

# CRA's Computing Community Consortium

Ed Lazowska

Bill & Melinda Gates Chair in  
Computer Science & Engineering  
University of Washington

Chair  
Computing Community Consortium

<http://cra.org/ccc>

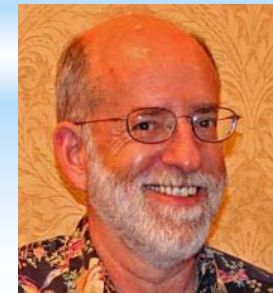


<http://cra.org/ccc>



# The Computing Community Consortium is ...

- A standing committee of CRA
- Funded by NSF under a Cooperative Agreement
- Focused on catalyzing and empowering the computing research community to pursue more audacious research
- Led by a broad-based Council
- Chaired by Ed Lazowska (Ch.) and Susan Graham (V.Ch.)
- Staffed by CRA (Erwin Gianchandani and Andy Bernat)



# The CCC Council

- Leadership

- Ed Lazowska, Chair
- Susan Graham, Vice Chair
- Erwin Gianchandani, Director
- Andy Bernat, CRA

- Terms ending 2014

- Deborah Crawford
- Gregory Hager
- John Mitchell
- Bob Sproull
- Josep Torrellas

- Terms ending 2013

- Randy Bryant
- Lance Fortnow
- Hank Korth
- Eric Horvitz
- Beth Mynatt
- Fred Schneider
- Margo Seltzer

- Terms ending 2012

- Stephanie Forrest
- Chris Johnson
- Anita Jones
- Frans Kaashoek
- Ran Libeskind-Hadas
- Robin Murphy

- Rotated off

- Bill Feiereisen, 2011
- Dave Kaeli, 2011
- John King, 2011
- Dick Karp, 2010
- Andrew McCallum, 2010
- Dave Waltz, 2010
- Greg Andrews, 2009
- Peter Lee, 2009
- Karen Sutherland, 2009



# CCC's activities include ...

- Outreach activities for computing researchers
  - Countless talks
  - Countless articles

**The Computing Community Consortium:  
Stimulating Bigger Thinking**

**Ed Lazowska**  
Bill & Melinda Gates Chair in  
Computer Science & Engineering  
University of Washington  
Chair, Computing Community Consortium  
Tapia Conference Career Workshop  
April 2009  
<http://www.cra.org/ccc/>



**V** viewpoints  
DOI:10.1145/1378704.1378714 Ed Lazowska

**Viewpoint**  
**Envisioning the Future  
of Computing Research**  
*Advances in computing have changed our lives—the Computing Community Consortium aims to help the research community continue that lineage.*

**H**OW CAN we work together to establish, articulate, and pursue compelling visions for our field—visions that will shape the intellectual future of the field, that will catalyze research investment and public support, and that will attract the best and brightest minds of a new generation? The National Science Foundation

many Internet hosts. It was only 10 years ago that Deep Blue—a supercomputer by any definition—defeated world chess champion Garry Kasparov. Today, thanks more to progress in software than to progress in hardware, you can download for your PC a chess engine with a rating 10% higher than any human player. Most of the futuristic com-

try: timesharing, computer graphics, networking (LANs and the Internet), personal workstation computing, windows and the graphical user interface, RISC architectures, modern integrated circuit design, RAID storage, and parallel computing. In each case, the role of federally sponsored research was clear. The road conducting this road is

- CCC Blog
  - Discussion of research-related topics
- Computing Research Highlight of the Week
  - Exposure for research-related press releases





- CCC sessions at FCRC, Snowbird

- FCRC 2007

- Christos Papadimitriou, UC Berkeley: *The Algorithmic Lens: How the Computational Perspective is Transforming the Sciences*
    - Bob Colwell, Independent Consultant: *Computer Architecture Futures 2007*
    - Randal Bryant, Carnegie Mellon University: *Data-Intensive Scalable Computing: Taking Google-Style Computing Beyond Web Search*
    - Scott Shenker, UC Berkeley: *We Dream of GENI: Exploring Radical Network Designs*
    - Ed Lazowska, University of Washington and Chair, Computing Community Consortium: *Computer Science: Past, Present and Future*



