CSSI 2020 PI Meeting:
Towards a National Cyberinfrastructure Ecosystem

February 13-14, 2020. Seattle, Washington

Organizers:

- Haiying Shen, University of Virginia (Chair)
- Carol Song, Purdue University (Co-Chair)
- Natalia Villanueva Rosales, University of Texas at El Paso (Co-Chair)
- Ritu Arora, University of Texas, Austin (Co-Chair)
- Sandra Gesing, University of Notre Dame (Co-Chair)
- Upulee Kanewala, Montana State University (Co-Chair)

Meeting Website: https://cssi-pi-community.github.io/2020-meeting/

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1. Executive Summary

The seventh NSF Cyberinfrastructure for Sustained Scientific Innovation (CSSI) Principal Investigator (PI) meeting was held at the Residence Inn by Marriott Seattle Downtown/Convention Center, Seattle, Washington on February 13 - February 14, 2020. The theme for the meeting was “Towards a National Cyberinfrastructure Ecosystem” and had 218 participants including 6 NSF program directors.

The meeting featured 173 lightning talks followed by a poster presentation for each talk and these were organized into four sessions. Presentations and posters are publicly available through the workshop website at https://cssi-pi-community.github.io/2020-meeting/ and also through the Figshare platform. Also, five invited talks, a panel, an open-mic session, and reception were included in the agenda. The remainder of the report presents the organization, the details of the agenda, participant information, and the lessons learned.

2. Introduction

NSF’s Cyberinfrastructure for Sustained Scientific Innovation (CSSI) umbrella program is aimed at providing support for emerging needs in cyberinfrastructure that enable innovations in science and engineering. As of January 2020, there are approximately 521 CSSI active projects. The purpose of this meeting was to further build the community around the NSF CSSI and its precursor programs (DIBBs, SI2) toward a national cyberinfrastructure ecosystem. The meeting provided a forum for the PIs to share the progress and technical information on their projects with each other, NSF program directors, and others in the community. The meeting also helped the participants in exploring innovative topics emerging in the software and data infrastructure communities, to discuss and learn about best practices across the projects, to stimulate new ideas of achieving software and data sustainability, and foster new collaborations.

3. Planning and Execution

The Organizing Committee for the 2020 workshop was composed of:

- Haiying Shen (PI), University of Virginia
- Carol Song (Co-PI), Purdue University
- Natalia Villanueva Rosales (Co-PI), University of Texas at El Paso
- Ritu Arora (Co-PI), University of Texas, Austin
- Sandra Gesing (Co-PI), University of Notre Dame
- Upulee Kanewala (Co-PI), Montana State University

The Organizing Committee was formed in March 2019 and started holding regular bi-weekly and weekly one-hour Zoom virtual meetings between September 2019 - February 2020. During these meetings, with the consultation from CSSI program directors, the team decided on the theme for the workshop “Towards a National Cyberinfrastructure Ecosystem.” The workshop website went online in November 2019. In February 2019 the Organizing Committee finalized the agenda focusing on promoting interactions between the participants. To this end, the organizing

committee decided to include a one-minute lightning talk and poster presentations by at least one representative (PI/Co-PI/senior personnel) from each active CSSI, SI2, and DIBBS project and is required by NSF. These were organized into four lightning talk sessions where each session was followed by poster presentation sessions. The agenda also included a panel on “ML for CI and CI for ML” and an open-mic session themed “Future directions of CSSI Program.” Also, the organizing committee invited five speakers to highlight the diversity of the CSSI funded projects. A mailing list was created for participants to contact the organizers and online forms were available for participants to register and provide links to their presentations and posters.

Table 1. Workshop Agenda
Day 1 - Tuesday, February 13, 2020

Time	Event	Speaker	Title
8:00 AM to 8:30 AM	Registration		
8:30 AM	Welcome & Announcements		
8:45 AM	Opening remarks	Vipin Chaudhary NSF/OAC	NSF Presentation Slides
9:00 AM	Lightning Talk Session #1		
10:00 AM	Coffee Break		
10:20 AM	Poster Session #1		
11:45 PM	Lunch		
1:00 PM	Invited talk	Marianna Safronova University of Delaware	Community Portal for High-Precision Atomic Physics Data and Computation Abstract Poster Slides
1:20 PM	Invited talk	Fred Hansen Nexight Group	Charting a Path Forward: Insights from a CSSI PI Survey Abstract Slides
1:40 PM	Lightning Talk Session #2		

2:40 PM	Coffee Break		
3:00 PM	Poster Session #2		
4:00 PM	NSF Presentation	Stefan Robila NSF/OAC	Future Steps of CSSI Slides
4:15 PM	Panel Discussion	Moderator: Haiying Shen Panelists: Geoffrey Charles Fox, Juliana Freire, Philip Harris, Andreas Mueller	ML for CI and CI for ML
5:00 PM to 8:00 PM	Reception		

Day 2

Time	Event	Speaker	Title
8:00 AM to 8:30 AM	Registration		
8:30 AM	Recap & Day 2 Agenda		
8:45 AM	Lightning Talk Session #3		
9:45 AM	Coffee Break		
10:00 AM	Poster Session #3		
11:00 AM	Open-Mic session	Moderator: Ritu Arora	
12:00 PM	Lunch		
1:00 PM	Invited talk	Gordon Watts University of Washington	The Institute for Research and Innovation in Software for High Energy Physics (IRIS-HEP)

			Abstract Poster Slides
1:20 PM	Invited talk	Madhav Marathe University of Virginia	Networks, Simulation Science and Advanced Computing Abstract Slides
1:40 PM	Lightning Talk Session #4		
2:30 PM	Poster Session #4		
3:30 PM	Coffee Break		
4:00 PM	Invited Talk	Michela Taufer University of Tennessee Knoxville	Cyberinfrastructure Tools for Precision Agriculture in the 21st Century Abstract Slides
4:20 PM	Closing Remarks	NSF	
4:30 PM	Meeting Adjourned		

4. Invited Talks, Panel, and Open Mic Session

Titles and abstracts of invited talks and panels are listed below.

Community Portal for High-Precision Atomic Physics Data and Computation (Marianna Safronova, University of Delaware**)** The goal of this project is to provide the scientific community with easily accessible high-quality atomic data and user-friendly broadly-applicable modern relativistic code to treat electronic correlations. The code will be capable of calculating a very broad range of atomic properties to answer the significant needs of atomic, plasma, and astrophysics communities. We also propose a creation on an online portal for high-precision atomic physics data and computation that will provide a variety of services to address the needs of the widest possible community of users. The portal will contribute a novel element to today's U.S. cyberinfrastructure ecosystem, improving usability and access for the atomic physics community and their fields of application.

