

## ModSim 2018 – Day One, August 15, 2018

7:15-8:00 a.m.	Registration and Welcome to ModSim
<i>Introductions and Keynote Speaker</i>	
8:00-8:15 a.m.	Introduction to the 2018 ModSim Workshop – <b>Adolfy Hoisie</b>
8:15-8:45 a.m.	View from Washington D.C. – <b>Almadena Chtchelkanova</b>
8:45-9:45 a.m.	Keynote Speaker – <b>Bob Colwell</b> : How Simulation Technology Enabled the Extreme Complexity of Today’s Designs
9:45-10:00 a.m.	<i>Open Discussions</i>
<i>ModSim of Subsystems – Session Lead: Laura Carrington</i>	
10:00-10:30 a.m.	<b>Natalie Enright Jerger</b> : Rapid Design Space Exploration of Interconnection Networks for Many-Core Architectures
10:30-11:00 a.m.	<b>Bruce Jacob</b> : Modeling and Simulation of Memory Systems
11:00-11:30 a.m.	<b>Rob Ross</b> : Advances in the CODES/ROSS Simulation Suite
<i>Lunch Pickup: 11:30 a.m. – 12:00 p.m.</i>	
12:00-1:30 p.m.	<i>Panel: <b>When to Model, When to Simulate, When to Emulate, and When to Prototype</b> (Bob Colwell, David Donofrio, Arun Rodriquez, Michael Taylor) Moderator: Shekhar Borkar</i>
<i>Contributed Presentations: Integrated ModSim of Performance Power &amp; Reliability – Session Lead: Scott Pakin</i>	
1:30-1:45 p.m.	<b>Sagar Karandikar</b> : FireSim: FPGA-Accelerated Cycle-Exact Scale-Out System Simulation in the Public Cloud
1:45-2:00 p.m.	<b>Tetsuya Odajima</b> : Performance and Power Consumption Analysis of ARM Scalable Vector Extension by using gem5 processor simulator
2:00-2:15 p.m.	<b>Jens Domke</b> : To float or not to float... How much FP64 performance do we really need?
2:15-2:30 p.m.	<b>Jeffrey Young</b> : Modeling Performance and Power Tradeoffs for Tunable Parallel Algorithms
2:30-2:45 p.m.	<b>Schuyler Eldridge</b> : Agile System Development using Open Source Hardware Components
2:45-3:00 p.m.	<b>Kishwar Ahmed</b> : Energy Demand Response Modeling for High Performance Computing Systems
3:00-3:15 p.m.	<b>Christian Engelmann</b> : Modeling and Simulation of Extreme-Scale Systems for Resilience by Design
3:15-3:30 p.m.	<i>Open Discussions</i>
3:30-4:00 p.m.	<b>Ron Brightwell</b> : SSW Perspective of Resilience
4:00-4:30 p.m.	<b>Pradip Bose</b> : Resilient Computing Under Energy Constraints
4:30-5:00 p.m.	<b>Nathan DeBardleben</b> : Overview of Capabilities and Uses of the FSEFI Software Fault Injector
5:00-5:15 p.m.	<i>Closing Remarks</i>
<b>End Day One</b>	

