



HIRSE\_PS

Helmholtz Platform for Research Software Engineering –  
Preparatory Study



# US-RSE: Envisioning the Next Stage and Defining Next Steps

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*Executive Director*

December 12, 2023

<https://us-rse.org>

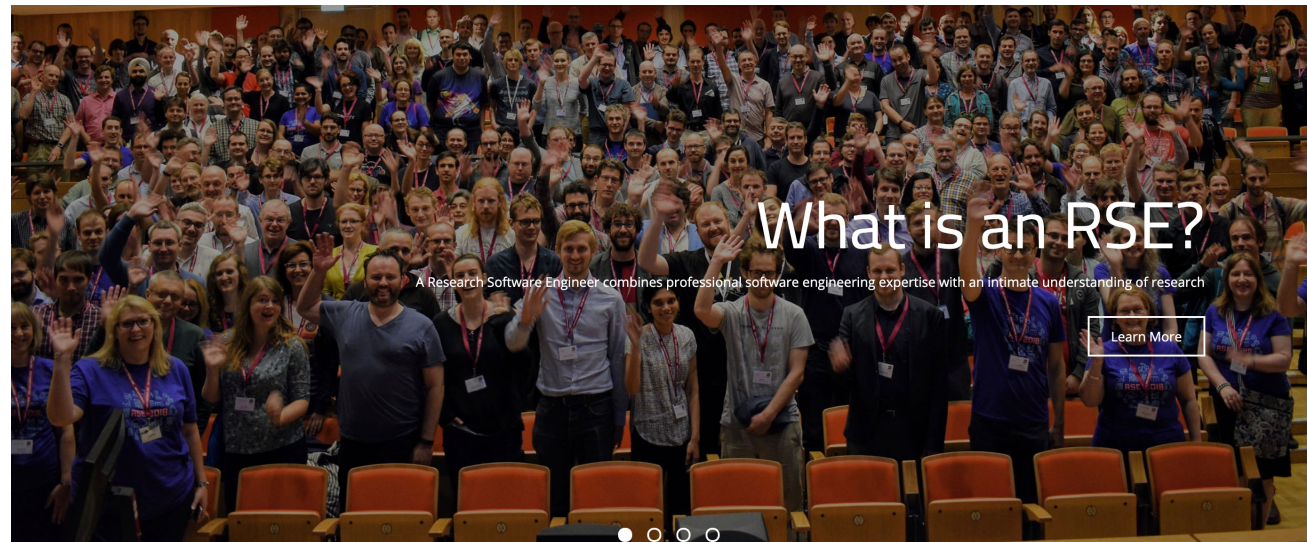


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# RSEs – Movement and Term Born in the UK

- 2012 SSI's Collaborations Workshop - “Research Software Engineer”
- Late 2013 UKRSE Association forms
- Since 2019 Society of Research Software Engineering



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*We like an inclusive definition of Research Software Engineers to encompass those who regularly use expertise in programming to advance research. This includes researchers who spend a significant amount of time programming, full-time software engineers writing code to solve research problems, and those somewhere in-between. We aspire to apply the skills and practices of software development to research to create more robust, manageable, and sustainable research software.*

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*A Research Software Engineer (RSE) combines professional software engineering expertise with an intimate understanding of research.*

Definition by the Society of Research Software Engineering



# US-RSE – The First Steps

- US: Winter 2017-2018
  - US Survey of RSEs: ~175 responses
    - 12 responded with interest to build a national community
  - UK Sponsored *1<sup>st</sup> International RSE Leaders Meeting*
    - 5 US delegates
- Jan-Feb 2018: US-RSE Slack workspace and first website go live
- Building of steering committee in 2018
- First Steering Committee elections and Annual General Meeting in 2020



# US-RSE Mission

## 1. **Community**

- Create a professional community to share knowledge, connections, and resources

## 2. **Advocacy**

- Promote RSEs impact on research, highlighting the critical and valuable role RSEs serve

## 3. **Resources**

- Provide access to information and material to support individuals and RSE groups