Charting a Path Forward: Insights from a CSSI PI Survey (Fred Hansen, Nexight Group**)** In developing investment priorities, the CSSI program seeks to engage the capabilities, curiosity and creativity of CI research community PIs. Ongoing feedback from and dialogue with PIs from the CI research community is therefore critical. Surveys are an efficient and effective mechanism

for staying connected and collecting input. This session describes the methodology and results of a survey of principal investigators (PIs), co-PIs, and others the CI research community. The survey, which was carried out by the Nexight Group under the Office of Advanced Cyberinfrastructure (OAC) Award (#1930025), had two primary purposes. First, the survey was designed to inform decisions about changes to be made to the National Science Foundation (NSF) Cyberinfrastructure for Sustained Scientific Innovation (CSSI) solicitation. Second, the survey was designed to inform decisions about the future direction and focus of the NSF CSSI umbrella program. The survey results provide insights that enhance CSSI's support of a cyberinfrastructure for scientific research.

The Institute for Research and Innovation in Software for High Energy Physics (IRIS-HEP) (Gordon Watts, University of Washington) The Institute for Research and Innovation in Software for High Energy Physics (IRIS-HEP) is a Software Institute funded by the National Science Foundation. It aims to develop the state-of-the-art software cyberinfrastructure required for the challenges of data intensive scientific research at the High Luminosity Large Hadron Collider (HL-LHC) at CERN, and other planned HEP experiments of the 2020's. These facilities are discovery machines which aim to understand the fundamental building blocks of nature and their interactions. In this talk I will discuss a bit of this history and some highlights from our first 15 months of operation (OAC-1836650).

Networks, Simulation Science and Advanced Computing (Madhav Marathe, University of Virginia**)** Reasoning about real-world social habitats often represented as multiplexed co-evolving networks is complicated and scientifically challenging due to their size, co-evolutionary nature and the need for representing multiple dynamical processes simultaneously. The 2014 Ebola epidemic, 2009 financial crisis, global migration, societal impacts of natural and human initiated disasters and the effect of climate change provide examples of the many challenges faced when developing such environments. Advances in computing has fundamentally altered how such networks can be synthesized, analyzed and reasoned. We will briefly describe our work on co-evolving socio-technical networks by drawing on our work in urban transport planning, national security and public health epidemiology to guide the discussion. We will conclude by describing an exciting new project funded by the NSF that aims to develop CINES: a scalable cyberinfrastructure for network science. CINES builds on a prior NSF project, CINET and serves as a community resource for network science. CINES provide an extensible platform for producers and consumers of network science data, information, and software.

Panel: ML for CI and CI for ML
Moderator: Haiying Shen
Panelists: Geoffrey Charles Fox, Juliana Freire, Philip Harris, Andreas Mueller

Each panelist gave a 3-minute introduction followed by a 3-minute brief talk. Then the following three questions were posed to each panelist: (1) How do you see the future of ML for CI and CI for ML?, (2) What are the challenges for ML for CI and CI for ML? and (3) What are the challenges and opportunities to form cross-disciplinary collaborations for CI and CI for ML?. Finally, the panel was opened for questions from the audience.

Open-mic Session on the Future Directions of the CSSI Program

Moderator: Ritu Arora

The list of the topics discussed during the open-mic session is included below:

1) Reproducibility
2) Findability.
3) Fostering Collaborations.
4) Evaluation.
5) Pipeline-workforce development
6) Training and tutorials.
7) Interoperability.
8) Sharing of best practices and lessons learned.
9) Innovation and Sustainability.

Picture 1. Invited talks session

5. Lightning Talks and Poster Sessions

Progress for each one of the CSSI projects was presented in a one-minute lightning talk followed by a poster presentation. A total of four lightning talks and poster sessions were organized. Each session contained a diverse range of projects, i.e., software and data as well as new projects and ending projects with an average of 43 presentations per session. All attendees were provided with a template and instructions to make their files publicly available using the Figshare platform. Lightning talks were moderated by organizers to ensure that every presenter had exactly one minute for their presentation. Lightning talks were streamed online for remote participants. Discussion and networking occurred during each one of the poster sessions. A total of 173 projects were presented during the two days of the meeting.

The list of the lightning talks along with links to abstracts, posters, and talks are provided below.

Table 2. List of lightning talks and poster sessions

Num	Name	Organization	NSF Award	Poster	Talk
1	Nagarajan Kandasamy	Drexel University	Collaborative Research: SI2-SSE: High-Performance Workflow Primitives for Image Registration and Segmentation Award #: 1642380	Poster	Slides
2	Cheryl Tiahrt	University of South Dakota	The South Dakota Data Store, a Modular, Affordable Platform to Enable Data-Intensive Research and Education Award #: 1659282	Poster	Slides
3	Ewa Deelman	University of Southern California	SI2-SSI: Pegasus: Automating Compute and Data Intensive Science Award #: 1664162	Poster	Slides
4	Klaus Bartschat	Drake University	Elements: NSCI-Software -- A General and Effective B-Spline R-Matrix Package for Charged-Particle and Photon Collisions with Atoms, Ions, and Molecules Award #: 1834740	Poster	Slides
5	David Sandwell	Univ. of California, San Diego	Elements: Software - Harnessing the InSAR Data Revolution: GMTSAR Award #: 1834807	Poster	Slides
6	Richard Evans	University of Texas at Austin	NSCI Elements: Software - PFSTRASE - A Parallel FileSystem TRacing and Analysis SErvice to Enhance Cyberinfrastructure Performance and Reliability Award #: 1835135	Poster	Slides
7	Kennie Merz	Michigan State University	CSSI: Efficient GPU Enabled QM/MM Calculations: AMBER Coupled with GPU Enabled QUICK Award #: 1835144	Poster	Slides
8	Ute Herzfeld	University of Colorado Boulder	Element: Software: Data-Driven Auto-Adaptive Classification of Cryospheric Signatures as Informants for Ice-Dynamic Models Award #: 1835256	Poster	Slides
9	Carlo Piermarocchi	Michigan State University	Elements: Software: NSCI: A Quantum Electromagnetics Simulation Toolbox (QuEST) for Active Heterogeneous Media by Design Award #: 1835267	Poster	Slides
10	Yuanfang Cai	Drexel University	Collaborative Research: Elements: Software: Software Health Monitoring and Improvement Framework Award #: 1835292	Poster	Slides
11	Daniel Shapero	University of Washington	icepack: an open-source glacier flow modeling library in Python Award #: 1835321	Poster	Slides

