

VISIONING ACTIVITIES WITH THE CCC

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OUR MISSION

The **mission** of Computing Research Association's Computing Community Consortium (CCC) is to:

catalyze the computing research community and
enable the pursuit of innovative, high-impact research.

CCC conducts activities that

strengthen the research community,
articulate compelling **research visions**, and
align those visions with pressing **national and global challenges**.

CCC **communicates** the importance of those visions to **policymakers**, government and **industry stakeholders**, the **public**, and the **research community** itself.



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AN OVERVIEW OF THE COMPUTING COMMUNITY CONSORTIUM

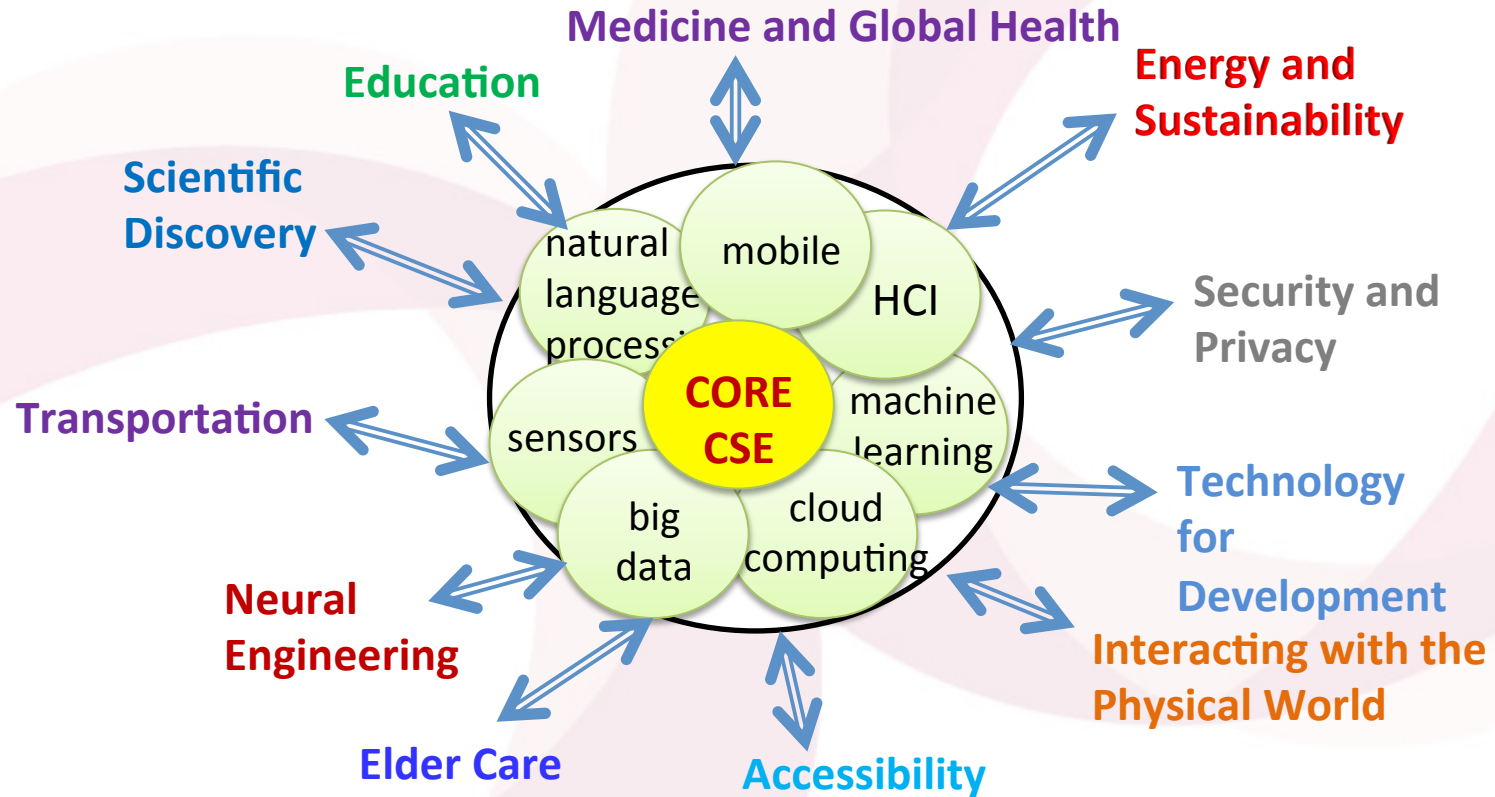
- Established in 2006 as a standing committee of the Computing Research Association
- Funded by NSF under a Cooperative Agreement
 - Second Award began in 2012, recently completed Reverse Site Visit
- Facilitates the development of a bold, multi-themed vision for computing research – and communicates this vision to stakeholders
- Led by a broad-based Council
- Staffed by CRA



