

# **Research Software Engineering in the Arts and Humanities**

## **Community and capacity building**

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# Research Software Engineering capability in the Arts and Humanities

**2004-2015:** Digital Humanities specialists as “swiss army knives”

- data cleaning, analysis, modelling & architecture
- software development
- UX/UI
- systems admin
- back ups - maintenance
- IT support

**2015 - today:** DH projects with far more complex software needs & BIG data

! Need for a specialised skillset → **AH RSE**

# Research Software Engineering capability in the Arts and Humanities

## Definition

AH RSEs are a subset of a much larger cross-disciplinary and cross-sector group of RSEs who “combine expertise in programming with an intricate understanding of research” and research infrastructures.

## Profiles

1. deep experience working with AH content and research questions → deep understanding of AH content, methods, and research culture
2. work within cross-disciplinary RSE ‘pools’ (often oriented towards STEM research) and occasionally assigned to AH projects → new perspectives and facilitate interdisciplinary transfer of tools, infrastructure, and methods.



The AH RSE workforce is **invisible** in some ways, working in enabling roles at the intersection of research and technology.

# Policy context and alignment

- 2010 Software Sustainability Institute (SSI) - “Better software, better research”
  - 2013 UK Research Software Engineers Association
  - several RSE groups in research institutions, eg UCL - 2012 → over 25 RSE groups across the UK
  - 2015 Research Software Group Leaders Network4
  - 2019 Society of Research Software Engineers
  - RSE community has also been recognised and supported by funding bodies for its contribution
- 
- 2018 King’s Digital Lab (KDL) , King’s College London (used the RSE term for AH)
  - 2019 Alan Turing Institute - Turing Humanities & Data Science Interest Group (H&DS)
  - Digital Humanities Institute , University of Sheffield | University of Exeter | University of Cambridge | University of Edinburgh ....

# Infrastructure for Digital Innovation and Curation in Arts and Humanities (iDAH) - UKRI AHRC

## Policy and Engagement Fellowship (1-8/2022)

- Scope out how existing UKRI DRI capabilities (ARCHER2, JASMIN) should be expanded to serve AH research communities
- Create a roadmap with focus on **technical requirements** and **business case** for a federated ecosystem of DRI
- Support the AHRC in developing its strategy to further enhance the arts and humanities digital research infrastructure on a national level.
- Assess and integrate RSE capacity → Leveraging RSE provision within A&H digital infrastructure

# Policy and Engagement Fellowship in Digital Research and Innovation Infrastructure

## (iDAH) Research Software Engineering (RSE) Steering Group

- **2 workshops:** May 25<sup>th</sup>, June 29<sup>th</sup> 2022 | Chair: **James Smithies**, Professor of Digital Humanities, Department of Digital Humanities, King's College London, facilitator: **Anna-Maria Sichani**, UKRI Policy and Engagement Fellow in Digital Research and Innovation Infrastructure
- **Workshop 01:** Problem, Opportunities, Requirements definition and discussion.
- **Workshop 02:** Discussion of early draft of report.
- **Members:** 33 people, 21 institutions; A&H and STEM for UKRI alignment and creative thinking.
- **Output:** Scoped, costed report detailing problems, opportunities, requirements as input to UKRI / AHRC iDAH investment
- Guided by **Terms of Reference**.

# Policy and Engagement Fellowship in Digital Research and Innovation Infrastructure

## (iDAH) Research Software Engineering (RSE) Steering Group

### Leveraging RSE provision within A&H

- AH RSE - wide interpretation : Analysts, designers, archivists, managers, project managers, developers, system administrators, and RSE-identifying academics too: a broad and evolving spectrum.
- **Enabling AH RSE voices**, vision, and expertise *across the whole of the UK and all institutions*.
- **Support-by-example RSE career pathways** and provision within A&H structures *across the whole of the UK and all institutions*
- **Alignment to RSE Society and Software Sustainability Institute** definitions of RSE is assumed.
- Strategically **develop (the need) for RSE capability** within the iDAH investment
- Advocate in practice for a **better integration of RSE** in A&H funding agendas
- Act as a **centre of RSE excellence and innovation** for the wider UK RSE and UKRI communities



