An update from UK Research Software Engineers

James Hetherington, Jonathan Cooper, Robert Haines, Simon Hettrick, Susheel Varma, James Spencer, Mark Stillwell, Michael Croucher, Christopher Woods
The problems facing research software are well known

- Low levels of reuse
- Poor standard of verification
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 innovation 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?