



## **Agenda Item 2**

# **NIST Cyber Security FFRDC Initiative Briefing**



## BOARD OF REGENTS

### SUMMARY OF ITEM FOR ACTION **INFORMATION** OR DISCUSSION

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**TOPIC:** NIST Cyber Security FFRDC Initiative Briefing (information item)

**COMMITTEE:** Economic Development and Technology Commercialization

**DATE OF COMMITTEE MEETING:** November 20, 2014

**SUMMARY:** On September 22nd, the National Institute of Standards and Technology's National Cyber Security Center of Excellence announced the award of the contract to operate the Cyber Security Federally Funded Research & Development Center (FFRDC) to MITRE Corporation and the USM.

The National Cyber Security Center of Excellence – NCCoE, was established in partnership with the State of Maryland and Montgomery County in February 2012. The public-private partnership is designed to help businesses secure their data and digital infrastructure by bringing together experts from industry, government and academia to find cyber security solutions. The FFRDC will support NCCoE's mission through three major task areas: research, development, engineering and technical support; program/project management; and facilities management.

NIST has already issued three task orders, totaling about \$29 million. The maximum value of the contract is \$5 billion over 25 years, beginning with a base performance period of five years, followed by four option periods. The Committee will be briefed on this initiative, including the potential economic impact of the Cyber Security FFRDC for Maryland.

**ALTERNATIVE(S):** This item is for information purposes.

**FISCAL IMPACT:** This item is for information purposes.

**CHANCELLOR'S RECOMMENDATION:** This item is for information purposes.

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COMMITTEE RECOMMENDATION:

DATE:

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BOARD ACTION:

DATE:

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SUBMITTED BY: Joseph F. Vivona (301) 445-2783

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# USM, MITRE Partner to Operate New Cybersecurity R&D Center for the National Institute of Standards and Technology



**MCLEAN, Va. and ADELPHI, Md., October 3, 2014** — The U.S. Commerce Department's National Institute of Standards and Technology (NIST) has selected The MITRE Corporation to operate the first federally funded research and development center (FFRDC) solely dedicated to enhancing cybersecurity and protecting national information systems. MITRE will partner with the University System of Maryland (USM) to support the center.

The new FFRDC will support the [National Cybersecurity Center of Excellence \(NCCoE\)](#), which NIST, the state of Maryland, and Montgomery County, Md., established in 2012 to help businesses secure their data and digital infrastructure by bringing together information security experts from industry, government and academia. MITRE will further the NCCoE's goal to foster public-private collaborations to identify and solve today's most pressing cybersecurity challenges. Working with the University of Maryland, College Park (UMCP) and the University of Maryland, Baltimore County (UMBC), two leading research institutions within the USM, MITRE will carry out the goals of the new FFRDC in research, development, engineering and technical support as well as operations and facilities planning.

"We're honored that NIST has chosen us to operate this new and timely cybersecurity-focused FFRDC," said Alfred Grasso, MITRE's president and chief executive officer. "Our work helping government and industry protect their critical assets and our ongoing collaboration with the cybersecurity community-particularly in advancing standards and facilitating threat-sharing-nicely complements NCCoE's mission. Working with our partners in the USM, we look forward to undertaking this work of significant national importance."

"We are thrilled to partner with MITRE to support the nation's first cybersecurity FFRDC," said USM Chancellor William E. "Brit" Kirwan. "With the combined knowledge base, research and expertise in cybersecurity of the University of Maryland, College Park, UMBC and MITRE, we look forward to meeting challenges the world faces in cyber security and information assurance. This alliance will present phenomenal opportunities for our faculty, staff and students to engage and work with our partners at MITRE, the incredible personnel at NIST and our nation's business community."

Cybersecurity is a core capability at MITRE, honed over more than four decades of working closely with federal agencies to secure the country's critical infrastructure, both information-based and physical. As part of its public interest mission, MITRE brings together government, commercial vendors and academic institutions to advance new concepts, standards and solutions in cybersecurity awareness, resiliency and threat-based defense.

"Cybersecurity is a common denominator for mission success for all of the sponsors we support, defense and civilian," said Gary Gagnon, MITRE senior vice president and chief security officer. "We're excited to apply our collective experience to help the NCCoE advance the state of cybersecurity practice across all sectors—industry, infrastructure owners and operators, commercial solution providers, government and academia."