12	Mohamed Soliman	Oklahoma State University	Element: Data: HDR: Enabling data interoperability for NSF archives of high-rate real-time GPS and seismic observations of induced earthquakes and structural damage detection in Oklahoma Award #: 1835371	Poster	Slides
13	Bruce Berriman	California Institute of Technology	Elements: Bringing Montage To Cutting Edge Science Environments Award #: 1835379	Poster	Slides
14	James Bordner	University of California, San Diego	Collaborative Research:Framework:Software:NSCI:Enzo for the Exascale Era (Enzo-E) Award #: 1835402	Poster	Slides
15	Bryna Hazelton	University of Washington	Collaborative Research: Elements: Software: Accelerating Discovery of the First Stars through a Robust Software Testing Infrastructure Award #: 1835421	Poster	Slides
16	Juan Pablo Vielma	MIT	Framework: Software: Next-Generation Cyberinfrastructure for Large-Scale Computer-Based Scientific Analysis and Discovery Award #: 1835443	Poster	Slides
17	Thomas Hacker	Purdue University	Elements: Data: Integrating Human and Machine for Post-Disaster Visual Data Analytics: A Modern Media-Oriented Approach Award #: 1835473	Poster	Slides
18	Jordan Powers	National Center for Atmospheric Research	CSSI Software Elements: Cloud WRF for the Atmospheric Research and Education Communities Award #: 1835511	Poster	Slides
19	Asti Bhatt	SRI International	Integrated Geoscience Observatory Award #: 1835573	Poster	Slides
20	Genevieve Bartlett	ISI/University of Southern CA	Elements: Software: Distributed Workflows for Cyberexperimentation(Elie) Award #: 1835608	Poster	Slides
21	Chris Hill	MIT	Collaborative Research: Framework: Data: Toward Exascale Community Ocean Circulation Modeling Award #: 1835618	Poster	Slides
22	Dan Negrut	University of Wisconsin-Madison	Collaborative Research: Elements:Software:NSCI: Chrono - An Open-Source Simulation Platform for Computational Dynamics Problems Award #: 1835674	Poster	Slides
23	Cate Brinson	Duke University	Collaborative Research: Framework: Data: HDR: Nanocomposites to Metamaterials: A	Poster	Slides

			Knowledge Graph Framework Award #: 1835677		
24	Byung-Jun Yoon	Texas A&M University	Elements: Software: Autonomous, Robust, and Optimal In-Silico Experimental Design Platform for Accelerating Innovations in Materials Discovery Award #: 1835690	Poster	Slides
25	Xiaogang Ma	University of Idaho	Elements: Software: HDR: A knowledge base of deep time to facilitate automated workflows in studying the co-evolution of the geosphere and biosphere Award #: 1835717	Poster	Slides
26	Michael Shirts	University of Colorado	Collaborative Research: NSCI Framework: Software: SCALE-MS - Scalable Adaptive Large Ensembles of Molecular Simulations Award #: 1835720	Poster	Slides
27	David Hudak	Ohio State University	Frameworks: Software NSCI-Open OnDemand 2.0: Advancing Accessibility and Scalability for Computational Science through Leveraged Software Cyberinfrastructure Award #: 1835725	Poster	Slides
28	Marouane kessentini	University of Michigan-Dearborn	Collaborative Research: Elements: Software: Software Health Monitoring and Improvement Framework Award #: 1835747	Poster	Slides
29	Xian-He Sun	Illinois Institute of Technology	Framework: Software: NSCI: Collaborative Research: Hermes: Extending the HDF Library to Support Intelligent I/O Buffering for Deep Memory and Storage Hierarchy Systems Award #: 1835764	Poster	Slides
30	Yao Liang	Indiana University Purdue University Indianapolis	¬†CyberWater,ÄîAn open and sustainable framework for diverse data and model integration with provenance and access to HPC Award #: 1835817	Poster	Slides
31	Zhenming Liu	William & Mary	Elements: Software: NSCI: A high performance suite of SVD related solvers for machine learning Award #: 1835821	Poster	Slides
32	Carol Song	Purdue University	Framework: Data: HDR: Extensible Geospatial Data Framework towards FAIR (Findable, Accessible, Interoperable, Reusable) Science Award #: 1835822	Poster	Slides
33	Alexey Akimov	University at Buffalo, SUNY	Elements: Libra: The Modular Software for Nonadiabatic and Quantum Dynamics Award #: 1931366	Poster	Slides

34	Alexey Akimov	University at buffalo, SUNY	CyberTraining: Pilot: Modeling Excited State Dynamics in Solar Energy Materials Award #: 1924256	Poster	Slides
35	Shrideep Pallickara	Colorado State University	Frameworks: Collaborative Proposal: Software Infrastructure for Transformative Urban Sustainability Research Award #: 1931363	Poster	Slides
36	Hanna Terletska	Middle Tennessee State University	Collaborative Research: Element: Development of MuST, A Multiple Scattering Theory based Computational Software for First Principles Approach to Disordered Materials. Award #: 1931367	Poster	Slides
37	In-Ho Cho	Iowa State University	Elements: Development of Assumption-Free Parallel Data Curing Service for Robust Machine Learning and Statistical Predictions Award #: 1931380	Poster	Slides
38	Robert Harrison	Stony Brook University	Collaborative Research: Frameworks: Production quality Ecosystem for Programming and Executing eXtreme-scale Applications (EPEXA) Award #: 1931387	Poster	Slides
39	Nicholas Murphy	Center for Astrophysics | Harvard & Smithsonian	Collaborative Research: Frameworks: An open source software ecosystem for plasma physics Award #: 1931388	Poster	Slides
40	Hasan Babaei	University of California-Berkeley	ENABLING ACCURATE THERMAL TRANSPORT CALCULATIONS IN LAMMPS Award #: 1931436	Poster	Slides
41	Denis Zorin	NYU	Open-Source Robust Geometry Toolkit for Black-Box Finite Element Analysis Award #: 1835712	Poster	Slides
42	Elsa Olivetti	Massachusetts Institute of Technology	The Synthesis Genome: Data Mining for Synthesis of New Materials Award #: 1922311	Poster	Slides
43	David Elbert	Johns Hopkins University	DMREF: Data-Driven Integration of Experiments and Multi-Scale Modeling for Accelerated Development of Aluminum Alloys Award #: 1921959	Poster	Slides
44	Chaowei Yang	George Mason University	Developing On-Demand Service Module for Mining Geophysical Properties of Sea Ice from High Spatial Resolution Imagery Award #: 1835507	Poster	Slides
45	Reed Maxwell	Colorado School of Mines	Collaborative Research: Framework: Software: NSCI : Computational and data innovation implementing a national	Poster	Slides

			community hydrologic modeling framework for scientific discovery Award #: 1835903		
46	Ron Soltz	Wayne State University	Jet Energy-loss Tomography with a Statistically and Computationally Advanced Program Envelope Award #: 1550300	Poster	Slides
47	Wolfgang Bangerth	Colorado State University	Collaborative Research: Frameworks: Software: Future Proofing the Finite Element Library Deal.II -- Development and Community Building Award #: 1835673	Poster	Slides
48	Mike Pritchard	University of California, Irvine	Collaborative Research: HDR Elements: Software for a new machine learning based parameterization of moist convection for improved climate and weather prediction using deep learning Award #: 1835863	Poster	Slides
49	Theodore Kisner	Lawrence Berkeley National Laboratory	Collaborative Research: Elements: Software: NSCI: HDR: Building An HPC/HTC Infrastructure For The Synthesis And Analysis Of Current And Future Cosmic Microwave Background Datasets Award #: 1835865	Poster	Slides
50	Dmitry Pekurovsky	University of California San Diego	Elements: Software: Multidimensional Fast Fourier Transforms on the path to Exascale Award #: 1835885	Poster	Slides
51	Yong Chen	Texas Tech University	Elements:Software:NSCI: Empowering Data-driven Discovery with a Provenance Collection, Management, and Analysis Software Infrastructure Award #: 1835892	Poster	Slides
52	Miriah Meyer	University of Utah	Reproducible Visual Analysis of Multivariate Networks with MultiNet Award #: 1835904	Poster	Slides
53	Luke Nambi Mohanam	University of California, Irvine	Elements: libkrylov, a Modular Open-Source Software Library for Extremely Large Eigenvalue and Linear Problems Award #: 1835909	Poster	Slides
54	Krister Shalm	Unviersity of Colorado, Boulder	RAISE-TAQS: Randomness Expansion Using a Loophole-Free Bell Test Award #: 1839223	Poster	Slides
55	Saul Teukolsky	Cornell University	Elements:Collaborative Proposal: A task-based code for multiphysics problems in astrophysics at exascale Award #: 1931280	Poster	Slides
56	Jeff Horsburgh	Utah State University	Collaborative Research: Elements: Advancing Data Science and Analytics for Water (DSAW) Award #: 1931297	Poster	Slides

