

2019 IEEE North Atlantic Test Workshop
May 13-15, 2019, Essex Resort & Spa, Essex, Vermont

The IEEE North Atlantic Test Workshop (NATW) provides a forum for discussions on the latest issues relating to high quality, economical, and efficient test methodologies and designs. In addition to traditional topics, the 28th NATW features a general theme of “Quality, Secure and Resilient Public Use Systems.” The 2019 workshop is being held at the Essex Resort & Spa, Essex, Vermont, and is sponsored by IEEE Green Mountain Section and IEEE Region 1.

Monday, May 13	
12:00 pm – 4:30 pm Registration	
12:00 pm – 12:50 pm Lunch	
12:50 pm – 1:00 pm Welcome Address	
1:00 pm – 4:30 pm Tutorial: AI Chip Architecture & DFT Methodologies -Rahul Singhal, Mentor, a Siemens Business	
4:30 pm – 6:00 pm Break	
6:00 pm Dinner	
7:00 pm – 9:00 pm Panel Discussions – Resilient Systems. Rahul Singhal (Mentor), Andrew Turner (IBM), Hammid Ossareh (Univ. of Vermont), Kris Lewia (Velco). <i>Resilience for any system is defined as its ability to prepare for and adapt to changing conditions and withstand or recover rapidly from disruptions. The recent discovery of Meltdown and Spectre attacks have highlighted vulnerabilities in modern computer systems. The panel will discuss the scope of existing vulnerabilities and present possible solutions to mitigate them.</i>	
Tuesday, May 14	
7:30 am – 12:00 pm Registration	
7:30 am – 8:20 am Breakfast	
8:20 am – 8:30 am Welcome Address	
8:30 am – 9:20 am Keynote Address 1: The Evolution of an ASIC Solution - Sue Bentlage (AveraSemi)	
9:20 am – 9:30 am Coffee Break	
9:30 am – 10:10 am Invited Address 1: The Gap between I.T. and O.T.- Kris Lewia (VELCO)	
10:10 am – 10:20 am Coffee Break	
10:20 am – 12:00 pm Academia Session	Chair: Bernadette Fernandes
<ul style="list-style-type: none"> • 10:20 am – 10:40 am Convolutional Neural Networks (CNNs)-Assisted Voltage Regulation: A New Power Delivery Scheme - Yiming Wen (Old Dominion University) • 10:40 am – 11:00 am Malicious Attacks on Physical Unclonable Function Sensors of Internet of Things - Yiming Wen (Old Dominion University) • 11:00 am – 11:20 am Improved Random Pattern Delay Fault Coverage Using Inversion Test Points – Soham Roy (Auburn University) • 11:20 am – 11:40 am Design Optimization Method of Test Structures for Accurate Dielectric Properties Characterization of Thin Films – Jinqun Ge (University of South Carolina) • 11:40 am – 12:00 am Scan Segment Disable for Capture Power Reduction for Low-Power Decompressed Patterns – Yi Sun (Southern Methodist University) 	
12:00 pm – 1:00 pm Lunch	
1:00 pm – 3:00 pm Special Session 1 - IoT and Sensor	Chair: Hari Chauhan (Analog Devices Inc.)

<ul style="list-style-type: none">1:00 pm – 1:40 pm A Bottom-up Educational Platform for Biosensors and Internet of Things – Ying Sun (University of Rhode Island)
<ul style="list-style-type: none">1:40 pm – 2:20 pm Quality Healthcare Enhanced by Bioengineering – Paola Calvachi Prieto (Brigham and Women's Hospital in Boston)
2:20 pm-2:30 pm Break
Special Session 2 - IoT and Sensor Chair: Fen Guan
<ul style="list-style-type: none">2:30 pm – 3:10 pm Emerging Bio/Chemical Sensor Technologies - Hari Chauhan (Analog Devices)
<ul style="list-style-type: none">3:10 pm – 3:50 pm Title – Systems Engineering for Sensor Platform Success and Realization – Bruce Hecht, (Analog Devices)
3:50 pm – 4:00 pm Break
4:00 pm – 4: 50 pm Invited Address 2: The Challenges of Correlating Memory Models to Hardware in Advanced Technologies – Ewan Cameron (Invecas)
4:50 pm – 6:00pm Break
6:00 pm – 8:30 pm Social Event: Banquet and Moody McCarthy Comedy Show
Wednesday, May 15
7:30 am – 12:00 pm Registration
7:30 am – 8:30 am Breakfast
8:30 am – 9:20 am Keynote Address 2: Predictive Analytics for Anomaly Detection and Failure Prediction in Complex Core Routers - Krishnendu Chakrabarty, Duke University.
9:20 am – 9:30 am Coffee Break
9:30 am – 11:30 am Industry Session 1 Chair: Danella Zhao
<ul style="list-style-type: none">9:30 am – 9:50 am Behavioral modeling of a Charge Trap Transistor One Time Programmable Memory – Eric Hunt-Schroeder (GlobalFoundries)
<ul style="list-style-type: none">9:50 am – 10:10 am Case Study of Advanced Diagnostic Techniques for Multiport Register File - Uma Srinivasan (IBM)
<ul style="list-style-type: none">10:10 am – 10:30 am Matlab JTAG AXI Meters Opens New Dimensions for Development and Testability – Mark Fosberry (BAE Systems)
10:30 am–10:40 am Break
10:40 am – 11:40 am Industry Session 2 Chair: Ryan Patterson
<ul style="list-style-type: none">10:40 am – 11:00 am The good and Bad of Testing Chips Hierarchically – Brion Keller (AveraSemi)
<ul style="list-style-type: none">11:00 am – 11:20 pm Breaking Design Barriers in High Quality and Low-Cost Applications - Carl Wisnesky, (Cadence)
<ul style="list-style-type: none">11:20 am – 11:40 pm The Art of Manufacturing Test Debug– Kelly Ockunzzi (GlobalFoundries)
11:40 pm – 11:50 pm Closing Remarks
11:50 pm – 1:00 pm Lunch