#### APPENDIX B. PAPERS ACCEPTED AND DISCUSSED AT WSSSPE1

### Developing and Supporting Software.

### Development Experiences.

- Mark C. Miller, Lori Diachin, Satish Balay, Lois Curfman McInnes, Barry Smith. Package Management Practices Essential for Interoperability: Lessons Learned and Strategies Developed for FASTMath [87]
- Karl W. Broman, Thirteen years of R/qtl: Just barely sustainable [29]
- Charles R. Ferenbaugh, Experiments in Sustainable Software Practices for Future Architectures [83]
- Eric G Stephan, Todd O Elsethagen, Kerstin Kleese van Dam, Laura Riihimaki. What Comes First, the OWL or the Bean? [88]
- Derek R. Gaston, John Peterson, Cody J. Permann, David Andrs, Andrew E. Slaughter, Jason M. Miller, Continuous Integration for Concurrent Computational Framework and Application Development [89]
- Anshu Dubey, B. Van Straalen. Experiences from Software Engineering of Large Scale AMR Multiphysics Code Frameworks [39]
- Markus Blatt. DUNE as an Example of Sustainable Open Source Scientific Software Development [30]
- David Koop, Juliana Freiere, Cláudio T. Silva, Enabling Reproducible Science with Vis-Trails [27]
- Sean Ahern, Eric Brugger, Brad Whitlock, Jeremy S. Meredith, Kathleen Biagas, Mark C. Miller, Hank Childs, VisIt: Experiences with Sustainable Software [26]
- Sou-Cheng (Terrya) Choi. MINRES-QLP Pack and Reliable Reproducible Research via Staunch Scientific Software [90]
- Michael Crusoe, C. Titus Brown. Walking the talk: adopting and adapting sustainable scientific software development processes in a small biology lab [31]
- Dhabaleswar K. Panda, Karen Tomko, Karl Schulz, Amitava Majumdar. The MVAPICH Project: Evolution and Sustainability of an Open Source Production Quality MPI Library for HPC [28]
- Eric M. Heien, Todd L. Miller, Becky Gietzel, Louise H. Kellogg. Experiences with Automated Build and Test for Geodynamics Simulation Codes [91]

#### Deployment, Support, and Maintenance of Existing Software.

- Henri Casanova, Arnaud Giersch, Arnaud Legrand, Martin Quinson, Frédéric Suter. Sim-Grid: a Sustained Effort for the Versatile Simulation of Large Scale Distributed Systems [92]
- Erik Trainer, Chalalai Chaihirunkarn, James Herbsleb. The Big Effects of Short-term Efforts: A Catalyst for Community Engagement in Scientific Software [38]
- Jeremy Cohen, Chris Cantwell, Neil Chue Hong, David Moxey, Malcolm Illingworth, Andrew Turner, John Darlington, Spencer Sherwin. Simplifying the Development, Use and Sustainability of HPC Software [93]
- Jaroslaw Slawinski, Vaidy Sunderam. Towards Semi-Automatic Deployment of Scientific and Engineering Applications [94]

# Best Practices, Challenges, and Recommendations.

- Andreas Prlić, James B. Procter. Ten Simple Rules for the Open Development of Scientific Software [41]
- Anshu Dubey, S. Brandt, R. Brower, M. Giles, P. Hovland, D. Q. Lamb, F. Löffler, B. Norris, B. O'Shea, C. Rebbi, M. Snir, R. Thakur, Software Abstractions and Methodologies for HPC Simulation Codes on Future Architectures [95]
- Jeffrey Carver, George K. Thiruvathukal. Software Engineering Need Not Be Difficult [84]

- Craig A. Stewart, Julie Wernert, Eric A. Wernert, William K. Barnett, Von Welch. Initial Findings from a Study of Best Practices and Models for Cyberinfrastructure Software Sustainability [96]
- Jed Brown, Matthew Knepley, Barry Smith. Run-time extensibility: anything less is unsustainable [97]
- Shel Swenson, Yogesh Simmhan, Viktor Prasanna, Manish Parashar, Jason Riedy, David Bader, Richard Vuduc. Sustainable Software Development for Next-Gen Sequencing (NGS) Bioinformatics on Emerging Platforms [98]

## Policy.

## Modeling Sustainability.

- Coral Calero, M. Angeles Moraga, Manuel F. Bertoa. Towards a Software Product Sustainability Model [43]
- Colin C. Venters, Lydia Lau, Michael K. Griffiths, Violeta Holmes, Rupert R. Ward, Jie Xu. The Blind Men and the Elephant: Towards a Software Sustainability Architectural Evaluation Framework [44]
- Marlon Pierce, Suresh Marru, Chris Mattmann. Sustainable Cyberinfrastructure Software Through Open Governance [45]
- Daniel S. Katz, David Proctor. A Framework for Discussing e-Research Infrastructure Sustainability [46]
- Christopher Lenhardt, Stanley Ahalt, Brian Blanton, Laura Christopherson, Ray Idaszak. Data Management Lifecycle and Software Lifecycle Management in the Context of Conducting Science [47]
- Nicholas Weber, Andrea Thomer, Michael Twidale. Niche Modeling: Ecological Metaphors for Sustainable Software in Science [48]

#### Credit, Citation, Impact.

- Matthew Knepley, Jed Brown, Lois Curfman McInnes, Barry Smith. Accurately Citing Software and Algorithms Used in Publications [51]
- Jason Priem, Heather Piwowar. Toward a comprehensive impact report for every software project [50]
- Daniel S. Katz. Citation and Attribution of Digital Products: Social and Technological Concerns [49]
- Neil Chue Hong, Brian Hole, Samuel Moore. Software Papers: improving the reusability and sustainability of scientific software [55]

In addition, the following paper from another area were also discussed in this area.

