

## **Research Software Engineer (RSE) Fellowships**

**Call type: Invitation for proposals**

**Closing date: 21 July 2015**

**Related themes: Research infrastructure**

### **Summary**

This call will support Research Software Engineer (RSE) Fellowships for a period of up to five years. The RSE Fellowship describes exceptional individuals with combined expertise in programming and a solid knowledge of the research environment. The Research Software Engineer works with researchers to gain an understanding of the problems they face, and then develops, maintains and extends software to provide the answers.

To support the role of RSEs and establish a cohort in the academic environment, up to £3m is available for this pilot call. Candidates are invited to provide an 'Intent to Submit' document in the first instance to register interest. Full proposals will be subject to a rigorous peer review and sift process before a final selection by interview.

### **Background**

Software developed for experimental facilities and instrumentation, modelling, simulation and data-analysis is a critical and valuable resource. Software and algorithm development represents major investments by skilled scientists and engineers, and the large suite of codes and algorithms used in research should be regarded as a research infrastructure, requiring support and maintenance along the innovation chain, and throughout its lifecycle.

Through the publication of the **EPSRC Software as an Infrastructure strategy**, EPSRC has recognised the importance of investing in software development. Previous funding has focused on support for the development of the key software codes that are used by the EPS community in their research. However, other important aspects of the strategy are the development of skills and career development for those engaged in software engineering, and it is these aspects that this call addresses.

The EPSRC-funded Software Sustainability Institute has begun a campaign to develop a UK community of Research Software Engineers, with the aim of raising awareness of their roles, and improving their career paths and reward/recognition within Universities.

This funding opportunity is a pilot in support of the concept of Research Software Engineers. For further background, please see the following links:

EPSRC Software as an Infrastructure strategy:

<http://www.epsrc.ac.uk/newsevents/pubs/software-as-an-infrastructure/>

The UK Community of Research Software Engineers: <http://www.rse.ac.uk/index.html>

The role of the Research Software Engineer:

<http://www.software.ac.uk/policy/research-software-engineers>

## Aims and Scope

A growing number of people in academia combine expertise in programming with an intricate understanding of research. These Research Software Engineers work with researchers to gain an understanding of the problems they face, and then develop, maintain and extend software to provide the answers. Although this combination of skills is extremely valuable, these people lack a formal place in the academic system and are often funded on short-term contracts.

The aim of this call is to provide long-term funding for those individuals working as Research Software Engineers in universities, to give them the resources to develop their careers and their skills. It has the additional aim of encouraging universities to recognise the role of the Research Software Engineer in supporting research.

The focus of the call is:

- For those at an early career stage;
- For those working on computational science and engineering, i.e. software that is used as a research tool in science and engineering. This call does not cover computer science and engineering;
- For work primarily in the remit of EPSRC. In the interests of encouraging cross-disciplinary working, 5-10% of the work may be in the remit of other Research Councils.

As this is a pilot call, those funded will be expected to assist in the evaluation of the activity.

This is a specifically and carefully defined call. As such, we expect this pilot opportunity to fit with a relatively small number of potential candidates so it is important that you read the eligibility and assessment criteria carefully. We will reject, without review, those candidates who do not sufficiently demonstrate alignment to the objectives of the call.

The role of the RSE Fellow is expected to be fully integrated and supported by their Host Institution. As such, an application to this call will require significant effort and co-ordination with your Host Institution to supply the required documentation and endorsements. The Host Institution is expected to provide support and development opportunities during the Fellowship and provide a solid foundation for career prospects beyond the term of the grant.

Other opportunities for Fellowship funding are available from EPSRC in the Capability and Challenge Themes, in particular Physical Sciences and Engineering with relevance to software. Further details are available at the following link:

<http://www.epsrc.ac.uk/skills/fellows/areas/>

## Funding available

Up to £3m is available for this call. EPSRC expects to fund four to eight Fellows in this pilot call, for a period of up to five years. No extension period will be made. RSE Fellowships may be expected to be subject to a mid-term review. Applicants can choose to spend between 50 and 100% Full Time Equivalent (FTE) on their Fellowship, as suits their situation.