57	Dane Morgan	University of Wisconsin - Madison	Collaborative Research: Framework: Machine Learning Materials Innovation Infrastructure Award #: 1931298	Poster	Slides
58	Yinzhi Wang	University of Texas at Austin	Elements: PASSPP: Provenance-Aware Scalable Seismic Data Processing with Portability Award #: 1931352	Poster	Slides
59	David Lange	Princeton University	C++ as a service - rapid software development and dynamic interoperability with Python and beyond Award #: 1931408	Poster	Slides
60	Ashok Srinivasan	University of West Florida	Cyberinfrastructure for Pedestrian Dynamics-Based Analysis of Infection Propagation Through Air Travel Award #: 1931511	Poster	Slides
61	Shantenu Jha	Rutgers University	RADICAL-Cybertools: Middleware Building Blocks for NSF's Cyberinfrastructure Ecosystem Award #: 1931512	Poster	Slides
62	Shantenu Jha	Rutgers University	S2I2: Impl: The Molecular Sciences Software Institute Award #: 1547580	Poster	Slides
63	Amneet Pal Singh Bhalla	San Diego State University	Collaborative Research: Frameworks: Multiphase Fluid-Structure Interaction Software Infrastructure to Enable Applications in Medicine, Biology, and Engineering Award #: 1931368	Poster	Slides
64	Neil Heffernan	Worcester Polytechnic Institute	Collaborative Research: Frameworks: Cyber Infrastructure for Shared Algorithmic and Experimental Research in Online Learning Award #: 1931523	Poster	Slides
65	Mahmut Kandemir	Penn State University	Frameworks: Re-Engineering Galaxy for Performance, Scalability and Energy Efficiency Award #: 1931531	Poster	Slides
66	Dhabaleswar K (DK) Panda	Ohio State University	Collaborative Research: Frameworks: Designing Next-Generation MPI Libraries for Emerging Dense GPU Systems Award #: 1931537	Poster	Slides
67	Rafal Angryk	Georgia State University	Elements: Comprehensive Time Series Data¬†Analytics for the Prediction of Solar Flares and Eruptions Award #: 1931555	Poster	Slides
68	Andreas Kloeckner	University of Illinois at Urbana-Champaign	Elements: Transformation-Based High-Performance Computing in Dynamic Languages (also: SHF-1911019: SHF: Small: Collaborative Research: Transform-to-perform: languages, algorithms, and solvers for nonlocal operators --- represented by Rob Kirby) Award #: 1931577	Poster	Slides

69	Hendrik Heinz	University of Colorado at Boulder	Collaborative Research: Frameworks: Cyberloop for Accelerated Bionanomaterials Design Award #: 1931587	Poster	Slides
70	Sameer Shende	University of Oregon	CSSI: Elements: First Workshop on NSF and DOE High Performance Computing Tools Award #: 1939486	Poster	Slides
71	Sameer Shende	University of Oregon	SI2-SSI: Collaborative Research: A Software Infrastructure for MPI Performance Engineering: Integrating MVAPICH and TAU via the MPI Tools Interface Award #: 1450471	Poster	Slides
72	Naveen Sharma	Rochester Institute of Technology	Citizenly: Empowering Communities by Democratizing Urban Data Science Award #: 1943002	Poster	Slides
73	Rajiv Ramnath	Ohio State University	EAGER: Bridging the last mile; Towards an assistive cyberinfrastructure for accelerating computationally driven science Award #: 1945347	Poster	Slides
74	Natalia Villanueva Rosales	University of Texas at El Paso	ELEMENTS: DATA: HDR: SWIM to a Sustainable Water Future Award #: 1835897	Poster	Slides
75	Kenton McHenry	University of Illinois Urbana-Champaign	Collaborative Research: CSSI: Framework: Data: Clowder Open Source Customizable Research Data Management, Plus-Plus Award #: 1835834	Poster	Slides
76	Ken Koedinger	Carnegie Mellon University	CIF21 DIBBs: Building a Scalable Infrastructure for Data-Driven Discovery and Innovation in Education Award #: 1443068	Poster	Slides
77	Amit Chourasia	University of California, San Diego	CIF21 DIBBs: Ubiquitous Access to Transient Data and Preliminary Results via the SeedMe Platform Award #: 1443083	Poster	Slides
78	Zachary Ives	University of Pennsylvania	mProv: Provence-Based Data Analytics Cyberinfrastructure for High-frequency Mobile Sensor Data Award #: 1640813	Poster	Slides
79	Bill Tolone	University of North Carolina at Charlotte	Virtual Information-Fabric Infrastructure (VIFI) for Data-Driven Decisions from Distributed Data Award #: 1640818	Poster	Slides
80	Shawn McKee	University of Michigan	CC*DNI DIBBs: Multi-Institutional Open Storage Research InfraStructure (MI-OSiRIS) Award #: 1541335	Poster	Slides

81	Margo Seltzer	University of British Columbia	SI2-SSI: Collaborative Research: Bringing End-to-End Provenance to Scientists Award #: 1450277	Poster	Slides
82	Erkan Istanbulluoglu	University of Washington	Collaborative Research: SI2-SSI: Landlab: A Flexible, Open-Source Modeling Framework for Earth-Surface Dynamics Award #: 1450412	Poster	Slides
83	Edward Valeev	Virginia Tech	Collaborative Research: SI2-SSI: Software Framework for Electronic Structure of Molecules and Solids Award #: 1550456	Poster	Slides
84	Catherine Zucker	Harvard University	SI2-SSE: Collaborative Research: A Sustainable Future for the Glue Multi-Dimensional Linked Data Visualization Package Award #: 1739657	Poster	Slides
85	Anton Van der Ven	University of California Santa Barbara	SI2-SSE: Automated statistical mechanics for the first-principles prediction of finite temperature properties in hybrid organic-inorganic crystals Award #: 1642433	Poster	Slides
86	David Mencin	UNAVCO Inc. and University of Colorado	Collaborative Research: Framework: Data: NSCI: HDR: GeoSCIFramework: Scalable Real-Time Streaming Analytics and Machine Learning for Geoscience and Hazards Research Award #: 1835791	Poster	Slides
87	Andreas Kloeckner	University of Illinois at Urbana-Champaign	SHF:Small:Collaborative Research: Transform-to-perform: languages, algorithms, and solvers for nonlocal operators Award #:1911019	Poster	Slides
88	Petr Sulc	Arizona State University	Elements: Models and tools for online design and simulations of DNA and RNA nanotechnology Award #: 1931487	Poster	Slides
89	Rachana Ananthakrishnan	University of Chicago	Automate: A Distributed Research Automation Platform Award #: 1835890	Poster	Slides
90	Lucy Fortson	University of Minnesota	Collaborative Research: Framework: Software: HDR: Building the Twenty-First Century Citizen Science Framework to Enable Scientific Discovery Across Disciplines Award #: 1835530	Poster	Slides
91	Carol Hall	North Carolina State University	Element: Software: Enabling Millisecond-Scale Biomolecular Dynamics Award #: 1835838	Poster	Slides
92	Carol Hall	North Carolina State University	Element: Computational Toolkit to Discover Peptides that Self-assemble into User-selected Structures Award #: 1931430	Poster	Slides

