



The Computing Community Consortium:

Stimulating Bigger Thinking

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Mission

Strengthen research and education in the computing fields.

- Working to influence **policy** that impacts computing research.
- Encouraging the development of **human resources**.
- Contributing to the cohesiveness of the professional **community**.
- Collecting and disseminating **information** about the importance and the state of computing research.

Arizona State University - CSE
Auburn University - CSSE
Ball State University - CS
Boston College - CS
Boston University - CS
Bowdoin College - CS
Bowling Green State University - CS
Bradley University - CS
Brandeis University - CS
Brigham Young University - CS
Brown University - CS
Bryn Mawr College - MCS
Bucknell University - CS
California Institute of Technology - CS
California Polytechnic State University - CS
California State University, Chico - CS
Carnegie Mellon University - CS
Case Western Reserve University - EECS
City University of New York, Graduate Center - CS
Clemson University - CS
Colgate University - CS
College of William & Mary - CS
Colorado School of Mines - MCS
Colorado State University - CS
Columbia University - CS
Cornell University - CS
Cornell University - ECE
Dalhousie University - CS
Dartmouth College - CS
DePaul University - CS
Drexel University - CS
Drexel University - IST
Duke University - CS
Emory University - MCS
Florida Atlantic University - CSE
Florida Institute of Technology - CS
Florida International University - CS
Florida State University - CS
Florida State University - IS
George Mason University - CS
George Washington University - CS
Georgia Institute of Technology - CSE
Georgia Southern University - IT
Georgia State University - CIS
Georgia State University - CS
Grinnell College - MCS
Harvard University - CS
Harvey Mudd College - CS
Hofstra University - CS
Illinois Institute of Technology - CS
Illinois State University - ACS
Indiana University - CS
Indiana University - I
Iowa State University - CS
Iowa State University - ECE
Johns Hopkins University - CS
Johns Hopkins University - SI
Juniata College - IT & CS
Kansas State University - CIS
Kent State University - CS
Lafayette College - CS
Lehigh University - CSE
Long Island University - ICS
Louisiana State University - CS
Loyola University, Chicago - CS
Massachusetts Institute of Technology - EECS

Miami University - CS
McMaster University - CE&S
Michigan State University - CSE
Michigan Technological University - CS
Mississippi State University - CS
Montana State University - CS
Montclair State University - CS
National University of Singapore - CS/IS
Naval Postgraduate School - CS
New Jersey Institute of Technology - CCS
New Mexico State University - CS
New York University - CS
North Carolina State University - CS
Northeastern University - CIS
Northwestern University - ECE
Nova Southeastern University - CS
Oakland University - CSE
Ohio State University - CSE
Ohio University - EECS
Oklahoma State University - CS
Old Dominion University - CS
Oregon Health & Science University - CSE
Oregon State University - EECS
Pace University - CSIS
Pennsylvania State University - CSE
Pennsylvania State University - IST
Polytechnic University - CIS
Pomona College - MCS
Portland State University - CS
Princeton University - CS
Purdue University - CS
Purdue University - ECE
Rensselaer Polytechnic Institute - CS
Rice University - CS
Rochester Institute of Technology - CS
Roosevelt University - CS&T
Rutgers University, Busch Campus - CS
Saint Louis University - MCS
Santa Clara University - CE
Simon Fraser University - CS
Singapore Management University - IS
Southern Illinois University, Carbondale - CS
Southern Methodist University - CSE
Southern Polytechnic State University - CSE
Stanford University - CS
State University of New York, Albany - CS
State University of New York, Binghamton - CS
State University of New York, Stony Brook - CS
Stevens Institute of Technology - CS
Swarthmore College - CS
Syracuse University - IS
Temple University - CIS
Texas A&M University - CS
Texas State University - CS
Toyota Technological Institute at Chicago - CS
Tufts University - CS
Tulane University - EECS
Union College - CS
University at Buffalo - CSE
University at Buffalo - IS
University of Alabama, Birmingham - CIS
University of Alabama, Tuscaloosa - CS
University of Alberta - CS
University of Arizona - CS
University of Arkansas - CSCE

University of Arkansas at Little Rock - I
University of Calgary - CS
University of California, Berkeley - EECS
University of California, Berkeley - IMS
University of California, Davis - CS
University of California, Irvine - ICS
University of California, Los Angeles - CS
University of California, Riverside - CSE
University of California, San Diego - CSE
University of California, Santa Barbara - CS
University of California, Santa Cruz - CE
University of California, Santa Cruz - CS
University of Central Florida - CS
University of Chicago - CS
University of Cincinnati - ECECS
University of Colorado, Boulder - CS
University of Delaware - CIS
University of Denver - CS
University of Florida - CISE
University of Georgia - CS
University of Hawaii - ICS
University of Houston - CS
University of Houston - ECE
University of Idaho - CS
University of Illinois, Chicago - CS
University of Illinois, Urbana Champaign - CS
University of Illinois, Urbana Champaign - ECE
University of Iowa - CS
University of Kansas - EECS
University of Kentucky - CS
University of Louisiana at Lafayette - CACS
University of Louisville - CECS
University of Maine - CS
University of Maryland - CS
University of Maryland, Baltimore Co - CSEE
University of Maryland, Baltimore Co - IS
University of Massachusetts, Amherst - CS
University of Massachusetts, Boston - CS
University of Michigan - EECS
University of Michigan - I
University of Michigan, Dearborn - CIS
University of Minnesota - CSE
University of Minnesota, Duluth - CS
University of Mississippi - CIS
University of Missouri, Columbia - CS
University of Missouri, Rolla - CS
University of Montana - CS
University of Montreal - CS
University of Nebraska at Omaha - CS/IST
University of Nebraska, Lincoln - CSE
University of Nevada, Las Vegas - CS
University of Nevada, Reno - CSE
University of New Brunswick - CS
University of New Hampshire - CS
University of New Mexico - CS
University of New Mexico - ECE
University of North Carolina at Chapel Hill - CS
University of North Carolina at Chapel Hill - SILS
University of North Carolina, Charlotte - IT
University of North Dakota - CS
University of North Texas - CS
University of Notre Dame - CSE
University of Oklahoma - CS
University of Oregon - CIS
University of Pennsylvania - CIS
University of Pittsburgh - CS

