MEETING SUMMARY

Advisory Committee
Directorate for Computer and Information Science and Engineering

November 28 – 29, 2012
National Science Foundation
4201 Wilson Boulevard, Arlington, VA 22230

The fall meeting of the National Science Foundation's Directorate for Computer and Information Science and Engineering's Advisory Committee (CISE AC) was held at the National Science Foundation (NSF) on November 28 - 29, 2012, in conference room 1235.

Wednesday, November 28, 2012:

Welcome, Review of Agenda and Approval of Minutes:

Drs. Jennifer Rexford and J Strother Moore, Co-Chairs, opened the meeting at 1:00 pm and welcomed all in attendance. The AC members introduced themselves. A list of attendees can be found in Appendix I. Dr. Jennifer Rexford reviewed the minutes from the Spring CISE AC meeting. The minutes were unanimously approved.

CISE Overview and Key Updates:

Dr. Farnam Jahanian, CISE Assistant Director, welcomed the returning AC members and nine new members. He stressed the importance of active engagement in this Committee for making recommendations to CISE. Dr. Jahanian emphasized the vital role of the CISE AC as the majority of federal funding for the CISE community is awarded through NSF, and he emphasized CISE's responsibility for setting the computer science research agenda for the Nation. Dr. Jahanian provided an overview and key updates since the last CISE AC meeting held in May 2012. He also discussed the FY 2013 budget and realignment of OCI to become part of CISE, noting that OCI's mission is very integrated across NSF.

OCI Overview:

Dr. Alan Blatecky, Division Director for Advanced Cyberinfrastructure (ACI), formerly Office Director of the Office of Cyberinfrastructure (OCI), presented the OCI Overview. He emphasized that all of the five program areas in cyberinfrastructure need to work well together in order to succeed. These areas are: 1) Data; 2) Software; 3) Advanced Computational Infrastructure; 4) Networking and Cybersecurity; and 5) Education and Community Building. Some of the challenges he discussed included 1) ways to look at all the pieces of the national data infrastructure; 2) providing support for all areas of science and engineering, deploying cyberinfrastructure across the board; and 3) leveraging and coordinating activities across NSF to avoid redundancies.

Discussion on CISE-OCI Realignment:

The discussion was led by Drs. Jahanian and Blatecky. Ten years ago, a blue ribbon panel led by Dan Atkins at the University of Michigan was commissioned to look at CISE's Partnerships for

Advanced Computational Infrastructure. When the report was completed, it focused on advanced cyberinfrastructure; it advocated significant focused investment by NSF and the creation of the Office of Cyberinfrastructure (OCI). OCI has worked across NSF with all of the research, engineering, and education directorates and offices. The realignment may bring about more collaboration amongst computer, computational and domain scientists. It is very important to continue to grow collaboration across the scientific domains. The AC discussed the challenges of integrating OCI into CISE while ensuring that it continues to serve an integrative role and as a resource to the entire foundation.

Programmatic Updates – BigData, Smart Health:

Dr. Howard Wactlar, Division Director for Information and Intelligent Systems (IIS), presented and led the discussion on Big Data. The Big Data program, a partnership between NSF and NIH, is looking for novel methods for data management, data analytics, and collaborative environments. BigData impacts many other programs. Due to time limitations, an update on Smart and Connected Health will be provided at a future AC meeting.

Updates on Recent Solicitations – CyberSEES, XPS:

Dr. Susanne Hambrusch, Division Director for Computing and Communication Foundations (CCF), focused on two new programs: Cyber-Enabled Sustainability and Engineering (CyberSEES) and eXploiting Parallelism and Scalability (XPS). CyberSEES aims to advance interdisciplinary research in which the science and engineering of sustainability are enabled by new advances in computing and where computational innovation is grounded in the context of sustainability problems. XPS will foster new collaborations combining expertise cutting across abstraction, software and hardware layers.

Postdoctoral Fellows in Computing:

Dr. Anita Jones of the University of Virginia presented on postdocs in Computer Science. She discussed the increase in the number of postdocs, stating that it has almost doubled since 2008, and discussed why the numbers have increased. She touched on a number of related topics, including redefining career progression, where a postdoc might be expected, and that it is necessary to understand and manage the evolution of the field.

Breakout Session – CISE 2025: Challenges and Opportunities:

The AC members broke into discussion groups and adjourned for the day at 6:00 pm.

Thursday, November 29, 2012:

Introductory Remarks:

Dr. Moore called the meeting to order at 8:30 am. Dr. Moore revisited the topic of Post Docs and will appoint a working group. Drs. Moore and Rexford will also appoint a working group to focus on visioning CISE 2025. Members interested in participating in a working group should e-mail Drs. Moore or Rexford.

Education and Workforce Development Subcommittee Report:

Dr. Teresa Dahlberg spoke about the Education and Workforce Development Subcommittee, which was formed in 2011. She addressed two program areas: the CS 10K Initiative and CE21. She proposed that the CISE AC members articulate their support for these two initiatives in the form of a letter addressed to Dr. Jahanian. She would also like to see the CISE AC help guide/direct CISE's role and scope of participation.