93	Gerard Lemson	Johns Hopkins University	Long Term Access to Large Scientific Data Sets: The SkyServer and Beyond Award #: 1261715	Poster	Slides
94	Geoffrey Charles Fox	Indiana University Bloomington	Middleware and High-Performance Analytics Libraries for Scalable Data Science Award #: 1443054	Poster	Slides
95	Anand Padmanabhan	University of Illinois at Urbana Champaign	CIF21 DIBBs: Scalable Capabilities for Spatial Data Synthesis Award #: 1443080	Poster	Slides
96	Rich Wolski	University of California, Santa Barbara	CC*DNI DIBBs: Data Analysis and Management Building Blocks for Multi-Campus Cyberinfrastructure through Cloud Federation Award #: 1541215	Poster	Slides
97	Thomas A DeFanti	UC San Diego	CC*DNI DIBBs: The Pacific Research Platform Award #: 1541349	Poster	Slides
98	Bertram Ludaescher	University of Illinois, Urbana-Champaign	CC*DNI DIBBS: Merging Science and Cyberinfrastructure Pathways: The Whole Tale Award #: 1541450	Poster	Slides
99	George Alter	University of Michigan	Continuous Capture of Metadata for Statistical Data Award #: 1640575	Poster	Slides
100	Bonnie Hurwitz	University of Arizona	Ocean Cloud Commons Award #: 1640775	Poster	Slides
101	Juliana Freire	New York University	CIF21 DIBBs: EI: Vizier, Streamlined Data Curation Award #: 1640864	Poster	Slides
102	Krishna Rajan	University at Buffalo	DIBBS: EI: Data Laboratory for Materials Engineering Award #: 1640867	Poster	Slides
103	Shyam Dwaraknath	Lawrence Berkeley National Laboratory	The Local Spectroscopy Data Infrastructure (LSDI) Award #: 1640899	Poster	Slides
104	Ann Christine Catlin	Purdue University	Creating a Digital Environment for Enabling Data-Driven Science (DEEDS) Award #: 1724728	Poster	Slides
105	Haiying Shen	University of Virginia	CIF21 DIBBs: PD: Building High-Availability Data Capabilities in Data-Centric Cyberinfrastructure Award #: 1724845	Poster	Slides
106	Kimberly Claffy	University of California San Diego, San Diego Sumpercomputer Center	CIF21 DIBBs: EI: Integrated Platform for Applied Network Data Analysis (PANDA) Award #: 1724853	Poster	Slides

107	Tevfik Kosar	University at Buffalo	CIF21 DIBBs: PD: OneDataShare: A Universal Data Sharing Building Block for Data-Intensive Applications Award #: 1724898	Poster	Slides
108	Tevfik Kosar	University at Buffalo	EAGER: GreenDataFlow: Minimizing the Energy Footprint of Global Data Movement Award #: 1842054	Poster	Slides
109	Saul Youssef	Boston University	CIF21 DIBBs: EI: North East Storage Exchange Award #: 1753840	Poster	Slides
110	Jose Fortes	University of Florida	SI2-SSE: Human- and Machine-Intelligent Software Elements for Cost-Effective Scientific Data Digitization Award #: 1535086	Poster	Slides
111	Upulee Kanewala	Montana State University	CRII: SHF: Toward Sustainable Software for Science - Implementing and Assessing Systematic Testing Approaches for Scientific Software Award #: 1656877	Poster	Slides
112	Philip A. Wilsey	University of Cincinnati	III: Small: Partitioning Big Data for the High Performance Computation of Persistent Homology Award #: 1909096	Poster	Slides
113	Tim Menzies	NC State University	Elements: Can Empirical SE be Adapted to Computational Science? Award #: 1931425	Poster	Slides
114	Christopher Paciorek	University of California, Berkeley	SI2-SSI: Integrating the NIMBLE statistical algorithm platform with advanced computational tools andanalysis workflows Award #: 1550488	Poster	Slides
115	Jason Leigh	University of Hawaii at Manoa	SI2-SSI: SAGEnext: Next Generation Integrated Persistent Visualization and Collaboration Services for Global Cyberinfrastructure Award #: 1441963	Poster	Slides
116	Volker Blum	Duke University	Collaborative Research: SI2-SSI: ELSI-Infrastructure for Scalable Electronic Structure Theory Award #: 1450280	Poster	Slides
117	Volker Blum	Duke University	DMREF: Collaborative Research: HybriD3: Discovery, Design, Dissemination of Organic-Inorganic Hybrid Semiconductor Materials for Optoelectronic Applications Award #: 1729297	Poster	Slides
118	David Wells	University of North Carolina, Chapel Hill	SI2-SSI: Collaborative Research: Scalable Infrastructure for Enabling Multiscale and Multiphysics Applications in Fluid Dynamics, Solid Mechanics, and Fluid-Structure Interaction Award #: 1450327	Poster	Slides

119	Anthony Danalis	University of Tennessee	SI2-SSI: Collaborative Proposal: Performance Application Programming Interface for Extreme-scale Environments (PAPI-EX) Award #: 1450429	Poster	Slides
120	Yung-Hsiang Lu	Purdue University	SI2-SSE: Analyze Visual Data from Worldwide Network Cameras Award #: 1535108	Poster	Slides
121	Michael Zentner	University of California, San Diego	S2I2: Impl: The Science Gateways Community Institute (SGCI) for the Democratization and Acceleration of Science Award #: 1547611	Poster	Slides
122	Kesong YANG	University of California San Diego	SI2-SSI: Collaborative Research: A Robust High-Throughput Ab Initio Computation and Analysis Software Framework for Interface Materials Science Award #: 1550404	Poster	Slides
123	Mark Ghiorso	OFM Research	SI2-SSI: Collaborative Research: ENKI: Software infrastructure that ENables Knowledge Integration for modeling coupled geochemical and geodynamical processes Award #: 1550482	Poster	Slides
124	Dan Katz	University of Illinois at Urbana-Champaign	Collaborative Research: SI2-SSI: Swift/E: Integrating Parallel Scripted Workflow into the Scientific Software Ecosystem Award #: 1550588	Poster	Slides
125	Umberto Villa	Washington University in St Louis	Collaborative Research:SI2-SSI:Integrating Data with Complex Predictive Models under Uncertainty: An Extensible Software Framework for Large-Scale Bayesian Inversion Award #: 1550593	Poster	Slides
126	Michael Dixon	National Center for Atmospheric Research	SI2-SSI: Lidar Radar Open Software Environment (LROSE) Award #: 1550597	Poster	Slides
127	Rafael Ferreira da Silva	University of Southern California	Collaborative Research: SI2-SSE: WRENCH: A Simulation Workbench for Scientific Workflow Users, Developers, and Researchers Award #: 1642335	Poster	Slides
128	Andreas Goetz	University of California, San Diego	SI2-SSE: Enabling Chemical Accuracy in Computer Simulations: An Integrated Software Platform for Many-Body Molecular Dynamics Award #: 1642336	Poster	Slides
129	Grey Ballard	Wake Forest University	High Performance Low Rank Approximation for Scalable Data Analytics Award #: 1642385	Poster	Slides

