INTRODUCTION TO THE CCC AND THE CCC COUNCIL
AN OVERVIEW OF THE COMPUTING COMMUNITY CONSORTIUM

• Established in 2006 as a standing committee of the Computing Research Association (CRA)
• Funded by NSF under a Cooperative Agreement
  – Third Award began in April 2018, Site Visit will be September 2018
• Facilitates the development of a bold, multi-themed vision for computing research – and communicates this vision to stakeholders
• Led by a broad-based Council
• Staff based at CRA
PRE-HISTORY

In the mid-2000’s, NSF CISE leaders and computing research community leaders had similar concerns regarding:

- The Federal commitment to research in general, and to computing research in particular
- Public and policymaker perception that computer science is “yesterday’s news”
- Failure to articulate and coalesce around exciting research visions in computer science – research visions that would galvanize the public, policymakers, researchers, and students
- Need to groom leadership for the field
- Decrease in student interest
- GENI Project direction

This led to:

- Increased focus on these issues by NSF CISE and the computing research community
- Computing Community Consortium solicitation by NSF
- Eager response by a group of computing research community leaders under the auspices of the Computing Research Association
  
  • Randy Bryant
  • Susan Graham
  • Anita Jones
  • Dick Karp
  • Ken Kennedy
  • Ed Lazowska
  • Peter Lee
  • Jeff Vitter
INFORMAL MISSION

“A catalyst and enabler for the computing research community”

- Bring the community together to contribute to shaping the future of the field
- Provide leadership for the community, encouraging revolutionary, high-impact research
- Encourage the alignment of computing research with pressing national priorities and national challenges (many of which cross disciplines)
- Work with policymakers to facilitate the translation of these important research directions into funded programs
- Give voice to the community, communicating to a broad audience the many ways in which advances in computing will create a brighter future
- Grow new leaders for the computing research community
MAJOR ORGANIZATIONAL MILESTONES

• Chair appointed (Winter 2007) + Council appointed (Spring 2007)
• Vice-Chair position formalized: Fall 2007
• Full-time Director (Erwin Gianchandani) joins: Spring 2010
• Renewal proposal submitted: Spring 2011
• Steady-state organizational structure defined: Fall 2012
• Executive Committee launched: Winter 2013
• Ann Drobnis joins as Director: Spring 2013
• Regular Chair / Vice-Chair succession kicks in: Summer 2013
• Proposal and Renewal (2017)
• Third Award (2018)
CCC: CATALYZING I.T.’S VIRTUOUS CYCLE

Icons modified from Zlatko Najdenovski, Flaticon
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.

Who
- Council - 20 members
- CCC/CRA Staff
- Chair, VC, & Director

Inputs: Bottom-up, Internal, & Top-Down

What:
- Workshops & Conf. Blue Sky Tracks
- Whitepapers & Social Media
- Reports Out (esp. to government)
- Biannual Symposium to DC’ers

Human Development
- Early Career Workshops & Participation
- Council Membership
- Leadership w/ Gov’t (LISPI)
ORGANIZATIONAL STRUCTURES
CCC ORGANIZATIONAL STRUCTURE

Chair, Vice-chair
  – 2 year non-staggered terms
  – Vice-chair is presumptive chair

Director, Deputy Director, Program Associates (2)
  – Full-time paid positions

Executive Committee
  – Chair, Vice-chair, Director
  – 3 at large drawn from Council for 1-year terms
  – CRA Executive Director

Council
  – 20 members
  – 3 year terms, at most 2 consecutive terms

Support
  – As needed, from CRA Staff
WHAT DOES EXECUTIVE COMMITTEE DO?

- Each member has a major responsibility within the organization
- Oversees the work of subcommittees and working groups
- Guides the planning of new activities
- Oversees the execution of the Strategic Plan and annual Implementation Plan
- Meets biweekly by teleconference
- Meets biweekly with NSF by teleconference
WHAT DO COUNCIL MEMBERS DO?