The FFRDC will be housed in the NCCoE's state-of-the-art cybersecurity research lab in Rockville, Md. MITRE anticipates that 40 information security professionals will staff the FFRDC.

"The NCCoE is the best of government working with world-class IT companies to make our country safer and our economy more secure," said U.S. Senator Barbara A. Mikulski, Chairwoman of the Senate Appropriations Committee, which funds NIST. "The NCCoE is a hub for innovation and development. I congratulate the University System of Maryland for partnering with MITRE to collaborate in support of the FFRDC. This new center unites the knowledge of the government with the know-how of the private sector to develop cyber technology tools needed to protect dot-com entities and make our cyber infrastructure more resilient."

## **About The MITRE Corporation**

The MITRE Corporation is a not-for-profit organization that operates research and development centers sponsored by the federal government. Our centers support our sponsors with scientific research and analysis, development and acquisition, and systems engineering and integration. We also have an independent research program that explores new and expanded uses of technologies to meet our sponsors' needs. Our principal locations are in Bedford, Mass., and McLean, Va. To learn more, visit [www.mitre.org](http://www.mitre.org).

## **About the University System of Maryland**

The University System of Maryland, the state's public higher education system, comprises 12 institutions, two regional higher education centers, and a system office. The USM engages in research and scholarship that expand the boundaries of current knowledge, and provides knowledge-based programs and services that are responsive to the needs of the citizens of the state and nation.

**November 20, 2014**

# **NIST Cybersecurity FFRDC Briefing**

**Anupam Joshi**

**Oros Family Chair Professor, CSEE  
Director, UMBC Center for Cybersecurity**

**Eric Chapman**

**Assistant Vice President for Research  
UMCP**



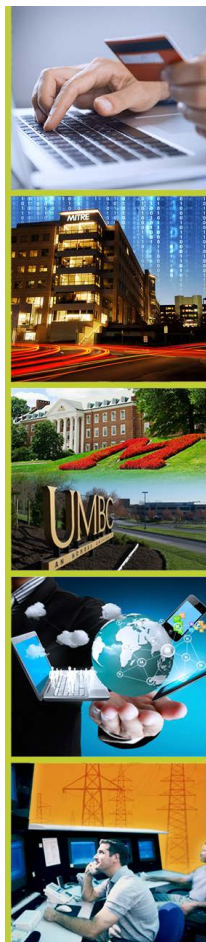
# NIST-NCCoE FFRDC in Cybersecurity

**UMBC and UMCP teamed with MITRE on successful bid for the NIST NCCoE *Federally-funded Research & Development Center (FFRDC)* in Cybersecurity**

- **25-year Indefinite Delivery / Indefinite Quantity (IDIQ) Contract awarded to MITRE/USM Team.**
- **FFRDC Home in Vicinity of Shady Grove Campus & NIST**
- **Academic Technology Leadership by UMBC & UMCP**
- **Launch – October 2014**



# Proposal to NIST



## Proposal to Operate the NIST/NCCoE Federally Funded Research and Development Center

Solicitation No. SB1341-14-RP-0005, as amended  
May 29, 2014

### Volume 2: Technical Proposal

Submitted by:  
**The MITRE Corporation**  
7515 Colshire Drive  
McLean, VA 22102  
DUNS: 04-054-0304  
Point of Contact:  
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**MITRE**



# Cybersecurity in Maryland

## A Hub of National Cyber Initiatives

- **National Security Agency (NSA)**
- **U.S. Cyber Command**
- **Intelligence Advanced Research Projects Agency (IARPA)**
- **Defense Information Systems Agency Headquarters (DISA)**
- **NIST – National Cybersecurity Center of Excellence (NCCoE)**
- **A variety of companies, from Big (NG, LMCO, ...) to small/startups (Tenable, Varen, Sourcefire, ...)**