University of Pittsburgh - IS
University of Puget Sound - MCS
University of Rochester - CS
University of South Alabama - CIS
University of South Carolina - CSE
University of South Florida - CSE
University of Southern California - CS
University of Southern California - EES
University of Tennessee, Knoxville - CS
University of Texas, Arlington - CSE
University of Texas, Austin - CS
University of Texas, Dallas - CS
University of Texas, El Paso - CS
University of Toronto - CS
University of Tulsa - MCS
University of Utah - CS
University of Virginia - CS
University of Washington - CSE
University of Washington - I
University of Washington, Bothell - CS
University of Washington, Tacoma - CSS
University of Waterloo - CS
University of Wisconsin, Madison - CS
University of Wisconsin, Milwaukee - EECS
University of Wyoming - CS
Utah State University - CS
Vanderbilt University - EECS
Virginia Commonwealth University - CS
Virginia Tech - CS
Wake Forest University - CS
Washington State University - EECS
Washington University in St. Louis - CS
Wayne State University - CS
West Virginia University - CSEE
Western Michigan University - CS
Williams College - CS
Worcester Polytechnic Institute - CS
Wright State University - CSE
Yale University - CS
York University - CS

Intel Corporation (Sponsoring Member)
Sun Microsystems (Sponsoring Member)
Microsoft Corporation (Sustaining Member)
IBM Research (Supporting Member)

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Argonne National Laboratory
Avaya
CA Labs
Computer Science Research Institute at Sandia Nation
Fraunhofer Center for Experimental Software Engineer
Fujitsu Laboratories of America
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Los Alamos National Laboratory
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McAfee Research
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National Center for Atmospheric Research
NCSA
NEC Laboratories America
NTT DoCoMo USA Labs
Pacific Northwest National Laboratory
Panasonic Information & Networking Technologies Lab
Ricoch Innovations
San Diego Supercomputer Center
SAP Labs
SRI International
Telcordia Technologies





- Computing has changed the world
- Research has built the foundation
- Much of the impact is recent



and the future is full of opportunity



But to create the future, we must work together to establish, articulate, and pursue visions for the field

- The challenges that will shape the intellectual future of the field
- The challenges that will catalyze research investment and public support
- The challenges that will attract the best and brightest minds of a new generation

The American Context

- Large diversity of research areas
- Large diversity of researcher homes
- Oversight group is unacceptable
- Research funding is highly concentrated
- No direct impact on funding sources
- Community service is not a high priority
- Economic competitiveness, not science, is the compelling issue

Some Previous Efforts

- “Computing the Future”
- PITAC
- Three one-off Grand Challenge Conferences

- Theory community - Cyber-enabled Discover and Innovation
- Networking community - GENI

- Other disciplines
 - Math, physics, ...
 - National Research Council committees



NSF asked CRA to create the Computing Community Consortium

- To envision long-range, more audacious research challenges
- To build momentum around such visions
- To state them in compelling ways
- To move them towards funded initiatives
- To ensure “science oversight” of large-scale initiatives

The CCC Structure

- CCC is the researchers
- A CCC Council guides, but only guides, the effort
- CCC is a partnership with NSF

To Date

- Support visioning by the computing research community
 - “Big Data Computing Study Group”
 - “Visions for Theoretical Computer Science”
 - “From Internet to Robotics: The Next Transformative Technology”
- Extensive work with NSF and the computing research community related to GENI (the Global Environment for Network Innovations) and the broader NetSE (Network Science & Engineering) research agenda
- www.cra.org/ccc for details/updates

Strategies

- Involve funding agencies from the beginning
- Engage strong international cooperation
- Create clear visions that generate support
- Coalesce around these visions
- Create political will to pursue them
- Communicating with the public, with the funders, with students



Anticipated Outcomes

- Capture the excitement of computing research
- Create visions that attract support from researchers, research agencies, leadership groups, and research organizations
- Attract the best & brightest students
- Encourage service

Dream, Strategize, Realize



“Twenty years from now, you will be more disappointed by the things you didn't do than by the ones you did. So throw off the bow lines. Sail away from the safe harbor. Catch the trade winds in your sails. Explore. Dream.”

Mark Twain