The funding is primarily aimed at supporting Fellows in a programme of work that can include: core software development work around an area or topic of interest to the Fellow; a programme of software development projects, where the Fellow provides a service to other research groups; development and delivery of a programme of training, embedding focussed computational science and engineering within the academic environment.

In addition, building links with international colleagues is welcomed and collaboration with industry (either software companies or software users) is also encouraged. Applicants can include requests for funds to enable these activities.

Where appropriate, the costs of training courses for the Fellow's personal and professional development can be included in the proposal.

This means that applicants can only request funds for:

- Their salary
- Travel and subsistence
- Administrative support
- Software licenses
- Training courses
- Staff of one FTE equivalent for the period of the Fellowship

Applicants to this call can also apply for time on or the cost of using regional/university machines, national or international HPC services, or the Hartree Centre machines. Further details are given in **Appendix 1**.

## Equipment

Where possible, researchers are asked to make use of existing facilities and equipment, including those hosted at other universities.

No single items of equipment costing over £10,000 (inc. VAT) in total will be supported as part of this call. Consumables under £10,000 should be applied for under Other Directly Incurred costs as usual.

Access to Facilities (HPC) – costs associated with access to national or international HPC facilities may be included. The Fellow will be responsible for complying with local regulations, access rules and requirements.

## Eligibility

Applicants are expected to hold a PhD by the start date of the fellowship or have equivalent experience. There are no eligibility rules based on years of post-doctoral experience or whether the applicant holds a permanent academic position.

Consideration will be given to applicants who have taken a non-standard career path after their primary degree. Applications are also welcomed from candidates who wish to re-establish themselves after a career break or other period of absence from active research.

There are no nationality restrictions imposed by EPSRC.

EPSRC reserves the right to reject, at any stage, applications that do not fit the remit, eligibility or ethos of this scheme.

Please note you may only apply for one EPSRC fellowship in any 12-month period so please consider carefully when you choose to submit your application.

For information on the eligibility of organisations and individuals to receive EPSRC funding, see the EPSRC Funding Guide: <http://www.epsrc.ac.uk/funding/howtoapply/fundingguide/>

Fellowships can be held at any UK university or similar Higher Education Institution (HEI) that is eligible for Research Council funding, however they cannot be held at Research Council Institutes.

## Submitting an application

The application process is in two stages; the first is a 'Statement of Intent' and the second is the full Je-S application. You *must* have submitted a Statement of Intent to EPSRC in order to make a full application.

See the 'Assessment' section of this document for guidance on submitting a Statement of Intent.

The 'Statement of Intent' is designed to capture key information from potential candidates and permit EPSRC to forward plan for the peer review process. It is not formally assessed, but if we feel that you do not meet the stringent criteria for this call, we may call to discuss your Statement of Intent document and could decline your proposal without review.

We will acknowledge receipt of your Statement of Intent document and provide a feedback note or telephone call within a week of acknowledgement. You do not have to wait to hear from EPSRC before preparing your full application.

## Full proposal application

You should prepare and submit your proposal using the Research Councils' Joint electronic Submission (Je-S) System (<https://je-s.rcuk.ac.uk/>).

When adding a new proposal, you should select:

- Council 'EPSRC'
- Document type 'Fellowship Proposal'
- Scheme 'EPSRC Fellowship'
- On the Project Details page you should select the 'Research Software Engineer Fellowships' call.

Note that clicking 'submit document' on your proposal form in Je-S initially submits the proposal to your host organisation's administration, not to EPSRC. Please allow sufficient time for your organisation's submission process between submitting your proposal to them and the call closing date. EPSRC must receive your application by 16:00 on 21 July 2015.

Guidance on the types of support that may be sought and advice on the completion of the research proposal forms are given on the EPSRC website (<http://www.epsrc.ac.uk/funding/>) which should be consulted when preparing all proposals.

