MARYLAND INSTITUTE FOR INNOVATIVE COMPUTING

UMBC

Whereas Maryland is considered a national cyber hub with the largest cyber workforce and ranks fourth in the nation for cybersecurity growth potential.

Whereas Maryland is home to the federal government's leading cyber agencies, including the National Security Agency (NSA), U.S. Cyber Command, the Defense Information Systems Agency, and U.S. Army Communications Electronic Command.

Whereas the State of Maryland is committed to the creation and implementation of policy and information technology (IT) solutions that improve IT infrastructure, cybersecurity, and government services and keep Maryland current with IT industry trends.

Whereas Governor Hogan has invested extensively in Maryland's cybersecurity and data analytics infrastructure, directing millions of dollars for performance improvement, workforce development, and incentives for cybersecurity investment.

Whereas Governor Hogan has built a broad-based coalition of state, national, and international actors committed to bolstering Maryland's cyberdefense technology and workforce.

Whereas the 2021 *U.S. News & World Report* Best Colleges rankings name UMBC a leading U.S. university, including the ninth most innovative university and eleventh best university for undergraduate teaching in the nation, and *Times Higher Education* has recognized UMBC as one of the top universities in the world, as well as a leader in global social and economic impact.

Whereas UMBC is a National Center of Academic Excellence in both Cyber Research and Cyber Defense Education and is home to the CyberDawgs, the current Mid-Atlantic Collegiate Cyber Defense champions.

Whereas UMBC is a top producer of computing talent for NSA and a key workforce development partner for other public and private sector organizations.

Whereas UMBC faculty are national leaders in Data Science and National Security, including Cybersecurity and Artificial Intelligence, Clinical and Medical Informatics, Health IT, Cognitive Computing, and Big Data.

Whereas the Hilltop Institute and the Maryland Technology Internship Program are longstanding, successful partnerships between the State of Maryland and UMBC that benefit stakeholders in multiple State agencies and multiple universities and community colleges.

Therefore, the parties agree to develop the Maryland Institute for Innovative Computing at UMBC to provide solutions for pressing cybersecurity and data analytics needs in State agencies, develop scalable solutions for challenging IT problems facing State agencies, and support further expansion of the State's IT workforce.

Vision

The State of Maryland will accelerate innovation in computing, especially in cybersecurity, artificial intelligence, and data science, through development of the *Maryland Institute for Innovative Computing (MIIC)* at UMBC. MIIC will be a hub optimizing connections between agency leaders, UMBC experts, talent from other University System of Maryland and Maryland post-secondary institutions, and public and private sector partners. MIIC will be a 21st century extension service, partnering to address pressing computing, analytics, and workforce challenges in State agencies, particularly in the areas of cybersecurity, artificial intelligence, and data science. Building on established collaborations including the Maryland Technology Internship Program, the UMBC Center for Cybersecurity (UCYBR), and the Hilltop Institute, UMBC faculty and students working alongside government, corporate, and nonprofit partners will apply experiences, innovative technology, and data access to develop models, scenarios, and solutions that secure critical citizen services in real time. In the process, Maryland will become a model for innovatively applying the latest technologies and forward-thinking to support the creative and productive capabilities of its entrepreneurs, business leaders, educators, and citizens while using the power of computing to make better policy decisions that leverage data safely, securely, and ethically.

Key Commitments

Three elements are central to Phase 1 of this initiative:

Establishing UMBC Computing Innovation Extension Rapid Response Teams to develop real-time solutions for the most pressing IT and data analytics needs in State agencies.

Small groups of UMBC undergraduate and graduate students and mentors will be assembled, trained, and deployed through internships and/or capstone courses to address high-impact, high-value technological and data projects facing State agencies, including real-time response to cybersecurity incidents and aiding in the development of best-practices. Led by faculty advisors and mentored by technical leads both at UMBC and within State agencies, these Rapid Response Teams will introduce the contemporary knowledge, creative energy, and enthusiasm of students to the rigorous and unique challenges of public service while delivering novel solutions that can be leveraged across the State. These teams will help improve State services while establishing an IT and data talent pipeline into State agencies seeking to develop the workforce for this rising need.

Supporting an MIIC Innovation Lab and Challenge Fund to develop scalable solutions for IT problems currently considered intractable through applied, evidence-based research in cybersecurity, data sciences, and artificial intelligence.

MIIC will take an evidence-based approach to understanding how innovation—including cybersecurity, data science, and artificial intelligence—can be applied in government agencies, creating models that can be replicated across agencies and across jurisdictions. Faculty, staff, and student teams will work on key medium- and long-term problems identified by the State, developing novel technology and applications. In addition, through close partnership with the agencies it supports, MIIC will have a unique perspective on the nature of data collected across Maryland. The Institute will house a strategic technology investment fund to enable solution development within interested State agencies.

Activating a multi-level computing and technology workforce development strategy for State agencies by leveraging the Maryland Technology Internship Program and workforce upskilling to build the most advanced state IT workforce in the nation. Strategic workforce development initiatives would include:

Maryland Technology Internship Program Extension: State and local government agencies face recruiting challenges for technical talent. Many government agencies lack the human resources infrastructure needed to support on-campus recruiting and the budget to match salaries offered by private companies. Extension of the highly successful Maryland Technology Internship Program to State agencies will be an important step in workforce pipeline development. UMBC would collaborate with the Maryland Department of Information Technology to use the current Maryland Technology Internship Program model and infrastructure to support State agencies in expanding their technical talent pipeline through intern hires in a way that is cost neutral for participating agencies.

Current Workforce Upskilling: UMBC curricula developed in alignment with digital proficiency credentials set by regional employers, including the federal government, and our own cybersecurity and data science programs can be customized and delivered online to upskill current state and local government employees.

Plan of Action

Maryland Governor Larry Hogan and UMBC President Freeman Hrabowski will charge senior executives from the State and UMBC to lead development of a Phase 1 Execution Plan, including a start-up budget, by September 30, 2021.

The State will commit to providing $500,000 to pilot this program upon receipt of the Phase I Execution Plan.

Senior executives from the Administration and the University will convene, facilitate, and support a working group of agency leaders, program leaders, and subject matter experts to launch the Phase 1 Execution Plan by January 31, 2022, and report to the Governor and the President semi-annually. The working group will meet quarterly to share information, address questions or concerns, make strategic decisions, and propose plans for future phases of work.

Dated July 29, 2021

Governor of Maryland

President of UMBC