Software Sustainability Institute Status Report

Covering the period from

1 September 2013 – 31 March 2014

Prepared by:
Neil Chue Hong, *Director*
Steve Crouch, *Consultancy Lead*
Simon Hettrick, *Deputy Director and Policy & Communications Lead*
Aleksandra Pawlik, *Training Lead*
Shoaib Sufi, *Community Lead*
Giacomo Peru, *Project Officer*

Overview

The Software Sustainability Institute continued its fourth year building on the success of the previous year. Initiatives such as the Fellowship Programme, Collaborations Workshop and Website are well established. An increasing impact from the Policy theme can be seen.

The four teams remain the same, however as noted in the previous report Aleksandra Pawlik has taken over from Mike Jackson as Training Lead:
- Community (led by Shoaib Sufi)
- Consultancy (led by Steve Crouch)
- Policy (led by Simon Hettrick)
- Training (led by Aleksandra Pawlik)

New staff were hired during this period: Giacomo Peru (Edinburgh) as a project officer supporting the Community and Training themes, and Devasena Inupakutika and John Robinson (Southampton) joining the Consultancy theme.

The approximate staffing for each of the teams over the reporting period is:
- Community: 1.75 FTE
- Consultancy: 5 FTE
- Policy: 2 FTE
- Training: 1.75 FTE

of which 9.5 FTE is funded by the core EPSRC grant, and 1 FTE is funded by other grants.

Significant highlights in the last seven months include:
- Four Fellows joined forces to run a Town Hall meeting at the prestiguous American Geophysical Union Fall Meeting - this could not have happened without the Fellows Programme
- Largest Collaborations Workshop to date, with successful hackday
- ForestGrowth consultancy project have secured additional funding after our work
- Recomputation.org has attracted significant community and industry interest
- Research Software Engineer community infrastructure has been launched
- We have helped to run 11 Software Carpentry bootcamps in the period
- We have been asked to deliver software sustainability keynotes to the IAEA, NSF SI2 programme and at the Scientific Software Days.

Changes from revised plan
There are no significant changes from the staffing organisation and fellows programme presented at the Advisory Board in February 2013.

Community

Community Highlights and Activities

Fellows

The recruitment of the Fellows for 2014, from the initial promotion campaign to the final face-to-face selections, was the main focus of the Community team in September, October and November. We had a mix of external and internal reviewers for the shortlisting while, both for the online and for the face-to-face selection meetings, we had a number of existing 2013 Fellows on the selection panel. This mode of "Fellows selecting Fellows" felt like the right way that the programme should be run: Alex Chartier, Kayla Iacovino and Robin Wilson were the 2013 Fellows who aided in the recruitment of the 2014 Fellowship programme.

Once Fellows had been selected we offered 16 places, of which 15 have been accepted. The person who did not accept declined due to the time commitment required. We were upfront about the time commitment needed (on average it's about 8 days of work over the year including attending events, writing reports and doing claim forms) which we feel is good value for the £ 3000 grant, network and expertise access that we offer. It was also interesting to note that two Fellows applicants who did not make it in 2013 carried on engaging and working in the space of software and research and were made Fellows in 2014.

Once the Fellows were selected, we collected information about them, their research work and their interest; all Fellows are now available at www.software.ac.uk/fellows where there is a gallery of fellows and each now has their own personal Fellows page, e.g. http://software.ac.uk/fellows/mark-basham. The 2014 Fellows were officially announced in December 2013.

The Fellows themselves have been very active in terms of making use of their Fellowships for travel and producing the associated reports (please see below). We are not reporting requests here but just actual outcomes from events and other resources produced by the Fellows and related community efforts.

Of particular interest is that four of the Fellows joined forces with SSI community help via Aleksandra Pawlik and organised a Town Hall meeting at the Annual Geographical Union conference in San Francisco (which has an attendance of over 25,000!): these were Allen Pope, Melody Sandells, Kayla Iacovino and Robin Wilson. There were a number of blog posts and reports about this which are listed below. The event itself received fantastic feedback (Feedback from Software and Research Town Hall at AGU 2013).

