

# The CI Milieu: Organizations

## SGCI, URSSI, WSSSPE, UK RSE, US RSE

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Virtual Residency Summer Workshop on  
Intermediate Research Computing Facilitation

University of Oklahoma

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# Sustainability for Cyberinfrastructure - NSF



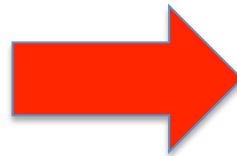
**Elements:** Small groups - create & deploy robust capabilities for demonstrated need to advance science & engineering.

**Framework Implementations:** Larger teams organized around the development and application of common infrastructure aimed at solving common research problems, resulting in a sustainable community framework serving a diverse community or communities.

**Planning Grants for Community Cyberinfrastructure:** Focus on long-term capabilities in cyberinfrastructure to serve a research community of substantial size and disciplinary breadth.

**Community Cyberinfrastructure Implementations:** Focus on long-term hubs of excellence in cyberinfrastructure and technologies, to serve a research community of substantial size and disciplinary breadth.

SI2  
Software Infrastructure for  
Sustained innovation



CSSI  
Cyberinfrastructure for Sustained  
Scientific Innovation

# Sustainability for Cyberinfrastructure - NSF

Sustainability Institutes and Excellence Hubs are funded to support the CI and research community

Support via implemented institutes is free for you!  
Your chance to influence conceptualizations!



## Implementations

- Science Gateways Community Institute (SGCI)
- The Molecular Sciences Software Institute (MolSSI)
- Institute for Research and Innovation in Software for High Energy Physics (IRIS-HEP)

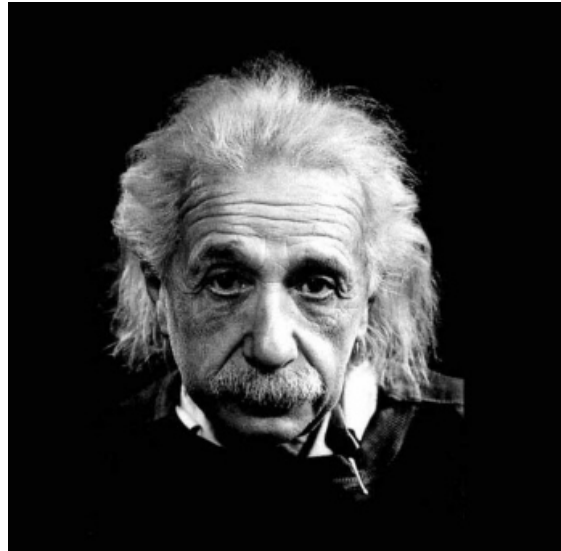
## Conceptualizations

- US Research Software Sustainability Institute (URSSI)
- Geospatial
- ...

# State of the Art in Research

Increased complexity of

- research questions
- hardware
- software
- instruments
- data volume
- data formats

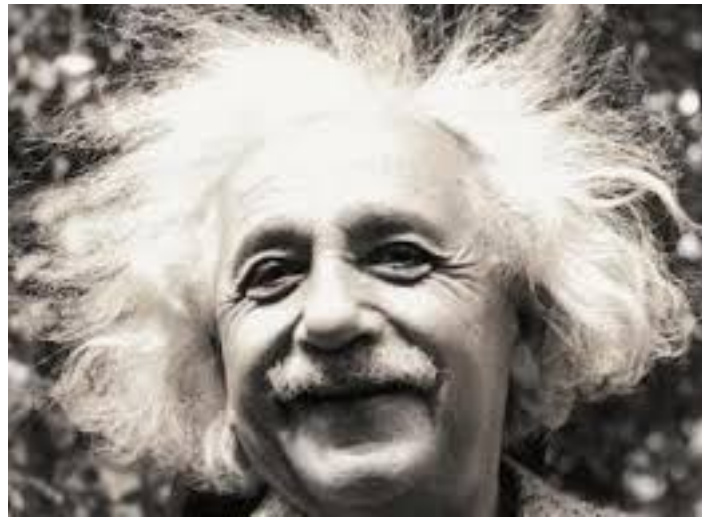


The need for **end-to-end solutions** for accessing **data, software, computing services, and equipment** specific to the needs of a science or engineering discipline

