

## [Working towards Sustainable Software for Science](#) [1]

Submitted by erinmr on Wed, 2014-07-02 10:07 Wednesday, July 9, 2014 - 08:15 to 08:45

**Event:** [Summer Meeting 2014](#) [2]

**Session Type:** [Plenary](#) [3]

### **Abstract/Agenda:**

This talk will look at the goal of sustainable scientific software from the point-of-view of an NSF program officer who funds software as infrastructure, meaning software that enables a community beyond the developers to perform research, and from the point-of-view of the attendees of the First Workshop on Sustainable Software for Science: Practice and Experiences (WSSSPE1, <http://wssspe.researchcomputing.org.uk/wssspe1/> [4]). Issues to be discussed include what sustainability means, funding, incentives, career paths, communities, licensing, and governance.

### **Notes:**

Big Science and Infrastructure

- Hurricanes affect humans
- Multiphysics: atmosphere, ocean, coast, vegetation, soil
- Humans: what have they built, where are they, what will they do?
- Infrastructure
  - Urgent/scheduled processing
  - software applications
  - etc.

Exploding data volumes and powerful simulation methods mean that more researchers need advanced infrastructure.

Science Infrastructure Challenges

- Science
  - Larger teams, more disciplines, more countries
- Data
  - Need for interoperability (systems and policies)
- Systems
- Software
- People
  - Education, Training, career paths, credit and attribution

Software is really essential for the bulk of science

Research is becoming dependent on advances in software.

Software Vision

- Infrastructure role and lifecycle: Research, science and engineering, research, education

Discussion on ACI Software Cluster Programs

Discussion on Software Infrastructure Projects

Current NSF Software Infrastructure Projects [bit.ly/sw-ci](http://bit.ly/sw-ci)

Discussion of Software Infrastructure: Solicitation and Decision Process

Discussion of Working Toward Sustainable Software for Science: Practice and Experiences (#WSSSPE)

<http://wssspe.researchcomputing.org.uk/> [5]

- Motivation
- Developing Software
- Best Practices

- Policy
- Communities
- Defining Sustainability
- Career Paths
- People are essential elements of research infrastructure. Difficult to motivate scientists to create sustainable software.
- Ideas for Moving Forward

### Session Leads:

**Name:** [Daniel Katz](#) [6]  
**Organization(s):** [NSF](#) [7]

### Presenters:

**Name:** [Daniel Katz](#) [6]  
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- [2] <https://commons.esipfed.org/2014SummerMeeting>
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