

CCC COUNCIL MEETING

July 24th, 2020



CCC

Computing Community Consortium
Catalyst

AGENDA

- Welcome and Introductions
- Updates (task forces, CI Fellows, NITRD, etc.)
- **BREAK**
- Strategic Plan
- Strategic Areas for the Upcoming Year
- **BREAK**
- Peter Harsha (CRA, Director of Government Affairs) on the Landscape in DC
- White Papers
- Wrap Up

WELCOME / INTRODUCTIONS



CCC
Computing Community Consortium
Catalyst

GENERAL UPDATES

- CI Fellows
- NITRD
- Task forces and working groups
- CCC's code of conduct

CIFellows 2020

Computing Innovation Fellows



*****July 10, 2020 -We have received several requests for our timeline, so wanted to provide a general update. We are currently reviewing all proposals and hope to make an announcement of awards by the end of July. Thank you for your patience. *****

Program Overview

The Computing Research Association (CRA) and the Computing Community Consortium (CCC) are pleased to announce a new Computing Innovation Fellows (CIFellows) Program for 2020. This program recognizes the significant disruption to the academic job search caused by the COVID-19 pandemic and associated economic uncertainty. Its targets include recent and soon-to-be PhD graduates in computing whose academic job search was impacted by COVID-19 and aims to provide them with a career-enhancing bridge experience.

The goal of this program is to create career growth opportunities that support maintaining the computing research pipeline. Computing research is defined as any area included under the **National Science Foundation (NSF) Computing and Information Science and Engineering (CISE) Directorate**. This effort takes inspiration from CRA/CCC's NSF-funded **Computing Innovation Fellows Programs** with cohorts starting 2009, 2010, and 2011 and **CRA's Best Practices Memo on Computer Science Postdocs**.

With funding by the National Science Foundation, the CIFellows 2020 program will offer 2 year postdoctoral opportunities in computing, with cohort activities to support career development and community building for this group of Fellows. Additional funding is possible.



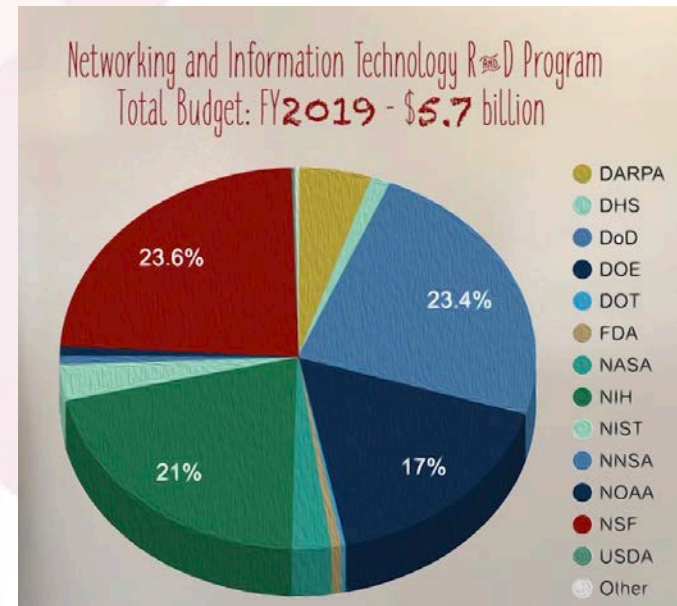
CCC

Computing Community Consortium
Catalyst

NITRD EVENT

Networking and Information Technology R&D (NITRD)

- Legislatively mandated coordination among Federal R&D agencies



- Director is Kamie Roberts
- We are organizing their 30th-anniversary Symposium next year

TASK FORCES AND WORKING GROUPS

- **FADE:** fairness, accountability, disinformation, and explainability within algorithms, big data, and AI; model transparency; sociotechnical issues.
- **Cybercrime & Cybersecurity:** 5G security and privacy, AI in fight against modern slavery (“Code 8.7”); economics of security.
- **Health & Computing:** technology to improve community and personal health outcomes; issues around personal health data.
- **Systems & Architecture:** New ways to compute to overcome today’s challenges (e.g., end of Moore’s Law); security and hardware; secure video conferencing.
- **Future of Research Enterprise:** evolving computing research ecosystem
- **AI WG:** AI Roadmap development and follow-up
- **Industry WG:** best practices in industry-academia and public-private partnerships