# Science Gateways

Increased complexity of

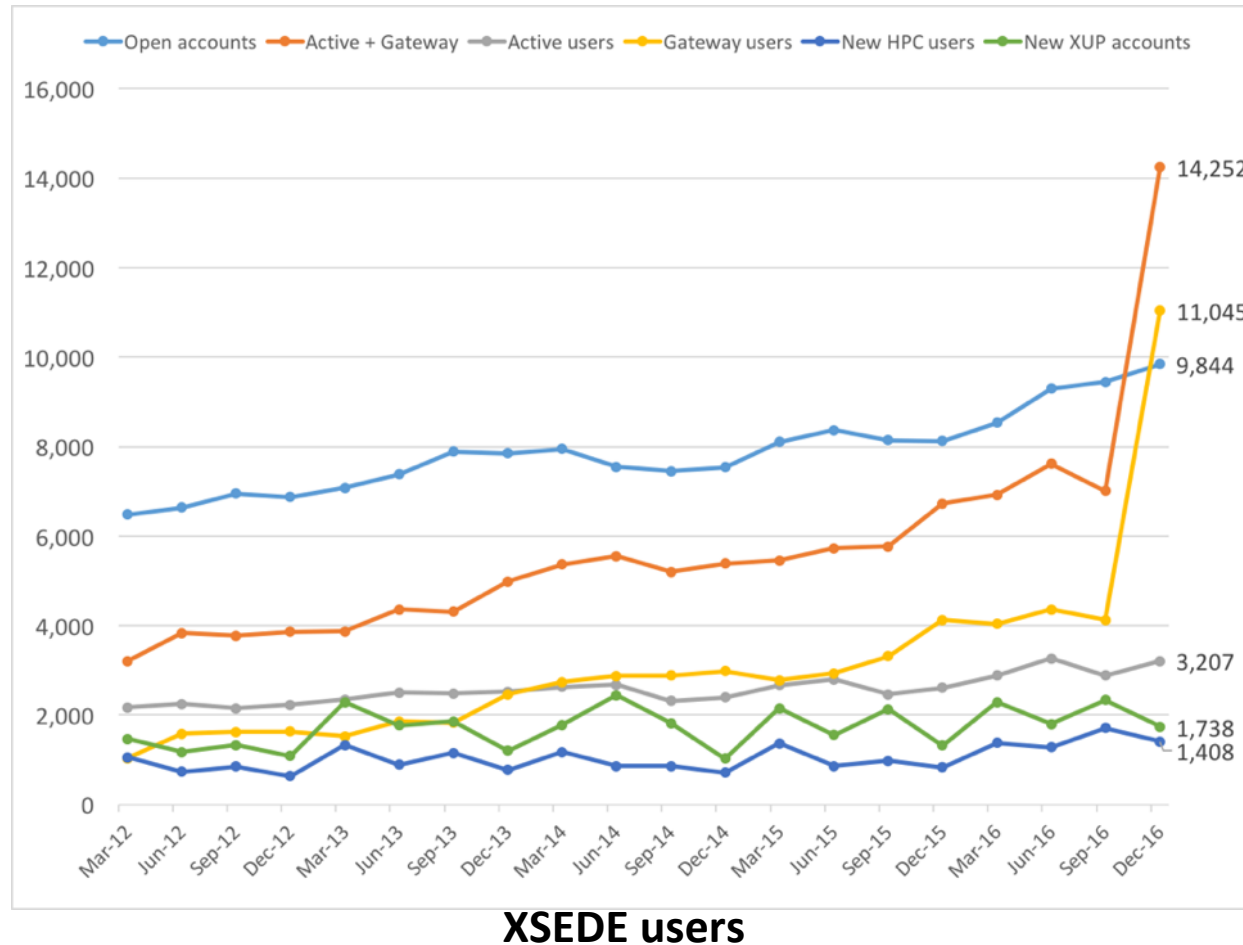
- research questions
- hardware
- software
- instruments
- data volume
- data formats



**Science Gateways!**

The need for **end-to-end solutions (not only GUIs!!!)** for accessing **data, software, computing services, and equipment** specific to the needs of a science or engineering discipline

## Gateway users are 77% of active XSEDE users in Q4 2016



All users

Gateways

Login

This is largely due to the CIPRES and I-TASSER gateways, but others are gaining

# Science Gateways Community Institute

## Incubator

Get advice (sustainability, usability, cybersecurity, other) on your existing gateway

## Extended Developer Support

Work with SGCI to build a gateway for you – up to 1 year developer time

## Scientific Software Collaborative

Find a working gateway or gateway development software in our catalog

## Community Engagement and Exchange

webinar series, gateways in the news, google scholar feed, case studies, annual conference, blog posts

