3rd Workshop on Sustainable Software for Science: Practice and Experiences (WSSSPE3)

Supported by Gordon and Betty Moore Foundation, National Science Foundation, and Software Sustainability Institute

Wifi: eduroam

or

UCAR Guests (password: hucwaucov)

Why are you here?

- Interested in scientific software, and
  - Feel like there's a problem (scientific software should be more sustainable) and you have a solution to an aspect of it to share
  - or
  - Feel like there's a problem (scientific software should be more sustainable) and you want to work with others on solving an aspect of it
  - or
  - Something else?

WSSSPE in brief

- WSSSPE1 – let's talk about problems
- WSSSPE1.1 – let's talk about problems at SciPy
- WSSSPE2 – let's talk about solutions
  - But just in the room, not much after that
- WSSSPE2.1 – let's talk about solutions at SciPy
- WSSSPE3 – let's talk about solutions
  - And figure out how to make them happen
    - What resources are needed
    - What stakeholders need to be involved
    - What work needs to be done

Organizers

- Daniel S. Katz, University of Chicago & Argonne National Laboratory
- Gabrielle Allen, University of Illinois Urbana-Champaign
- Neil Chue Hong, Software Sustainability Institute, University of Edinburgh
- Sou-Cheng (Terrya) Choi, Illinois Institute of Technology & University of Chicago
- Sandra Gesing, University of Notre Dame
- Lorraine Hwang, University of California, Davis
- Manish Parashar, Rutgers University
- Erin Robinson, Foundation for Earth Science (local organizer)
- Matthew Turk, University of Illinois Urbana-Champaign
- Colin C. Venters, University of Huddersfield

- Thanks for logistics help to:
  - Laura Owen, University of Illinois Urbana-Champaign
  - Ethan Davis, UCAR
  - Sheri Ruscetta, UCAR

- Facilitators:
  - Costa Michailidis & Tim Dunne, Knowinnovation

High-Level Agenda - Today

- Today
- 1:00 pm — Introduction & Kickoff
- 2:00 pm — Keynote: Matthew Turk, University of Illinois, “Should scientific software be sustained?” & lightning talks
- 3:30 pm — short break (coffee, snacks to be purchased by attendees at the cafeteria in the building)
- 3:45 pm — continued lightning talks
- 4:45 pm — getting into working groups (list of possible groups in CFP, specific groups will depend on attendee interests) (available breakout rooms: Auditorium South, 2126, 2503, 2603, 2607, and 3131)
- 6:25 pm — end of formal day 1
- 6:30 pm — dinner (see next slide)

- Note: cafeteria is cash only, but an ATM is by the front door

High-Level Agenda - Tonight

- 6:30 pm — dinner (reservations made for groups of 8 at local restaurants, groups to self-assemble); dinner options:

- Cheesecake Factory (American) – 1401 Pearl St.
- Boulder Beer Brewery (brewpub) – 2880 Wilderness Pl.
- Chez Thuy (Vietnamese) – 2655 28th St.
- The Mediterranean Restaurant (middle eastern) – 1002 Walnut St.
- Carelli's (Italian) – 645 30th St.
- Jaipur (Indian) – 1800 Broadway #160
- Rio Grande (Mexican) – 1101 Walnut St.
- Zolo (southwestern) – 2525 Arapahoe Ave.
- Leaf Vegetarian Resaurant – 2010 16th Street (6:45 pm reservation)

- Sign up

Working groups

- Take notes (perhaps on a google doc, or whatever works for you)
  - Capture key points discussed, as well as plans
- Add a link to the google doc (or other) to the corresponding GitHub issue
  - https://github.com/danielskatz/WSSSPE/labels/WSSSPE3%20activity

High-Level Agenda - Tomorrow

- 8:30 am — Working group presentations – partially “pitched” to the audience, possibly including some funders (who will not commit to funding anything, just providing feedback), including e.g., NSF, EPSRC, Sloan.
- 9:30 am — Working group activities
- 10:30 am — short break (coffee, snacks to be purchased by attendees at the cafeteria in the building)
- 10:45 am — more working group activities
- noon — lunch (to be purchased by attendees at the cafeteria in the building)
- 1:00 pm — yet more working group activities
- 3:15 pm — short break (coffee, snacks to be purchased by attendees at the cafeteria in the building)
- 3:30 pm — working group final present backs
- 4:30 pm — closing discussion
- 5:00 pm — end of formal meeting

High-Level Agenda - Wednesday

- 8:30 am to 5:00 pm — (optional) WSSSPE3 report writing (room 2503)
- coffee, snacks, and lunch to be purchased by attendees at the cafeteria in the building

- Gateway Computing Environments (GCE15) workshop starts at noon

Potential Working Groups

- Development and Community
- Training
- Credit
- Publishing
- Reproducibility and testing
- Documentation

Potential Working Groups

- Development and Community
  - Writing a white paper/review paper about best practices in developing sustainable software
  - Documenting successful models for funding specialist expertise in software collaborations
  - Creating and curating catalogs for software tools that aid sustainability (perhaps categorized by domain, programming languages, architectures, and/or functions, e.g., for code testing, documentation)
  - Documenting case studies for academia/industry interaction
  - Determining effective strategies for refactoring/improving legacy scientific software
  - Determining principles for engineering design for sustainable software
  - Create a set of guidance giving examples of specific metrics for the success of scientific software in use, why they were chosen, what they are useful to measure, and any challenges/pitfalls; then publish this as a white paper
- Training
  - Writing a white paper on training for developing sustainable software, and coordinating multiple ongoing training-oriented projects
  - Developing curriculum for software sustainability, and ideas about where such curriculum would be presented, such as a summer training institute

Potential Working Groups

- Credit
  - Hacking the credit and citation ecosystem (making it work, or work better, for software)
  - Developing a taxonomy of contributorship/guidelines for including software contributions in tenure review
  - Documenting case studies of receiving credit for software contributions
  - Developing a system of awards and recognitions to encourage sustainable software
- Publishing
  - Developing a categorization of journals that publish software papers (building on existing work), and case studies of alternative publishing mechanisms that have been shown to improve software discoverability/reuse e.g., popular blogs/websites
  - Determining what journals that publish software paper should provide to their reviewers (e.g., guidelines, mechanisms, metadata standards, etc.)
- Reproducibility and testing
  - Building a toolkit that could allow conference organizers to easily add a reproducibility track
  - Documenting best practices for code testing and code review
- Documentation
  - Develop landing pages on the WSSSPE website (or elsewhere) that enable the community to easily find up-to-date information on a WSSSPE topic (e.g., software credit, scientific software metrics, testing scientific software)

Overall Goal

- Let's talk about solutions that will make scientific software more sustainable
- And figure out how to make them happen
  - What resources are needed
  - What stakeholders need to be involved
  - What work needs to be done