Does RSE have a diversity crisis and what can we do?

With thanks to Caroline Jay and Jeremy Cohen
Slides: https://doi.org/10.6084/m9.figshare.12955094

16 September 2020, 2nd International RSE Leaders Workshop
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Diversity in RSE

- Facts and figures - what's the situation?
- Issues and challenges - what can we do?
- Hopes and dreams - what will we do?

Warnings:

- I'm not an EDI expert but do have experience
- Based on UK data, but internationally relevant

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Let's start with a quiz

(figures based on the 2018 International RSE Survey - those in the UK may or may not have an advantage)

Survey (1/3)

0 3 0

What percentage of UK RSEs identify as female?

8%

27 %

14% ✓

43 %

22%

30 %

46%

0 %

What percentage of UK RSEs identify as being of non-white/mixed ethnicity?

ⓘ Start presenting to display the poll results on this slide.

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What percentage of UK RSEs identify as being of non-white/mixed ethnicity?

0 3 0

5% ✓

53 %

14%

23 %

21%

20 %

27%

3 %

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Survey (3/3)

What percentage of UK RSEs identify as having a disability?

0 3 1

4%

58 %

6% ✓

32 %

10%

10 %

19%

0 %

So, how do we do?

	UK RSEs	UK Academics	UK Software Developers	UK Working Age Population
Gender (female)	14%	46%	14%	50%
Ethnicity (BAME/Mixed)*	5%	15%	21%	14%
Disabled	6%	4%	10%	19%

Sources:
- 2018 International RSE Survey
- HESA Staff by equality characteristics 2018/2019
- BCS Diversity Report 2020: ONS Analysis

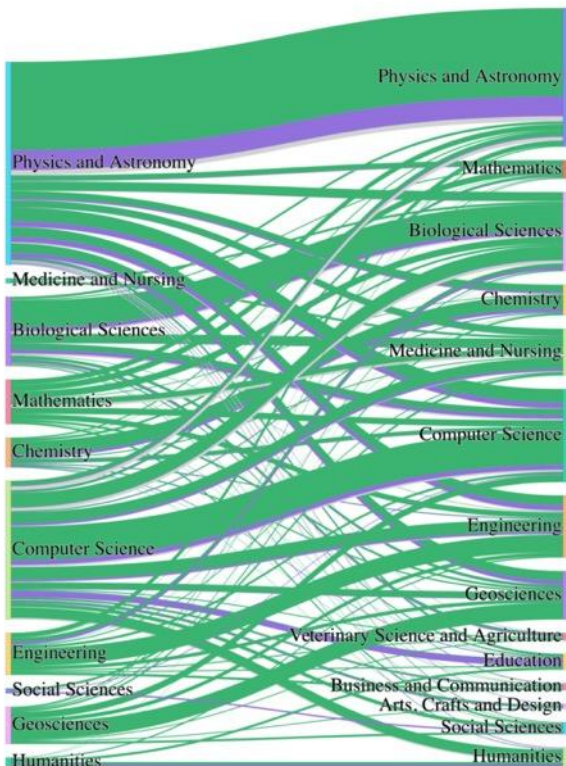* I'll come back to why this categorisation is potentially problematic

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Isn't this a pipeline problem?

- Most UK RSEs are from physical sciences and computer science backgrounds, but...

	UK RSEs	UK Physical Sciences Students	UK Computer Science Students
Gender (female)	14%	41%	18%
Ethnicity (BAME/Mixed)	5%	21%	28%

Chue Hong, Cohen & Jay (2020), Does RSE have a diversity crisis?
Preprint: https://doi.org/10.5281/zenodo.3989884
Gender statistics from HESA, ethnicity statistics from IOP and BCS surveys

diversity ≠

inclusion & equity

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- Safety in similarity
  - We want to work with people who are like ourselves
  - Yet research shows that diverse teams lead to higher quality science
- Our culture isn't inclusive enough
  - Even with Codes of Conduct

Microbarriers

Microbarriers: small things that diminish access and equity, and are often unnoticed by the majority

E.g.:

- Your website doesn't work at 200% zoom
- Meetings at inconvenient hours
- Not valuing people's time properly

Microbarriers experienced

Infrastructure: not everyone has fast / always-on Internet / powerful laptop

Communication: language barriers (particularly for non-native English speakers) / lack of training on giving feedback / bro-culture / assuming knowledge of geek culture references / being left out of communications / lack of education at senior levels / isolation

Meetings: not understanding different holiday seasons / school holidays / religious holidays / inconvenient meeting times / no consideration for childcare requirements

Expectations on time: overtime / working evenings / enforcing personal time / no flexibility in work schedule / that you have as much "free time" / time to travel

Expectations on minorities: expectation you will join every meeting to represent your "category" / being told you are the only woman doing this

Assumptions: all single people have one job and no kids / candidates are able to have their work publicly visible / all people in the UK like to go to the pub

Accessibility: no recognition of access needs for disabled & neurodiverse / gatekeeping resources

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Value lived experiences

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What is your lived experience?

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Participants' lived experience

Multiple-choice poll (Multiple answers)

What is your lived experience?
(1/3)

`0 2 9`

I have a skill that others in my RSE group don't possess
86 %

I have collected data "in the field"
24 %

I studied a subject which is different from the main area I work in
59 %

I have another job or volunteer position which doesn't involve software development
31 %

I speak to my peers in a language which is not my primary language
55 %

I work in a different country from where I or my parents were born
62 %

Multiple-choice poll (Multiple answers)

What is your lived experience?
(2/3)

`0 2 9`

I have caring responsibilities
45 %

I have used, or helped someone use, assistive technology
7 %

I have performed in front of a paying audience
45 %

I've played a team sport competitively
21 %

I knit / crochet / cross-stitch
3 %

I have run a business
14 %

Multiple-choice poll (Multiple answers)

What is your lived experience?
(3/3)

`0 2 9`

I was born after the World Wide Web (1989)
3 %

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The problem with "other"

"We are particularly looking for great females / people of colour! Please pass along to your networks and let me know if there is anyone you think I should reach out to."