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THE RAPIDLY EXPANDING WORLD OF COMPUTING



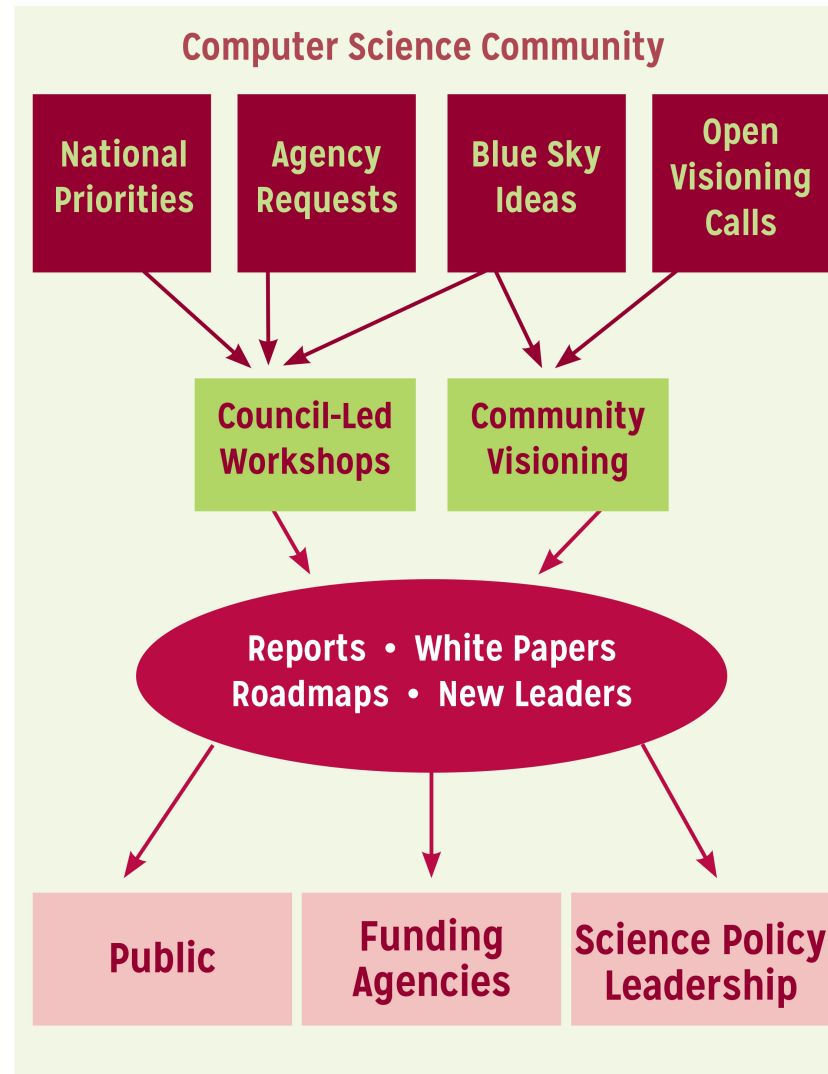
Graphic courtesy of Ed Lazowska, University of Washington



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CCC AND ITS STAKEHOLDERS



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MAJOR STAKEHOLDERS

- CS research community
 - CRA, CSTB (Computer Science and Telecommunications Board, part of National Research Council), professional societies, academic units, research labs
- Industry
 - Computer industry, major users of IT
- Public
- Government
 - See summary next



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GOVERNMENT STAKEHOLDERS

White House Office of Science and Technology Policy
(OSTP)

President's Council of Advisors on Science and Technology
(PCAST)

Networking and Information Technology R&D (NITRD)

Agencies:

- National Science Foundation
- National Institutes of Health
- Department of Defense / DARPA
- Department of Energy



