Visioning Workshop on Nanotechnology-inspired Information Processing Systems of the Future

August 31-September 1, 2016
Fairmont Hotel, Washington, DC.

Sponsored by the Computing Community Consortium (CCC)
Create a new type of computer that can proactively interpret and learn from data, solve unfamiliar problems using what it has learned, and operate with the energy efficiency of the human brain.

https://www.whitehouse.gov/blog/2015/10/15/nanotechnology-inspired-grand-challenge-future-computing
A Bridge from Systems-to-Devices

- Architectures
- Systems
- Circuits
- Applications
- Devices
Workshop Organization
vertically-integrated platform-centric working groups

the cloud
Klara Nahrstedt (UIUC)
Vijay Narayanan (Penn State)

autonomous
Daniel Lee (UPenn)
Tom Kaizor (Raytheon)

human-centric
Naveen Verma (Princeton)
Jie Liu (Microsoft)
Activities

• pre-workshop prep: working group meetings

• at the workshop:
  – identify new ideas and concepts with 10-15 year incubation
  – identify challenges and opportunities
  – establish new collaborations
  – summarize findings

• post-workshop:
  – group leads and OC members to summarize workshop findings in a final report by late September-mid October
Agenda at-a-glance

• Wednesday AM: the **verticals**
  – plenary - Lloyd Whitman (OSTP)
  – a systems-to-devices journey – Naresh Shanbhag (UIUC)
  – lightening Introductions – all
  – working group F2F
  – working group pre-workshop summaries and panel

• Wednesday PM: **cross-cutting** panels
  – Nanotechnology (Alan Seabaugh), Application Drivers (Jan Rabaey), Computational Models and Architectures (Sharad Malik)

• Thursday AM: **summarize**
  – breakouts to finalize working group findings

• Lunch and adjourn by 2pm
Organizing Committee

• Jan Rabaey, UC Berkeley
• Hava Siegelmann, U. Mass., Amherst, DARPA
• Naresh Shanbhag, UIUC
• Philip Wong, Stanford University
• Randy Bryant, CMU
• Ann Drobnis, Computing Community Consortium
• Mark Hill, University of Wisconsin

• Khari Douglas and Helen Wright, CCC
looking forward to your active participation
and
thanks to everyone for attending!!