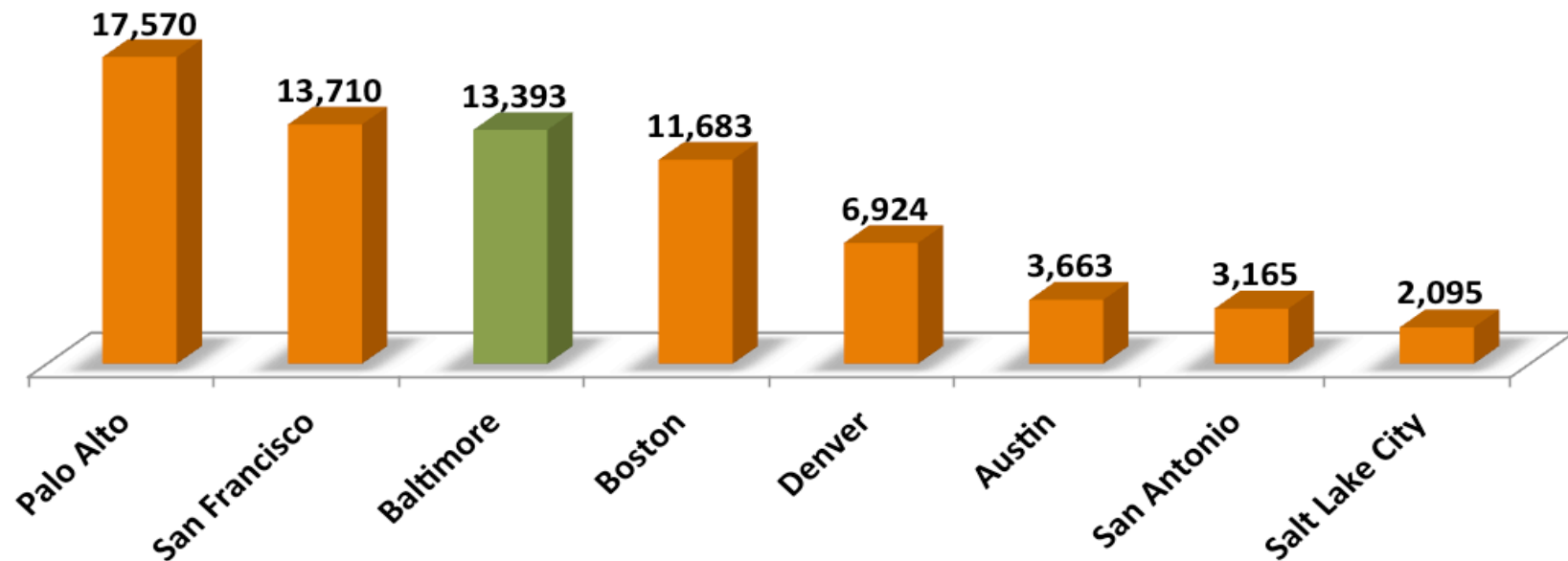




# Cybersecurity Economic Impact in Maryland

- 13,400 Cyber-related Jobs posted in Baltimore in 2013
- 18,000 estimated across the State of Maryland

Cyber Job Postings by Region – 2013



# Some History

- **NIST released an RFI in 2013 to form an FFRDC to support the NCCoE**
  - **Initiative seeded by Congressional Support**
- **President Hrabowski reached out to Chancellor Kirwan and President Loh to suggest a joint USM response**
- **Chancellor Kirwan led the effort, and created a team of USM (PJ Hogan, Suresh Balakrishnan), UMCP (Pat O'Shea, Ken Gertz, Eric Chapman) and UMBC (Geoff Summers/Karl Steiner, Anupam Joshi, Greg Simmons, Don Engel) to pursue the opportunity. The USM team was led by PJ Hogan.**
- **USM was contacted by several potential bidders, and eventually selected to team with MITRE in late Summer/early Fall 2013**
- **A subset of this team, along with other faculty colleagues, worked closely with the MITRE proposal writing team**



# Who is MITRE?

- **MITRE is a not-for-profit organization that operates research and development centers sponsored by the federal government.**
- **MITRE already supports 6 FFRDCs for Federal Agencies:**
  - National Security Engineering Center – *Department of Defense*
  - Center for Advanced Aviation System Development – *Federal Aviation Admin.*
  - Center for Enterprise Modernization – *Department of Treasury & IRS*
  - Homeland Security Systems Engineering and Development Institute – *DHS*
  - Judiciary Engineering and Modernization Center – *Office of the U.S. Courts*
  - CMS Alliance to Modernize Healthcare – *Ctr. for Medicare & Medicaid Services*
- **[www.mitre.org](http://www.mitre.org)**



