On the Edge:
The Future of Computing Research
Two talks

- **Shwetak Patel**, University of Washington
  *Your Noise is My Signal*

- **Daphne Koller**, Stanford University
  *Data-Driven Medicine*
The Computing Community Consortium

A Catalyst and Enabler for the Computing Research Community

- Catalyzing the definition of - and providing exposure for - new research directions, including those that confront national and global challenges
- Communicating with policymakers
- Inspiring and growing the community
- Growing new leaders
- “Just being there” - community leaders who can create and/or seize opportunities
Structure

- Operates as a “standing committee” of the Computing Research Association (similar to CRA-W)
- Funded by NSF under a Cooperative Agreement
  - Additional funding from NSF and other organizations for specific activities
- Led by a broad-based, continually refreshed Council
- Chaired by Ed Lazowska and Susan Graham
- Staffed by Erwin Gianchandani (Director), Kenneth Hines (Program Associate), and many members of the CRA staff
Outcome: National Robotics Initiative

- 4 meetings during summer 2008
- Roadmap published May 2009
- Extensive discussions between visioning leaders & agencies
- OSTP issues directive to all agencies in summer 2010 to include robotics in FY 12 budgets
- National Robotics Initiative announced in summer 2011

Henrik Chistensen
Georgia Tech
Outcome: Multi-Agency “Big Data” Initiative

A series of white papers prepared in fall 2010 relating data mining, machine learning, predictive modeling, etc., to national challenges.

Discussions with OSTP, Federal agencies

Multi-agency Big Data initiative rollout, March 29
Outcome: PCAST NITRD Report

- 1/3 of the PCAST NITRD Working Group members were CCC Council members (Bryant, Graham, Jones, Lazowska, Sproull)
- The report drew extensively on CCC White Papers
- A thoughtful roadmap for the field
Activity: NITRD Symposium

The Impact of NITRD

TRANSFORMING THE WORLD, DRIVING THE NATION’S COMPETITIVENESS, LEADING INTO THE FUTURE.
Activity: Leadership in Science Policy Institute

Agenda

8:30 am - 9:00 am
Welcome [180 KB PDF] [Referenced videos - Lazowska | Bartlett | Brooks] (Fred Schneider, Cornell, Workshop Chair)

Lay out the goals of the workshop: to provide a crash-course in relevant science policy issues and the mechanics of policymaking, including a sense of how federal science policy is crafted, how it's implemented, and where the opportunities for members of the community to participate in the policy-making process.

9:00 am - 10:30 am
Interacting with Agencies/Creating New Initiatives
(Jeannette Wing, CNU [434 KB PDF]; Milt Corn, NIH [242 KB PDF]; Henry Kelly, DoE)

The agencies are where the science-policy rubber hits the road, where decisions made in both the administrative and Legislative branches get implemented, and the most common avenue for individuals in the science community to interact with the federal government. Influencing policy decisions at the agency level can require a somewhat different skill set and somewhat different approach than influencing your faculty peers, the Congress, or the White House. Agencies also provide opportunities for individuals in the community to directly shape federal policy in their field, by serving on an agency advisory committee, or by taking a role as a program manager, division director, or office director. This session will cover the agency budget process and will discuss opportunities for scientists to advise and engage federal science agencies like NSF, DOE, and NIH. The speakers will discuss the mechanics of how agency new initiatives get started, focusing on the culture and traditions that constitute the lens through which agencies view themselves and are viewed by others. In practical terms, how is success measured? To what extent is outside advice sought and in support of what kinds of activities? What kinds of advice and modes of engagement are unlikely to be effective?

Attendees

Milt Corn, NIH

Henry Kelly, DoE

Logistics

Date: November 7, 2011
Location: Hyatt Regency Capitol Hill, Washington, DC

Participation in the workshop will include breakfast and lunch at the workshop, as well as a reception with workshop speakers and other interested guests at the conclusion of the meeting. Hotel accommodations for two nights (before and after the workshop) as well as reimbursement for airfare and other travel expenses will be provided by the workshop (through funding from CCC).

Agenda

List of Sessions and Speakers and Slides

http://cra.org/ccc
Activity: CCC Blog

CCC Blog Monthly Wordpress hits
Currently ~1,550 direct subscribers (receive email updates)
Lots more! Get involved! http://cra.org/ccc/
Drivers of fundamental research: demand pull vs. technology push

Bob Lucky, 1998: “the last electrical engineer”
A National Imperative

“Recent technological and societal trends place the further advancement and application of networking and information technology squarely at the center of our Nation’s ability to achieve essentially all of our priorities and to address essentially all of our challenges.”


Farnam Jahanian, NSF

http://cra.org/ccc
CISE and National Priorities

- Broadband & Universal Connectivity
- Emergency Response & Disaster Resiliency
- Environment & Sustainability
- Health & Wellbeing
- Manufacturing, Robotics, & Smart Systems
- Secure Cyberspace
- Transportation & Energy
- Education and Workforce Development

Farnam Jahanian, NSF
Research Frontiers

- Data Explosion
- Smart Systems: Sensing, Analysis and Decision
- Expanding the Limits of Computation
- Secure Cyberspace
- Universal Connectivity
- Augmenting Human Capabilities

Farnam Jahanian, NSF
http://cra.org/ccc

Hank Levy, University of Washington
Two talks

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