The Conceptualization of URSSI – How You Can Engage

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July 24, 2018
Conceptualizing a US Research Software Sustainability Institute (URSSI)
Conceptualizing a US Research Software Sustainability Institute (URSSI)

Award Abstract #1743188
SI2-S2I2 Conceptualization: Conceptualizing a US Research Software Sustainability Institute (URSSI)

- NSF Org: Office of Advanced Cyberinfrastructure (OAC)
- Initial Amendment Date: December 21, 2017
- Latest Amendment Date: December 21, 2017
- Award Number: 1743188
- Award Instrument: Standard Grant
- Start Date: December 15, 2017
- End Date: June 30, 2019 (Estimated)
- Awarded Amount to Date: $499,999.00

URSSI
US Research Software Sustainability Institute

Start Date: December 15, 2017

End Date: June 30, 2019 (Estimated)

Awarded Amount to Date: $499,999.00
URSSI Team

Karthik Ram
UC Berkeley

Sandra Gesing
Notre Dame

Jeff Carver
University of Alabama

Daniel S. Katz
UIUC

Nic Weber
U. Washington
URSSI Team

Senior Personnel

Wolfgang Bangerth · Anshu Dubey · Melissa Haendel · Michael A Heroux · Kathryn Huff · Suresh Marru · Kate Mueller · Jarek Nabrzyski · Kyle Niemeyer · Marlon Pierce · Ariel Rokem · Arfon Smith · Tracy Teal · Matthew Turk · Rick Wagner · Michael Zentner

Advisory Board

Richard Arthur · Michelle Barker · Philip E. Bourne · Neil Chue Hong · Daniel Crawford · James Howison · Kurt Schwehr · Jeff Spies · Nancy Wilkins-Diehr
Research Software

Use 90% 95%
Can't continue without 70% 63%

http://doi.org/10.5281/zenodo.843607
> 50% neither formal nor informal training in software engineering

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<thead>
<tr>
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<th>Use</th>
<th>Can't continue without</th>
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<tr>
<td>UK</td>
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<td>70%</td>
</tr>
<tr>
<td>US</td>
<td>95%</td>
<td>63%</td>
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[https://doi.org/10.5281/zenodo.843607](https://doi.org/10.5281/zenodo.843607)
Lack of career paths

Use
90%

Can't continue without
70%

95%

63%

http://doi.org/10.5281/zenodo.843607
How to cite software?

Use

90%  95%

Can't continue without

70%  63%

http://doi.org/10.5281/zenodo.843607
Areas of Concern

• Functioning of the individual and team
• Functioning of the research software
• Functioning of the research field itself

Developing a pathway to research software sustainability
Functioning of the Individual and Team

- Training & education
- Ensuring appropriate credit for software development
- Enabling publication pathways for research software
- Fostering satisfactory and rewarding career paths for people who develop and maintain software
- Increasing the participation of underrepresented groups in software engineering
Functioning of Research Software

- Supporting sustainability of the software
- Growing community, evolving governance, and developing relationships between organizations, both academic and industrial
- Fostering both testing and reproducibility
- Supporting new models and developments (e.g., agile web frameworks, Software-as-a-Service)
- Supporting contributions of transient contributors (e.g., students)
Functioning of the Research Field Itself

- Growing communities around research software and disparate user requirements
- Cataloging extant and necessary software
- Disseminating new developments
- Training researchers in the usage of software
- Understanding and improving pipelines of diverse developers and maintainers
URSSI and Other S2I2 Projects

URSSI
(Software Sustainability)

SGCI (Science Gateways)

MoISSI (Molecular Sciences)

HEP-S2I2 (High Energy Physics)

Science & Engineering Disciplines
URSSI and Other S2I2 Projects

Goal: Close collaboration and fill in gaps on each axis
Conceptualization

• Workshops
  • First workshop took place in April in Berkeley

April 2018
Conceptualization

- Workshops
  - First workshop took place in April in Berkeley
  - Next workshop will take place in October in Chicago
- Software credit workshop
- Incubator workshop
- Survey
- Ethnographic studies
- Mission and vision working group
## Initial Straw Man

<table>
<thead>
<tr>
<th></th>
<th>Supporting software</th>
<th>Supporting science</th>
<th>Supporting community</th>
<th>Science Impact</th>
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<tbody>
<tr>
<td><strong>Development support</strong></td>
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<tr>
<td><strong>Incubator</strong></td>
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<tr>
<td><strong>Training</strong></td>
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<td><strong>Policy</strong></td>
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<tr>
<td><strong>Community</strong></td>
<td>x</td>
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How to Connect

- Website http://urssi.us/
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- Website http://urssi.us/
- Materials https://github.com/si2-urssi
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Results from a US survey about Research Software Engineers

Daniel S. Katz, Sandra Gesing, Olivier Philippe, and Simon Hettrick, June 21, 2018

In 2016, the UK Software Sustainability Institute (SSI) ran a first survey of Research Software Engineers (RSEs): the people who write code in academia. This produced the first insight into the demographics, job satisfaction, and practices of RSEs. To support and broaden this work, the Institute planned to run the survey every year in the UK and an ever-expanding number of countries so that insight and comparison can be made across the globe. Ultimately, the SSI hopes that these results, the anonymized version of which are open licensed, will act as a valuable resource to understand and improve the working conditions for RSEs.

In 2017, led by Olivier Philippe and Simon Hettrick from the SSI, a set of such surveys were run across the UK, Canada, Germany, the Netherlands, South Africa, and the US. One or more people from each non-UK country “translated” the questions so that they made sense in the local language and culture. The UK team ran the surveys, with the collaborators from the other countries—Scott Henwood (Canada), Stephan Janosch and Martin Hammitzsch (Germany), Ben van Werkhoven and Tom Bakker (Netherlands), Anelda van der Walt (South Africa), and Daniel S. Katz and Sandra Gesing (USA)—helping to publicize the survey in their countries. When the surveys were complete, the UK team analyzed the
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Join the Mailing List

[Form]
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- Mailing list: http://urssi.us/
- Discuss: https://discuss.urssi.us/

<table>
<thead>
<tr>
<th>URSSI</th>
<th>Sign Up</th>
<th>Log In</th>
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</thead>
<tbody>
<tr>
<td>all categories</td>
<td>Latest</td>
<td>Top</td>
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<tr>
<td>Topic</td>
<td>Category</td>
<td>Users</td>
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<tr>
<td>Welcome to URSSI discourse</td>
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<tr>
<td>Research software is critical to supporting science. This research software is essential to progress in almost all research fields, but it's often not developed in an efficient or sustainable way, and knowledge is often …</td>
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<td>more</td>
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<td>US RSE Community: any existing efforts?</td>
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<tr>
<td>Software project management for people with backgrounds in other research disciplines</td>
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<td>Teaching RSE skills</td>
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- Twitter https://twitter.com/si2urssi
Thanks!

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- Mailing list http://urssi.us/
- Discuss https://discuss.urssi.us/
- Twitter https://twitter.com/si2urssi
- Workshops http://urssi.us/workshops/

Join us for our next workshop in October in Chicago!