FADE TF

- **Key accomplishments this year:**
 - Fairness and Economics report prepared and circulated within NSF and research communities
 - Panels at AAAS on Fairness and Disinformation
 - Conception of FC2 workshop, identification of lead organizer and team.
- **In Progress:**
 - Organizing the Fairness in/for Computing workshop (Dec/Jan?)
- **Potential Future Directions**
 - model transparency and integration; the sociotechnical frontier

CYBERCRIME AND CYBERSECURITY TF

- **Key accomplishments this year:**

- Continued engagement in Code 8.7 collaboration: AI in the fight against modern slavery
- Organized CCC / Code 8.7 workshop in DC (3/20)*
- Produced 5G Security and Privacy whitepaper*

- **In Progress:**

- Completion of CCC / Code 8.7 workshop report

- **Potential Future Directions**

- 5G Security and Privacy workshop
- Economics of Security workshop

* Also associated blog postings.

HEALTH AND COMPUTING TF

- **Key accomplishments this year:**
 - Computational Support for Substance Use (Workshop);
 - Blogs (Wearable device accuracy; Contact tracing accessibility; making PPE)
- **In Progress:**
 - Computational Support for Substance Use (Report - almost done)
- **Potential Future Directions**
 - Online Workshop on Personal Health Information Usage Rights

SYSTEMS AND ARCHITECTURE TF

- **Key accomplishments this year:**
 - Workshop on wide-area data analytics (Oct 2019) and report
 - Blog postings on “Internet under Covid” and “A Vision of Computer Architecture Visioning”
 - “Thermodynamic Computing” presented at AAAS and NSF
- **In Progress:**
 - “Thermodynamic Computing” follow-up: CACM submission, AAAS panel, virtual NSF briefing
 - Workshops on “Reversible Computing” (virtual) and “Hybrid Biological Systems” (delayed)
- **Potential Future Directions**
 - Security and hardware, secure video conferencing

FUTURE OF THE RESEARCH ENTERPRISE TF

- **Key accomplishments this year:**
 - White paper “Evolving Methods in the Evaluation and Dissemination of Computing Research”
- **In Progress:**
 - Shared white paper with CRA, inviting feedback
 - Making white paper public
- **Potential Future Directions**
 - Present findings to CRA Board (done!), possible CRA follow-up



INDUSTRY WG

- **Key accomplishments this year:**
 - Collaborated with the CRA Industry Working group as a follow-up to last year's CCC Industry white paper
- **In Progress:**
 - CRA Industry Working Group has prepared a white paper based on new survey data, with recommendations; which was presented to the CRA Board on Tuesday
- **Potential Future Directions**
 - Coordinate with CRA on industry strategy and CCC's role

AI WG

- **Key accomplishments this year:**

- AI Roadmap! CCC is cited in the National AI Research Institutes NSF solicitation

The screenshot shows a live presentation slide with a red 'LIVE' indicator in the top left corner. The slide title is 'National AI Research Institutes'. The main content is a bulleted list:

- **National hubs** for universities, federal agencies, industry and nonprofits to **advance AI research and education**
- In FY 2020:
 - *Planning grants* for future Institutes
 - Launching up to six multidisciplinary, multi-institutional research *Institutes*
 - Anticipated investment: ~\$200M over six years, beginning in FY 2020

To the right of the text is a diagram titled 'Use-inspired' showing four vertical bars representing different fields: Science, Chemistry, Education, and Precision Agriculture. Below the bars is a purple box with the text 'Trustworthy AI: fair, accountable, transparent, safe, secure'. At the bottom of the diagram are logos for 'Foundations of ML' and 'Foundations'.

In the bottom right corner of the slide, there is a video feed of a woman with glasses and a teal top. Below the video feed is the CRA logo (Computing Research Association) and the CCC logo (Computing Community Consortium Catalyst).

- **In Progress:**

- responding to queries, requests for comment

- **Potential Future Directions**

- on retainer

POLICIES

Code of Conduct for CRA CCC Council Members Adopted 1 July 2019

Goal: To establish a set of principles and practices of the CRA CCC Council (the “Council”) that will set parameters and provide guidance and direction for its members’ conduct and decision-making. This document will be distributed to Council members on an annual basis.