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ACTIVITIES

- Visioning
 - Workshops
 - Blue Sky Ideas Conference Tracks
- Outreach
 - Outputs of Visioning Activities
 - Short Reports / White Papers
 - Task Forces
- Communicating
 - CCC Blog (<http://cccblog.org>)
 - Research “Highlight of the Week”
 - Computing Research in Action Video Series
 - “The Impact of NITRD” Symposium
- Nurturing Next generation of leaders
 - Computing Innovation Fellows (CIFellows) Project
 - Leadership in Science Policy Institute



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VISIONING

CREATING VISIONS FOR COMPUTING RESEARCH

“The Computing Community Consortium (CCC) solicits proposals that will galvanize the community to define visions and agendas for exciting frontiers of computing research.”

- Create a new community of researchers.
- Justify a new funding initiative.
- Help an extant community define a new trajectory.



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VISIONING PROCESSES

- Periodic RFP for Community Initiated Activities
- Historically 3-7 workshops per year
- Top-down (agency initiated)
- Bottom-up (open call)
- Sideways (council initiated, joint with other agencies,....)



Robotics



Spatial
Computing



Online
Education



Privacy R&D



Uncertainty in
Computation



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PAST VISIONING ACTIVITIES

2008

- Cyber-Physical Systems Summit
- From Internet to Robotics: The Next Transformative Technology
- Network Science and Engineering (NetSE)
- Theoretical Computer Science

2009

- Discovery and Innovation in Health Information Technology
- Cross-layer Reliability (RelXLayer)
- Global Development
- Learning Technologies
- Free/Open Source Software (FOSS)

2010

- Advancing Computer Architecture Research (ACAR)

2011

- Role of Information Sciences and Engineering in Sustainability (RISES)

2012

- Computing for Disaster Management
- Next Generational Financial Cyberinfrastructure Workshop
- From GPS and Virtual Globes to Spatial Computing – 2020
- Computing and Healthcare: New Opportunities and Directions



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PAST VISIONING ACTIVITIES

2013

- Convergence of Software Assurance Methodologies and Trustworthy Semiconductor Design and Manufacture (SA+TS)
- Multidisciplinary Research for Online Education
- Privacy R&D Workshop (with ITIF)
- Extreme Scale Design Automation 2 (with ACM)
- Visions of Theory of Computing (with Simons Institute)
- Robotics, Automation, and Computer Science (with NSF, OSTP)

2014

- Extreme Scale Design Automation 3 (with ACM)
- Computing Visions 2025: Interacting with the Computers All Around Us (with CISE)
- Computing Visions 2025: The New Making Renaissance: Programmable Matter and Things (with CISE)
- Human Computation Roadmap Summit Workshop
- Aging in Place
- Uncertainty in Computation (October)
- BRAIN (December)



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SUCCESSFUL VISIONING ACTIVITIES

- Engage the community and relevant stakeholders
- Facilitate broad thinking with compelling examples
- Create new avenues for (interdisciplinary) collaboration
- Prepare and energize the community for future opportunities
- Rapidly capture and synthesize ideas from the community.
- Present ideas and engage possible funders and stakeholders
- Articulate needs and barriers to research impact



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VISIONING PROPOSAL PITFALLS: WHO

- PI's or proposed attendees do not include key members from
 - relevant research communities
 - public sector
 - private sector
 - all manner of diversity
- PI's are unlikely to succeed in orchestrating the discussion, delivering outputs, or other follow-thru.
- Flawed process for identifying / soliciting community participation in workshops
- Insufficient involvement from the “customer”
 - possible funding agencies
 - other federal agencies that will benefit from the output



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VISIONING PROPOSAL PITFALLS: WHAT

- Ignorance of relevant prior efforts
- No discussion of what constitutes success and how to measure it.
- Suitable written outputs are not discussed
- No plan to evangelize new proposed activity, such as
 - Meetings with relevant Federal officials
 - Discussions with the broad research community



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PROPOSAL DETAILS

- A well-formulated proposal should do the following:
 - *describe* the visioning topic area and its current state of development within the field,
 - *explain* the proposed activities in detail (if more than one activity, be sure to demonstrate the differences between the activities, the rationale for more than one activity, and the mechanisms to coordinate across activities),
 - *connect* the activity and the vision: how does the former support/foster the latter?
 - *justify* why this vision and this activity are appropriate now,
 - *specify* the intended outcomes of the workshop, and
 - *describe* how those outcomes can be used to advance the visioning topic area.
- A complete proposal must also
 - *identify* the organizing committee,
 - *include* biographical sketches of the organizers,
 - *propose* a representative set of potential workshop invitees (be sure to include representation from policy and funding organizations),
 - *provide* a budget with justification, and
 - *articulate* how the success of the workshop and its outcomes can be assessed.