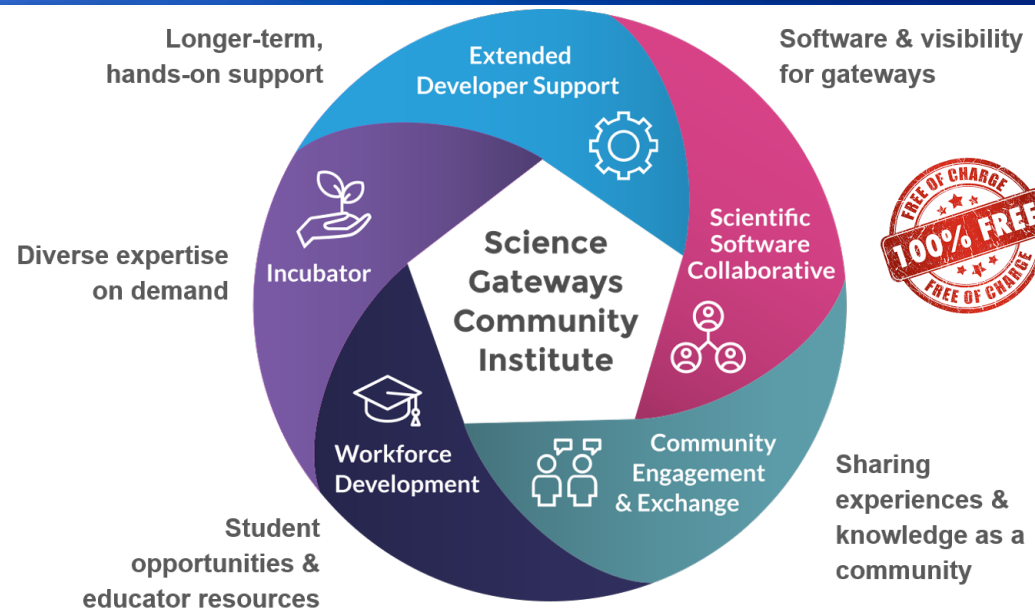
## Workforce Development

Enroll a student in an internship program to learn gateway development

## Launch of a new SGCI program at PEARC19!

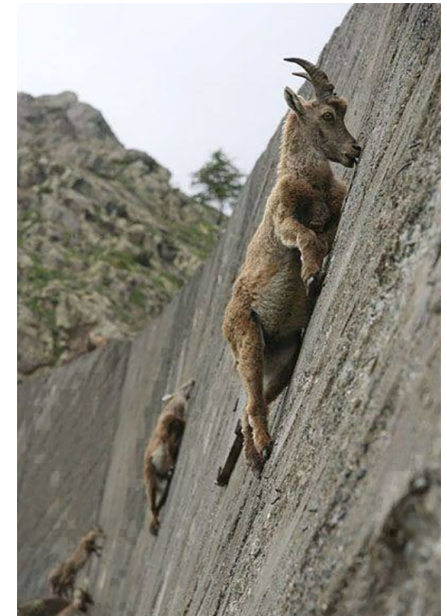
## Gateway Ambassadors

Community building  
Building of gateway groups at institutions and in consortia



## Collaborations

Make  
Challenges  
Less  
Steep



# Connect with SGCI

## Incubator Sustainability Bootcamp

- <https://sciencegateways.org/engage/bootcamp>

## Work with us

- <https://sciencegateways.org/consulting/work-with-us>

## Yearly Conference

- <https://sciencegateways.org/engage/annual-conference>

## Become involved as a partner or affiliate

- <https://sciencegateways.org/about/partners>

## Software/Gateway Catalog

- <https://catalog.sciencegateways.org/>

## Train students in internships

- <https://sciencegateways.org/engage/student-focused>

## Gateway Ambassadors

- <https://sciencegateways.org/engage/gateway-ambassadors>

Webinars, blogs, newsletter, Twitter, LinkedIn etc.

<https://sciencegateways.org>



# Research Software



Use

90%

95%



Can't  
continue  
without

70%

63%

# Research Software

> 50% neither formal nor informal training  
in software engineering



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

# Research Software



Use

90%

95%

Can't  
continue  
without

70%

63%

# Research Software



How to cite software?

Use

90%

95%

Can't  
continue  
without

70%

63%

<http://doi.org/10.5281/zenodo.843607>

# Software Sustainability



Software  
Sustainability  
Institute

About

Programmes and Events

## The importance of sustainability

**Sustainability** means that the software you use today will be available - and continue to be improved and supported - in the future.

## Better science through superior software

Our work is focussed around four themes we believe are fundamental to doing research correctly in the digital age. These are related to **our manifesto**.

The first of these is **Skills and Training**: creating a capable research software community by enabling access to software development training for all researchers and teaching them methods to advance their research.

**Recognition and Reward** promotes and contributes to systems of credit for good software development and reuse practice.

**Career Paths** recognises and champions the varied job roles associated with research software; with a primary focus on the academic sector but suggesting industrial practice where applicable.

Finally, **Reproducible Research** promotes the fundamental place of software in supporting confidence in the research process and its results.

