

2017 Energy Consequences of Information (ECI)

Dr. Andrew Pineda et al | February 22-25, 2017 | Santa Fe, NM

La Fonda on the Plaza Hotel
100 E San Francisco St.
Santa Fe, NM 87501

Agenda - February 22-25, 2016

Time	Wed., Feb. 22	Thur., Feb. 23	Fri., Feb. 24	Sat., Feb. 25
7:00 AM				
7:20 AM		Registration & Breakfast	Registration & Breakfast	Registration & Breakfast
7:40 AM				
8:00 AM		Welcome Remarks Dr. Chiping Li (AFOSR)	History of DARPA UPSIDE	Neuroscience - Beyond Neuron- Centricity in Brain Function for Supporting Energy Efficient Computing
8:20 AM		Government Talk Robinson Pino (DOE)	Dan Hammerstrom (Portland State Univ)	Cindy Leiton (Stony Brook Univ)
8:40 AM		Government Talk(DARPA)	Title Erik DeBenedictis (SNL)	Title Garrett Kenyon (LANL)
9:00 AM		Keynote Lloyd Whitman (OSTP)	A Mini-MIPS Microprocessor and Clocking for Adiabatic Computing Greg Snider (Univ of Notre Dame)	Introduction to AHaH Computing, kT-RAM, and the KnownAPI and Known Memristors Alex Nugent (Knownm)
9:20 AM			Fundamental Limits on Energy Dissipation in Neuromorphic Computing Natesh Ganesh (Univ Mass Amherst)	Title (Memristor Technology) Kris Campbell (Boise State Univ) Alt. Hugh Barnaby (Arizona State Univ)
9:40 AM		20 minute Break	20 minute Break	Neuromorphic Computing in the Computing and Communications Division of AFRL Information

				Directorate Clare Thiem (AFRL)
10:00 AM		Government Talk Jim Lyke (AFRL)	Adiabatic Computing for Energy-Efficient and Secure IoT Devices Himanshu Thapliyal (Univ of Kentucky)	20 minute Break
10:20 AM		Keynote Naryan Srinivasa (Intel)	Learning Structured Sparsity in Deep Neural Networks and Implementation on CPUs, GPUs and FPGAs Hai Li (Duke Univ)	Energy Efficient On-Line Learning Accelerators for Deep and Hierarchical Neural Networks Dhireesha Kudithipudi (Rochester Inst of Tech)
10:40 AM			Estimating the Energy Dividends from Quantum Processing Travis Humble (ORNL)	Energy Efficient Neuromemristive Systems Nicholas Soures (Rochester Inst of Tech)
11:00 AM		Sustainable Computing Progress Stan Williams (HPE)	Panel Discussion	Neuromorphic Coprocesor Energy Consumption in the Beyond Exascale Era Raphael Pooser (ORNL)
11:20 AM				Panel Discussion & Conclusion
11:40 AM		Lunch (provided)/ Poster talks	Lunch (local restaurants)	
12:00 PM				
12:20 PM				
12:40 PM				
1:00 PM				
1:20 PM		Session Keynote: Title Michael DeBole (IBM Research)	Session Keynote: Title Todd Hylton (UCSD)	
2:00 PM		Sustainable Data Centers	Generalized Reversible	

		Steven Hammond (NREL)	Computing, Truly Adiabatic Circuits, and Asynchronous Ballistic Logic Michael Frank (SNL)	
2:20 PM		Title Brent Draney (LBL)	Title John Cheng (Custom Silicon Solutions)	
2:40 PM		In-Place Deep Learning Paul Armijo (Cobham Semiconductor)	Title Richard Murphy (Micron)	
3:00 PM		Secure and Lightweight Computing Environment for HPC Systems Lei Ding (Accenture Labs)	Voltage-Tunable Stochastic Computing With Magnetic Bits Shaloo Rakheja (NYU)	
3:20 PM		20 minute Break	20 minute Break	
3:40 PM		Title David Martinez (SNL)	Title Matt Marinella (SNL)	
4:00 PM		Transitioning Applications to the Pre-Exascale Cori System at NERSC Katy Antypas (NERSC)	Non-Volatile Redox Transistors for Low Power Analog Computing Alec Talin (SNL)	
4:20 PM		A Future Infrastructure Integrating Security, Privacy and Computing for Big Data Genomics Xinghua (Mindy) Shi (UNC Charlotte)	Title (FPGA) Alonzo Vera (COSMIAC/IDEAS Eng. & Tech.)	
4:40 PM		A Server-Network Collaborative Approach to Optimizing Energy in Data Centers Guru Venkataramani (George Washington Univ)	Domain Specific Languages for Configurable Hardware Synthesis Pedro Diniz (USC/ISI)	

5:00 PM		Stochastic Computing: A New Paradigm for Ultra Low Power, Skew Tolerant and Error Tolerant Computing Marc Riedel (Univ of Minnesota)	Harnessing the Power Efficiency of FPGAs for HPC using High-Level Synthesis and Overlay Architectures Hal Finkel (ANL)	
5:20 PM		Panel Discussion	Panel Discussion	
5:40 PM				
6:00 PM	Reception and Registration	Dinner (Local Restaurants)		
6:20 PM				
6:40 PM				
7:00 PM			Workshop Dinner (La Terraza @ La Fonda on the Plaza)	
7:20 PM				
7:40 PM				
8:00 PM		Poster/Networking Session		
8:20 PM				
8:40 PM				
9:00 PM				
9:20 PM				
9:40 PM				