

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)

White House Office of Science and Technology Policy (OSTP)

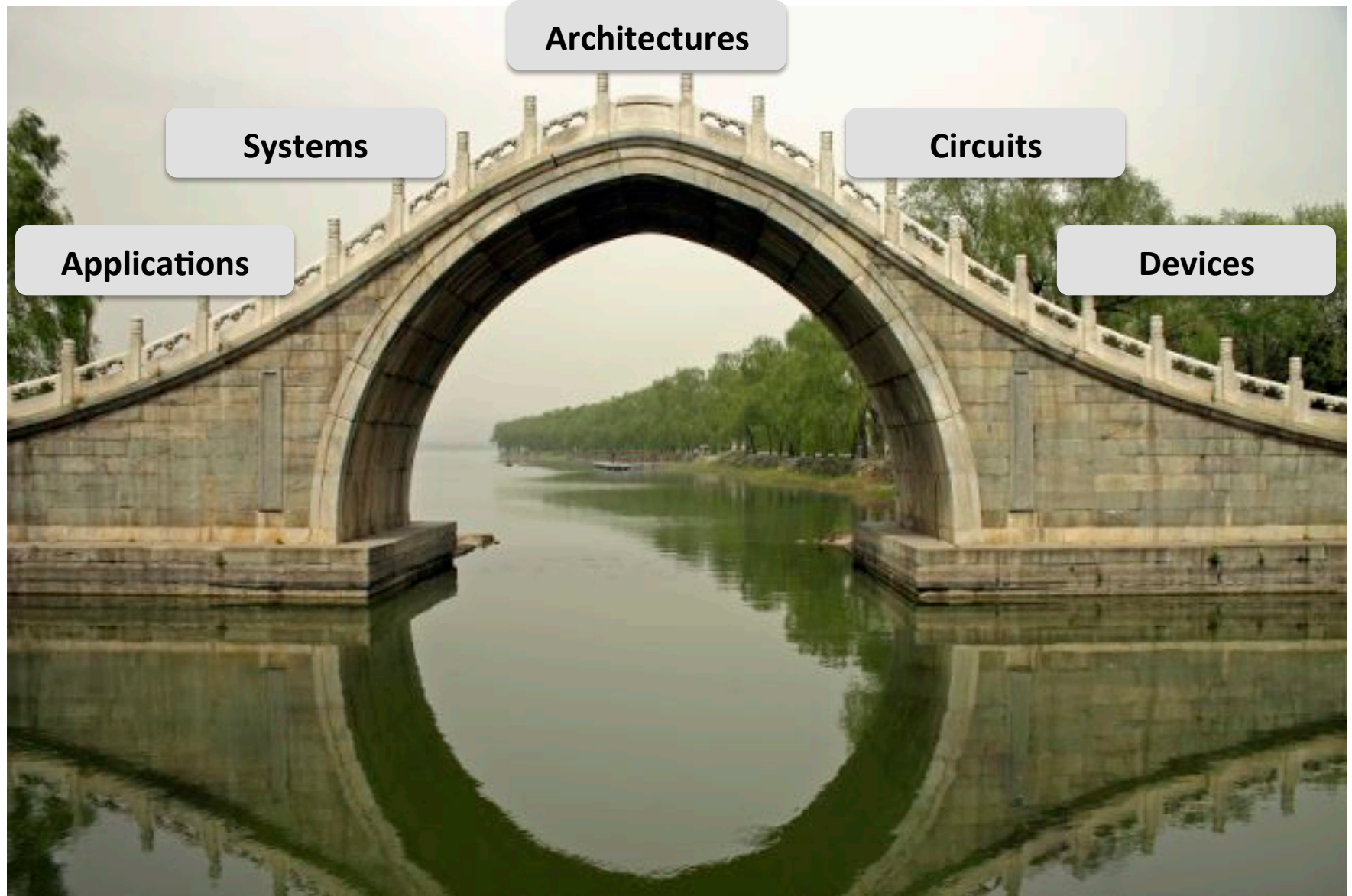
A Nanotechnology-Inspired Grand Challenge for Future Computing

OCTOBER 20, 2015 AT 6:00 AM ET BY LLOYD WHITMAN, RANDY BRYANT, AND TOM KALIL

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



Workshop Organization

vertically-integrated platform-centric working groups

the cloud

Klara Nahrstedt (UIUC)
Vijay Narayanan (Penn State)



apps & systems

computational
models &
architectures

circuits/devices

autonomous

Daniel Lee (UPenn)
Tom Kaizor (Raytheon)



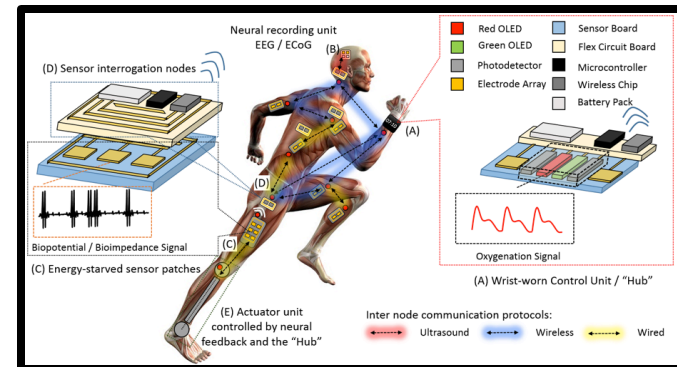
apps & systems

computational
models &
architectures

circuits/devices

human-centric

Naveen Verma (Princeton)
Jie Liu (Microsoft)



apps & systems

computational
models &
architectures

circuits/devices

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 Drobni, 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!!