Securing the 5G Supply Chain through Measurements Workshop

Speaker Bios

Lisa Friedersdorf, White House Office of Science and Technology Policy

Dr. Lisa Friedersdorf is the Director of the National Nanotechnology Coordination Office. She has been involved in nanotechnology for over twenty-five years, with a particular interest in advancing technology commercialization through university-industry-government collaboration. She is a strong advocate for science, technology, engineering, and mathematics (STEM) education, and has over two decades of experience teaching at both the university and high school levels. Lisa earned her PhD and MSE in Materials Science and Engineering from the Johns Hopkins University and BS in Mechanical Engineering from the University of Central Florida.

While at the NNCO, Lisa has focused on building community and enhancing communication in a variety of ways. With respect to coordinating research and development, her efforts have focused on the Nanotechnology Signature Initiatives in areas including nanoelectronics, nanomanufacturing, informatics, sensors, and water. A variety of mechanisms have been used to strengthen collaboration and communication among agency members, academic researchers, industry representatives, and other private sector entities, as appropriate, to advance the research goals in these important areas. Lisa has also led the establishment of a suite of education and outreach activities reaching millions of students, teachers, and the broader public. She continues to expand the use of targeted networks to bring people together in specific areas of interest, including the Nano and Emerging Technologies Student Network and the U.S.-EU Communities of Research focused on the environmental, health, and safety aspects of nanotechnology. Nanotechnology entrepreneurship and nanomedicine are areas where new communities of interest are developing.

Prior to joining the NNCO, Lisa held a number of positions at the intersection of academia, industry, and government. At Lehigh University, Lisa served as the associate director of the Materials Research Center and director of the industry liaison program. In this role, she oversaw dozens of membership programs and was responsible for developing and coordinating multi-investigator interdisciplinary research programs including a multimillion-dollar public-private partnership in microelectronics. As director of the Virginia Nanotechnology Initiative, she led an alliance of academic institutions, industry, and government laboratories with an interest in nanotechnology across the Commonwealth of Virginia. At the University of Virginia, she served as managing director of the nanoSTAR Institute and led the development of pan-university initiatives as a program manager in the Office of the Vice President for Research. Additionally, Lisa has been active in the start-up ecosystem for many years assisting small companies with business development and access to resources, and vetting emerging technologies for investors.

Paul Hale, NIST



Dr. Paul Hale is Chief of the RF Technology Division at the National Institute of Standards in Boulder, CO. During Dr. Hale's career at NIST, his work has focused on providing NIST traceability that supports the microwave, high-speed electronics, and optoelectronics industries and Dr. Hale lead or co-lead the development of seven NIST measurement services in those areas. Dr. Hale was also the technical co-lead on the NASCTN 3.5 GHz radar waveform measurements in 2016 and was technical lead on the NASCTN test plan development for measuring the user equipment (UE) aggregate long term evolution (LTE) emissions in the AWS-3 Band in 2017.

Dr. Hale is a Fellow of the IEEE and was an Associate Editor of Optoelectronics/ Integrated optics for the IEEE Journal of Lightwave Technology from June 2001 until March 2007. He has authored or coauthored over 100 technical publications (i10-index=68, Google Scholar, 2/19/2021) and received the Department of Commerce Bronze, Silver, and Gold Awards, the Allen V. Astin Measurement Science Award, two ARFTG Best Paper Awards, and the NIST Electrical Engineering Laboratory's Outstanding Paper Award. Paul Hale received a Bachelor of Science degree in Engineering Physics and Doctor of Philosophy degree in Applied Physics, both from the Colorado School of Mines, Golden, CO.

Ophir Gaathon, Dust Identity

Ophir Gaathon co-founded DUST Identity to solve the challenge of securing, authenticating, and trusting physical items within complex global value chains. As the CEO of DUST Identity, Ophir is the architect of the business' vision, strategy, and product development. Ophir's background includes supply chain security and a deep technical expertise of quantum sensing in diamond materials. He received his Ph.D. in applied physics from Columbia University, led research projects at MIT and Columbia, is the author of several patents and published over 30 papers in leading peer reviewed journals.