## Guidance on writing application

For advice on writing proposals see:

<http://www.epsrc.ac.uk/funding/howtoapply/preparing/>

If the attachments are uploaded as Word documents, please be aware that once the application has been submitted to the Council/Funder, all the attachments will be converted and held as an Adobe Acrobat file (PDF). Also please note, that whilst we support a wide range, **we do not support all MS Word font types**. Therefore if an unsupported font type is used a different font type may be substituted which may result in changes to the layout of

the document. For this reason we recommend that the documents are converted to PDF files before uploading.

In addition, where non-standard fonts are present, and even though the converted PDF document may look unaffected in the Je-S System, when it is imported into the Research Councils Grants System some information may be removed. We therefore recommend that where a document contains any non-standard fonts (scientific notation, diagrams etc.), the document is converted to PDF prior to attaching it to the proposal.

The full proposal should consist of the following completed documents. Where appropriate, call specific advice is given. Applicants are advised to consider the assessment criteria and strategic drivers of the call, and to ensure that they address these in their application:

**Case for support (up to eight sides of A4) comprising:**

**Track Record of Applicant (up to two sides of A4):** The applicant should submit a tailored track record which highlights their skills, expertise and experience in software development. An explanation for why you have chosen your host organisation should be included.

**Description of proposed programme and its context (up to six sides of A4):**

Applicants should set out clear goals and objectives, both personal and technical. A clear description of the proposed work should be given, including: the core programme of software engineering; the programme of software engineering services for other research groups and how this will be prioritised and managed; any training the fellow will offer; a programme of personal development and how the Fellow will forge links with the research community and embed into the academic infrastructure.

**Pathways to impact document (up to two sides of A4):**

<http://www.rcuk.ac.uk/ke/impacts/>

In the Impact Summary, you will have described who potential beneficiaries might be, and how the work might impact them. This document is your opportunity to describe what you will actually do to facilitate this, for instance, what methods for communications and engagement you will use, how will you ensure collaboration and exploitation in the most effective and appropriate manner.

A specific section of the pathways to impact document should be dedicated to detailing the software management plan for the proposal. This should include information on what software outputs (including documentation and other related material) will be produced, who is responsible for releasing the software, the revision control process to be used, and the licensing for each output. For further guidance and information on what to consider in the software management plan please see:

<http://www.software.ac.uk/resources/guides/software-management-plans>

**Applicant's CV (up to two sides of A4)**

- This should include:
- Your current contact details.
- Your employment history, listed in reverse order. Please start with your current employment and make sure that the title of your current post is clear.
- Your academic history, listed in reverse order. The dates of any degrees obtained and the viva date for your PhD should be stated.
- Track record of research funding

- Any current teaching commitments.
- Any current administrative activities: examples may include editorial responsibilities, committee membership etc.
- Other: examples may include invited talks, awards, prizes, memberships of professional bodies etc.

### **Host Organisation Statement (two sides of A4):**

The Head of Unit (or equivalent and relevant senior role) at the host organisation must complete a statement in support of the application. The statement should be on Departmental or University headed paper, should be dated, and should clearly state the position held by the author. The statement must include details of the following considerations:

- What support the applicant will receive during the fellowship period, for instance, mentoring, personal and career development opportunities, training;
- How the Research Software Engineer role fits with the wider institutional strategy and how this will embed into the institution;
- What the plans would be for the Fellow at the end of the fellowship period;
- A statement to confirm that the RSE Fellow will be supported as an Investigator on grants from funding bodies, including any relevant guarantees beyond the term of the Fellowship;
- How the RSE Fellow will be supported to forge links with researchers and embed into the academic communities to establish equivalent status to other EPSRC Fellows.

**Justification of the resources requested (up to two sides of A4).** Please ensure that all applicable costs requested on the Je-S form are justified in the JoR.

**Work plan (up to one side of A4):** Normally a schematic Gantt Chart, but you can use any technique to show how the elements of the Fellowship will flow together. We do not expect high levels of detail.

### **Statements of support from any project partners (no page limit)**

#### **Technical assessment (no page limit)**

Any proposals requesting ARCHER time **must** have a technical assessment attached. Please note these can take up to 4 working days to complete.