## ■ Snowbird 2010

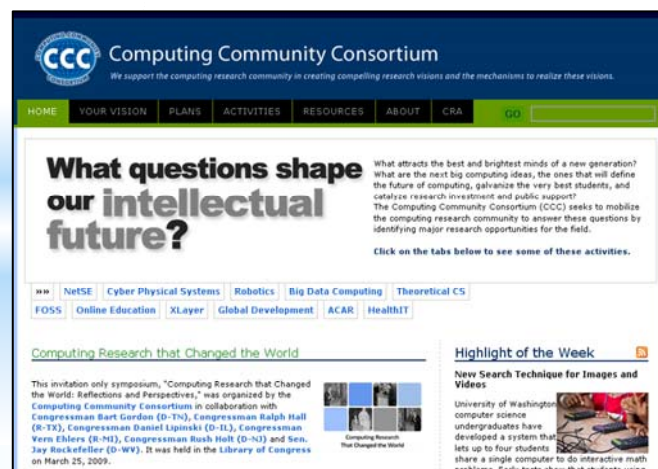
- Peter Lee, DARPA; Andrew McPherson, Penn->Drexel; Mariah Meyer, Utah->Harvard; Antonina Mitrofanova, NYU->Columbia: *The Computing Innovation Fellows Project*
- Randal Bryant, CMU; David Culler, UC Berkeley; Illah Nourbakhsh, CMU; Shwetak Patel, University of Washington: *Achieving Sustainable Energy: New Approaches Based on the Tools of Computer Science*
- Tapan Parikh, UC Berkeley; Lakshmi Subramanian, NYU; Beki Grinter, Georgia Tech: *Computer Science and Global Development: A New High-Impact Research Area*
- Ed Lazowska, University of Washington and Chair, Computing Community Consortium: *The Computing Community Consortium and You*



# CCC's activities include ...

- Engagement activities for computing researchers
  - Community-initiated activities to define new computing research directions and communicate these to the White House and funding agencies

(More than a dozen, including the future of robotics, educational technology, IT for development, the role of large-scale data analysis in all fields, interactive technologies, ...)

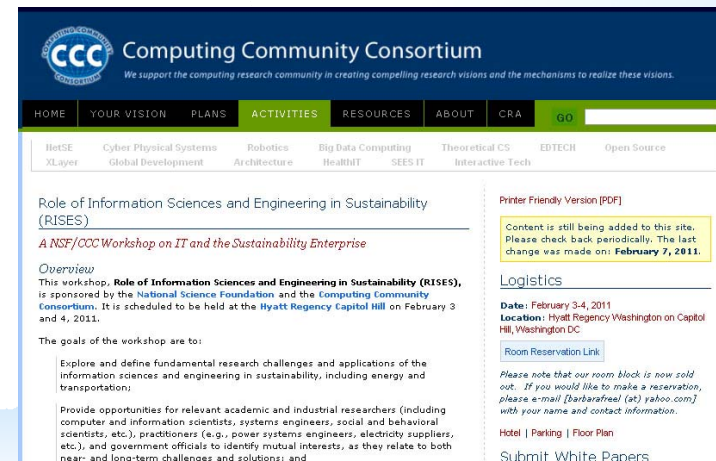
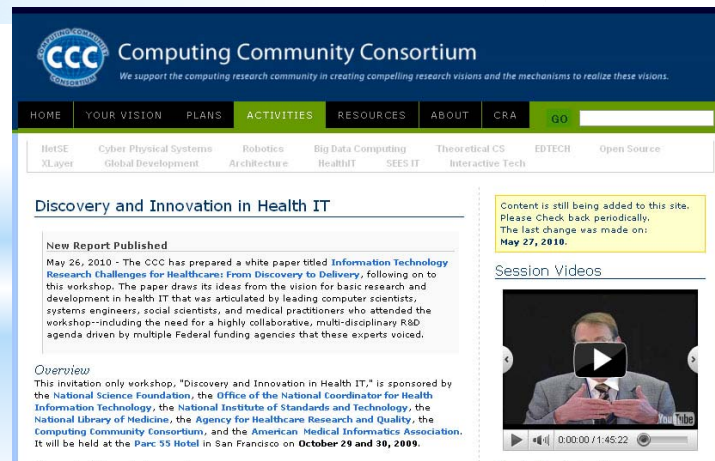


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- Major workshops in areas where research advances in computing are essential to achieving national priorities
  - IT and Health Care
  - IT and Energy/Sustainability



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- “Out-of-the-Box Ideas” sessions at major conferences
  - PLDI, OSDI, CIDR, more to come
    - Existing “out-of-the-box” conferences (e.g., HotX) have gone mainstream
    - Existing “wild ideas” sessions tend to be turf-marking rather than truly revolutionary ideas

The image displays three screenshots of the Computing Community Consortium (CCC) website and blog. Each screenshot features the CCC logo and the text "The Computing Community Consortium A Service for the Computing Research Community".