**ModSim 2018 – Day Two, August 16, 2018**

7:30-9:00 a.m.	<i>Panel: <b>Future of ModSim:</b> (Shekhar Borkar, Pradip Bose, Adolfy Hoisie, Bruce Jacob, Noel Wheeler, Sudha Yalamancili) – Moderator: <b>Bill Harrod</b></i>
<i><b>ModSim of Open Hardware Invited Presentations – Session Lead: Rob Hoekstra</b></i>	
9:00-9:30 a.m.	<b>David Donofrio:</b> Open Hardware: How open source designs will drive the next generation of HPC Systems
9:30-10:00 a.m.	<b>Michael Taylor:</b> Building the DNA for the Planet's Open Source HW Ecosystem
10:00-10:15 a.m.	<i>Open Discussions</i>
10:15-10:45 a.m.	<b>Subhasish Mitra:</b> QED and Symbolic QED: Dramatic Improvements in Design Productivity
<i><b>Contributed Presentations: ModSim for and Through Data Analysis – Session Lead: Bob Mrosky</b></i>	
10:45-11:00 a.m.	<b>Nathan Tallent:</b> Increasing Performance by Forecasting Job Failures in Distributed Workflows
11:00-11:15 a.m.	<b>Rajkumar Kettimuthu:</b> A Framework for Evaluating Superfacility Design Choices
11:15-11:30 a.m.	<b>Li Tang:</b> Application of Machine Learning to Memory Subsystem Characterization
11:30-11:45 a.m.	<b>Mariam Kiran:</b> Finding Anomalies in Data transfers using Unsupervised Feature Extraction
11:45a.m.-Noon	<b>Tushar Krishna:</b> MAESTRO: An Open-source Infrastructure for Modeling Dataflows within Deep Learning Accelerators
<i><b>Lunch Pickup: 12:00 p.m.-12:30 p.m.</b></i>	
12:30-2:00 p.m.	<i>Panel: <b>Skills and Competencies for ModSim:</b> (Jose Brunheroto, Jeanine Cook, Martin Schulz, Michaela Taufer) – Moderator: <b>Bruce Childers</b></i>
<i><b>ModSim Methodology – Session Lead: Martin Schulz</b></i>	
2:00-2:30 p.m.	<b>Sam Williams:</b> Applying the Roofline Model to Applications Running on Manycore and Accelerated Systems
2:30-2:45 p.m.	<i>Open Discussions</i>
2:45-3:15 p.m.	<b>Lizy John:</b> Approximate Techniques for Performance and Power Modeling/Prediction
<i><b>Contributed Presentations: Performance Modeling – Session Lead: Bob Mrosky</b></i>	
3:15-3:30 p.m.	<b>Nathan DeBardleben:</b> Resilience and Energy Co-Analysis for Software Fault Injection with FSEFI, Early Results
3:30-3:45 p.m.	<b>Kewen Meng:</b> Performance Modeling through Hybrid Static/Dynamic Analysis
3:45-4:00 p.m.	<b>Jeffrey Young:</b> Improving the Co-Design Lifecycle for Performance Portable Application Development
4:00-4:15 p.m.	<b>Dylan Chapp:</b> Modeling Record-and-Replay for Nondeterministic Applications on Exascale Systems
4:15-4:30 p.m.	<b>Robert Mrosky:</b> Creating Heterogeneous Simulations with SST and PyRTL
4:30-4:45 p.m.	<i>Closing Remarks</i>
5:00-6:30 p.m.	<b>Poster &amp; Q&amp;A Session in the Merrill Commons Room</b>
End of Day Two	

**ModSim 2018 – Day Three, August 17, 2018**

***Invited Presentations – Session Lead: Noel Wheeler***

8:00-8:30 a.m.	<b>Rob Ross:</b> ModSim for the Era of Extreme Heterogeneity
8:30-9:00 a.m.	<b>Keren Bergman:</b> Embedded Photonics for Unified Connectivity in Heterogeneous Systems
9:00-9:30 a.m.	<b>Arun Rodrigues:</b> DOD/DOE Joint Hardware Exploration & Modeling Work
9:30-10:00 a.m.	<b>David Nellans:</b> From One To Many: Understanding the Challenges in Multi-GPU Performance Modeling
10:00-10:30 a.m.	<b>David Brooks:</b> A Retrospective and Future Challenges in Extreme Heterogeneity
10:30-10:45 a.m.	<b><i>Open Discussions</i></b>
10:45a.m.-12:15 p.m.	<b>Panel: <u>ModSim Challenges for Extreme Heterogeneity</u>:</b> ( <i>Ron Brightwell, David Brooks, Anastasiia Butko, Christian Engelmann, Andreas Gerstlauer, Lizy John</i> ) - Moderator: <b>Rich Carlson</b>
12:15-12:30 p.m.	<b>Workshop Wrap-up</b>