## 4. **Diversity, Equity, and Inclusion**

- Actively promote, encourage, and improve diversity within RSE community

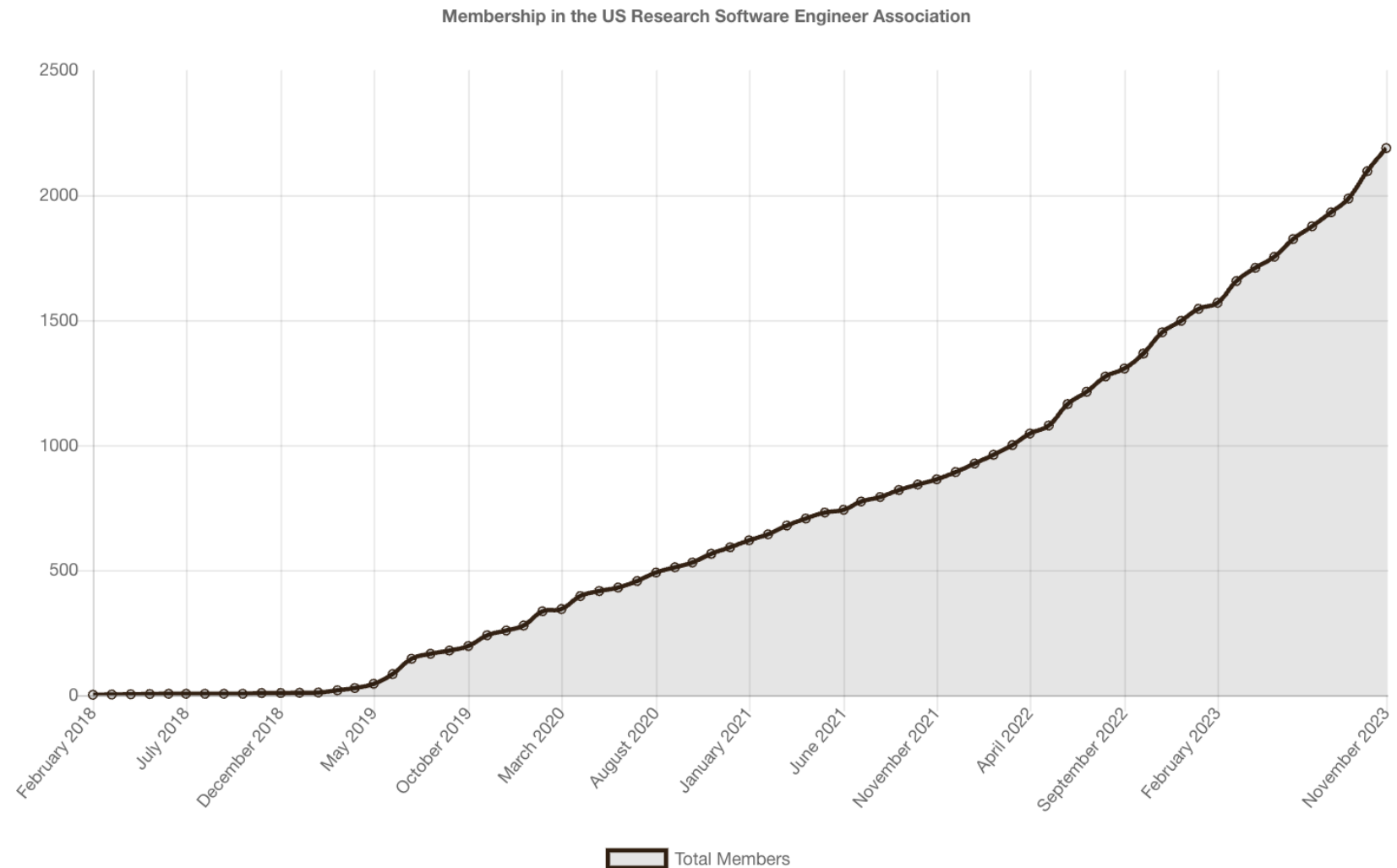
## A community-driven grassroots organization

### Members:

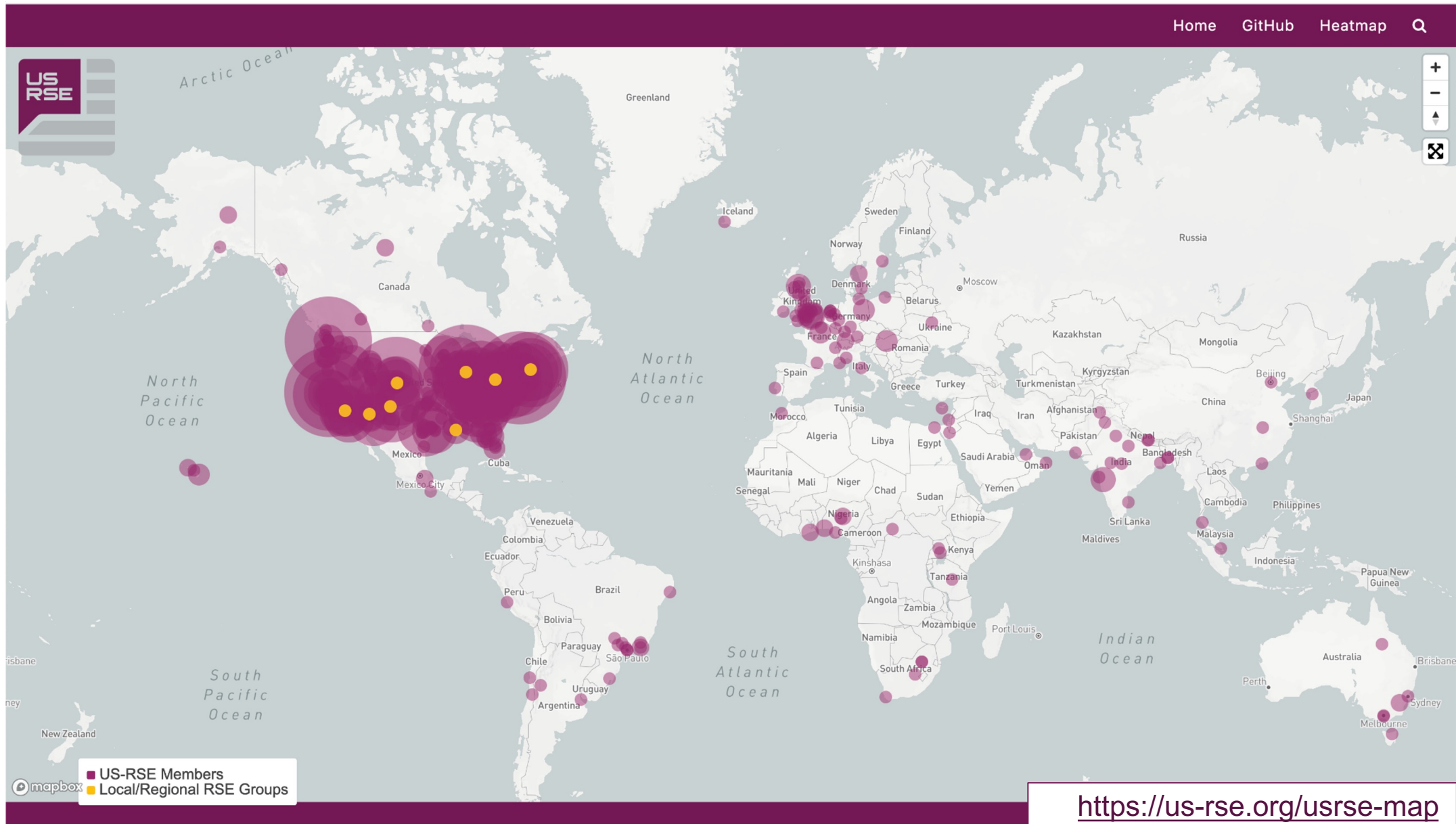
- Writing and contributing research software at
  - Universities, laboratories, knowledge institutes, companies, & more
- Interested in research software engineer careers
  - Students, researchers, software engineers
- Identifying as RSE “allies”
  - Manage, sponsor, support



