

# November 2019 S<sup>2</sup>ERC SHOWCASE AGENDA

November 20-21, 2019 • Hosted by Ball State University • Muncie, IN

## Tuesday, November 19

5:00-7:00 PM	<b>Networking Reception - <i>Appetizers &amp; Beverages</i></b> David Owsley Museum of Art Sculpture Court, 2021 W. Riverside Avenue, AR 328, Muncie, Indiana 47306
<b>Wednesday, November 20</b>	
8:00-9:00 AM	<b>Registration / Poster Set-Up / Breakfast</b> Ball State Alumni Center Conservatory & Pre-Event Area, 2800 West Bethel Avenue, Muncie, Indiana 47304 
9:00-9:10	<b>Welcome &amp; Introductions</b> – Ball State Alumni Center, Assembly Hall Geoffrey S. Mearns, President, Ball State University
9:10-9:30	<b>State of the S<sup>2</sup>ERC</b> – Shaoen Wu, S <sup>2</sup> ERC Director, Ball State University
9:30-9:50	<b>NSF Program Update &amp; Surveys, IUCRC Breakthroughs</b> – Vida Scarpello, I/UCRC Assessment Coordinator
9:50-11:30	<b>Session 1: New Proposals</b> <p>9:50-10:05 <i>Profiling User Activity for Security with Ethical Oversight</i> Ella Peltonen (presenting), Susanna Pirttikangas, Satu Tamminen, Teemu Tokola, Pekka Abrahamsson; University of Oulu</p> <p>10:10-10:25 <i>Effective Risk Analysis: Risk Analysis Tree</i> Kirthy Kolluri (presenting remotely), Lawrence Chung; University of Texas, Dallas</p> <p>10:30-10:45 <i>High-Quality Recommendations: A Goal-Oriented, Ontology- and Machine Learning-Based, Interactive Approach</i> Ronaldo Goncalves, Jr. (presenting remotely), Lawrence Chung; University of Texas, Dallas</p> <p>10:50-11:05 <i>Leveraging Rigorous Software Specification and Testing to Developing and Orchestrating Reliable Applications for Network Softwarization</i> Lan Lin, Xin Sun; Ball State University</p> <p>11:10-11:25 <i>Towards Effective Conflict Resolution During Software Development: A Goal-Oriented, Knowledge-Based, and Machine Learning Approach</i> Robert Sungsoo Ahn (presenting remotely), Lawrence Chung; University of Texas, Dallas</p>
11:30-12:00	<b>IAB Meeting</b> – Ball State Alumni Center, Board Room 
12:00-1:00	<b>Lunch Break</b> – Ball State Alumni Center, Conservatory 
1:00-2:20	<b>Session 2: New Proposals</b> – Ball State Alumni Center, Assembly Hall <p>1:00-1:15 <i>Understanding and Implementing Acceptance Test Driven Development</i> Paul Gestwicki; Ball State University</p> <p>1:20-1:35 <i>Automated Configuration Validation for Microservice Architectures</i> Xin Sun; Ball State University</p> <p>1:40-1:55 <i>Refactoring large and complex business systems into high-quality microservices: A Non-Functional Requirements Perspective</i> Haan Mo Johng (presenting remotely), Lawrence Chung; University of Texas, Dallas</p> <p>2:00-2:15 <i>iDetect: Intelligent System Intrusion Detection based on Event-Driven Deep Learning</i> Shaoen Wu; Ball State University</p>
2:20-2:50	<b>IAB Meeting</b> – Ball State Alumni Center, Board Room 
2:50-3:40	<b>Session 3: Status Reports</b> – Ball State Alumni Center, Assembly Hall <p>2:50-3:00 <i>Testing Internet of Things: An Enhanced Combinatorial Testing and Graph-based Technique</i> Linghuan Hu (video presentation); PI: Eric Wong; University of Texas, Dallas</p> <p>3:05-3:15 <i>Quality Assurance and Health Management for Software Systems</i> Linghuan Hu and Xuelin Li (video presentation); PI: Eric Wong; University of Texas, Dallas</p> <p>3:20-3:35 <i>Shared-Memory Middleware</i> Todor Cooklev; Purdue University, Fort Wayne</p>