Additional documentation will not be accepted after the deadline. Please note that proposals not accompanied by the correct documentation will be rejected.

### **Assessment**

Interested parties should seek advice from their desired host institution in the first instance, since EPSRC requires the host to provide significant support and commitment to the RSE Fellow.

Candidates who consider they have the appropriate profile of skills and experience are invited to send an 'Intent to Submit' note to [edward.clarke@epsrc.ac.uk](mailto:edward.clarke@epsrc.ac.uk) by 16:00 on 12 June 2015. The note should be no more than 1 page A4 and include:

- Your name and contact details

- A summary of your career to date;
- A brief explanation of why you feel the RSE Fellowship is appropriate for you;
- A brief summary of what you would hope to achieve from an RSE Fellowship.

Candidates who have not provided an 'Intent to Submit' notice to EPSRC will not be accepted for submission of a full proposal application.

## Assessment process

You will receive an acknowledgement of your Statement of Intent and, within five working days, some feedback. This feedback will either invite, or decline, a full application.

You do not have to wait for feedback before preparing your full application. However, based on the Statement of Intent and other eligibility checks, we may decline applications without review that do not fit the scope of this call.

Full proposals will be sent to external peer reviewers for their comments. Where sufficiently supportive reviewer comments have been received, applicants will be invited to submit a response to the reviewers' comments. Following an initial sift by EPSRC based on reviewer comments and applicant responses, proposals will then be considered and prioritised for funding by a peer review panel.

An interview stage will be held following the Panel meeting in order to select the final successful candidates. Full details of the process will be sent to candidates.

Applicants should note that peer reviewers and panel members will be drawn from a pool which will include software development specialists, computational scientists and other relevant experts. EPSRC reserve the right to sift proposals at any stage to ensure all proposals fit the call.

## Assessment criteria

The applications will be assessed for their fit to the scope of the call and how they address the strategic drivers. Specific criteria are:

- **The candidate:** evidence of a clear vision for the role. Evidence of an aptitude and potential to lead, inspire and influence, for example, through mentoring and networking. Demonstration of excellent communications and interpersonal skills.
- **Quality**, including novelty of the research enabled, quality of the software engineering proposed, the appropriateness of the proposed methodology.
- **Research environment:** Justification for the choice of host organisation. Demonstration of an appropriate level of support and commitment to the Fellow's career as evidenced through the Host Organisation Statement.
- **Importance**, including contribution to EPSRC's strategic priorities.
- Quality of the proposed **pathways to impact**, including the quality of the software management plan, and of the plans for outreach and collaboration.
- **Resources and Management:** justification of the planning and project management of the proposed programme, risk management strategies.
- **Leadership and Vision:** The ability of the candidate to establish a network and promote computational science and engineering to achieve their career objectives.

## Guidance

### Guidance for reviewers

Information about the EPSRC peer review process and guidance for reviewers can be found at: <http://www.epsrc.ac.uk/funding/>

### Guidance for host organisations/heads of department

Host organisations are expected to give the individual all the support normal for an academic member of staff, even though they may not currently hold an academic position. Provision of the usual infrastructure such as laboratory and office space will be expected, plus other support such as mentoring should be considered.

### Additional grant conditions

In addition to the standard terms and conditions for grants, successful applicants will be required to provide reports as requested by EPSRC, feedback on the RSE structure, commitment to participate actively in events and activities aimed at EPSRC Fellows (whether within their Host Institution or more widely) and submit to any grant reviews required by EPSRC.

### Key dates

Activity	Date
Call opens	May 2015
Receipt of 'Intent to Submit'	12 June 2015
Acknowledgement and EPSRC feedback	Within five working days
Closing date for receipt of full proposals	21 July 2015
Panel meeting	w/c 12 October 2015
Interview Panel for candidates	w/c 09 November 2015
Decisions released	December 2015
Earliest Start Date	01 January 2016

### Contacts

Requests for help and advice concerning the writing and costing of your proposal should be addressed to your institutional Research Office in the first instance.