Yousef Iskander, Azure Hardware Systems and Infrastructure



Yousef Iskander is the Director of Supply Chain Security at Microsoft's Azure Global Security, Risk & Compliance group. Prior to joining Microsoft, he led research in microelectronics trust and assurance at Cisco System. While at Cisco, he worked with supply chain, brand protection, counterfeit, and forensic incident analysis groups as well as performing security evaluations on Cisco products.

He has also held positions at Duke Energy, the Oak Ridge National Laboratory, the Los Alamos National Laboratory, and a DARPA-funded cyber-security startup in Virginia, working on DARPA's TRUST and IRIS programs.

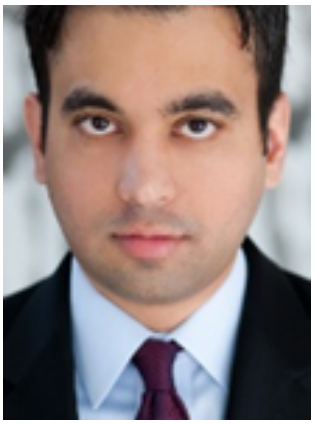
He holds a Ph.D. in Computer Engineering from Virginia Tech, a Masters in Electrical and Computer Engineering from Georgia Tech, and a bachelor's degree in Electrical Engineering with a Minor in Mathematics from the University of Tennessee at Chattanooga. His focus includes trust and reliability in ASICs and FPGAs, and reconfigurable and adaptive computing. He is a Senior Member of the IEEE.

Stergios Papadakis, Johns Hopkins University Applied Physics Laboratory



Stergios J. Papadakis is the Chief Scientist of the Experimental and Computational Physics Group, in the Research and Exploratory Development Department at the Johns Hopkins Applied Physics Laboratory. He is a device physicist who has spent his career researching a range of novel sensors and sensor systems, typically in new materials. In recent years he has focused on sensing systems for security applications, including security of biometric sensors against spoofing attacks and security of digital systems using side-channel emissions.

Kabir Kasargod, Qualcomm



Kabir Kasargod is a Senior Director of Strategic Operations at Qualcomm Government Technologies (QGOV). In this role at QGOV, Kabir heads up QGOV's Microelectronics initiatives, and QGOV's Education team that is responsible for bringing Qualcomm's latest commercial wireless knowledge to Government partners to help them leverage and stay on the commercial curve. Prior to joining QGOV, Kabir worked as the Director of Business Development at Qualcomm Life where he led software partnership initiatives and strategy related to mobile apps & services in healthcare.

Prior to this role, Kabir was the founder and lead of an entrepreneurial venture within Qualcomm Labs. Kabir also held positions in Product Management and Strategy within Qualcomm Internet Services prior to joining Qualcomm Labs. Before returning to Qualcomm, Kabir also worked in product management roles at Verizon Wireless and at Ericsson's CDMA Infrastructure division. Kabir began his career as a Project Engineer at Qualcomm in 1998. Kabir holds a Master of Science in Electrical Engineering from Rutgers University and a bachelor's degree in Electrical Engineering from the University of Mumbai in India.

Ian Oliver, Nokia Bell Labs



Dr Ian Oliver is a Distinguished Member of Technical Staff at Bell Labs working on Trusted and High-integrity Cyber Security applied to 5G and future 6G mobile technologies, NFV, Edge and IoT devices with particular emphasis on the safety-critical domains, such as future railway, medical devices and medical systems.

Mark Tehranipoor, University of Florida



Mark Tehranipoor is currently the Intel Charles E. Young Preeminence Endowed Chair Professor in Cybersecurity at the ECE Department, University of Florida. He is also currently serving as Director for Florida Institute for Cybersecurity Research (FICS), National Microelectronics Security Training Center (MEST), CYAN Center of Excellence, and ECI Transition Center. His current research interests include: IoT security, hardware security and trust, supply chain risk management and security, counterfeit electronics detection and prevention and reliable circuit design. Dr. Tehranipoor has published extensively in the field of hardware security and has delivered more than 200 invited talks and keynote addresses. He has 8 patents, and has published 13 books and 22 book chapters. He is a recipient of 13 best paper awards and nominations, as well as the 2008 IEEE Computer Society (CS) Meritorious Service Award, the 2012 IEEE CS Outstanding Contribution, the 2009 NSF CAREER Award, and the 2014 MURI award. His projects are sponsored by both the industry and Government.