• Frank Löffler, Steven R. Brandt, Gabrielle Allen and Erik Schnetter. Cactus: Issues for Sustainable Simulation Software [70]

# Reproducibility.

- Sou-Cheng (Terrya) Choi. MINRES-QLP Pack and Reliable Reproducible Research via Staunch Scientific Software [90]
- Victoria Stodden, Sheila Miguez. Best Practices for Computational Science: Software Infrastructure and Environments for Reproducible and Extensible Research [99]

### Implementing Policy.

- Randy Heiland, Betsy Thomas, Von Welch, Craig Jackson. Toward a Research Software Security Maturity Model [57]
- Brian Blanton, Chris Lenhardt, A User Perspective on Sustainable Scientific Software [58]
- Daisie Huang, Hilmar Lapp. Software Engineering as Instrumentation for the Long Tail of Scientific Software [59]

• Chandra Krintz, Hiranya Jayathilaka, Stratos Dimopoulos, Alexander Pucher, Rich Wolski. Developing Systems for API Governance [56]

## Communities, Models, and Education.

### Communities.

- Reagan Moore. Extensible Generic Data Management Software [100]
- Karen Cranston, Todd Vision, Brian O'Meara, Hilmar Lapp. A grassroots approach to software sustainability [33]
- J.-L. Vay, C. G. R. Geddes, A. Koniges, A. Friedman, D. P. Grote, D. L. Bruhwiler. White Paper on DOE-HEP Accelerator Modeling Science Activities [65]
- Ketan Maheshwari, David Kelly, Scott J. Krieder, Justin M. Wozniak, Daniel S. Katz, Mei Zhi-Gang, Mainak Mookherjee. Reusability in Science: From Initial User Engagement to Dissemination of Results [66]
- Edmund Hart, Carl Boettiger, Karthik Ram, Scott Chamberlain. rOpenSci a collaborative effort to develop R-based tools for facilitating Open Science [67]
- L. Christopherson, R. Idaszak, S. Ahalt. Developing Scientific Software through the Open Community Engagement Process [32]
- Marlon Pierce, Suresh Marru, Mark A. Miller, Amit Majumdar, Borries Demeler. Science Gateway Operational Sustainability: Adopting a Platform-as-a-Service Approach [68]
- Lynn Zentner, Michael Zentner, Victoria Farnsworth, Michael McLennan, Krishna Madhavan, and Gerhard Klimeck, nanoHUB.org: Experiences and Challenges in Software Sustainability for a Large Scientific Community [69]
- Andy Terrel. Sustaining the Python Scientific Software Community [34]
- Frank Löffler, Steven R. Brandt, Gabrielle Allen and Erik Schnetter. Cactus: Issues for Sustainable Simulation Software [70]
- Nancy Wilkins-Diehr, Katherine Lawrence, Linda Hayden, Marlon Pierce, Suresh Marru, Michael McLennan, Michael Zentner, Rion Dooley, Dan Stanzione. Science Gateways and the Importance of Sustainability [71]
- Sou-Cheng (Terrya) Choi. MINRES-QLP Pack and Reliable Reproducible Research via Staunch Scientific Software [90]

In addition, the following paper from another area was also discussed in this area.

• Marcus Hanwell, Amitha Perera, Wes Turner, Patrick O'Leary, Katie Osterdahl, Bill Hoffman, Will Schroeder. Sustainable Software Ecosystems for Open Science [25]

### Industry & Economic Models.

- Anne C. Elster. Software for Science: Some Personal Reflections on Funding, Licensing, Publishing and Teaching [81]
- Ian Foster, Vas Vasiliadis, Steven Tuecke. Software as a Service as a path to software sustainability [80]
- Marcus Hanwell, Amitha Perera, Wes Turner, Patrick O'Leary, Katie Osterdahl, Bill Hoffman, Will Schroeder. Sustainable Software Ecosystems for Open Science [25]

In addition, the following papers from other areas were also discussed in this area.

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- Markus Blatt. DUNE as an Example of Sustainable Open Source Scientific Software Development [30]
- Dhabaleswar K. Panda, Karen Tomko, Karl Schulz, Amitava Majumdar. The MVAPICH Project: Evolution and Sustainability of an Open Source Production Quality MPI Library for HPC [28]
- Andy Terrel. Sustaining the Python Scientific Software Community [34]

### Education & Training.

- Ivan Girotto, Axel Kohlmeyer, David Grellscheid, Shawn T. Brown. Advanced Techniques for Scientific Programming and Collaborative Development of Open Source Software Packages at the International Centre for Theoretical Physics (ICTP) [40]
- Thomas Crawford. On the Development of Sustainable Software for Computational Chemistry [37]

In addition, the following papers from other areas were also discussed in this area.

- Charles R. Ferenbaugh, Experiments in Sustainable Software Practices for Future Architectures [83]
- David Koop, Juliana Freiere, Cláudio T. Silva, Enabling Reproducible Science with Vis-Trails [27]
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