# **(community-driven) Outputs**

## **1)Report :**

Sichani, A.-M., Ahnert, R., Baker, J., Beavan, D., Ciula, A., Crouch, S., De Roure, D., Francois, P., Hetherington, J., Jeffries, N., McGillivray, B., Ridge, M., Terras, M., Tupman, C., Turner, M., Weinzierl, M., Willcox, P., Winters, J., Wynne, M., & Smithies, J. (2023). iDAH Research Software Engineering (RSE) Steering Group Working Paper (v.1.0). Zenodo. <https://doi.org/10.5281/zenodo.8177926>

## **2)AHRC RSE Advisory Group** as a central, permanent AH RSE function (TBC)

- to review technical proposals
- define models (data, processes, workflows)
  - environmental standards
  - career paths & promotion metrics
  - technical research standards in alignment to UKRI RSE and infrastructure initiatives
- design policies to support sustainability and archiving of funded repositories and services

# In the meantime...



Software  
Sustainability  
Institute

## Report on the AHRC Digital/ Software Requirements Survey 2021:

### Where is Investment Needed?

Shoaib Sufi  
Software Sustainability Institute | University of  
Manchester

Emily Bell  
University of Leeds | Software Sustainability Institute

Anna-Maria Sichani  
School of Advanced Study, University of London |  
Software Sustainability Institute



Software  
Sustainability  
Institute

## SHAPING DATA AND SOFTWARE POLICY IN THE ARTS AND HUMANITIES RESEARCH COMMUNITY

### A Study for the AHRC

Rebecca Taylor, Johanna Walker, Simon Hettrick,  
Philippa Broadbent (University of Southampton, Software  
Sustainability Institute), and David de Roure (University of  
Oxford)

# Research Software Engineering in Arts & Humanities Community Interest Group

**(Spring 2023 )**

CIG Coordinators -Facilitators

**Stavros Angelis**, Maynooth University

**Kathryn Cassidy**, Digital Repository of  
Ireland

**David Kelly**, University of Galway

**Anna-Maria Sichani**, School of Advanced  
Study, UoL

(previously)

**Mary Chester-Kadwell**, University of  
Cambridge

**David Beavan**, Alan Turing Institute



# Background and aims

- Origins in AHRC Infrastructure for Digital Innovation and Curation in Arts and Humanities (iDAH)
- **Intersection of research and technology** increasingly important in AH

## Community-oriented goals & activities

1. **Community-focused discussions:** to discuss issues and learn from each other.
2. **Knowledge exchange and collaboration:** formal and informal opportunities to build capacity and develop talent.
3. **Advocacy and policy-focused interventions:** to make a difference to policies and investment.

# Our **Values**

- Grassroots initiative
- Open, inclusive, collaborative, safe space
- Who is welcome ?
  - Anyone involved or interested in RSE in AH, broadly conceived.
  - Irrespective of job title, career stage, background, etc.
- Discrimination and harassment not tolerated
- Accessibility

## Resources - channels of communication



**Slack** channel

#ah-rse at  
[uk-ie-dh-assoc.slack.com](https://uk-ie-dh-assoc.slack.com)



**GitHub** repo

[github.com/stavrosangelis/research-software-engineering-in-the-arts-and-humanities](https://github.com/stavrosangelis/research-software-engineering-in-the-arts-and-humanities)

# Community Interest Group Survey (2024)

## Preliminary findings

- Very diverse community (Inst.Location, Employment status/Contract Type, Job Titles, Discipline, Education)
- Variety in professional Identity (software dev, research, management/admin, teaching/training)
- Team structure (Work with same researchers, part of dedicated research group) and Work pattern (working alone/in groups/teams/ in pools, Relation to industry, Bus factor)
- Active towards a pan-institutional RSE Collaboration



# Top Barriers to RSE in AH

- Unrecognised AH RSE activity
- Lack of long term career prospects
- Lack of clear career paths
- Funding sources
- Institutional support for funding applications

## **Top priorities for such an initiative (ranked by importance):**

- 1.collaboration frameworks
- 2.policy interventions
- 3.professional rights



# Community - driven initiative and group

- From the community and for the community
- A grassroots, bottom-up approach
- Inclusive and open ethos
- Co-design roadmap, goals and activities

## Next steps

1. Nurturing long-term engagement
2. Demonstrating impact
  - a. Across institutions
  - b. Funders' level
  - c. Policy level
3. Sustainable growth