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PROPOSAL DETAILS

- At most, 6 pages
- Budget: \$10K - \$200K
 - Funds expenses in connection with meetings.
 - Typically 1 – 3 meetings
- Brief Bio Sketches of PI's



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PROPOSAL REVIEW PROCESS

- Visioning Committee (VC) or delegate iterates with PI's.
- Proposal sent to entire CCC Council for Review based on:
 - potential to be a compelling vision
 - ability to engage large segment of research community, policy, and funding agencies.
- PI's receive feedback from full Council (typically 4-8 weeks)



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CCC SUPPORT FOR A VISIONING EXERCISE

- CCC Liaison and CCC Director:
 - Available to PI's when planning workshops
 - Provides guidance
 - Attends workshop (as an observer)
 - Provides feedback on outputs as they are being produced
 - Provides guidance for agency meetings
- CCC Program Associate, Helen Vasaly
 - Logistical Support
 - Website Support



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THE CCC COUNCIL – EXECUTIVE COMMITTEE



- Greg Hager, Johns Hopkins Univ. (Chair)
- Beth Mynatt, Georgia Tech (Vice Chair)
- Susan Graham, UC Berkeley (Past Chair)
- Bob Sproull, formerly Sun Labs Oracle
- Liz Bradley, University of Colorado, Boulder
- Mark Hill, University of Wisconsin, Madison
- Ann Drobnis, Director
- Andy Bernat, CRA Executive Director



* Executive Committee

** 1 year leave



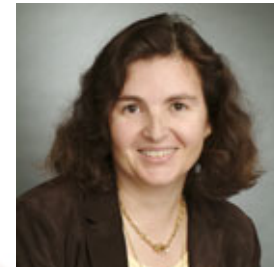
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THE CCC COUNCIL

- Terms ending June 2017
 - Lorenzo Alvisi, UT Austin
 - Vasant Honavar, Penn State
 - Jennifer Rexford, Princeton
 - Debra Richardson, UC Irvine
 - Klara Nahrstedt, UIUC
 - Ben Zorn, Microsoft Research
- Terms ending June 2016
 - Randy Bryant, CMU**
 - Limor Fix, formerly Intel
 - Tal Rabin, IBM
 - Daniela Rus, MIT
 - Ross Whitaker, Univ. Utah
- Terms ending June 2015
 - Sue Davidson, Univ. Pennsylvania
 - Joe Evans, Univ. Kansas
 - Ran Libeskind-Hadas, Harvey Mudd College
 - Shashi Shekhar, Univ. Minnesota

** 1 year leave



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THE CCC COUNCIL- PAST MEMBERS

- Greg Andrews, Univ. Arizona
- Debra Crawford, Drexel
- Bill Feiereisen, LANL
- Stephanie Forrest, Univ. New Mexico
- Lance Fortnow, Georgia Tech
- Eric Horvitz, Microsoft Research
- Chris Johnson, Univ. Utah
- Anita Jones, UVA
- Frans Kaashoek, MIT
- Dave Kaeli, Northeastern
- Dick Karp, UC Berkeley
- John King, Univ. Michigan
- Hank Korth, Lehigh
- Ed Lazowska, Univ. of Washington, CCC Founding Chair
- Peter Lee, Carnegie Mellon
- Andrew McCallum, UMass
- John Mitchell, Stanford
- Robin Murphy, Texas A&M
- Fred Schneider, Cornell
- Margo Seltzer, Harvard
- Karen Sutherland, Augsburg College
- David Tennenhouse, New Venture Partners
- Josep Torrellas, UIUC
- Dave Waltz, Columbia



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KEY LINKS

- RFP:
<http://www.cra.org/ccc/visioning/creating-visions-for-computing-research>
- Best Practices Guide:
<http://www.cra.org/ccc/files/docs/rfp/Visioning%20Best%20Practices%20v1.0.pdf>
- Past Visioning Activities:
<http://www.cra.org/ccc/visioning/visioning-activities>
- Email Contact: cccrfp@cra.org



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