If you have any questions about preparing and submitting your proposal using Je-S, please contact the Je-S helpdesk ([Je-SHelp@rcuk.ac.uk](mailto:Je-SHelp@rcuk.ac.uk), 01793 444164).

Please see the attached FAQ for answers to common queries. For other queries not addressed in the call document please contact:

Eddie Clarke, Senior Portfolio Manager. Email: [edward.clarke@epsrc.ac.uk](mailto:edward.clarke@epsrc.ac.uk) or telephone 01793 444438

## Appendix 1: Access to Computing Resources

Applicants should include the necessary computing resources needed for the project.

For access to the **national HPC service, ARCHER**, please follow the process described on the web:

<http://www.epsrc.ac.uk/research/facilities/hpc/access/>

For help and advice, please contact the Help Desk on [support@archer.ac.uk](mailto:support@archer.ac.uk). Please note that a technical assessment will need to be attached to the proposal on submission.

Following recent capital investments from UK government the Department has established **the Hartree Centre** in collaboration with IBM. This outward-facing centre offers a range of services including collaborative software development and access to a range of novel hardware platforms (98304 core Blue Gene/Q, Blue Gene Active Storage, iDataPlex, NextScale, ARM, nVidia Tesla GPU, Intel Phi and Maxeler MPX-X).

For access to the Hartree Centre machines, please contact: Michael Gleaves, Head of Business Development, The Hartree Centre, STFC Daresbury Laboratory e-mail: [Michael.Gleaves@stfc.ac.uk](mailto:Michael.Gleaves@stfc.ac.uk), tel: 01925 603710

<http://www.stfc.ac.uk/hartree/default.aspx>

For access to your **local or regional machines**, please contact the relevant person at your institution or the regional centres directly. It is permissible to include the cost of this access on the grant.

EPSRC supported regional centres:

<http://www.epsrc.ac.uk/research/ourportfolio/themes/researchinfrastructure/subthemes/einfrastructure/highperformance/computingcentres/>

HPC Wales: <http://hpcwales.co.uk/services> or e-mail direct to [info@hpcwales.co.uk](mailto:info@hpcwales.co.uk) for further access information.

## Appendix 2: Frequently Asked Questions

Below are some answers to common enquiries. Please check if your query is addressed here. If not, please contact us using the details in the main call document.

### **Q: Who can apply for this funding opportunity?**

A: This is a carefully designed call intended to support exceptional individuals who wish to develop their career in scientific software engineering in an academic environment. The combination of scientific expertise and computational science of the RSE is best described at the following link: <http://www.rse.ac.uk/who.html>

### **Q: Do I need to be a researcher or have a current academic post to apply for this call?**

A: No, but you must be able to move into the academic environment as an employee by the start of your RSE Fellowship. That is, you must be employed by an eligible institution at the start and for the duration of the Fellowship.

### **Q: What's the earliest start date for my RSE Fellowship?**

A: You may start the RSE Fellowship from 01 January 2016.

### **Q: Can I make this a part-time post?**

A: Yes, you can spend anything over 50% FTE on the RSE Fellowship. However, the term must not exceed five years.

### **Q: Does the RSE Fellow have to work on one project or in a single department?**

A: The RSE Fellow should have a flexible framework to permit working on multiple projects across disciplines, departments or more widely. They should involve challenging issues and provide innovative solutions. However, where there is capacity to do so, the RSE may wish to focus efforts on a single project that offers a number of complex or interdisciplinary challenges across various interfaces.

### **Q: What should the Host Institution provide?**

A: The Host Institution must be fully committed to supporting the RSE Fellow for the term of the award, and ensure a strong foundation for future career development. The Host Institution Statement should be prepared by a suitably senior figure in the university who has a strategic overview and relevant interests in the development of the RSE role. Some wider guidance is at: <http://www.epsrc.ac.uk/skills/fellows/hostorganisationobligations/>

### **Q: Can I transfer the RSE Fellowship to another institution?**

A: Yes, but you must have the full support of both the involved institutions. The Fellowship must have more than 6 months to run. Please contact us to consider your options as there are a number of conditions that must be met.

