image processing and digital signal and applications to biology and medicine, Mathematical modeling, Nanotechnology and its applications, Mossbauer spectroscopy, Condensed matter physics, Acoustics, inverse problem theory, Magnetic thin films, Bioinformatics, Quantum Literacy.
- **Transportation and Urban Infrastructure Studies:** Traffic and highway engineering, Planning and management and logistics;
Urban Mobility & Equity Center: a Tier 1 University Transportation Center research center funded by the U.S. DOT, connected and autonomous vehicles, systems optimization and integration, and planning.