**MITRE**

# Letters of Support

United States Senate  
WASHINGTON, DC 20510

June 19, 2014

Dr. Willie E. May  
Acting Director  
National Institute of Standards and Technology  
100 Bureau Drive, Stop 8900  
Gaithersburg, Maryland 20899-8900

Dear Dr. May:

Your agency has recently received a proposal from the University System of Maryland (USM) and its partner, the MITRE Corporation, in response to NIST's request for proposals regarding the establishment of the Cyber Security Federally Funded Research and Development Center (FFRDC) at the NIST National Cyber Center of Excellence (NCCoE). We are writing to express our support of this application and to draw your attention its merits.

The combined knowledge, assets and expertise of the USM and MITRE Corporation in the field of cybersecurity and in operating FFRDCs make this partnership world class.

The USM is at the cutting edge of cyber-security research, community outreach and workforce development. With cybersecurity centers on its main campuses and a focused cyber security curriculum, the USM is fully equipped to groom the next generation of cybersecurity talent to protect our businesses and government entities from an onslaught of cyber attacks.

The MITRE Corporation is a world leader in cyber achievements, and has earned an international reputation for technical excellence and innovation in operating FFRDCs for over fifty years.

Together, USM and MITRE offer the NCCoE access to the best expertise, research and workforce development capabilities in cyber security. We are confident that this proposal will strengthen the NCCoE's efforts to collaborate with a wide range of participants from the business, academic and government sectors to solve increasingly challenging issues in the cyber domain.

We very much appreciate your attention to this matter, and we urge you to give this proposal every appropriate consideration. Please keep us posted as these decisions are made.

Sincerely,

Barbara A. Mikulski  
United States Senator

Benjamin L. Cardin  
United States Senator



OFFICE OF THE CHANCELLOR

June 16, 2014

The Honorable Barbara A. Mikulski  
United States Senator  
503 Hart Senate Building  
Washington, DC 20510

Dear Senator Mikulski:

With your strong support, the National Institutes of Standards and Technology (NIST) is establishing a Cyber Security Federally Funded Research and Development Center (FFRDC) at the NIST National Cyber Center of Excellence to be located in Montgomery County, MD.

The University System of Maryland (USM) institutions have outstanding programs, researchers, and assets in the cyber security fields. The USM has partnered with the MITRE Corporation to submit a proposal to the NIST request. The USM lead institutions on this proposal are the University of Maryland College Park and the University of Maryland Baltimore County.

The USM/MITRE proposal is truly compelling. Combining the cyber security knowledge, expertise, and assets of our universities and the MITRE Corporation, we are extraordinarily well positioned to meet the needs of NIST and the nation.

The NIST Cyber Security FFRDC will provide invaluable benefits to the private and government sectors, and extraordinary opportunities for USM faculty, graduate and undergraduate students helping to ensure the long-term education, training and research needs for Maryland and our nation's cyber security platforms and processes.

In an effort to maintain Maryland as the epicenter of cyber security, we are requesting that you send a letter of support to the Director of NIST.

The USM appreciates your strong leadership and continued support for these vital programs and services. If we can answer any questions on this issue please have your staff contact P.J. Hogan, USM Vice Chancellor for Government Relations at 301-445-1927.