### **Q: What happens when EPSRC receives my Statement of Intent?**

A: We will look at the number and profile of the applicants. This will help us to plan the later stages of the peer review process. We may advise you that your profile does not fulfil the requirements of the call and, in this case, a proposal is likely to be rejected without review. You should be aware that, once a full application is made to EPSRC through Je-S to this call, it will count for the purposes of Demand Management. In addition, you are only permitted to make one EPSRC Fellowship application in a 12-month period.

**Q: Does making a Statement of Intent to this call affect my record with EPSRC?**

A: No, there are no implications on Demand Management or other processes. The Statement of Intent is merely a way to record the number and scope of potential applicants and sift those that do not fit the profile of the RSE Fellowship. If the call is greatly oversubscribed, we will sift heavily at all stages.

**Q: What can the funding be used for?**

A: The normal criteria apply. However, note that there is a restriction on staff to 1 FTE over the period of the Fellowship. Further information may be found in the funding section of the EPSRC website and on the Fellowships guidance pages.

**Q: Can I apply for other funding as a PI or Co-I while I have an RSE Fellowship?**

A: Fellows at 100% FTE are eligible to be a PI / Co-I on a research grant, assuming you meet all the other requirements. However the required resource cannot be duplicated – salary should not be costed to the new proposal for any overlapping period of time, with the fellowship, estates and indirect costs would need to be reduced accordingly.

However, you would need to be able to convince peer review that this would not adversely impact the delivery of your fellowship and the research grant project is feasible whilst having a 0% time commitment. This is usually the case where the research grant project is heavily related to the fellowship, so the administrative time needed on the grant is able to be covered by the time on the fellowship.

**Q: Can I have Co-Investigators on the application?**

A: No, the RSE Fellowship does not permit Co-Investigators. This call is based on the credibility and quality of the individual.

**Q: Can I split my time between HEIs?**

A: Yes, this is possible. Both institutions must be fully signed up to supporting the RSE Fellow, and one 'lead' institution must be identified to hold the award and this will be your employer. There will be considerable additional challenge in defining a clear programme between two centres and you must be aware to fully justify all costs and administrative overheads. You may create other ways of working closely with other institutions.

**Q: Can I involve industrial or business in the Fellowship?**

A: Yes, as contributors to the Fellowship, such involvement is encouraged. However, these project partners may not draw funds from the Fellowship, including for travel costs. Named project partners should supply a letter of support describing their contribution, support and commitment to the Fellowship.

**Q: When will I get a decision?**

A: We will endeavour to keep you informed at every stage of the process. Please be aware that the period shortly after a peer review meeting is exceptionally busy and we may not be able to offer immediate responses. Feedback will be limited to review comments. Email correspondence is preferred for non-urgent enquiries.

**Q: If I am invited to interview, what do I need to prepare?**

A: We will let you know the requirements and structure of the interview in good time. There will be no additional assessment criteria. In general, the panel meeting will consider the strength of the case and the interview will focus on the quality of the candidate.

**Q: What is the 'mid-term review' mentioned in the call document?**

A: Over the period of five years, we would like to assess the success and impact of this scheme. EPSRC may require you to provide evidence of achievements and report on progress. This may be examined by external peer review who will be asked to offer opinion and feedback. This review is not conditional on continuation of funding.

See also: <http://www.epsrc.ac.uk/skills/fellows/overview/faqs/> but some guidance may not apply in the case of RSE Fellowships, as this RSE call is a tailored opportunity.

**Change log**

<b>Name</b>	<b>Date</b>	<b>Version</b>	<b>Change</b>
Susan Morrell	July 2014	0.1	N/A
E. Clarke	April 2015	0.2	Revised and updated after consultation
E. Clarke	14.4.15	0.3	Final draft for checking.
E. Clarke	28.4.15	1.0	Release version approved
E. Clarke	06.05.15	1.1	Je-S approved/PR approved.