# Membership Growth

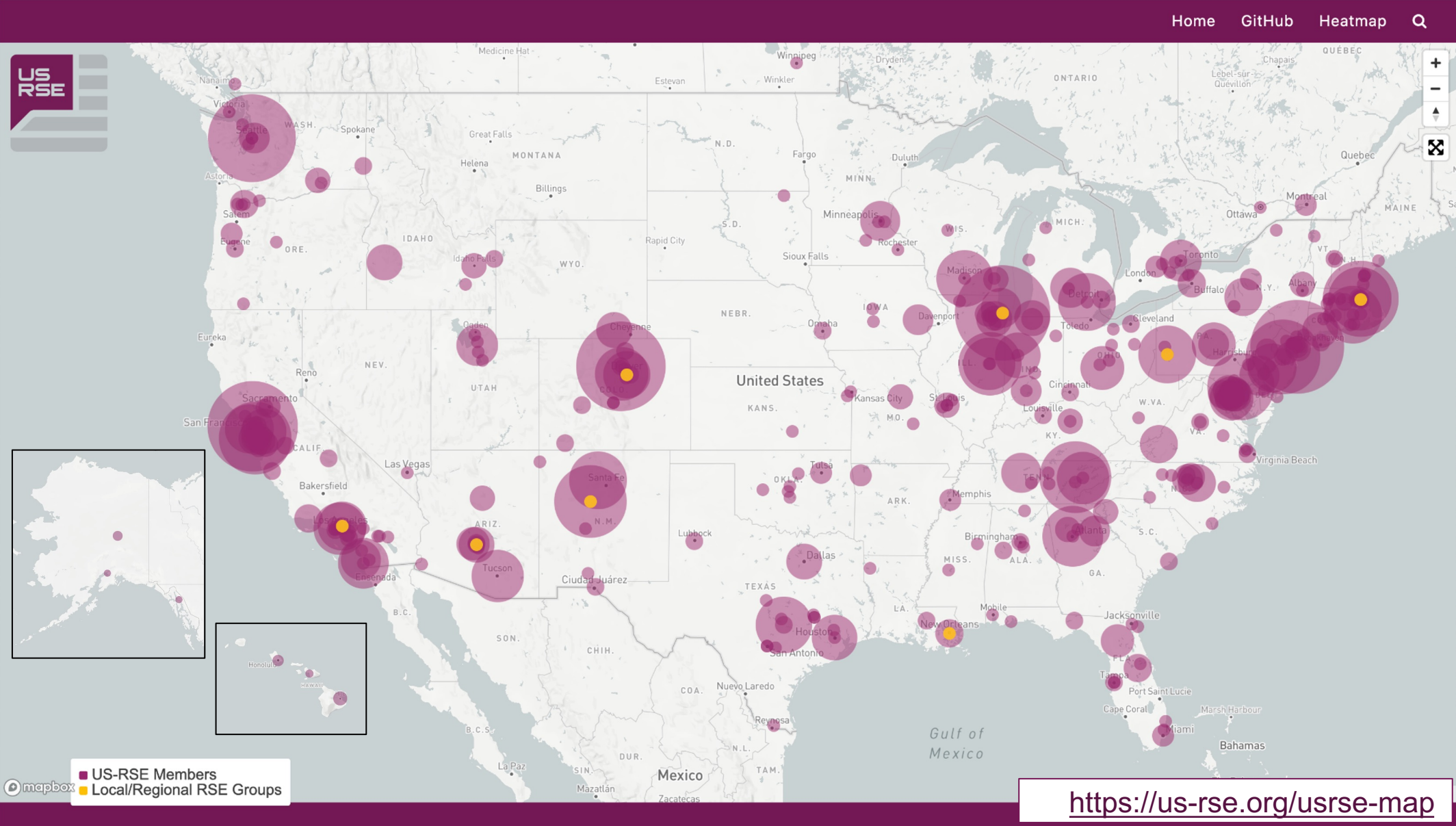


# US-RSE Members





# US-RSE Members



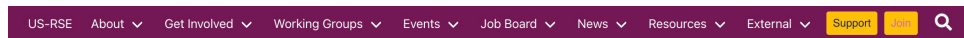


# US-RSE Resources

- Website
- Newsletters
- Slack Workspace
- LinkedIn, Twitter, Mastodon
- Job Board
- YouTube