Code: Members of the Council are committed to observing and promoting the highest standards of ethical conduct in the performance of their responsibilities on the Council. Members pledge to accept this code as a minimum guideline for ethical conduct and shall:

<https://www.cccblogger.org/council-members-only/>

<https://cra.org/ccc/about/governing-documents/>



CCC

Computing Community Consortium
Catalyst

Accountability

1. Faithfully abide by the Articles of Incorporation, by-laws, and policies of the CRA, copies of which are attached.
2. Exercise reasonable care, good faith and due diligence in organizational affairs.
3. Fully disclose information that may result in a perceived or actual conflict of interest. This disclosure should be directed to the Chair and/or the Director of the CCC, who should in turn disclose to the Executive Director of the CRA, who will make a determination, consulting with legal counsel as appropriate.
4. Remain accountable for prudent fiscal management to the Council, the CRA, and where applicable, to government and funding bodies.

Professional Excellence

6. Maintain a professional level of courtesy, respect, and objectivity in all Council activities.
7. Strive to uphold those practices and assist other Council members in upholding the highest standards of conduct.

Personal Gain

8. Exercise the powers invested for the good of the CRA, the CCC, and all participants in Council activities—including, but not limited to, Council members, CRA staff, authors of CCC documents, and participants in CCC events—rather than for the benefit of themselves, their families, their current & former colleagues, the institution they represent, or any other institution with which they have significant financial ties.

Equal Opportunity

9. Ensure the right of all participants in Council activities to appropriate and effective services without discrimination on the basis of gender, sexual orientation, national origin, race, religion, age, socio-economical characteristics, political affiliation or disability, in accordance with all applicable legal and regulatory requirements.



CCC

Computing Community Consortium
Catalyst

Confidential Information

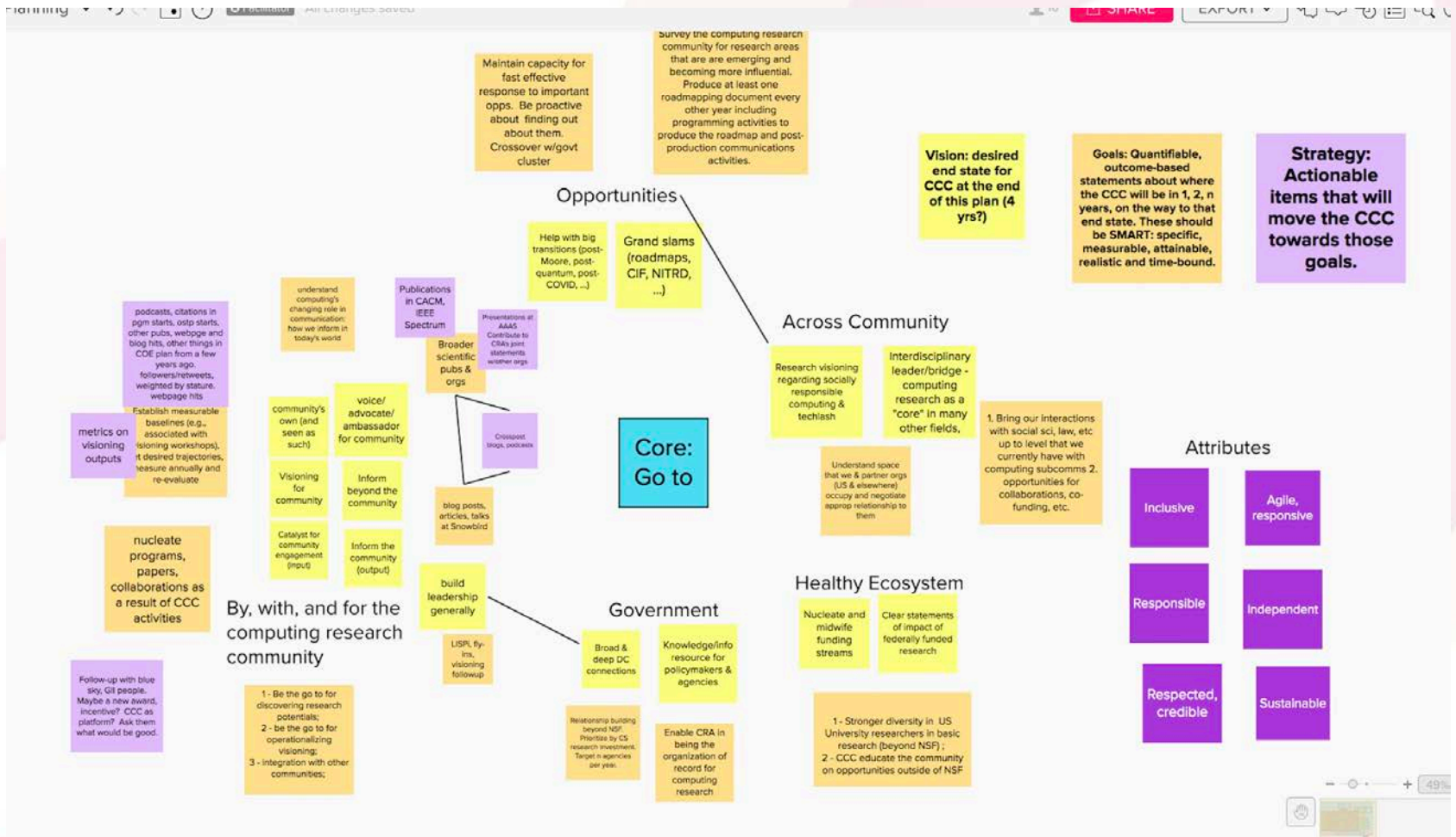
10. Respect the privacy and confidentiality of sensitive information known due to Council service.