Sincerely,

Brit E. Kirwan  
Chancellor

Wallace Loh  
President UMCP

Freeman A. Hrabowski  
President UMBC

1807  
University of  
Maryland,  
Baltimore

1856  
University of  
Maryland,  
College Park

1865  
Bowie State  
University

1956  
Towson  
University

1986  
University of  
Maryland  
Eastern Shore

1988  
Frostburg State  
University

1900  
Coppin State  
University

1925  
Salisbury  
University

1925  
University of  
Baltimore

1925  
University of  
Maryland  
Center for  
Environmental  
Science

1947  
University of  
Maryland  
University  
College

1966  
University of  
Maryland,  
Baltimore County

# Stakeholders

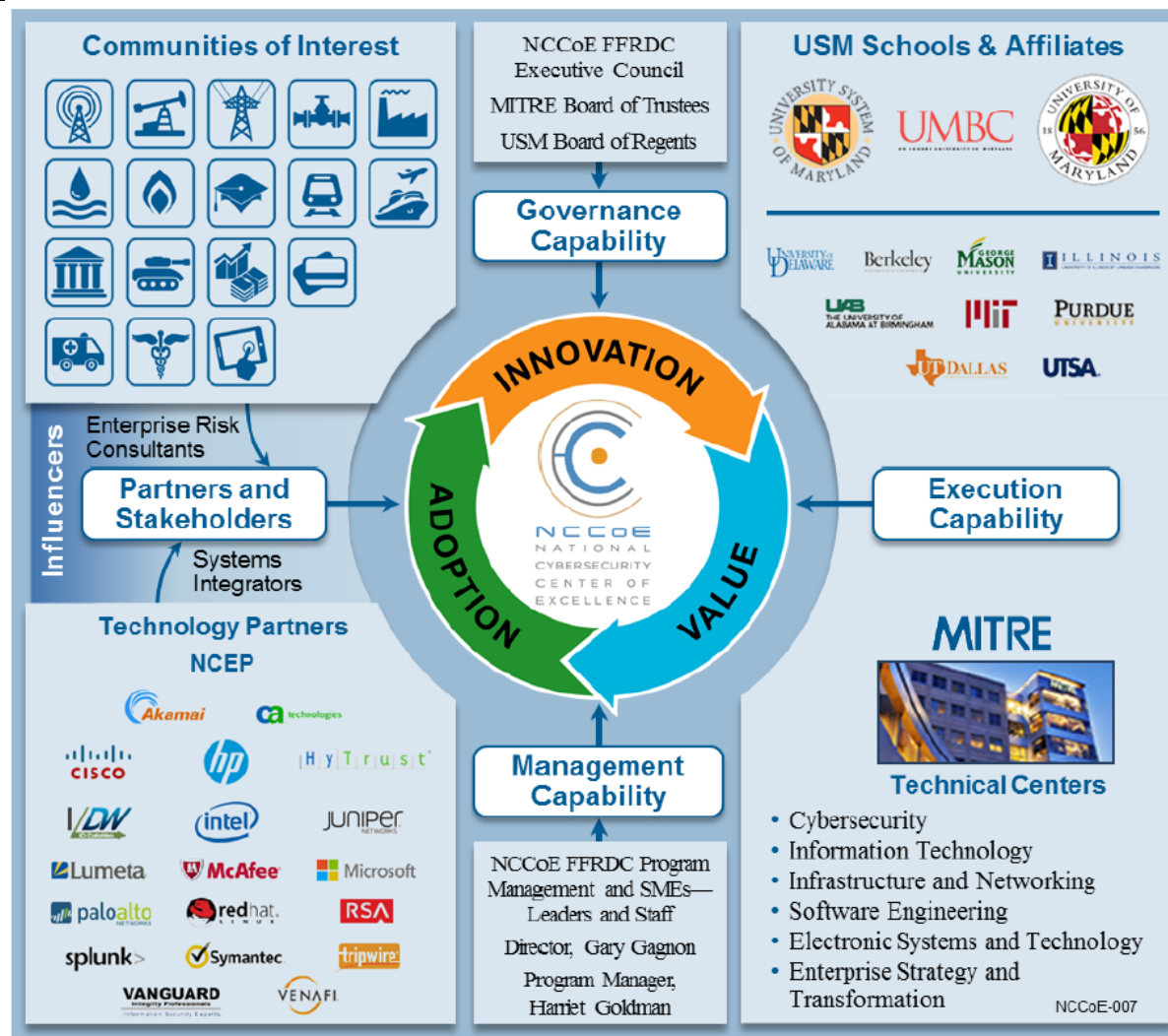
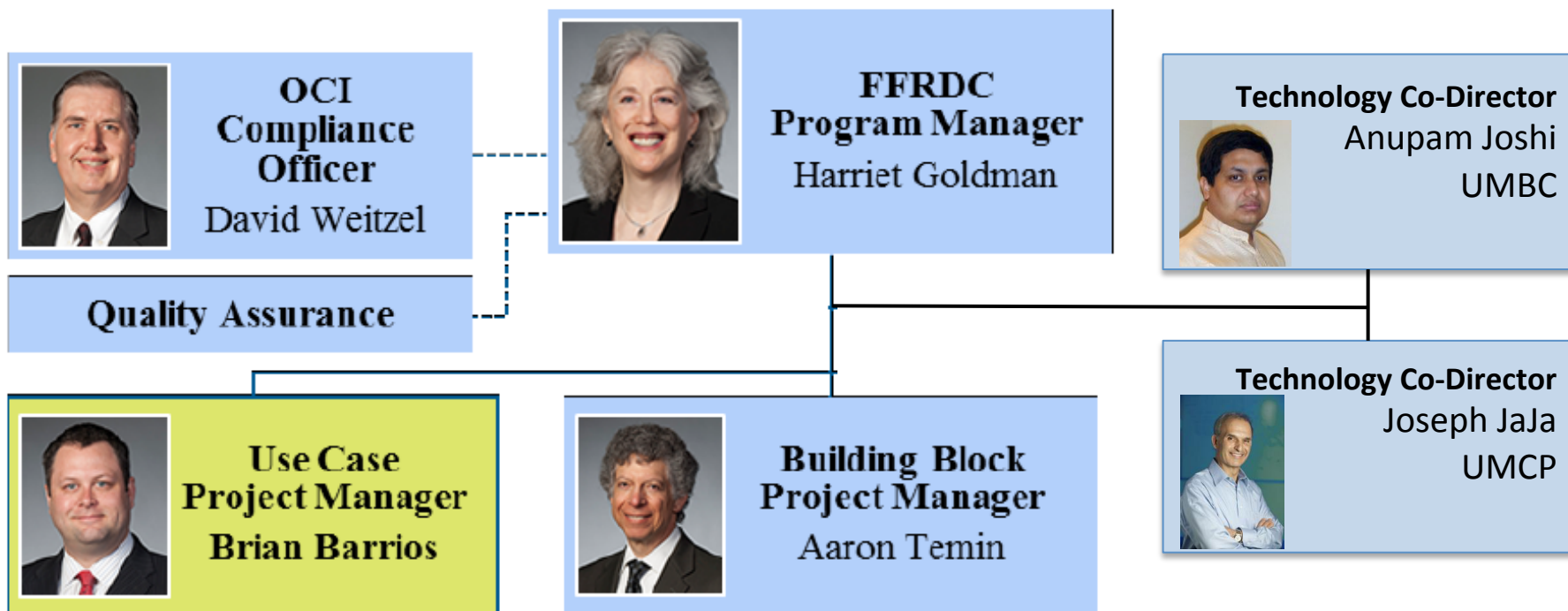