- Left Screenshot:** Shows a blog post titled "PLDI's 'Fun Ideas & Thoughts' Visions" dated July 26th, 2010, by Erwin Gianchandani. The text describes the CCC's interest in stimulating the development of new research visions and challenges in computing research, mentioning the success of PLDI's "Fun Ideas and Thoughts" session.
- Middle Screenshot:** Shows a blog post titled "Research Visions at OSDI '10" dated October 7th, 2010, by Erwin Gianchandani. The text mentions the CCC's collaboration with conferences in computer science and sponsoring sessions with travel awards, specifically the Research Vision session at the 9th Symposium on Operating Systems Implementation (OSDI).
- Right Screenshot:** Shows a blog post titled "'Outrageous Ideas' at CIDR: Seeking to Stimulate Innovative Research Directions" dated January 18th, 2011, by Erwin Gianchandani. The text discusses the constraints of a rigorous review process and the CCC's mission to identify major new research opportunities, mentioning the 5th Biennial Conference on Innovative Data Systems Research.

# CCC's activities include ...

- Outreach activities for policymakers
  - Library of Congress Symposium: “Computing Research That Changed The World”
    - 13 presentations; a great set of videos and overview papers for students
  - Landmark Contributions by Students in Computer Science
    - Prepared as part of the DARPA leadership transition



## Landmark Contributions by Students in Computer Science

Version 11: September 15, 2009

There are many reasons for research funding agencies (DARPA, NSF, etc.) to invest in the education of students. Producing the next generation of innovators is the most obvious one. In addition, though, there are an impressive number of instances in our field in which undergraduate and graduate students have made truly game-changing contributions in the course of their studies.

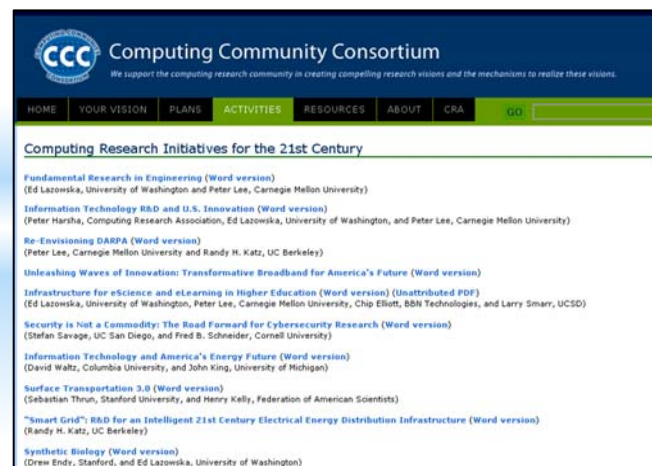
The inspiring list below was compiled by the following individuals and their colleagues: Bill Bonvillian (MIT), Susan Graham (Berkeley), Anita Jones (University of Virginia), Ed Lazowska (University of Washington), Pat Lincoln (SRI), Fred Schneider (Cornell), and Victor Zue (MIT).

We solicit your suggestions for additional student contributions of comparable impact – post them on the Computing Community Consortium blog, <http://www.cccblog.org/2009/08/28/landmark-contributions-by-students-in-computer-science/>, or send them to Ed Lazowska, [lazowska@cs.washington.edu](mailto:lazowska@cs.washington.edu).



- “White papers” on the many roles of computing research, prepared for the Transition Team, the White House, and various agencies

(Roughly 20, including emergency informatics; broadband; cybersecurity; transportation; energy; synthetic biology; networking; robotics; quality-of-life technology; a series on data analytics in a broad range of fields; quantum computing; cyber-physical systems; ...)