<https://us-rse.org>



## RSE Opportunities

### Current RSE Openings

1. [Principal ML Research Scientist](#): Kempner Institute, Harvard University, Cambridge, MA *Posted: Dec 07, 2023*
2. [ML Research Scientist](#): Kempner Institute, Harvard University, Cambridge, MA *Posted: Dec 07, 2023*
3. [Computational Astrophysics Postdoctoral Researcher](#): Los Alamos National Laboratory, Los Alamos, NM *Posted: Dec 06, 2023*
4. [Full Stack Developer](#): Institute for Genomic Medicine, Nationwide Children's Hospital, Columbus, Ohio *Posted: Dec 05, 2023*
5. [Programmer II](#): Children's Hospital of Philadelphia, Philadelphia, PA *Posted: Dec 05, 2023*
6. [OSTP Software Developer](#): Kitware, Clifton Park, NY *Posted: Nov 30, 2023*
7. [Research Assistant I](#): Michigan State University, East Lansing, MI *Posted: Nov 29, 2023*
8. [POSE Research Software Engineer and Technical Lead \(2 positions\)](#): Open Molecular Software Foundation, Remote in US *Posted: Nov 29, 2023*
9. [Computational Scientist, High Performance and Research Computing](#): University of Rhode Island Center for Computational Research, Kingston, RI *Posted: Nov 21, 2023*
10. [Associate Research Scientist / Research Scientist - Software](#): Flatiron Institute, Center for Computational Neuroscience, New York, NY *Posted: Nov 17, 2023*
11. [Performance Tuning Analyst](#): Princeton University, Princeton, NJ (in-person, not remote) *Posted: Nov 14, 2023*
12. [Research Software Engineer – Neutron Sciences](#): Oak Ridge National Laboratory, Oak Ridge, TN (Flexible/Hybrid) *Posted: Oct 19, 2023*
13. [Infrastructure Software Engineer](#): Flatiron Institute - Simons Foundation, New York, NY *Posted: Oct 18, 2023*
14. [Research Software Engineer II \(Language and Intelligence\)](#): Princeton University, Princeton, NJ *Posted: Oct 02, 2023*
15. [Lead Neuroimaging Software Developer](#): Boys Town, Omaha, NE *Posted: Sep 25, 2023*
16. [Geospatial Software Engineer](#): Clark University - Center for Geospatial Analytics, Worcester, MA *Posted: Sep 14, 2023*
17. [Research Software Engineer II](#): Princeton University, Princeton, NJ *Posted: Sep 07, 2023*

**US-RSE | @us\_rse@fosstodon**

@us\_rse Follows you

US Research Software Engineers Community, [us-rse.org](https://us-rse.org)

📍 USA 🌐 [us-rse.org](https://us-rse.org) 📅 Joined June 2019

188 Following 2,688 Followers



# US-RSE Recurring & Upcoming Events

- Monthly Community Calls
- DEI Speaker Series\* & Media Club
- Funder Speaker Series\*
- Education & Training Speaker Series\*
- Conference Panels/BoFs/Workshops/Outreach



Feb 2022 Community Call: Workflow Tools

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



<https://us-rse.org>



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\*Most available on US-RSE YouTube channel



# Working & Other Groups

## Working groups

- Awards
- Code of Conduct and Moderation
- Code Review
- Diversity, Equity, and Inclusion (DEI)
- Education & Training
- Grants
- Group Management
- Mentorship Program
- Outreach
- RSE Empowerment in National Labs
- User Experience (UX)
- Website
- Regional and affinity groups (being formed)

## Affinity groups

- RSE Group Leaders' Network
- Neuroscience group (under discussion)

## Regional groups

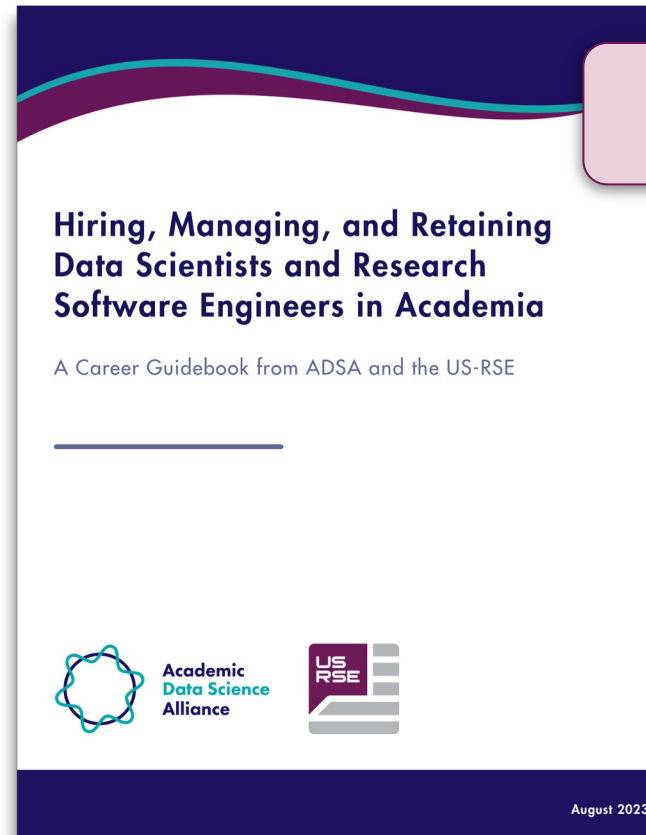
- Chicago
- Front Range (CO)
- New England
- New Orleans



Image by Gerd Altmann from Pixabay

# New Resource - Career Guidebook

- US-RSE & ADSA Career Support Workshop (Oct '22)
  - Guidebook for RSE & DS career paths in academia
  - Published in Aug '23 <https://doi.org/10.5281/zenodo.8264153>



100+  
pages!