• Shepherd visioning activities
• Participate in topical task forces
  – Examples: AI and Robotics, Healthcare, Privacy and Fairness
  – Produce and curate relevant resources
  – Monthly teleconferences
• Develop and lead new activities
  – Examples: CIFellows, LISPI, ...
• Engage with government agencies, industry, and sister organizations (NSF, ACM, Big Data Hubs...)
• Write white papers and blog posts
• Other requests as needed
• Monthly teleconferences
• Three face-to-face meetings each year
THE CCC COUNCIL

Chair: Mark Hill
Vice Chair: Liz Bradley

Terms ending June 2021
• Ian Foster, University of Chicago
• Ronitt Rubinfeld, MIT
• Suresh Venkatasubramanian, Utah
• Daniel P. Lopresti, Lehigh University
• David C. Parkes, Harvard
• Shwetak Patel, Univ. Washington

Terms ending June 2020
• Nadya Bliss, Arizona State
• Juliana Freire, NYU
• Keith Marzullo, Maryland
• Greg Morrisett, Cornell
• Jennifer Rexford, Princeton
• Manuela Veloso, Carnegie Mellon
• Ben Zorn, Microsoft Research

Terms ending June 2019
• Sampath Kannan, Upenn
• Maja Mataric, USC
• Elizabeth Mynatt, Georgia Tech
• Nina Mishra, Amazon
• Holly Rushmeier, Yale
• Kevin Fu, Univ. Michigan
CRA STAFF

CCC Director: Ann Drobnis
Senior Program Associate: Helen Wright
Program Associate: Khari Douglas
CRA Executive Director: Andy Bernat
Other CRA Staff:
  – Peter Harsha, Director of Government Affairs
  – Sandra Corbett
  – Sabrina Jacob
RELATIONSHIP TO COMPUTING RESEARCH ASSOCIATION (CRA)

NSF cooperative agreement is with CRA

CCC is a standing committee of CRA

- Andy Bernat, CRA Executive Director, is an ex officio member of the CCC Executive Committee
- Mark Hill, the CCC Chair is a member of the CRA Board of Directors
- Susan B. Davidson, the CRA chair must consent to CCC Council appointments (and is a former Council member)
- Greg Morrisett, CCC Council member and member of the CRA Board of Directors

CCC staff are based in CRA
CCC GOALS AND ACTIVITIES
GOALS FOR CCC

1. Bring the computing research community together to envision audacious research challenges, and to articulate concrete pathways to enable pursuit of these challenges.

2. Communicate these challenges and opportunities to the broader national community.

3. Facilitate investment in these research challenges by key stakeholders.

4. Inculcate values of leadership and service by the computing research community.

5. Inform and influence early career researchers to engage in these community-led research challenges.
• Periodic RFP for Community Initiated Activities
• 6 workshops per year in the last 3 years
• Top-down (agency initiated)
• Bottom-up (open call)
• Sideways (council initiated, joint with other agencies,....)
VISIONING ACTIVITIES

- Over 45 visioning activities in 10-year history
- Average of 6 activities per year in the last 4 years
- Research areas include:
  - Smart and Pervasive Health
  - Beyond Moore’s Law
  - Robotic Materials
  - Privacy by Design
  - BRAIN Initiative
  - Fairness
  - Personalized Education
- 13 workshop reports released in past 4 years
- 20 white papers released in past 4 years

### Workshop Details

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<thead>
<tr>
<th>Workshop</th>
<th>Date</th>
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<tbody>
<tr>
<td>Cyber-Social Learning Systems Workshop 3</td>
<td>January 24-25, 2017</td>
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<tr>
<td>Cyber Security for Manufacturers Workshop</td>
<td>March 14-15, 2017</td>
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<tr>
<td>Socio Technical Cybersecurity Workshop 2</td>
<td>August 8-9, 2017</td>
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<tr>
<td>Leadership in Science Policy Institute</td>
<td>November 6-7, 2017</td>
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<td>Fair Representations and Fair Interactive Learning</td>
<td>March 18-19, 2018</td>
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<td>Sociotechnical Interventions for Health Disparity Reduction</td>
<td>April 9-10, 2018</td>
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<td>Robotic Materials</td>
<td>April 23-24, 2018</td>
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<td>Digital Computing Beyond Moore’s Law</td>
<td>May 3-4, 2018</td>
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<tr>
<td>Next Steps in Quantum Computing: Computer Science’s Role</td>
<td>May 22-23, 2018</td>
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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
CCC TASK FORCES

