An update from UK Research Software Engineers

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The problems facing research software are well known

- Low levels of reuse
- Poor standard of verification

Technical solutions to technical problems

The e-Research community has spent a long time trying to find technical solutions

- ► Research software distributions
- ► Grid
- ► Middleware
- ► Workflows

These have had limited adoption in research communities.

Social solutions to technical problems

We hypothesise that social innnovation is needed

- A new role in the academic system focused on research software
- Combines the best of the Craftsperson and the Scholar

Social innovation in centuries-old institutions is hard

Why a new role?

Alternative approaches:

- ► Reward good research software using traditional academic incentives:
- ► Recognise software as an academic output
- ► Reject submissions with unreproducible computational software
- ► Funder mandates

Advantages of RSE Groups

- Can lead on training and teaching in reproducible computational research
- Good for researchers who *don't* want to be programmers
- Synergies with research computing platforms

What is a Research Software Group?

- Collaborates with researchers to build Sustainable Software
- Delivers teaching in reproducible computational research
- Measured on research software output and quality
- Can be part of Research Computing / IT, or faculty
- Not independent researchers, but research background

Timeline

- February 2012: Software Sustainability Institute (SSI) Collaborations Workshop, agrees on "Research Software Engineer" title. (Also considered Scientific Programmer, research software developer, etc. . .)
- SSI begins Research Software Engineers Campaign
- September 2012: University College London founds Research Software Development Team, 3 centrally funded posts

Timeline

- September 2013: Founding, UK Community of Research Software Engineers
- Autumn 2013: First grant-funded work in UCL, research groups costing research programmers into grants
- Spring 2014: Launch of ARCHER embedded Computational Science and Engineering Call
- March 2014: First grant-funded recruitment in UCL team
- Winter 2014: UCL group grows to six through further grant collaborations from History to Radio Astronomy.

Timeline

- Spring 2015: Research Software Groups founded in Manchester, Southampton, Sheffield
- Spring 2015: Workshop on future of UK Cyberinfrastructure recommends software support as critical component
- Summer 2015: EPSRC announces first Research Software Engineering Fellowships
- Summer 2015: Activity towards founding of RSE groups in Cambridge, Oxford, Bristol, Imperial

The EPSRC Research Software Engineering Fellowships

UK Research Council Fellowships:

- Most common route to permanent position
- ~£1M, 5 years plus staff

RSE Fellowships:

- Can be used to found research software groups
- Expect to award 3-4
- *200 Applicants!*

The Future

- RSE groups in most research-intensive universities?
- Work sharing between groups?
- Faculty and department posts?
- RSE role recognised outside UK?