Jan Cuny, Program Director, CISE, presented on the CS 10K Initiative. CS 10K aims to increase the effectiveness of computing education in high school through the introduction of a new curriculum with the goal to prepare 10,000 high school teachers to teach the new curriculum in 10,000 schools by 2015. The AC discussed the difficulty and challenges of getting these courses into high schools and recognized the job that NSF has done with this initiative. They unanimously voted to endorse the letter of support drafted by the subcommittee chairs.

The Committee also discussed the CISE strategic plan for broadening participation in computing, which focuses on a high-level framework. The CISE AC voted to endorse the Strategic Plan.

Mid-Scale Infrastructure Subcommittee Update:

Dr. James Kurose presented on the NSF CISE Midscale Infrastructure Committee. His presentation focused on: 1) how infrastructure requirements should be derived; 2) how CISE can articulate a framework for understanding the value of infrastructure; 3) the best models of funding community mid-scale infrastructure; and 4) future research infrastructure – i.e., GENI, IGNITE, XSEDE, FutureGrid. A community-wide call for white papers is currently being drafted, to be followed by a workshop, tentatively to be held in spring 2013. There was support for developing an opportunity for research to further knowledge on cloud network infrastructure.

Meeting with NSF Director and Deputy Director:

Dr. Rexford thanked Director Subra Suresh and Deputy Director Cora Marrett for attending the meeting. The AC members introduced themselves to Drs. Suresh and Marrett. Dr. Rexford stated that the CISE AC is very supportive of the integration of OCI into CISE, and she noted how the computing community evolved during the last few years, recognizing that these two communities have grown closer together than they were in the past.

Director Suresh thanked everyone for being present. He discussed budget and funding, stating that a lot of funding is in infrastructure and that this provides an opportunity for NSF. Topics of discussion included: CISE/OCI integration, Big Data research and education, CS10K, Post-Docs in computing, and international science and engineering.

Secure and Trustworthy Cyberspace (SaTC) Program Update:

Keith Marzullo, Division Director for Computer and Network Systems (CNS), presented on SaTC and the NITRD Federal Cybersecurity Strategic Plan (NITRD is a multi-agency program, which coordinates strategy and research across federal agencies).

SaTC Program Frontier Awards:

Two recipients of the SaTC Frontier Awards, Professor Latanya Sweeney of Harvard University, and Professor Geoff Voelker of the University of California, briefed the CISE AC on their projects and research.

Professor Sweeney presented on her cross-disciplinary project - Privacy Tools for Sharing Research Data. Professor Voelker spoke on his research - Developing an Empirical Basis for Socio-Economic Perspectives.

Closing Remarks and Wrap Up:

Dr. Suzanne Iacono, Deputy Assistant Director, CISE, introduced the CISE Deputy Division Directors, acknowledging that they are the directorate's day-to-day problem solvers. Dr. Jahanian acknowledged the administrative staff who organized this meeting. Dr. Jahanian closed the meeting by thanking everyone on the CISE AC for their service, and he acknowledged that their contributions will have a tremendous impact on the direction and focus of the CISE community and NSF.

The next CISE Advisory Committee meeting will be held May 16-17, 2013.

The meeting adjourned at 2:15 p.m.

Appendix 1

ATTENDEES

NAME	AFFILIATION

Members Present:

Dr. Francine Berman   Professor of Computer Science, Rensselaer Polytechnic Institute

Dr. Jaime Carbonell   School of Computer Science, Carnegie Mellon University

Dr. Henrik Christensen   Interactive Computing/College of Computing, Georgia Institute of Technology

Dr. David Culler   Chair of Electrical Engineering & Computer Science, Univ. of California at Berkeley

Dr. Teresa Dahlberg   College of Computing and Informatics, University of North Carolina, Charlotte

Dr. Susan Davidson   Department of Computer and Information Science, University of Pennsylvania

Dr. Jose Fortes   Department of Electrical and Computer Engineering, University of Florida

Dr. Juan Gilbert   Human-Centered Computing Division, Clemson University

Dr. Bruce Hailpern   Director of Computer Science, IBM Research – Almaden. San Jose, California

Dr. Charles Isbell, Jr.   College of Computing, Georgia Institute of Technology

Dr. James Kurose   Department of Computer Science, University of Massachusetts Amherst

Dr. James Landay   Department of Computer Science and Engineering, University of Washington

Dr. Peter Lee   Microsoft Research – Redmond, Washington

Dr. J. Strother Moore   AC Co-Chair; Department of Computer Science, University of Texas, Austin

Dr. Jennifer Rexford   AC Co-Chair; Department of Computer Science, Princeton University

Dr. Ronitt Rubinfeld   Massachusetts Institute of Technology

Dr. Robert Rutenbar   Department of Computer Science, University of Illinois at Urbana-Champaign

Dr. Robert Schnabel   School of Informatics and Computing, Indiana University

Dr. Alex Szalay   Department of Physics and Astronomy, The Johns Hopkins University

Dr. Jeffrey Vitter   Department of Electrical Engineering and Computer Science, University of Kansas

Member Attending via Conference Line November 29, 2012:

Dr. Stefan Savage   Department of Computer Science and Engineering, University of California, San Diego (telecom)