8K  
VIEWS

4K  
DOWNLOADS

► Show more details



# New Resource - RSE Career Guide

- In partnership with IEEE Computer Society\*
- 25 page brochure
  - Intro and background
  - How to build an RSE Career
  - Why Research Software Engineering?
- Published in Nov '23
  - Zenodo & <https://us-rse.org/resources/rses>

2K  
👁 VIEWS

1K  
📄 DOWNLOADS

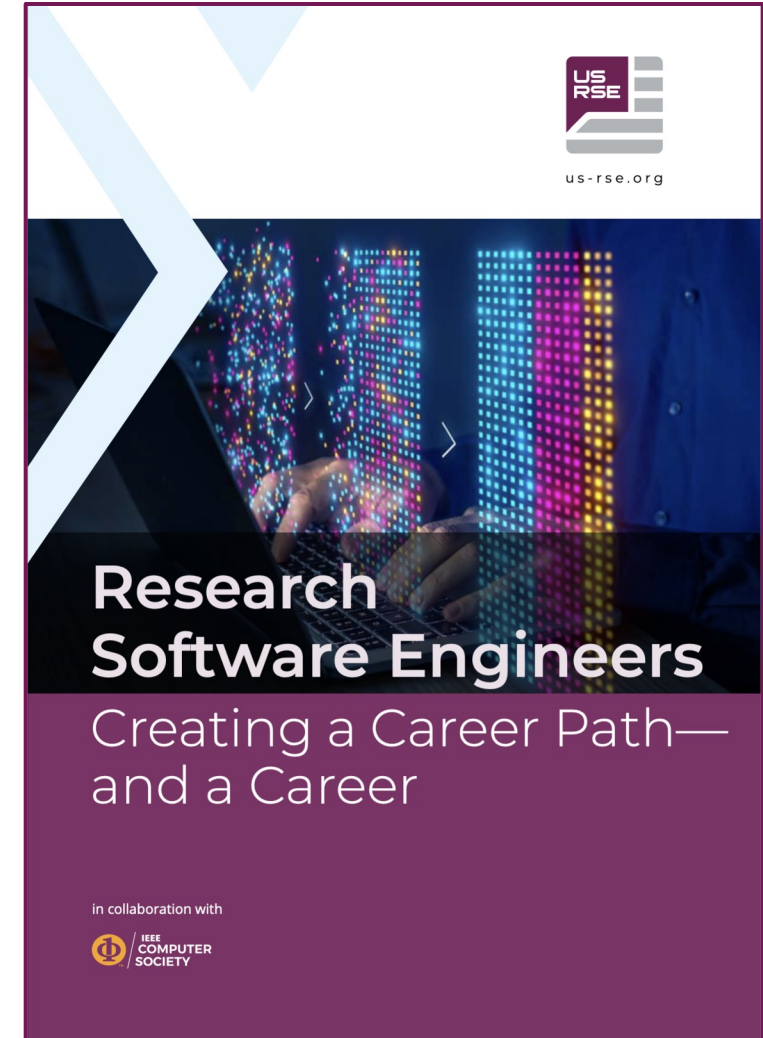
▶ Show more details

\*Special thanks to Dan Katz for leading the effort!

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<https://doi.org/10.5281/zenodo.10073233>



# US-RSE - New Fiscal Sponsor

- January '23: we switched to a new fiscal sponsor
  - After ~2 years, US-RSE left Open Collective Foundation (OCF)
- Community Initiatives - 501(c)(3) non-profit
  - US-RSE is a “sponsored project”
  - Provides grant support, legal services, support for crowdfunding and donation management, and certain types of insurance for volunteers
  - Enables US-RSE to hire staff
- We are still navigating the non-profit landscape!





# Our First Conference!

**US  
RSE  
2023**

## **1st Annual Conference of the US Research Software Engineer Association**

Chicago, IL  
October 16-18

**Software-Enabled Discovery and Beyond**

[View Presentations](#)

<https://us-rse.org>



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# The Inaugural Conference

US-RSE - start in 2018 with a handful of people

Two virtual workshops

- 2021 – 136 registrations
- 2022 – 151 registrations

## USRSE'23

250 registrations!



So excited!

# US-RSE'23

- Held at Univ. of Illinois Chicago
- 250 total participants
  - Facility capacity
- Technical program “tracks”
  - Dev Ops & Cyberinfrastructure
  - Research & Development Tooling
  - Culture & Community
  - Software Engineering Practice
  - ML/AI





# Conference Program

- Program from submissions
  - 4 tutorials
  - 3 workshops
  - 6 Birds of a Feather
  - 19 short/long papers
  - 25 talks
  - 15 posters
  - 2 notebooks
- Additional program features
  - 2 keynotes
  - Funding agency panel
  - Student program
  - Sponsor talks
  - Poster reception
  - Conference dinner
  - Social hour



Our mascot:  
The unicorn!



# Many People Make This Conference Possible

## Sponsors!!!

Diamond



Platinum

**ILLINOIS**  
NCSA | National Center for  
Supercomputing Applications



**Google Cloud**

Gold



Silver

**Chan  
Zuckerberg  
Initiative**

Bronze



Local



DISCOVERY PARTNERS INSTITUTE  
PART OF THE UNIVERSITY OF ILLINOIS SYSTEM





# Yesterday, Today, Tomorrow



## ***Yesterday, Today, Tomorrow***

A celebration of all that RSEs have done for computing in the past,  
in the present, and in the future

<https://us-rse.org>

 [@us\\_rse@fosstodon.org](mailto:@us_rse@fosstodon.org)





# Date and Location

## **Conference Dates:**

October 15 - 17, 2024

## **Venue:**

Albuquerque Convention Center  
401 2nd St NW  
Albuquerque, NM 87102



# Explore New Mexico!

- **Nickname:** Land of Enchantment
- **Statehood:** 1912; 47th state
- **Population (as of July 2022):** 2,113,344
- **Capital:** Santa Fe
- **Biggest city:** Albuquerque
- **State bird:** greater roadrunner
- **State flower:** yucca
- Home to the **International Balloon Fiesta**





ALFRED P. SLOAN  
FOUNDATION

Enabling investment in 3 key and transformative areas:

1. Dedicated staff
2. Activities & initiatives
3. Organizational tools & community health



So excited!





# Newly-Enabled Strategic Investments

## Dedicated staff

Full-time Community Manager

Support and grow internal US-RSE  
community activities



Sophia Anyatonwu

# Newly-Enabled Strategic Investments

## Dedicated staff

### Full-time Community Manager

Support and grow internal US-RSE community activities

### Part-time Executive Director

Long-term financial sustainability of the organization



So excited about my new role!