130	Chad Hanna	Penn State University	Hearing the signal through the static: Real-time noise reduction in the hunt for binary black holes and other gravitational wave transients Award #: 1642391	Poster	Slides
131	Ritu Arora	University of Texas at Austin, Texas Advanced Computing Center	SI2-SSE: An Interactive Parallelization Tool Award #: 1642396	Poster	Slides
132	Cameron Smith	Rensselaer Polytechnic Institute	Fast Dynamic Load Balancing Tools for Extreme Scale Systems Award #: 1533581	Poster	Slides
133	Suresh Marru	Indiana University	Collaborative Research: SI2-SSI: Open Gateway Computing Environments Science Gateways Platform as a Service (OGCE SciGaP) Award #: 1339774	Poster	Slides
134	Shawn Douglas	UC San Francisco	SI2:SSE: Collaborative Research: Integrated Tools for DNA Nanostructure Design and Simulation Award #: 1740212	Poster	Slides
135	Edgar Solomonik	University of Illinois at Urbana-Champaign	Collaborative Research: Frameworks: Scalable Modular Software and Methods for High-Accuracy Materials and Condensed Phase Chemistry Simulation Award #: 1931258	Poster	Slides
136	Philip Harris	MIT	Collaborative Research: Frameworks: Machine learning and FPGA computing for real-time applications in big-data physics experiments Award #: 1931561	Poster	Slides
137	Gianfranco Ciardo	Iowa State University	SI2-SSE: A Next-Generation Decision Diagram Library Award #: 1642397	Poster	Slides
138	Anthony Danalis	University of Tennessee	SI2-SSE: PAPI Unifying Layer for Software-Defined Events (PULSE) Award #: 1642440	Poster	Slides
139	I-Te Lu	California Institute of Technology	SI2-SSE: PERTURBO: a software for accelerated discovery of microscopic electronic processes in materials Award #: 1642443	Poster	Slides
140	P. Bryan Heidorn	University of Arizona	SI2-SSE: Visualizing Astronomy Repository Data using WorldWide Telescope Software Systems Award #: 1642446	Poster	Slides
141	Xiaosong Li	University of Washington	SI2-SSI: Sustainable Open-Source Quantum Dynamics and Spectroscopy Software Award #: 1663636	Poster	Slides

142	Edgar Gabriel	University of Houston	Collaborative Research: SI2-SSI: EVOLVE: Enhancing the Open MPI Software for Next Generation Architectures and Applications Award #: 1663887	Poster	Slides
143	David Tarboton	Utah State University	Collaborative Research: SI2-SSI: Cyberinfrastructure for Advancing Hydrologic Knowledge through Collaborative Integration of Data Science, Modeling and Analysis Award #: 1664061	Poster	Slides
144	B.S. Manjunath	University of California, Santa Barbara	SI2-SSI: LIMPID: Large-Scale IMage Processing Infrastructure Development Award #: 1664172	Poster	Slides
145	Andrew Schultz	University at Buffalo	SI2-SSE: Infrastructure Enabling Broad Adoption of New Methods That Yield Orders-of-Magnitude Speedup of Molecular Simulation Averaging Award #: 1739145	Poster	Slides
146	Andrew Connolly	University of Washington	An Ecosystem of Reusable Image Analytics Pipelines Award #: 1739419	Poster	Slides
147	Christina Peterson	University of Central Florida	SI2-SSE: TLDS: Transactional Lock-Free Data Structures Award #: 1740095	Poster	Slides
148	Michael Sokoloff	University of Cincinnati	Collaborative Research: SI2:SSE: Extending the Physics Reach of LHCb in Run 3 Using Machine Learning in the Real-Time Data Ingestion and Reduction System Award #: 1740102	Poster	Slides
149	Hyowon Park	University of Illinois at Chicago	SI2-SSE: Collaborative Research: Software Framework for Strongly Correlated Materials: from DFT to DMFT Award #: 1740112	Poster	Slides
150	Brian Broll	Vanderbilt University	SI2-SSE: Deep Forge: a Machine Learning Gateway for Scientific Workflow Design Award #: 1740151	Poster	Slides
151	Yosuke Kanai	University of North Carolina at Chapel Hill	Collaborative Research: NSCI: SI2-SSE: Time Stepping and Exchange-Correlation Modules for Massively Parallel Real-Time Time-Dependent DFT Award #: 1740204	Poster	Slides
152	Brian Demsky	University of California, Irvine	SI2-SSE: C11Tester: Scaling Testing of C/C++11 Atomics to Real-World Systems Award #: 1740210	Poster	Slides
153	Alex Pak	University of Chicago	Highly Efficient and Scalable Software for Coarse-Grained Molecular Dynamics Award #: 1740211	Poster	Slides

154	Stanimire Tomov	University of Tennessee, Knoxville	SI2:SSE: MAtrix, TEnsor, and Deep-Learning Optimized Routines (MATEDOR) Award #: 1740250	Poster	Slides
155	Ryan May	University Corporation for Atmospheric Research	SI2-SSE: MetPy - A Python GEMPAK Replacement for Meteorological Data Analysis Award #: 1740315	Poster	Slides
156	Serban Porumbescu	University of California Davis	Gunrock: High-Performance GPU Graph Analytics. Award #: 1740333	Poster	Slides
157	Shaowen Wang	University of Illinois at Urbana-Champaign	SI2-S2I2 Conceptualization: Geospatial Software Institute Award #: 1743184	Poster	Slides
158	Karthik Ram	University of California, Berkeley	SI2-S2I2 Conceptualization: Conceptualizing a US Research Software Sustainability Institute (URSSI) Award #: 1743188	Poster	Slides
159	Ivan Rodero	Rutgers University	CIF21 DIBBs: EI: Virtual Data Collaboratory: A Regional Cyberinfrastructure for Collaborative Data Intensive Science Award #: 1640834	Poster	Slides
160	Daniel G Aliaga	Purdue University	Elements: Data: U-Cube: A Cyberinfrastructure for Unified and Ubiquitous Urban Canopy Parameterization Award #: 1835739	Poster	Slides
161	Roland Haas	University of Illinois	SI2-SSI: Collaborative Research: Einstein Toolkit Community Integration and Data Exploration Award #: 1550514	Poster	Slides
162	Xiaozhu Meng	Rice University	SI2-SSI: Collaborative Research: A Sustainable Infrastructure for Performance, Security, and Correctness Tools Award #: 1450273	Poster	Slides
163	Wenchang Lu	North Carolina State University	NSCI SI2-SSE: Multiscale Software for Quantum Simulations of Nanostructured Materials and Devices Award #: 1740309	Poster	Slides
164	Hari Subramoni	Ohio State University	SI2-SSI: FAMII: High Performance and Scalable Fabric Analysis, Monitoring and Introspection Infrastructure for HPC and Big Data Award #: 1664137	Poster	Slides
165	Matthew Turk	University of Illinois at Urbana-Champaign	Collaborative Research: SI2-SSI: Inquiry-Focused Volumetric Data Analysis Across Scientific Domains: Sustaining and	Poster	Slides

