



Rebooting Computing Summit

December 11-13, 2013

Washington, DC USA

REBOOTING COMPUTING SUMMIT

Omni Shoreham Hotel, 2500 Calvert St NW, Washington, DC 20008

Wednesday, December 11, 2013

Empire Ballroom

7:00 – 9:00 Welcome Reception

Thursday, December 12, 2013

Hampton Room

9:00 - 9:15	Welcome and Introduction	Tom Conte and Elie Track
9:15 – 10:00	Evolution of Moore’s Law and future prospects	Bob Colwell, DARPA
10:00 – 10:15	Break and Group Photo	
10:15 – 11 :00	Future technology directions	Peter Highnam, IARPA
11:00 – 11:45	Big Data and International Competition	Rob Leland, OSTP
11:45 – 12:30	The new computing ecosystem	David McQueeney, IBM

Capitol Room

12:30 – 1:30	Lunch	
1:00 – 1:30	Visions of the Future	Brian David Johnson, Intel

Hampton Room

1:30 – 3:00	Appreciative Inquiry Session 1	Elena Gerstmann, IEEE
3:00 – 3:30	Break	
3:30 – 5:30	Appreciative Inquiry Session 2	Elena Gerstmann, IEEE

Palladium Ballroom

6:30 – 9:00 Reception and Dinner

Friday, December 13, 2013

Hampton Room

9:00 – 9:30	Summit Boot-up	Elena Gerstmann, IEEE +
9:30 – 11:00	Appreciative Inquiry Session 3	Elena Gerstmann, IEEE
11:00 – 11:30	Break	
11:30 – 12:30	Distillation and Recommendations	Tom Conte, Elie Track, Elena Gerstmann, All

Capitol Room

12:30 – 1:30 Farewell Lunch

REBOOTING COMPUTING SUMMIT

We are really excited about hosting a uniquely different type of summit focused on “Rebooting Computing.” Instead of the traditional “death-by-PowerPoint” conference, we will be hosting an engaging workshop with thought leaders and doers. Using the proven techniques of Appreciative Inquiry and Science Fiction Prototyping, we will put each minute to good use so we hope you can join us from start to finish on Thursday and Friday, 12 & 13 December. There will be note takers and a professional writer, so we can concentrate on the discussion itself.

“Rebooting Computing” is an initiative of the IEEE to catalyze innovative and holistic thinking and planning for the next generation computing platforms. The goals are to address the needed applications of the coming decades, ensure the highest level of security, and guarantee the highest degree of energy efficiency. The term “Rebooting Computing” was first coined by Dr. Peter Denning in an earlier project focused on the educational aspect of inspiring the new generation of technologists and innovators who will create the next computing paradigm. In this IEEE initiative, the goal is broadened to reach all professionals, thought leaders, and decision makers, providing a forum for all to come together in a pre-competitive, multidisciplinary approach to define the new directions to follow. The approach of “Rebooting Computing” will be a complete rethinking of the computer platform, starting with a “blank page,” and considering all aspects of computing, “from soup to nuts.”

How is this different? The invitation-only Summit duration of 1 ½ days on December 11-13, 2013 in Washington, DC will use techniques of “Appreciative Inquiry” to allow participants to envision the future of computing. In brief, “Appreciative Inquiry” is a large-scale planning technique built on gathering strengths to answer business questions. Participants will be encouraged to use science fiction to push the limits of today’s thinking and develop a roadmap to a 2023 future where we have been successful at “Rebooting Computing.” This technique has been used successfully within IEEE and outside IEEE. Its outcome will be a set of clear recommendations for the way forward, leveraging the resources of IEEE, and setting common threads that unite future efforts towards common goals.

Agenda & timing: As an invitee to this Summit, you are part of a select group that will engage in an intense exercise of seeding a uniquely needed initiative and laying a robust foundation for the activities to follow. The Summit’s success depends on full participation of all the invitees for the entire duration. Wednesday evening will afford the opportunity for initial meet-and-greet in a relaxed social setting. Following introductory presentations on Thursday morning, broadly defining goals and a few perspectives on the current state-of-the-art and trends, the crux of the meeting will start on Thursday afternoon with the first session of Appreciative Inquiry, continue on Friday morning with the second session, and conclude with lunch. -The key questions can be summarized as follows:

- Applications – What are they, what should they be considered, what will they be in 2023?
- Security – Individual privacy, national security, financial security, respect of laws: how can they be guaranteed? How important is a guarantee?
- Energy Efficiency – At the device level, chip level, board level, system level, what needs to be done to ensure the most efficient use of the energy resources?
- Measures of success – Each step, each activity, each system, must be assessed and measured, compared to competing steps/activities/systems. What are these measures of success, and how can they be defined in a fair, simple, yet effective manner?

Your enjoyable pre-workshop reading: Brian David Johnson, Intel’s resident futurist and a leader in the method of science fiction prototyping, will present his thoughts at the workshop. A selection of science fiction stories have been handpicked to best relate to our workshop were emailed last week. Some of the stories may seem to tackle a much broader perspective than computing. Nevertheless, the overall context of the future as it can be dreamed is the target, and these readings may help inspire a vision.

The Summit will begin to define the solutions, the paths to solutions. We need and want you at the Summit. We need you actively participating at every session. We look forward to seeing you there.

IEEE Rebooting Computing Working Group

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Thursday Dec. 12: 9:00 a.m. – 5:00 p.m. Workshop sessions, followed by dinner event.

Friday Dec. 13: 9:00 a.m. – 1:00 p.m. Workshop session, followed by farewell lunch.

The summit is organized under the auspices of the IEEE Future Directions Committee

Organizing Committee – Rebooting Computing Working Group:

Co-Chairs: Elie Track (President, Council on Superconductivity) & Tom Conte (President Elect, Computer Society)

Members:

David Atienza (Council on Electronic Design Automation)	Jonathan Candelaria (Electron Devices Society)
Erik DeBenedictis (Computer Society)	Glen Gulak (Solid State Circuits Society)
Scott Holmes (Electron Devices Society)	Yung-Hsiang Lu (Computer Society)
David Mountain (Electron Devices Society)	Oleg Mukhanov (Council on Superconductivity)
Vojin Oklobdzijja (Circuits And Systems Society)	Angelos Stavrou (Reliability Society)
Ian Young (Solid State Circuits Society)	

IEEE Staff:

Elena Gerstmann (Enterprise Planning and Development)	Bichlien Hoang (Future Directions)
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Confirmed Participant Affiliations:

DARPA	IARPA
DOE	NSF
OSTP	NSA
NSA-LPS	NCO/NITRD
SRC	Sandia
HP	IBM
Intel	Microsoft
NVIDIA	Hypres
Georgia Tech.	U. of Chicago
U. of Pennsylvania (Penn)	NPS
U.C. San Diego (UCSD)	Booz Allen Hamilton
U. of Texas at Austin	George Mason U. (GMU)
Stony Brook U. (SBU)	U. of Southern California (USC)
U. of Illinois Urbana-Champaign	Purdue U.