# Newly-Enabled Strategic Investments

## Dedicated staff

- Full-time Community Manager
- Part-time Executive Director

## Activities and initiatives

- Conference
  - Enable signing contracts
  - Bootstrap first two years
- Community Funds
  - Provide funding to members
  - <https://us-rse.org/grants-and-awards/>
- Awards
  - *Research Software Engineering Awards*





# Community Initiative & Travel Grants

- Program Goals:
  - Grow and diversify the US-RSE community and larger RSE community
  - Connect people within the US-RSE community
  - Assist individuals to grow in their own career
  - Increase visibility and viability of Research Software Engineering as a career
  - Create opportunities for underserved community members
- Applications fall into two categories:
  - Community: These benefit a group of individuals within the community (e.g., hosting a regional group meetup)
  - Individual: These benefit an individual applicant (e.g., a travel grant)
- Funding
  - From \$100-\$10,000 per proposal
  - Most expected to be <\$2,500

<https://us-rse.org/grants-and-awards/>

Next deadline: Dec 31



# Newly-Enabled Strategic Investments

## Dedicated staff

- Full-time Community Manager
- Part-time Executive Director

## Activities and initiatives

- Conference
- Community Grants
- Awards

## Organizational tools & community health

- DEI consulting
- Code of Conduct response training
- Swag!
- Tools & software to make US-RSE more effective



<https://otter.technology/>



<https://us-rse.org>

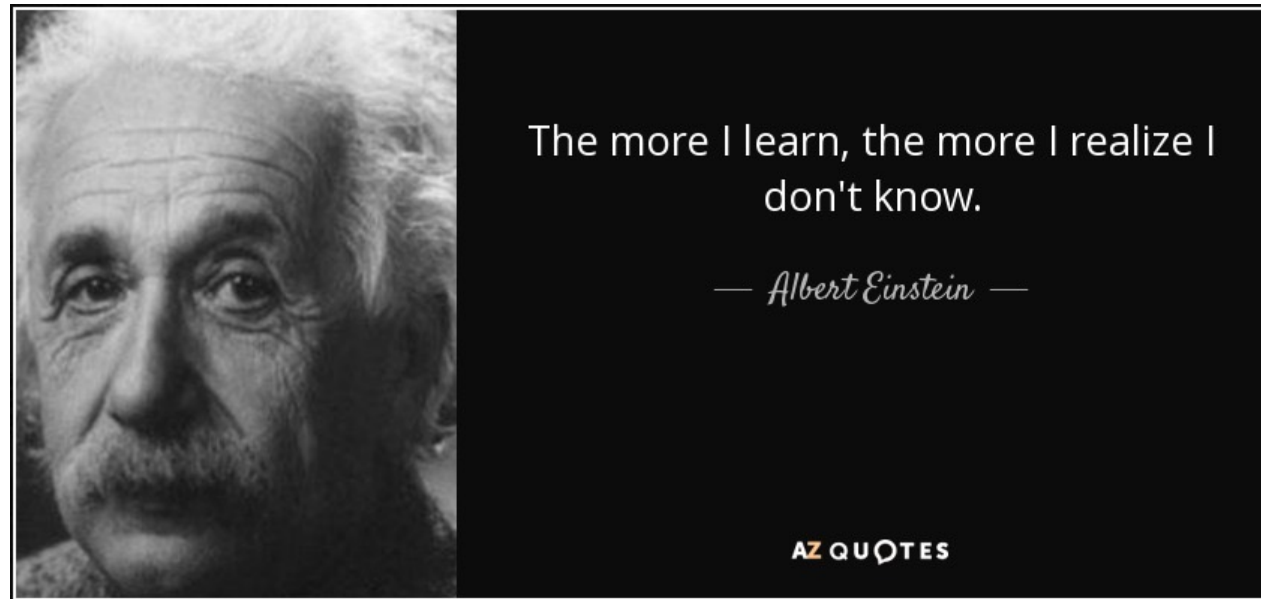


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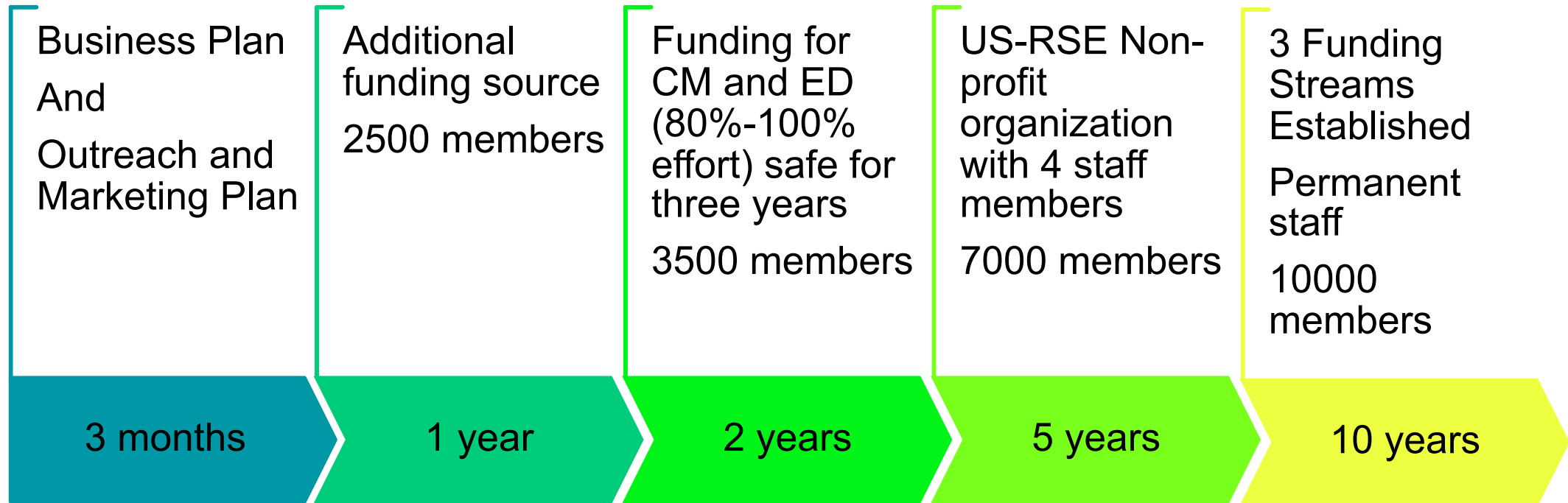