He serves on the program committee of more than a dozen leading conferences and workshops. He served as Program and General Chairs of several leading conferences and workshops. He co-founded a new symposium called IEEE International Symposium on Hardware-Oriented Security and Trust (HOST) and served as HOST-2008 and HOST-2009 General Chair (http://www.hostsymposium.org/). He is currently serving as HOST's Chair of Steering Committee. He is also the co-founder of Trust-Hub (www.trust-hub.org) and Asian HOST (http://asianhost.org/2017/). He serves as co-EIC for newly established Journal on Hardware and Systems Security (HaSS). He also served as an Associate EIC for IEEE Design & Test, an IEEE Distinguished Speaker, and an ACM Distinguished Speaker from 2010 to 2014. He is currently serving as an Associate Editor for JETTA, JOLPE, Transactions on VLSI (TVLSI), and Transactions on Design Automation for Electronic Systems (TODAES). Prior to

joining University of Florida, Dr. Tehranipoor served as the founding director of the Center for Hardware Assurance, Security, and Engineering (CHASE) and the Comcast Center of Excellence in Security Innovation (CSI) at the University of Connecticut. Dr. Tehranipoor is a Fellow of IEEE, a Golden Core Member of the IEEE, and Member of ACM and ACM SIGDA. He is currently serving as IEEE Ambassador on Cybersecurity.

Kaushik Chowdhury, Northeastern University



Kaushik Chowdhury is Professor in the Electrical and Computer Engineering Department at Northeastern University, Associate Director of the Institute for the Wireless Internet of Things, and Faculty Fellow of the College of Engineering. He received his Ph.D. from the Georgia Institute of Technology in August 2009 and M.S. from the University of Cincinnati in 2006. He is the winner of the U.S. Presidential Early Career Award for Scientists and Engineers (PECASE) in 2017, the Defense Advanced Research Projects Agency Young Faculty Award in 2017, the Office of Naval Research Director of Research Early Career Award in 2016, and the National Science Foundation (NSF) CAREER award in 2015. He is the recipient of best paper awards at IEEE GLOBECOM'19, DySPAN'19, INFOCOM'17, ICC'13,'12,'09, and ICNC'13. He serves as area editor for IEEE Trans. on Mobile Computing, Elsevier Computer Networks Journal, IEEE Trans. on Network Science and Engineering, and IEEE Trans. on Wireless Communications. He is Sr. Member of the IEEE, co-directs the operations of Colosseum RF/network emulator, as well as the Platforms for Advanced Wireless Research project office, a joint $100 million public-private partnership between the NSF and wireless industry consortium to create city-scale testing platforms.

Prof. Chowdhury's research is mainly focused on autonomous operation and systems aspects of machine learning applied to wireless networks, dynamic spectrum access, networked robotics including UAVs and at-scale experimentation for 5G and beyond standards.

Keith Rebello, Defense Advanced Research Projects Agency



Mr. Keith Rebello is a program manager in the Defense Advanced Research Projects Agency's (DARPA) Microsystems Technology Office (MTO), where he leads research in hardware and supply chain security. His System Security Integration Through Hardware and Firmware (SSITH) program is developing computer architectures to protect systems against entire classes of software enabled hardware vulnerabilities. He conducted DARPA's first bug bounty program, Finding Exploits to Thwart Tampering (FETT). His Safeguards against Hidden Effects and Anomalous Trojans in Hardware (SHEATH) Microsystems Exploration Program seeks to find supply chain

implants. Prior to DARPA, Keith held technical leadership roles within the Department of Defense, Johns Hopkins University Applied Physics Laboratory, and commercial industry. He has authored more than 30 technical journal and conference papers, three book chapters, and has served as an instructor teaching Microelectromechanical Systems (MEMS) engineering at the Johns Hopkins Whiting School of Engineering and as a member of the adjunct faculty at the U.S. Naval Academy where he taught Applications of Cyber Engineering.

Mr. Rebello received a B.S. degree in Electrical Engineering from Virginia Tech and M.S. degrees in Electrical and Computer Engineering from Carnegie Mellon University and Applied Biomedical Engineering from the Johns Hopkins University Applied Physics Laboratory.