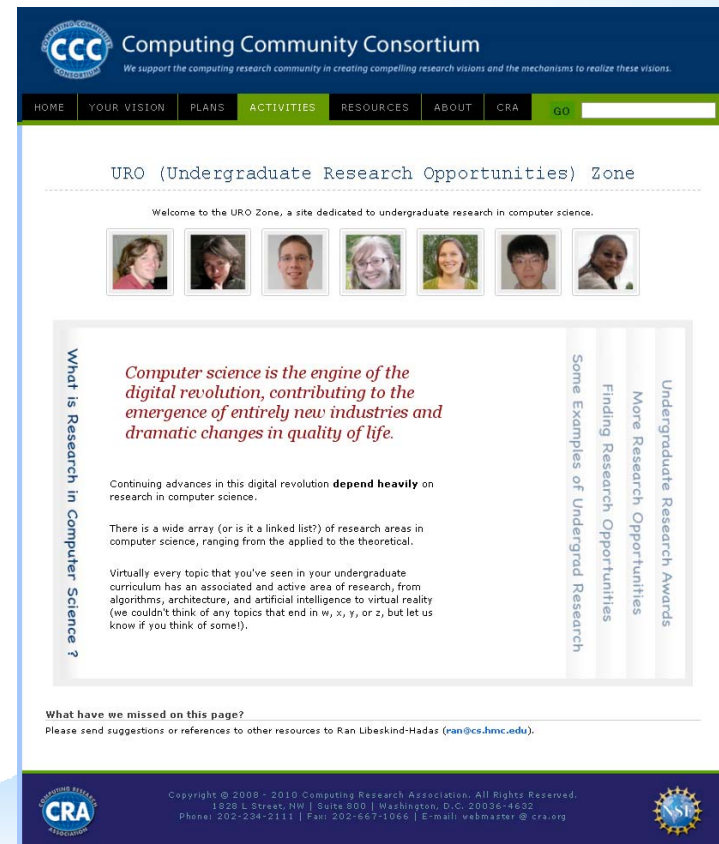


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# CCC's activities include ...

- Outreach activities for undergraduates
  - Undergraduate Research Opportunities -  
<http://cra.org/ccc/uro-zone>





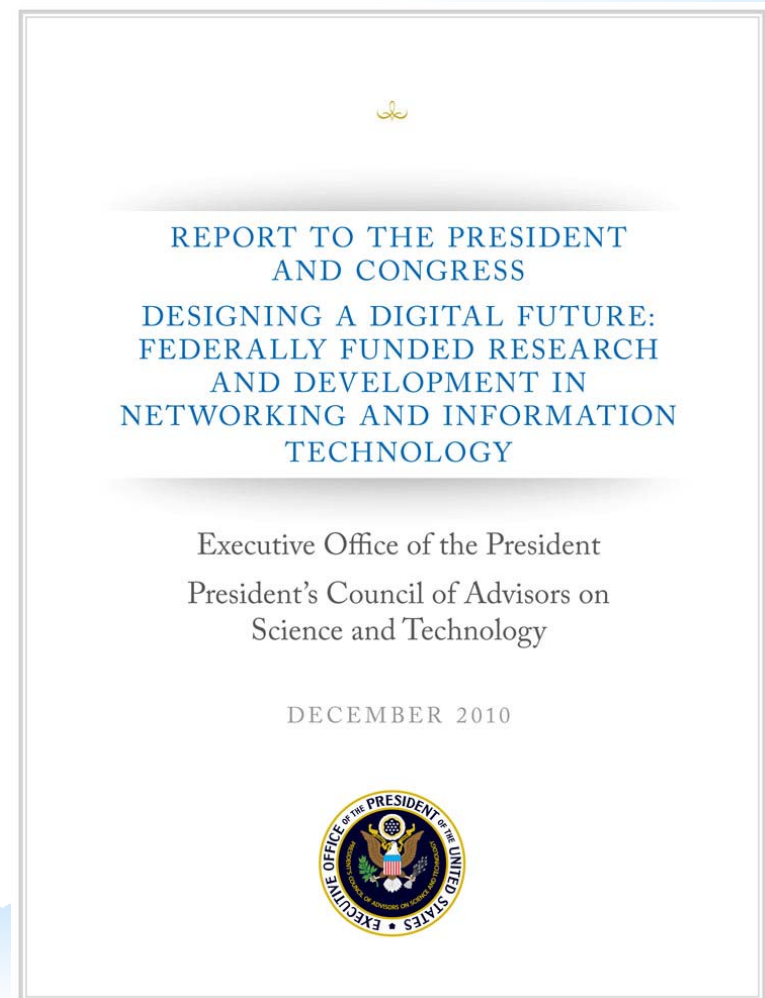
# CCC's activities include ...