## Next Stage and Next Steps

- I know that there are things I don't know about non-profit
- I know that I don't know how some sustainability measures can work out, e.g., membership fees



# Next Stage and Next Steps





# From Idea into Reality: 8 Steps to Start an Association

1. Determine your goals
2. Create a business plan
3. Recruit your board
4. Recruit your staff
5. File for tax-exempt status
6. Choose your software
7. Create an association website
8. Start recruiting members



<https://memberclicks.com/blog/start-an-association/>

<https://us-rse.org>



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!!!COMING!!!

Job of Executive Director and SC



Done



In progress with Sloan Grant

<https://memberclicks.com/blog/start-an-association/>

<https://us-rse.org>



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# The Basis of the Business Plan are Our Members

Only a growing vibrant community opens up possibilities for financial sustainability

Reasons why members joined

- Feeling addressed and included
- Belonging to a community
- A space for discussions
- A space for learning
- Support of a non-traditional career path



# Sustainability

## Study of nearly 900 associations

- What are the primary challenges to association growth?
- How do dues affect membership?
- Why do members join and renew?
- What are the common uses for social media?
- How does your association compare with similar associations?



<https://www.marketinggeneral.com/knowledge-bank/reports/>

<https://us-rse.org>



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## Main two reasons for being a member

1. Access to a unique community of like-minded individuals
2. Access to specialized information and resources in our niche

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# Financial Sustainability – Diversification of Funding Sources

- Proposals
- Grants from medium and large organizations in the private sector
- Grants can be in the form of cash or in-kind donations of tangible or intangible property
- Membership fees
- US-RSE brand store



# Financial Sustainability

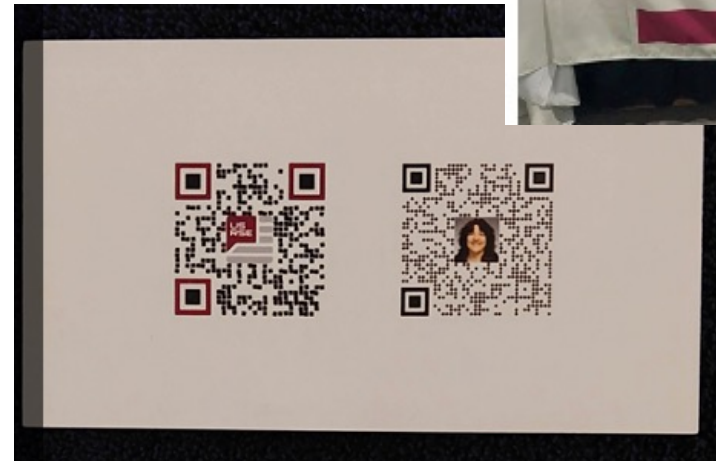
- NSF Research Coordination Network proposal planned for February
- Industrial advisory board planned with first meeting in March
- Focus group planned for April with leaders of RSE teams about organizational membership fees
- Focus group planned for June on personal membership fees
- Every three month meeting with group of leaders of non-traditional organizations (RSE associations, ADSA, CaRCC, CASC etc.)





# Recent Activities

- November community call about visions
- SC23 in Denver
  - US-RSE booth
  - Co-Chair of RSE-HPC workshop
  - RSE evening event with around 30 people



# Recent Activities

- Mentor Alaina Harkness, Current, Chicago
- Advisory Board for the position – independent of US-RSE steering committee
  - Simon Hettrick, University of Southampton, Society of RSEng
  - Neil Chue Hong, SSI
  - Kerk Kee, Texas Tech University
  - Mary Ann Leung, Sustainable Horizons Institute
  - Lance Parsons, Princeton University
  - John Towns, NCSA
  - Michael Zentner, University of California, San Diego

# Marketing Plan

- Newsletter
- Outreach campaigns
  - Minority Serving Institutions
  - Community Colleges
  - Domain researchers
  - Leadership at universities and national labs
- RSEs who don't know yet that they are RSEs ... or think they are not





# An International Movement



Photo by Antonia Cozacu, Jan Philipp Dietrich, de-RSE e.V. (CC BY 4.0).