			Expanding the yt Community Award #: 1663914		
166	Clare McCabe	Vanderbilt University	Collaborative Research: NSCI Framework: Software for Building a Community-Based Molecular Modeling Capability Around the Molecular Simulation Design Framework (MoSDeF) Award #: 1835874	Poster	Slides
167	Douglas Thain	University of Notre Dame	DataSwarm: A User-Level Framework for Data Intensive Scientific Applications Award #: 1931348	Poster	Slides
168	Joe Stubbs	University of Texas, Austin	Collaborative Proposal: Frameworks: Project Tapis: Next Generation Software for Distributed Research Award #: 1931439	Poster	Slides
169	Frank Timmes	Arizona State University	Collaborative Research: SI2-SSI: Modules for Experiments in Stellar Astrophysics Award #: 1663684	Poster	Slides
170	Greg Newman, Stacy Lynn	Colorado State University	SI2-SSI: Advancing and Mobilizing Citizen Science Data through an Integrated Sustainable Cyber-Infrastructure Award #: 1550463	Poster	Slides
171	Rion Dooley	Chapman University	The Agave Platform: An Open Science-As-A-Service Cloud Platform for Reproducible Science Award #: 1450459	Poster	Slides
172	Joe Breen	University of Utah	CIF21 DIBBs: EI: SLATE and the Mobility of CapabilityAward #: 1724821	Poster	Slides
173	Andrew Lumsdaine	University of Washington	CSSI Element: GraphPack: Unified Graph Processing with Parallel Boost Graph Library, GraphBLAS and High-Level Generic Algorithm Award #: 1716828	Poster	Slides

6. Registered Participants

The PIs of 521 projects received an email invitation to participate in this meeting. Even those who do not currently have an active CSSI project were welcome to join the meeting. This meeting was held close to, and concurrently with, the SIAM Conference on Parallel Processing for Scientific Computing (PP20). Attendees of PP20 were encouraged through an email and a BoF session to join the meeting and interact with the CSSI investigators and visit the poster sessions in the CSSI PI meeting. A great response was received from the CSSI investigators and additional attendees. A total of 218 participants registered for the meeting, their names and institutions are listed as follows:

Table 3. List of registered participants

Name	Institution
Aleksander Durumeric	University of Chicago
Alex Pak	University of Chicago
Alexey Akimov	University at Buffalo, SUNY
Amit Chourasia	University of California, San Diego
Amneet Pal Singh Bhalla	San Diego State University
Anand Padmanabhan	University of Illinois at Urbana Champaign
Andreas Goetz	University of California, San Diego
Andreas Kloeckner	University of Illinois at Urbana-Champaign
Andreas Mueller	Columbia University
Andrew Connolly	University of Washington
Andrew Lumsdaine	University of Washington
Andrew Schultz	University at Buffalo
Ann Christine Catlin	Purdue University
Anthony Danalis	The University of Tennessee
Anton Van der Ven	University of California Santa Barbara
Ariel Rokem	University of Washington
Ashok Srinivasan	University of West Florida
Asti Bhatt	SRI International
B.S. Manjunath	University of California, Santa Barbara
Bertram Ludaescher	University of Illinois, Urbana-Champaign
Bill Tolone	University of North Carolina at Charlotte
Bonnie Hurwitz	University of Arizona
Braulio Villegas Martinez	National Institute for Astrophysics, Optics and Electronics
Brian Broll	Vanderbilt University
Brian Demsky	University of California, Irvine
Bruce Berriman	California Institute of Technology
Bryna Hazelton	University of Washington
Byung-Jun Yoon	Texas A&M University
Cameron Smith	Rensselaer Polytechnic Institute
Carlo Piermarocchi	Michigan State University
Carlos Maltzahn	University of California, Santa Cruz
Carol Hall	North Carolina State University
Carol Song	Purdue University
Cate Brinson	Duke University
Catherine Olschanowsky	Boise State University
Catherine Zucker	Harvard University
Chad Hanna	Penn State University

Chaowei Yang	George Mason University
Cheryl Tiahrt	University of South Dakota
Chris Hill	MIT
Christina Bandaragoda	University of Washington
Christina Peterson	University of Central Florida
Christopher Paciorek	University of California, Berkeley
Clare McCabe	Vanderbilt University
Dan Negrut	University of Wisconsin-Madison
Dane Morgan	University of Wisconsin - Madison
Daniel G Aliaga	Purdue University
Daniel S. Katz	University of Illinois at Urbana-Champaign
Daniel Shapero	University of Washington
David Elbert	Johns Hopkins University
David Hudak	The Ohio State University
David Lange	Princeton University
David Mencin	UNAVCO Inc. and University of Colorado
David Parker	Stanford University
David Sandwell	Univ. of California, San Diego
David Tarboton	Utah State University
David Wells	University of North Carolina, Chapel Hill
Denis Zorin	Denis Zorin
Dhabaleswar K (DK) Panda	The Ohio State University
Dmitry Pekurovsky	University of California San Diego
Douglas Thain	University of Notre Dame
Edgar Gabriel	University of Houston
Edgar Solomonik	University of Illinois at Urbana-Champaign
Edward Valeev	Virginia Tech
Eliu Huerta Escudero	University of Illinois
Elsa Olivetti	Massachusetts Institute of Technology
Erkan Istanbulluoglu	University of Washington
Ewa Deelman	University of Southern California
Frank Timmes	Arizona State University
Frederick Hansen	Nexight Group
Genevieve Bartlett	ISI/University of Southern CA
Geoffrey Charles Fox	Indiana University Bloomington
George Alter	University of Michigan
George K. Thiruvathukal	Loyola University Chicago
Gerard Lemson	Johns Hopkins University
Gianfranco Ciardo	Iowa State University