Richard Ott, Air Force Research Laboratory



Dr. Ott leads the Air Force Research Laboratory Verification & Validation efforts in support of the Trusted Electronics Branch and OSD Trusted and Assured Microelectronics. In his current role, he leads a team actively researching methods to improve microelectronic counterfeit detection methods & metrics, and supply chain assurance. In addition to his research activities, he leads the Joint Federated Assurance Center ASSESS Working Group, evaluating second order effect system capability and working to link measured observables to their physical origin. He received his BA in physics from Ohio Wesleyan University, his MS in Mechanical Engineering from the University of Akron, and his Ph.D. in Mechanical Engineering from Utah State University.

Urmi Ray, International Electronics Manufacturing Initiative (iNEMI)

Urmi Ray is an experienced semiconductor professional who works with industry organizations such as iNEMI, IMAPS, SEMI and others on driving advanced packaging and integration strategies. She has worked at JCET Group focusing on advanced system in package (SIP) technologies and Qualcomm as the technology and program lead in several forward-looking programs in 3D and 2.5D and system integration, with particular focus on low cost packaging for mobile industry. She joined Qualcomm in 2006, after spending 10+ years at Lucent Technologies Bell Laboratories in NJ working on advanced materials and reliability for a diverse set of product portfolios, including consumer products to high reliability telecommunications projects. She has a PhD from Columbia University (New York City).

Urmi also spends her time volunteering for many organizations in areas such as education (tutoring, mentoring), food banks/soup kitchens, conservation activities with CA state parks

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Michael Schuldenfrei, NI



Michael brings over 35 years of experience in software development and today is focused on long-term innovation software projects at NI. Additionally, he supports various other activities, including software strategy, sales, marketing, product planning and R&D. He also evangelizes NI enterprise software solutions to customers, partners and industry forums.
Michael joined NI from OptimalPlus, which was acquired by NI in June 2020. During his 15-year tenure at OptimalPlus, he served in several leadership roles including Chief Software Architect and CTO, designing, architecting and prototyping many of its flagship products as well as providing support for sales and marketing. Most recently, he was the Corporate Technology Fellow in the business development team that led to the successful sale of OptimalPlus to NI.

Before joining OptimalTest in 2005, Michael was a Senior Software Architect at SAP, where he worked on Duet, a joint venture with Microsoft to enable seamless access to SAP data via Microsoft Office. Before joining SAP, Michael was a Software Architect at Microsoft, where he consulted with the company's major customers. He was also vice president, R&D, at ActionBase, a company providing business-management enterprise solutions to enhance internal organizational workflow and collaboration, and a team leader at Eyron, where he managed software projects for numerous companies, in areas as diverse as defense, health, aerospace and high tech.

Marc Vanden Bossche, NI



As an employee of Hewlett Packard (HP), in 1990 Marc Vanden Bossche received his Ph.D. from Vrije Universiteit Brussel in electrical engineering focusing on the foundation of high frequency large-signal network analysis. In 1991, he established a HP R&D team in Belgium continuing to work on characterization and system-level modeling tools for high frequency nonlinear electrical components, leading to the expansion of the capabilities of VNA's beyond S-parameters. In collaboration with NIST, NIST established a phase calibration standard in the second half of the 90's merging network and signal analysis. In June 2003 Marc founded NMDG, which was acquired by NI (formerly National Instruments) in October 2012. At NI, team and himself introduced vector calibration techniques into the NI RF production test systems. Presently Marc is technically leading the accurate characterization effort under modulation conditions at NI and scaling these efforts for over the air characterization.

Marc is a senior IEEE member. He was a co-recipient of the 2002 ARFTG Technology Award and recipient of two ARFTG Best Paper Awards and is author of 9 patents.

Sylvere Krima, NIST



Dr. Sylvere Krima is a research associate at the National Institute of Standards and Technology (NIST) and a senior consultant at Engisis LLC. He received a Ph.D. in Computer Science from the University of Burgundy, France in 2013. His research focuses on using emerging technologies to develop methodologies and tools to implement standard-based interoperability and data traceability. He currently co-leads the Trustworthiness and Traceability of Supply Chain Data project at NIST and focuses on securing the manufacturing digital thread and its digital supply chain.