Collaboration, Cooperation, and Communication

11. Respect the diversity of opinions as expressed or acted upon by participants in Council activities, and formally register dissent as appropriate.
12. Promote collaboration, cooperation, and partnership among participants in Council activities.
13. Include the following disclaimer on all written documents produced and released by the CCC: *The CCC's work is supported by the National Science Foundation. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.* Council members speaking on behalf of the CCC will disclose their other institutional affiliations as well as any other conflicts of interest, as directed by the Chair.

BREAK

A CCC STRATEGIC PLAN FOR 2020-2023



CCC

Computing Community Consortium
Catalyst

IMPORTANT ATTRIBUTES

CCC is...

- Inclusive and sustainable
- Responsive and agile
- Independent and responsible
- Respected and credible



CCC

Computing Community Consortium
Catalyst

OVERALL VISION

1. As part of CRA, CCC is of, by, and for the computing research community
2. CCC uses its resources and its connections to contribute to a healthy computing research ecosystem
3. CCC communicates effectively with stakeholders and decision makers regarding computing research
4. CCC bridges across research communities to foster productive interdisciplinary collaborations in which computing can play an important role



CCC

Computing Community Consortium
Catalyst

VISION: DETAILS

1. As part of CRA, CCC is of, by, and for the computing research community. Focusing specifically on research activities:
 - CCC acts as a voice/ambassador of this community
 - CCC is visible in this community
 - CCC informs and is informed by this community
 - CCC builds leadership, at all levels, in this communityCCC serves as a catalyst for engagement of this community

VISION: DETAILS

2. CCC uses its resources and its connections to contribute to a healthy computing research ecosystem:
 - CCC catalyzes and supports visioning activities for computing research
 - CCC identifies and nurtures sustainable opportunities and avenues for computing research
 - CCC creates and disseminates clear statements about the impact of computing research
 - CCC fosters inclusivity in all of its activities

VISION: DETAILS

3. CCC communicates effectively with stakeholders and decision makers regarding computing research:
 - CCC serves as a knowledge and information resource for policymakers and agencies
 - CCC cultivates broad, deep, productive DC connections
 - CCC connects with sister organizations representing relevant academic disciplines

VISION: DETAILS

4. CCC bridges across research communities to foster productive interdisciplinary collaborations in which computing can play an important role:
 - CCC informs beyond the computing research community
 - CCC supports visioning activities that build bridges between the computing research community and other relevant communities

HOW WILL WE GET THERE?

Goal A: Research Catalysis We will balance proactive research catalysis with responding to and supporting the broader stakeholder community in advancing responsible, ethical, and inclusive computing research.

Goal B: Informing Policy We will work closely with the rest of CRA, and with our partner organizations, to both strategically inform and effectively respond to the policy community.

Goal C: Visibility and Communication We will communicate effectively about computing research and improve CCC's visibility, both within and beyond the computing research community, as a means for better advancing our other goals.

Goal D: People We will serve as responsible stewards of the computing research community, providing leadership development and engagement opportunities for its members. In all of these, we will seek diversity along all appropriate axes.