Taken together, these enable the efficient and effective use of software to tackle both the grand challenges that push the boundaries of human knowledge to day-to-day research software tasks.

<https://www.software.ac.uk/about>

# Conceptualization

- Workshops
  - Requirements gathering workshops
  - Software credit workshop
  - Incubator workshop
  - **Winter school in December!**
- Survey
- Ethnographic studies
- Mission and vision working group

# URSSI Strawhorse

	Supporting Software	Supporting People	Supporting the community	Science & research impact
Development Support (consulting & short term small project support)	X			X
Incubator (technology advice, business planning, usability advice, etc.)	X			X
Training (courses & guides)	X	X		X
Policy (research & campaigns)		X	X	X
Community (fellowships, workshops, blogs, website)	X	X	X	X

# How to Connect

- Website <http://urssi.us/>
- Materials <https://github.com/si2-urssi>
- Blog posts <http://urssi.us/blog/>
- Mailing list <http://urssi.us/>
- Discuss <https://discuss.urssi.us/>
- Twitter <https://twitter.com/si2urssi>
- Workshops <http://urssi.us/workshops/>



# WSSSPE (Working Towards Sustainable Software for Science: Practice and Experience)

- Workshops since 2013
- Working groups

## About WSSSPE

Progress in scientific research is dependent on the quality and accessibility of software at all levels and it is now critical to address many new challenges related to the development, deployment, and maintenance of reusable software. In addition, it is essential that scientists, researchers, and students are able to learn and adopt a new set of software-related skills and methodologies.

Established researchers are already acquiring some of these skills, and in particular a specialized class of software developers is emerging in academic environments who are an integral and embedded part of successful research teams.

WSSSPE provides a forum for discussion of the challenges, including both positions and experiences, and a forum for the community to assemble and act.

[Learn more about WSSSPE](#)

## Community & Channels

### Mailing List

[to join](#)

[to post](#) (only subscribers can post to the list)

### Twitter

Follow [@WSSSPE](#)

Tweet using [#wssspe](#)

### Facebook

Follow our [Facebook group](#)

### Slack

There is a Slack team for WSSSPE including channels for various working groups

[To join the main team](#)

Once you have joined the main team, join other channels through slack

- <http://wssspe.researchcomputing.org.uk/>

# UK RSE Association

## Welcome to the UK Research Software Engineer Association

Welcome to the UKRSE Association website. We are an association working to create a community and raise awareness of the UK's Research Software Engineers. We campaign for the recognition and adoption of the RSE role within academia along with the need for appropriate reward and career opportunities for RSEs. We organise regular events to allow Research Software Engineers to meet, exchange knowledge and collaborate.

Joining the RSE Community is easy. [Sign up](#) to our mailing list to receive notices about events, our campaign, job vacancies from other Research Software Groups and enquiries from other RSEs looking to get help or create new collaborations.

*Influencing academia to recognise the fundamental role that software plays in today's research.*

## What is a Research Software Engineer?

**A growing number of people in academia combine expertise in programming with an intricate understanding of research. Although this combination of skills is extremely valuable, these people lack a formal place in the academic system. This means there is no easy way to recognise their contribution, to reward them, or to represent their views.** Without a name, it is difficult for people to rally around a cause, so we created the term *Research Software Engineer*. We are now working to raise awareness of the role and bring the community together.

<https://rse.ac.uk/>

## Fourth Annual RSE Conference – 17th-19th September 2019

The Call for Participation is open until the 7th May.

[Sign up for notifications about the Conference.](#)

RSEConUK 2019 will be held at the University of Birmingham, Tuesday 17th to Thursday 19th September 2019.

## Join Us!

Join: [sign up to the mailing list](#)

Discuss: We use Slack for discussions. If you are from a pre-approved institution you can [signup here](#).

Alternatively you can [Request Access](#)



## Tweets by @ResearchSoftEng

 Society of Research Software Engineering  
Retweeted



# US RSE Community

- Slack channel and upcoming email list
- Has grown to over 50 people in the last three months
- Steering committee will suggest rules to govern community (biweekly calls)
- Soon: Monthly community calls
- **BoFs: PEARC19 and SC19**

<https://us-rse.org/>



HOME COMMUNITY ▼ RESOURCES ▼ GET INVOLVED ▼ CAREERS ▼

## Join US-RSE

By joining the community you will:

- Receive announcements of events organized by and for RSEs
- Connect with research software engineers from across the country in many disciplines
- Help us to raise awareness of the importance of software in research and vital role we play in creating this software

### Join the discussion

Please consider joining the discussion in the [US-RSE Slack Group](#)! You can request access to the slack group by filling out this [form](#).

Thanks

Questions?

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