- immediately reminds me of your lack of diversity, that you consider me a minority and asking me to do work for free
- demonstrates the potential issue with blanket terms like BAME / BIPOC / WISE - everyone's lived experience is different

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There isn't an easy fix

- Addressing the diversity crisis in RSE is not a checkbox / checklist exercise
- We survey the community to check we're heading in the right direction, not to identify "areas of concern"
- Champion exceptional people from all walks of life, rather than relying on proxies

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- What is your team / event culture?
  - Don't try to be all things to everyone
- Think about the role you're trying to fill
  - What you need done, not who you're looking for
- Test for skills rather than relying on CVs
  - Internships & opportunities, longer shortlists
- Learn from those with greater experience

What has worked to improve equity, diversity and inclusion in your RSE group?

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What has worked (hiring)

- Diversity on interview panels
- Not requiring PhDs / limiting to specific backgrounds or fields
- Hiring people who require visas
- Blinded review of applications
- Flexible approach to prior qualifications (not just prestigious universities)
- Proactively looking beyond the person to the skill sets and strengths.
- Understanding and addressing unconscious bias
- Targeted advertising / targeted recruitment from a 'historically Black' university
- Working through organizations that focus on diversity
- Focus on merits, skills and attitude together rather than narrow focus
- Deliberately selecting larger number of candidate from more diverse profiles to shortlist

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What has worked (culture)

- Clear culture, expectations and support/opportunities
- Providing mentorship / internship opportunities
- Talk about non-work topics to better understand people's interests and experiences / keep eyes open, speak to many, build meaningful relationships
- Being open about being "brutally" open
- Emphasise importance of diversity during induction of new members
- Having diversity and inclusion as a goal for the group
- Working with organisations that also emphasise equity, diversity and inclusion
- Already having a more diverse group at the beginning
- Actually having access to an RSE group / community
- Collecting data to judge how well things worked...

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What one thing are you going to do to next to improve Equity, Diversity and Inclusion in your RSE group?

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EDI Resources

NumFOCUS DISCOVER Cookbook:

https://discover-cookbook.numfocus.org/

Creating an inclusive working environment:

https://www.recurse.com/manual

Ally Skills Workshop:

https://frameshiftconsulting.com/ally-skills-workshop/

Women in HPC Resources:

https://womeninhpc.org/community/resources

Rewatch the SORSE launch

Dr Kari Jordan
Executive Director, The Carpentries
I wanna dance with somebody

Dr Mariann Hardey
Associate Professor, Durham University
Switching off the label "women in tech"

https://sorse.github.io/programme/kickoff/

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... but give yourself time to play as well!

Summary

- RSE diversity is poor, but we're measuring it
- There are still many microbarriers to access and inclusion in the RSE community
- It's easy to get it wrong by "othering"
- This represents an opportunity to understand what we're really looking for in the RSE role

Acknowledgements

The SSI team/*alumni*:
- *Agata Dybisz*
- Aleksandra Nenadic
- *Aleksandra Pawlik*
- *Alexander Hay*
- Ania Brown
- *Arno Proeme*
- Carole Goble
- Caroline Jay
- Claire Wyatt
- Clem Hadfield
- Dave De Roure
- *Devasena Prasad*
- Giacomo Peru
- Graeme Smith
- *Iain Emsley*
- Jacalyn Laird
- James Graham
- John Robinson
- Kirsty Pringle
- Les Carr
- *Lucia Michielin*
- *Malcolm Atkinson*

- *Malcolm Illingworth*
- Mario Antonioletti
- Mark Parsons
- *Mike Jackson*
- *Olivier Philippe*
- *Priyanka Singh*
- Rachael Ainsworth
- *Raniere Silva*
- *Rob Baxter*
- *Robin Wilson*
- Sam Manghan
- Selina Aragon
- Shoaib Sufi
- Simon Hettrick
- Stephen Crouch
- *Tim Parkinson*
- *Toni Collis*
- *Plus the SSI Fellows and RSE community*

Research software:
- Abby Cabunoc-Reyes
- Arfon Smith
- Dan Katz
- Heather Piowowar
- James Hetherington
- James Howison
- Jeff Carver
- Jennifer Schopf
- Jeremy Cohen
- Kaitlin Thaney
- Karthik Ram
- Kirstie Whittaker
- Martin Fenner
- Michelle Barker
- Shelley Stall
- Stephan Druskat
- Victoria Stodden
- Von Welch
- *WSSSPE community*

The Carpentries
- Greg Wilson
- Tracy Teal
- Kari Jordan
- *Instructor Community*

Software Preservation
- Daina Bouquin
- Digital Preservation Coalition
- Software Preservation Network

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Multichoice options

… as female?

- 8%, 14%, 22%, 46%

… as being of non-white/mixed ethnicity?

- 5%, 14%, 21%, 27%

… as having a disability?

- 4%, 6%, 10%, 19%

Which is the biggest diversity barrier to getting a first job as an RSE?

- Age; Gender; Ethnicity; Sexuality; Visible disability; Invisible disability; Other; None of these are barriers

Lived experience

I have a skill that others in my RSE group don't possess

I have collected data "in the field"

I studied a subject which is different from the main area I work in

I have another job or volunteer position which doesn't involve software development

I speak to my peers in a language which is not my primary language

I work in a different country from where I or my parents were born

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I have run a business

I was born after the World Wide Web (1989)

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