

## **GOMACTech-22 Keynote and Kilby Talks**

### **Keynote**

**Tuesday March 22, 2022**

**9:00-9:45 am**

**“Semiconductors Are Central to Our Economic Success. What Does the US Need to Compete?”**

**Manish Bhatia**

**Executive Vice President, Global Operations**

**Micron Technology, Inc.**

\*\*\*\*\*

### **Kilby Talks:**

**Tuesday March 22, 2022**

**10:15 – 11:45 am**

**“Edge to Cloud for Critical Infrastructure: Creating Secure, Intelligent, and Connected Systems”**

**David Pellerin**

**Senior Principal, Worldwide Specialist Organization, Semiconductor Industry**

**Amazon Web Services**

Rapid advances in machine learning and analytics has led to an explosion in demand for secure and scalable edge-to-cloud connectivity, for example in the energy sector, manufacturing, transportation, and in other critical industries requiring high levels of automation. AI/ML is at the heart of many the newest, most advanced edge-to-cloud applications, ranging from robotics and autonomous vehicles, to home automation, to smart factories and consumer-facing services in the financial and healthcare sectors. These products and services in turn benefit from custom or application-specific semiconductor technologies, which themselves must be designed for high levels of security, with the right balance of performance and scalability.

This talk presents examples of business-critical IoT and AI use-cases within Amazon, as well examples of how Amazon and its customers increasingly rely on custom silicon solutions to drive year-over-year increases in performance, security, and scalability. The talk concludes with an example of using IoT, AI, and digital twin for smart manufacturing and smart operations in a safety-critical industry.

\*\*\*\*\*

## **“The Future Operating Environment and Implications for Microelectronics”**

**Dr. Yadunath Zambre**  
**Chief Microelectronics Technology Officer**  
**Air Force Research Laboratory**

The United States’ national security is based on its global relationships with current and emerging military and economic powers. The emergence of “Great Power Competition” threatens the status of the US as a global power and has introduced multifaceted challenges and expanded warfare into information, economic, political, and military domains. Protecting U.S. and allies’ interests across the world will require operating in military environments where adversaries have the ability to deny or limit access. This talk will discuss current and future operating environment and the implications to electronics system needs.

\*\*\*\*\*

## **“DoD Microelectronics for the Near, Medium, and Long Term”**

**Dr. Devanand Shenoy**  
**Principal Director for Microelectronics at Office of the Undersecretary of Defense and Director, DMCFT**  
**Office of the Under Secretary of Defense for Research and Engineering, Pentagon**  
**Washington, DC**

Microelectronics are essential technology drivers for the DoD’s most critical national security systems and missions. However, the DoD faces unique challenges in ensuring a strong and secure industrial base that can supply its broad operational requirements, while driving future system functionality and performance enabled by access to leading edge technologies. The DoD is addressing these challenges across several coordinated thrusts. The Defense Microelectronics Cross Functional Team is developing a holistic DoD strategy that strengthens the domestic industrial base, facilitates transition of technology into DoD systems, and enhances coordination of Department-wide and inter-agency efforts to access measurably secure microelectronics supply chains. The USD (R&E)’s Trusted and Assured Microelectronics Program is executing major investments to develop secure access to leading edge design, fabrication, packaging and test capability. Furthermore, the T&AM Scalable Asymmetric Lifecycle Engagement (SCALE) project is building a broad microelectronics workforce through promotion, development, and execution of Public-Private-Academic Partnerships (PPAP) to evaluate and create curriculum standards. The USD (R&E) Microelectronics Commons concept is exploring mechanisms to reinvigorate and reinstate research and engineering through establishment of critical on-shore prototyping capabilities that ensure proximal coupling of innovation and manufacturing. This Kilby lecture will highlight these near, medium, and long-term opportunities for the DOD.