Figure 2-2. An Ecosystem of Stakeholders Working in Partnership to Achieve Innovation, Adoption and Value



# Leadership

**Senior Leadership Team – Chancellor and Presidents of UMBC and UMCP, CEO and two SVPs of MITRE**



**Figure TO1-1. Our Leadership Team Guides the Delivery of High Impact Use Cases**



# Technology Directors

**The Technology Directors will complement the resources of MITRE's extensive Technical Centers and FFRDCs and ensure the NCCoE's access to:**

- Expert faculty and researchers from USM's 12 institutions and associated research centers
- Leading academics from USM and globally prominent university affiliates
- Business leaders and technologists across sectors
- Robust technology transfer capabilities

**The role of the TD will be shared between UMBC and UMCP**

- **Anupam Joshi – UMBC and Joseph JaJa – UMCP)**



# Impact on USM

- **Capabilities Proposal – not a Statement of Work**
  - Indefinite Delivery / Indefinite Quantity (IDIQ)
  - Actual Work is determined by Task Orders
  - Initial 3 Task Orders have been issued (\$29.2 Million)
- **The Opportunity to build a Nationally Recognized Research program in Cybersecurity.**
- **A Seat at the Table for Key Decisions**
- **Driving an important National Agenda**
  - Private Sector and National Security
- **Statewide Partnership to cement Maryland's National Position**





# Impact on Maryland

- **An expansion building on Maryland's existing strength in defense-related Cybersecurity efforts**
- **Positioning Maryland as a National Leader in Cybersecurity**
  - Cyber Maryland, etc.
- **Focus on Private Sector Security Issues**
  - Retail Sector
  - Banking
  - Automotive
  - Energy
- **Increase need for a highly-educated cyber-workforce to build Maryland's knowledge-based economy**