Gordon Watts	University of Washington
Greg Newman, Stacy Lynn	Colorado State University
Grey Ballard	Wake Forest University
Haiying Shen	University of Virginia
Hanna Terletska	Middle Tennessee State University
Hari Subramoni	The Ohio State University
Hasan Babaei	University of California-Berkeley
Heike Jagode	The University of Tennessee
Hendrik Heinz	University of Colorado at Boulder
Hongjie Xie	University of Texas at San Antonio
Huy (Ken) Tu	North Carolina State University
Hyowon Park	University of Illinois at Chicago
I-Te Lu	California Institute of Technology
Ilkay Altintas	University of California San Diego
In-Ho Cho	Iowa State University
Indika Kahanda	Montana State University
Ivan Rodero	Rutgers University
Jack Smith	Marshall University
Jae-kwang Kim	Iowa State University
James Bordner	University of California, San Diego
Jason Leigh	University of Hawaii at Manoa
Jeff Horsburgh	Utah State University
Jelena Mirkovic	University of Southern California
Jennifer S. Holmes	University of Texas at Dllas
Joe Breen	University of Utah
Joe Stubbs	University of Texas, Austin
John Stamper	Carnegie Mellon University
Jordan Powers	National Center for Atmospheric Research
Jose Fortes	University of Florida
Juan Pablo Vielma	MIT
Juliana Freire	New York University
Kam Syed	Amazon
Karthik Ram	University of California, Berkeley
Ken Koedinger	Carnegie Mellon University
Kennie Merz	Michigan State University
Kenton McHenry	University of Illinois Urbana-Champaign
Kesong YANG	University of California San Diego
Kevin Jorissen	Amazon Web Services
Kimberly Claffy	University of California San Diego, San Diego Supercomputer Center

Klaus Bartschat	Drake University
Krishna Rajan	University at Buffalo
Krister Shalm	Unviersity of Colorado, Boulder
Laura Condon	University of Arizona
Lucy Fortson	University of Minnesota
Luke Nambi Mohanam	University of California, Irvine
Madhav Marathe	University of Virginia
Madushanka Manathunga	Michigan State University
Mahmut Kandemir	Penn State
Margo Seltzer	The University of British Columbia
Marianna Safronova	University of Delaware
Mario Juric	University of Washington
Mark Ghiorso	OFM Research
Mark Shephard	Rensselaer Polytechnic Institute
Marouane kessentini	University of Michigan-Dearborn
Matthew Turk	University of Illinois at Urbana-Champaign
Michael Dixon	National Center for Atmospheric Research
Michael Shirts	University of Colorado
Michael Sokoloff	University of Cincinnati
Michael Zentner	University of California, San Diego
Michela Taufer	The University of Tennessee Knoxville
Mike Pritchard	University of California, Irvine
Miriah Meyer	University of Utah
Mohamed Soliman	Oklahoma State University
Nagarajan Kandasamy	Drexel University
Natalia Villanueva Rosales	University of Texas at El Paso
Naveen Sharma	Rochester Institute of Technology
Neil Heffernan	Worcester Polytechnic Institute
Nic Weber	University of Washington
Nicholas Murphy	Center for Astrophysics | Harvard & Smithsonian
Noemi Petra	University of California, Merced
Oliviero Andreussi	University of North Texas
P. Bryan Heidorn	University of Arizona
Patrick Brandt	University of Texas, Dallas
Petr Sulc	Arizona State University
Philip A. Wilsey	University of Cincinnati
Philip Harris	Massachusetts Institute of Technology
Rachana Ananthakrishnan	University of Chicago
Rafael Ferreira da Silva	University of Southern California

Rafal Angryk	Georgia State University
Rajesh Kalyanam	Purdue University
Rajiv Ramnath	The Ohio State University
Reed Maxwell	Colorado School of Mines
Rich Wolski	University of California, Santa Barbara
Richard A. Alo	Florida Agricultural and Mechnical University
Richard Evans	University of Texas at Austin
Richard West	Northeastern University
Rion Dooley	Champman University
Ritu Arora	University of Texas at Austin, Texas Advanced Computing Center
Robert Harrison	Stony Brook University
Roland Haas	University of Illinois
Ron Soltz	Wayne State University
Ryan Gilmore	Pennsylvania State University
Ryan May	University Corporation for Atmospheric Research
Sameer Shende	University of Oregon
Samuel Bekoe	University of California, Irvine
Sandra Gesing	University of Notre Dame
Saul Teukolsky	Cornell University
Saul Youssef	Boston University
Sean Clevleand	University of Hawaii
Serban Porumbescu	University of California Davis
Shantenu Jha	Rutgers University
Shaowen Wang	University of Illinois at Urbana-Champaign
Shawn Douglas	UCSF
Shawn McKee	University of Michigan
Shrideep Pallickara	Colorado State University
Shyam Dwaraknath	Lawrence Berkeley National Laboratory
Sirish Namilae	Embry-Riddle Aeronautical University
Sophia Hayes	Washington University in St. Louis
Srirangaraj Setlur	University at Buffalo, The State University of New York
Stacy Lynn	Colorado State University
Stanimire Tomov	The University of Tennessee, Knoxville
Subhashini Sivagnanam	University of California, San Diego
Suresh Marru	Indiana University
Tara Madhyastha	Amazon
Tevfik Kosar	University at Buffalo
Theodore Kisner	Lawrence Berkeley National Laboratory

Thomas A DeFanti	UC San Diego
Thomas Hacker	Purdue University
Tim Menzies	North Carolina State University
Timo Heister	Clemson University
Umberto Villa	Washington University in St Louis
Upulee Kanewala	Montana State University
Ute Herzfeld	University of Colorado Boulder
Venu Govindaraju	University at Buffalo
Victoria Stodden	University of Illinois, Urbana-Champaign
Volker Blum	Duke University
Wei Chen	Northwestern University
Wenchang Lu	North Carolina State University
Wolfgang Bangerth	Colorado State University
Xian-He Sun	Illinois Institute of Technology
Xiaogang Ma	University of Idaho
Xiaosong Li	University of Washington
Xiaozhu Meng	Rice University
Xin Miao	Missouri State University
Yao Liang	Indiana University Purdue University Indianapolis
Yinzhi Wang	University of Texas at Austin
Yong Chen	Texas Tech University
Yosuke Kanai	University of North Carolina at Chapel Hill
Yuanfang Cai	Drexel University
Yung-Hsiang Lu	Purdue University
Zachary Ives	University of Pennsylvania
Zhenming Liu	William & Mary

7. Best Practices Recommendations for Future Organizing Committees

The meeting was on schedule most of the time. Participants were engaged in discussions and networking opportunities. Some of the best practices that the current organizers believe contributed to have a successful meeting include: 1) Providing information and detailed instructions with enough time for attendees to prepare their lightning talks and posters, 2) Providing multiple opportunities for networking and open discussions as opposed to assigning most of the time for lecture-type presentations, 3) Having an updated website and material available online for everyone to access before, during and after the meeting, 4) Being on track with the schedule so attendees know what to expect, 5) Having a wide variety of food that can accommodate dietary restrictions creates a welcoming environment.

Given the space constraints of the venue, this meeting did not include smaller rooms to break into groups, we strongly encourage future organizers to consider this option. It is also recommended the poster session to be held in a large space to enable engaged discussions without disrupting other presenters.