## Wednesday, November 20 (cont.)

3:40-4:00	<b>IAB Meeting</b> – Ball State Alumni Center, Board Room
4:00-4:45	<b>Panel Discussion</b> – Ball State Alumni Center, Assembly Hall <i>Topic: The Impact of AI</i> <i>Moderator: Shaoen Wu, S<sup>2</sup>ERC Director, Ball State University</i> <i>Participants: Holmes Finch (Distinguished Professor of Educational Psychology, Statistics, &amp; Psychometrics, Ball State)</i> <i>Markku Korkiakoski (Netox)</i> <i>Patrick McDaniel (Professor of Info &amp; Comm Tech, Penn State; Director, Institute for Network &amp; Security Research)</i> <i>David Pilkington (Senior Director of Technology, GM of Cloud Projects, Ontario Systems)</i> <i>Jian Ren (Associate Professor, College of Electrical and Computer Engineering, Michigan State University)</i>
5:00-8:00	<b>Cocktail Hour</b> – Ball State Alumni Center Pre-Event Area <b>Banquet</b> – Ball State Alumni Center Assembly Hall Presentation by Wilbur R. (Wil) Davis, President, Ball State Innovation Corporation <i>"The Power of Purpose"</i>

## Thursday, November 21

8:00-9:00 AM	<b>Registration / Breakfast</b> – Ball State Alumni Center, Conservatory
9:00-10:00	<b>Special Topic Presentation</b> – Ball State Alumni Center, Assembly Hall <i>"The Challenges of Machine Learning in Adversarial Settings"</i> Patrick McDaniel William L. Weiss Professor of Information and Communications Technology, Pennsylvania State University Director, Institute for Network and Security Research
10:00-10:30	<b>Poster Session</b> – Ball State Alumni Center, Pre-Event Area
10:30-11:45	<b>Session 4: Status &amp; Final Reports</b> – Ball State Alumni Center, Assembly Hall 10:30-10:40 <i>Anomaly-based Insider Threat Detection</i> Lauri Haverinen and Jari Jääskelä (presenting), Teemu Tokola; University of Oulu 10:45-10:55 <i>Code Duplication ++ - Final</i> Dolores Zage (presenting), Wayne Zage, Eric Snyder; Ball State University 11:00-11:10 <i>Building Security In: OpenAPI and IDE Integration of Fuzzing</i> Jukka Pajukangas (presenting), Pekka Pietikäinen; University of Oulu 11:15-11:25 <i>How Far Could Mathematics and Rigor Take Us?</i> Lan Lin; Ball State University 11:30-11:40 <i>ProGame</i> Mauri Miettinen (presenting), Lauri Lovén, Ella Peltonen, Susanna Pirttikangas; University of Oulu
11:45-12:00	<b>IAB Meeting</b> – Ball State Alumni Center, Conference Room 1
12:00-1:00	<b>Lunch Break</b> – Ball State Alumni Center, Conservatory
1:00-2:15	<b>Session 5: Status &amp; Final Reports</b> – Ball State Alumni Center, Assembly Hall 1:00-1:10 <i>Experimental Optimization of Privacy Protection Methods</i> Ulrico Celentano; University of Oulu 1:15-1:25 <i>Proof-of-concept for intelligent contracts using blockchain</i> Taija Kolehmainen (presenting), Pekka Abrahamsson; University of Jyväskylä 1:30-1:40 <i>IoT-enabled, Model-assisted, Learning-based Attack Detection and Response for Building Energy Management Systems - Final</i> Ryan Gerdes; Virginia Tech 1:45-1:55 <i>Improving Software Security with Automated Vulnerability Analysis and Inference with Multi-Case Based Reasoning - Final</i> Shaoen Wu (presenting), Noah Ziems; Ball State University 2:00-2:10 <i>Enhancing Cybersecurity Test and Evaluation Research</i> Laura Freeman (presenting remotely); Virginia Tech