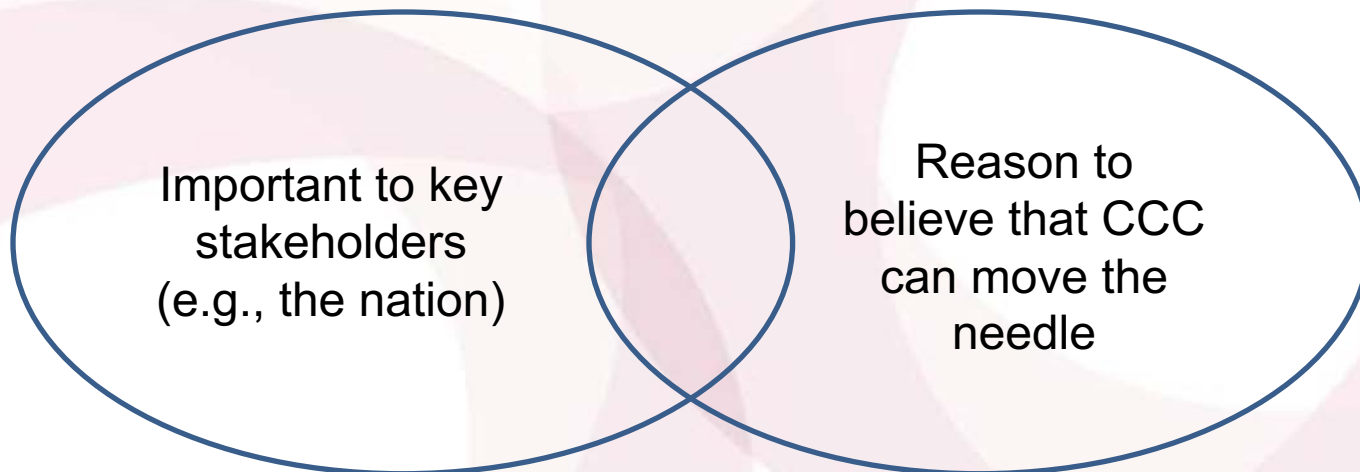
Goal A: Research Catalysis – We will balance proactive research catalysis with responding to and supporting the broader stakeholder community in advancing responsible, ethical, and inclusive computing research.

- Strategy A1: Each year, we will identify strategic areas of computing research that are important, compelling and realistic. Across those areas, we will annually write at least five white papers, conduct at least five visioning workshops. We will follow up to circulate the results of these outputs to appropriate communities.
- Strategy A2: We will respond quickly and effectively to important opportunities (like the 2019 AI Roadmap and Computing Innovations Fellows 2020).
- Strategy A3: We will increase the level of our interactions with research communities outside computing including, but not limited to, law, policy, ethics, health & social sciences.
- Strategy A4: Over the span of this strategic plan, we will facilitate the creation of, or connection to, 2-3 new avenues and resources for computing research.

Goal A: Research Catalysis – We will balance proactive research catalysis with responding to and supporting the broader stakeholder community in advancing responsible, ethical, and inclusive computing research.

- Strategy A1: **Each year, we will identify strategic areas of computing research that are important, compelling and realistic.** Across those areas, we will annually write at least five white papers, conduct at least five visioning workshops. We will follow up to circulate the results of these outputs to appropriate communities.
- Strategy A2: We will respond quickly and effectively to important opportunities (like the 2019 AI Roadmap and Computing Innovations Fellows 2020).
- Strategy A3: We will increase the level of our interactions with research communities outside computing including, but not limited to, law, policy, ethics, health & social sciences.
- Strategy A4: Over the span of this strategic plan, we will facilitate the creation of, or connection to, 2-3 new avenues and resources for computing research.

STRATEGIC AREAS FOR 2020-2021



OUR CURRENT STRUCTURE

- **FADE:** fairness, accountability, disinformation, and explainability within algorithms, big data, and AI; model transparency; sociotechnical issues.
- **Cybercrime & Cybersecurity:** 5G security and privacy, AI in fight against modern slavery (“Code 8.7”); economics of security.
- **Health & Computing:** technology to improve community and personal health outcomes; issues around personal health data.
- **Systems & Architecture:** New ways to compute to overcome today’s challenges (e.g., end of Moore’s Law); security and hardware; secure video conferencing.
- **Future of Research Enterprise:** evolving computing research ecosystem
- **AI WG:** AI Roadmap development and follow-up
- **Industry WG:** best practices in industry-academia and public-private partnerships



CCC

Computing Community Consortium
Catalyst

BREAK

PETER HARSHA: LANDSCAPE IN DC

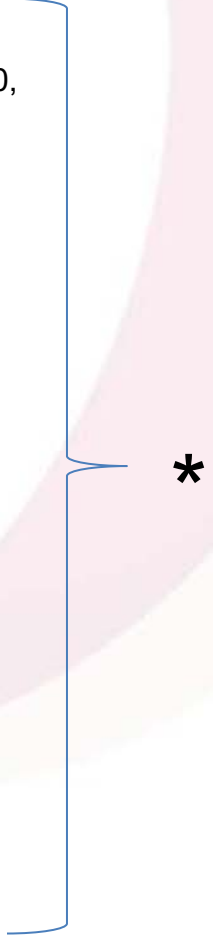
WHITE PAPERS FOR THE FALL OF 2020...



