

# SC19 Birds of a Feather on Software Engineering and Reuse in Modeling, Simulation, and Data Analytics for Science and Engineering

- **David E. Bernholdt**, Oak Ridge National Laboratory
- **Jeffrey Carver**, University of Alabama
- **Neil Chue Hong**, University of Edinburgh, Software Sustainability Institute
- **William Gropp**, University of Illinois, National Center for Supercomputing Applications (NCSA)
- **Carina Haupt**, German Aerospace Center (DLR)
- **Michael A. Heroux**, Sandia National Laboratories and St. John's University
- **Axel Huebl**, Lawrence Berkeley National Laboratory
- **Guido Juckeland**, Helmholtz-Zentrum Dresden-Rossendorf (HZDR)
- **Mozhgan Kabiri Chimeh**, University of Sheffield
- **Daniel S. Katz**, University of Illinois, National Center for Supercomputing Applications (NCSA)

**BOF web site:** <http://bit.ly/swe-cse-bof>

**Please give feedback on SC web site!**

**Mailing list signup:** <https://swe-cse-bof.groups.io/>

**Discussion notes:** <http://bit.ly/swe-cse-notes>

# Motivation and Goals

- CSE software developers already facing scientific demands for “bigger, better, and faster” modeling and simulation capabilities, entailing larger, more multidisciplinary and geographically dispersed development teams, must now also contend with significant architectural changes. Further, increases in data volume and complexity, and the increasing integration of “big data” (analytics) infrastructures (both hardware and software) raise additional SWE challenges.
- Our goal is to bring together people concerned about this topic to share existing activities, discuss how we can expand and improve on them, and share the results, complementing “traditional” venues for the academic (often versus practical) discussion of SWE for CSE, such as conferences and workshops.

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# Agenda

Time	Topic	Speaker/Moderator
3 min	BOF Introduction	David E. Bernholdt
30 min	Lightning Talks (9)	Mozhgan Kibiri Chimeh/ 9 speakers
52 min	General Discussion	Daniel S. Katz, audience
5 min	Wrap-Up and Next Steps	Daniel S. Katz, audience

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# Lightning Talks

	Topic	Speaker	Affiliation
1	Software citation: boldly going where no reference has gone before	Neil Chue Hong	Software Sustainability Institute, EPCC, University of Edinburgh
2	US-RSE: Building a National Community of Research Software Engineers	Ian Cosden	Princeton University
3	Best Practices for Governance of HPC Software Projects	Nathan Goldbaum	Quansight
4	Helmholtz Federated IT Services (HIFIS) – Creating Services together	Carina Haupt	German Aerospace Center (DLR)
5	Research Software Science: A Scientific Approach to Improving the Development and Use of Research Software	Michael A. Heroux	Sandia National Laboratories
6	Continuous Documentation for Fast-Moving Projects	Axel Huebl	Lawrence Berkeley National Laboratory
7	Thoughts on mentoring schemes for UK Research Software Engineers	Catherine Jones	UKRI: Science and Technology Facilities Council
8	Journal of Open Source Software (JOSS)	Daniel S. Katz	University of Illinois at Urbana-Champaign
9	Accelerating Scientific Discovery with Reusable Software	Scott Lathrop	Shodor Education Foundation, and NCSA at the University of Illinois

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