**Data/Culture:** Building sustainable communities around Arts and Humanities datasets and tools

**National RSE Capability skilled in Arts & Humanities**

**Stakeholder group**

- Started as 26 members
- Turned into 40 authors
- Range of skills and expertise

**The  
Alan Turing  
Institute**



Arts and  
Humanities  
Research Council

# Process

- 3 Workshops
- Email group and Dashboard with resources
- Newsletter updates
- Collaborative writing
- Dedicated writer

## **Workshop 1**

- User stories
- Challenges and Opportunities
- Problem Definition
- Change

## **Workshop 2**

- Capability Model (incubator?)
  - Objective setting
  - Themes: Skills, Foundation, Research
- Collaboration delivery
- What roles should be central to the operation

## **Workshop 3**

- Values
- Scope and Aims
- Operating Model and Governance
- Programme Design and Priorities
- Skills (Clementina)
- Implementation

# Towards a National Research Software Engineering Capability in Arts and Humanities Research: a Roadmap

## Executive Summary

- Glossary and Key Terms
- Introduction
- Vision, Aims and Objectives
- Challenges and Limitations
- Programme of Work
- Delivery Approach
- Conclusion
- Acknowledgements
- Reference List

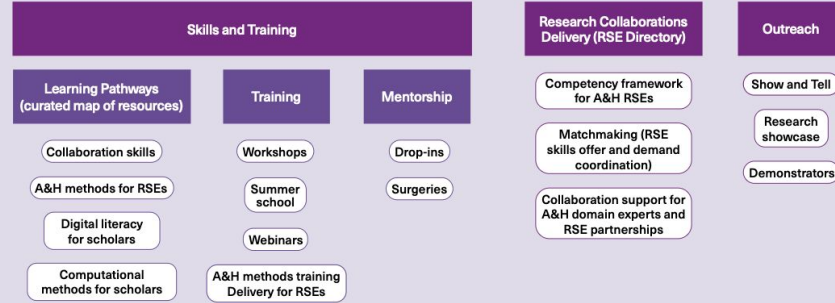


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Couch, T. J., Sarah, D., Stephanie, F.,  
Francois, P., Goudarouli, D. E., Grindley,  
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(2025). Towards a National Research  
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and Humanities Research: a Roadmap.  
Zenodo.

<https://doi.org/10.5281/zenodo.15083396>

## Responsive

### Ecosystem Development



## Active

### Research Development



## Strategic

### Monitoring and Strategic Development



# Delivery Approach

- Governance and Staffing
- Implementation and running (Years, 1, 2 and 3)
- Year 1: Team, ToC, DP, Mapping, Partnership Mechanism
- Year 2: RSE Directory, Annual Survey, Incubator, Evaluation
- Year 3: Publish Survey, Strategy, Business Case, activities+

## **Three Collaboration Case Studies**

- The National Archives (UKGWA)
- Centre for Data, Culture and Society (Rapid Prototyping Sandpit)
- KDL (Modular Digital Research Infrastructure Design)

## **Investment Levels**

- Recommended Level
- Prioritised
- Minimum

# **RSE AH roundtable at DH UK IE Annual Event : Maximizing collaboration towards RSE in A&H (17/6/25)**

RSE AH CIG

Roadmap

KDL

DISKAH

SSI

•In what ways can we foster stronger collaboration with these existing organisations and teams to benefit our community?

•How can this community make meaningful and sustainable contributions to the broader RSE and research infrastructure community?





SSI

2010

King's  
Digital Lab

2016



SoRSE

2019



Arts and  
Humanities  
Research Council

2021

iDHA RSE  
AH steering  
group



SSI  
reports



RSE  
AH  
CIG

2023

The  
Alan Turing  
Institute  
Roadmap

2024



Arts and  
Humanities  
Research Council

2025

RSE AH  
summer  
school -  
Turing /  
Edinburgh

The  
Alan Turing  
Institute



# Conclusions & challenges

- Bold vision to transform how RSE and A&H researchers work together
- The need to invest given the pressures in tech changes
- Develop skills, innovation, careers, leadership
- A more dynamic, collaborative, strongly connected community
- Risks of not investing
- Global leadership

Questions? Ideas?

**Slack** channel

#ah-rse

at [uk-ie-dh-assoc.slack.com](https://uk-ie-dh-assoc.slack.com)



Thank you !

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RSE AH Roadmap