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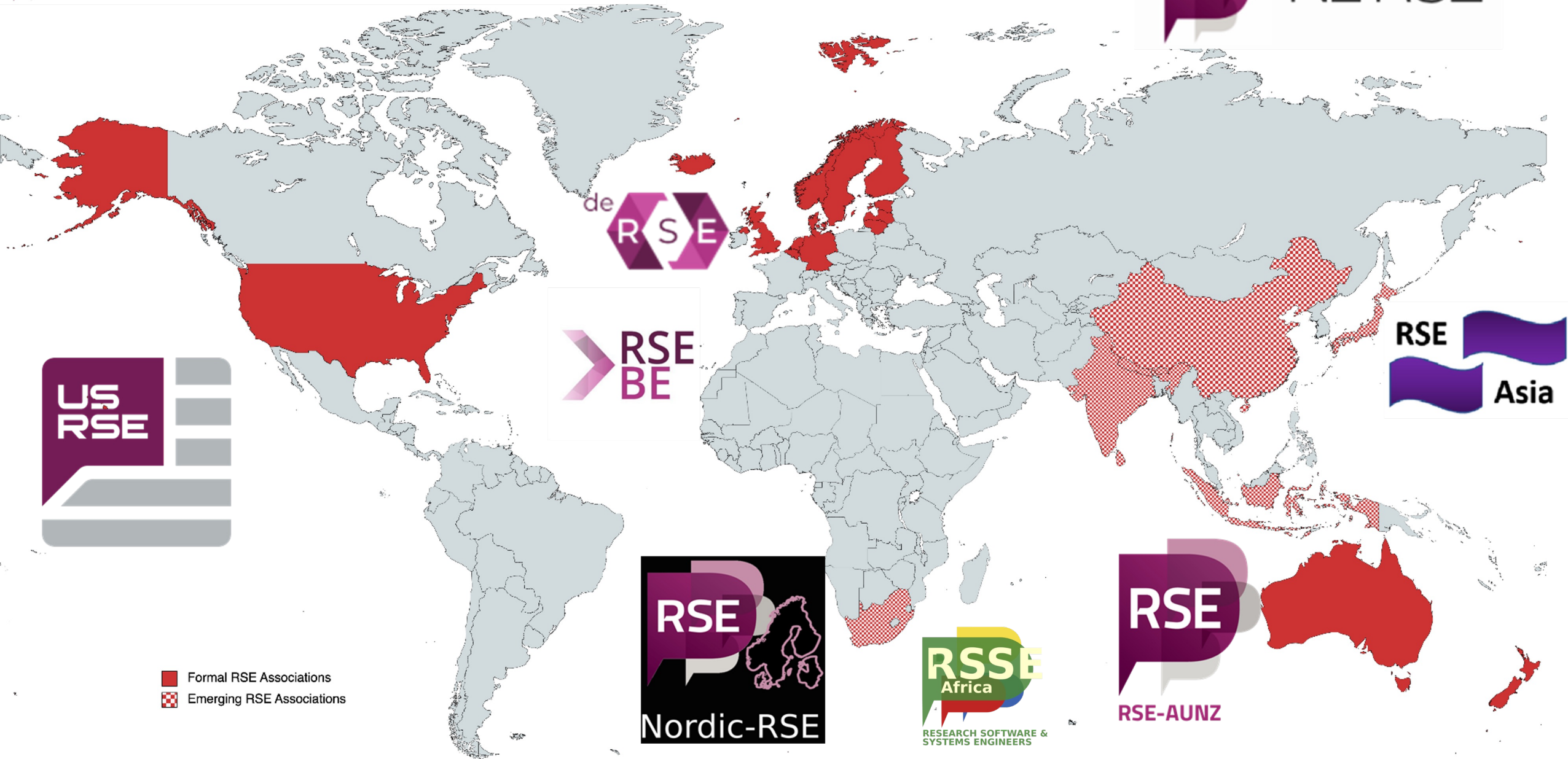




# 2013

UNITED STATES



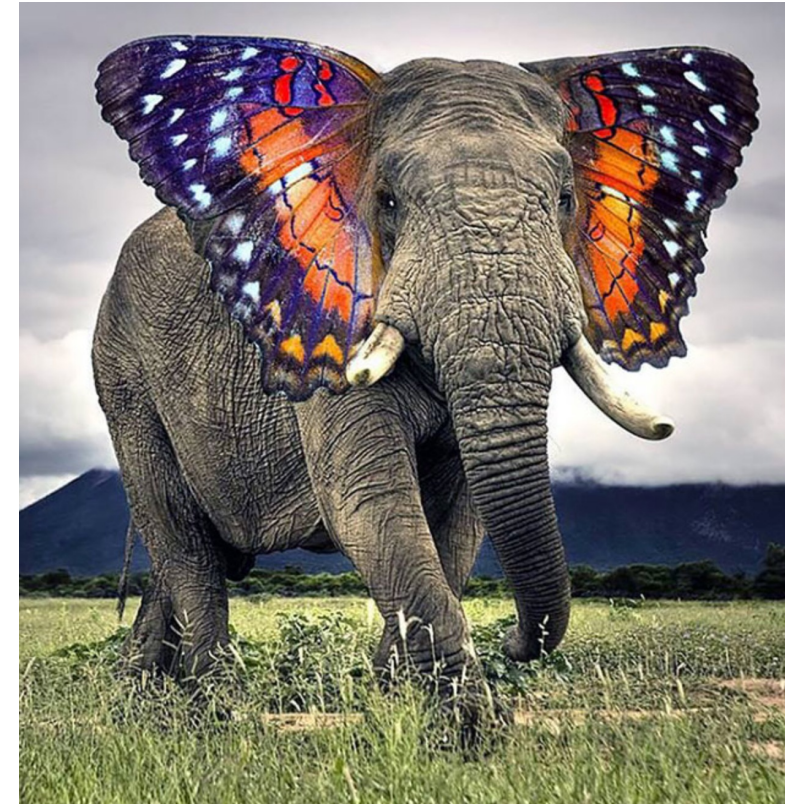


# Changes Bring Some Risks

US-RSE becomes a different animal with staff positions and funding

Ways to address it

- Steady communication with the SC
- ED is part of the community, contributing to working groups
- Awards and recognition of volunteers
- Regular meetings and exchange with other leaders of communities such as UK RSE, ADSA, The Carpentries, CaRCC, etc.
- Regular surveys





# Overarching Goals

## Changing Academic Culture



Welcoming and  
Sustainable  
Environment



Keep  
Grass-Root  
Character



# Thanks!



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