- The Computing Innovation Fellows project
  - A stimulus-motivated project
  - Has placed more than 100 new graduates with postdoctoral mentors in the past 2 years
  - “Max 2 rule” ensures broad institutional participation



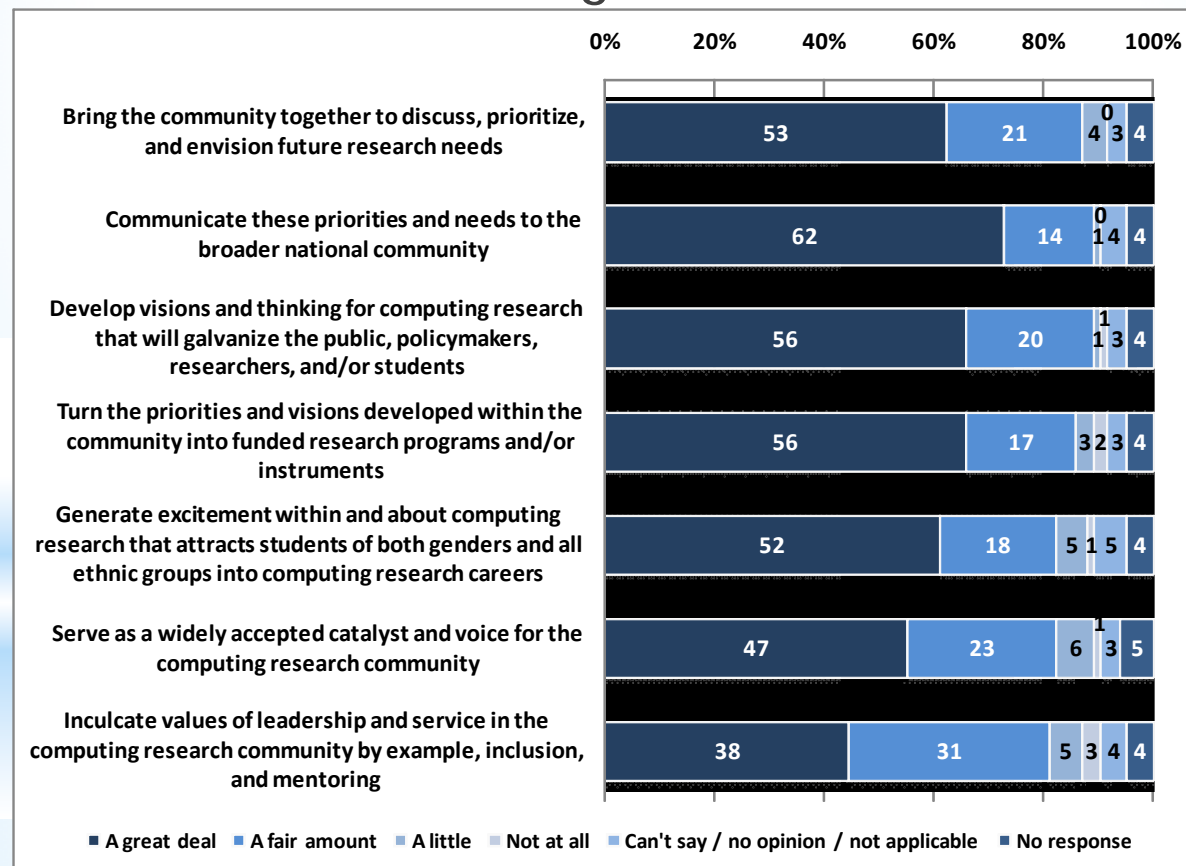
# CCC's activities include ...

- Just being there
  - 1/3 of the PCAST NITRD Working Group members, plus one of the two co-chairs, were CCC Council members



# SRI assessment - ~800 responses

- “How necessary is it to have within the U.S. computing research community an organization designated to perform one or more of the following activities?”



# Participate!

- The CCC is all of us!
- The CCC is part of CRA!



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