CCC task forces are organized around national priorities, community needs, and council member interests. Our current* set of topics are:

- AI Working Group
- Industry Working Group
- Cybersecurity and Cybercrime
- Health and Human Computer Interaction
- Information Integrity and Provenance
- Intelligent Infrastructure
- Fairness and Accountability
- Systems and Architecture

Goal is for CCC to be engaged in ongoing activities around these topics, to identify needs and opportunities in the topic area, and to identify actions (generating white papers, convening a workshop, publicizing information, etc.) that have the possibility of “moving the needle” for these topics.

Annual process to determine topics, membership and priorities. Informed by major stakeholders (NSF, OSTP, PCAST, NITRD, workshops and council members). * List likely to change after this summer’s meeting.
COMMUNICATING

• Workshop Reports
• White Papers
  – CCC works with community to produce timely white papers that inform policymakers and the broader community on national priorities
• CCC Blog
  – Provides a continuous stream of information on advances in computing research
  – Opportunities for community to get involved
  – Forum for community discussion
• Website
  – Collection of Resources
• Great Innovative Ideas
  – A way to showcase the exciting new research and ideas generated by the computing community
• Annual events
  – CCC Symposium
  – CRA Snowbird
• Special Events
  – Early Career Researcher Symposium
NURTURING NEXT GENERATION OF LEADERS

Grow leadership and community capacity to engage in and respond to national science policy needs and identify new directions for computing research.

Leadership in Science Policy Institute
- Educates and trains computing researchers on how science policy in the U.S. is formulated and how to advocate for computing research
- Co-sponsored by CRA’s Government Affairs Committee

Industry – Academic Collaborations
- CCC collaborated with Big Data Regional Hubs
- Activities to enhance the research of early career faculty

Postdoc Best Practices
- Program to study institutional support structures for postdocs
- 3 programs: University of Washington, NY ASCENT, Arizona

Computing Innovation Fellows (CIFellows) Project
- Rapidly created the CI Fellows program to preserve human capital when faculty positions became scarce with the financial crisis
THE CCC COUNCIL — PAST MEMBERS

- Lorenzo Alvisi, Univ. of Texas
- Greg Andrews, Univ. Arizona
- Randy Bryant, Carnegie Mellon Debra Crawford, Drexel
- Elizabeth Churchill, Google
- Susan Davidson, Univ. PA
- Cynthia Dwork, Harvard
- Joseph Evans, Univ. KS
- Bill Feiereisen, LANL
- Limor Fix, Intel
- Stephanie Forrest, Univ. New Mexico
- Lance Fortnow, Georgia Tech
- Susan Graham, UC Berkeley
- Greg Hager, Johns Hopkins
- Vasant Honavar, Univ. of Pennsylvania
- 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
- Ran Libeskind-Hadas, Harvey Mudd
- Andrew McCallum, UMass
- John Mitchell, Stanford
- Robin Murphy, Texas A&M
- Klara Nahrstedt, UIUC
- Tal Rabin, IBM Research
- Debra Richardson, UCSD
- Daniela Rus, MIT
- Fred Schneider, Cornell
- Margo Seltzer, Harvard
- Shashi Shekhar, Univ. MN
- Bob Sproull, Formally Oracle
- Karen Sutherland, Augsburg College
- David Tennenhouse, New Venture Partners
- Josep Torrellas, UIUC
- Dave Waltz, Columbia
- Ross Whitaker, Univ. Utah
- Kathy Yelick, UC Berkeley