CCC

Computing Community Consortium
Catalyst

THOUGHTS FROM THE NSF

- **CISE in a Post-Moore World: The Seismic Shift.**
 - Fundamental need to design new interface layers & design practices: Hardware 2.0, Software 2.0, Curriculum 2.0 ... and beyond.
 - Principles and Practice of Scalable Systems (PPoSS).
 - Quantum Computing and Information Science.
 - **Transcendence of Artificial Intelligence.**
 - Fueled by convergence: AI algorithms + data + ample systems capabilities.
 - NSF invests nearly \$500 million in AI annual across at least 5 directorates.
 - National AI research institutes.
 - Other AI investments and partnerships with PAI, DARPA, Amazon.
 - AI at the Edge (software defined sensor network cyberinfrastructure).
 - **CISE's Sociotechnical Frontier.**
 - Reshape computation to “bake in” notions of security, trust, verifiability, privacy and fairness.
 - Advanced wireless research (PAWR).
 - CISE/SBE collaborations: roundtables, joint solicitations?
 - **Broadening Participation in Computing**
 - **CIFellows**
 - **CS GI Bill**
- 

* From “The Computing & Information Science & Engineering Landscape: A look forward,” Margaret Martonosi, June 2020



CCC

Computing Community Consortium
Catalyst

PCAST RECOMMENDATIONS*

- 10x increase in research funding for “core” AI.
- Accelerate translational AI research (e.g., COVID-19).
- AI institutes for every state, matched to local needs.
- National AI testbeds.
- Novel academia-industry AI partnership models.
- Increased international collaboration in AI with key U.S. allies.
- National quantum computing user facilities.
- Foundational quantum technology discovery institutes.
- Build a quantum Internet.
- Accelerated discovery powered by convergence of HPC, AI, and quantum computing.

* From PCAST report, June 2020

https://science.osti.gov/-/media/_/pdf/about/pcast/202006/PCAST_June_2020_Report.pdf

TOM KALIL'S THOUGHTS

- White papers around election time can...
 - get the Government to do things
 - get the Community to do things
- White papers around election time should be:
 - A mix of shovel ready and far out-there ideas
 - Present a consensus view
 - Focused for Agencies
 - Have a plan (who to call to get it done)
- CS+X (or showing how CS is a part of so much) could be a good thing

FROM OTHER QUARTERS:

- ethical and responsible AI; AI for national security & defense (NSCAI)
- Quantum Leap Challenge Institutes (OSTP/NSF)
- Socially responsible/just CS (CRA)
- All of the concerns of the various Hill committees that Peter talked about yesterday..

WRAP UP

THE CURRENT CCC COUNCIL

Chair: Liz Bradley, University of Colorado Boulder

Vice Chair: Dan Lopresti, Lehigh University

CCC Chair Emeritus: Mark Hill, University of Wisconsin, Madison

Terms ending June 2023:

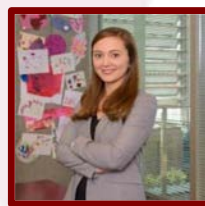
- Nadya Bliss, Arizona State
- Kathleen Fisher, Tufts University
- William D. Gropp, Illinois Urbana-Champaign
- Brian LaMacchia, Microsoft Research
- Melanie Moses, University of New Mexico
- Helen Nissenbaum, Cornell Tech
- Holly Yanco, UMass Lowell

Terms ending June 2022:

- Sujata Banerjee, VMware
- Elisa Bertino, Purdue University
- Tom Conte, Georgia Tech
- Maria Gini, University of Minnesota
- Chad Jenkins, University of Michigan
- Melanie Mitchell, Portland State University
- Katie Siek, Indiana University

Terms ending June 2021:

- Ian Foster, University of Chicago
- Ronitt Rubinfeld, MIT
- Suresh Venkatasubramanian, Utah
- David C. Parkes, Harvard
- Shwetak Patel, Univ. Washington



CCC TIMELINE: THE NEXT SIX MONTHS

Assured
Autonomy
WS #3

Task Forces
Start Meeting

Reversible
Computing
Workshop

November
CCC Council
Meeting

First CCC
Council
Call

Strategic
Plan
Finalized

National
Elections

CI Fellows
2021???

August

September

October

November

December

White papers

THANK YOU!