Fellows sometimes request that we present information with them at events; e.g. the invited talk at the UK Polar Network 2013 Polar Research Workshop in September 2013 delivered by Aleksandra Pawlik, was organized with the support of SSI's Fellowship resources by Allen Pope.

A number of Fellows are interested in, or have run Software Carpentry Courses; they thus contribute directly to the Institutes training agenda. Examples of this include the R course run by Fellows 2014 and colleagues Stephen Eglen and Laruent Gatto.

To spread the load of Fellows Management responsibility in 2014 and match up the Fellows with the most appropriate person in the Institute we introduced the role of 'handler' so currently we have two levels of handler primary and secondary. Primary handlers are those focused on responding to the requests for events from the particular Fellow and also build up a working relationship with them and route them to other relevant people in the Institute or known to the Institute if the need arises. Secondary handlers act as backup. Currently Handlers include Shoaib Sufi, Aleksandra Pawlik, Tim Parkinson and Simon Hettrick. Simon has one Fellow to look after,Tom Crick, who works in the area of science policy and Aleksandra Pawlik has a Fellow called Aleksandra Simperler who is a specialist in the area of software training for researchers (which is a specific focus for Aleksandra Pawlik as the Institute's training lead).

Some of the Fellows 2013, for various reasons, have asked to extend the time in which they can make use of their Fellowship grant; we have taken a flexible approach to this, allowing them to do this on a case by case basis and taking their ideas and circumstances into consideration.

One area where we have not engaged at present is with the Fellows 2014 Mentors – we hope to do this after the Fellows Summer meeting when the Fellows have built up a better understanding and some practice of what being Fellow is like. But we are open for advice from the Advisory Board on this topic.

Continuing Fellowship programme

We have in place a communal pot of money to help support Fellows who are not in their active/inaugural year attend events and report back/blog-about their experiences if there is relevant software in research content.
In this capacity we agreed to fund Laura Moss (Fellows 2012) to attend the SWAT4LS workshop in December 2013.
We also set up a new mailing list in December called all-fellows@software.ac.uk that includes all the Fellows from 2012, 2013 and 2014.

Collaborations Workshop 2014

From November, once Fellows recruitment activities were over, there was a focus on planning and organizing the Software Sustainability Institute's Collaborations Workshop 2014 (CW14). This year we chose the theme for the workshop to be 'software in your reproducible research'. Theming the workshop was a suggestion of the Advisory board after CW13. The theme did make it much easier to promote the event. In fact over half of the attendees were neither Fellows, Staff or previously known to the main organiser which showed that we were reaching a new audience.

GitHub, the popular software repository and collaborative working site came on board as Silver sponsors for CW14 in November, they also agreed to have a representative on the steering committee. Microsoft Research came on board in December as Gold sponsors and also agreed to be part of the steering committee. Facilities for the workshop were kindly provided by the Oxford e-Research Centre (OeRC) with local support from their excellent events team.

There were three Steering group meetings held in January, February and March. Arfon Smith and Kenji Takeda from GitHub and Microsoft Research respectively, attended all the meetings and felt very much part of the organising team with good suggestions on such topics as timing of lightning talks, discussion session reporting format, balance of the agenda, prizes (which they sponsored) and how to run an effective hackday.

We provided significantly more information resources for CW attendees this year with tips and guidance documents written, such as [Top tips for lightning talks](#) and 'Collaborative ideas and Hackday Pitches' to help give sufficient constraint to allow ideas to flourish but not be overly constraining the proceedings. A face-to-face meeting solely focused on the CW was held in January a day before our regular quarterly face-to-face meeting; this helped boot-strap the material for the CW.

We also promoted the Workshop using different techniques. We focused on asking the community who should be involved in the conversation around software in reproducible research: '[Software's role in reproducible research: who should be involved?](#) ' There was also a call out to the approximate 2000 Twitter followers of the Institute to help gain further advice from the Community. The use of social media expertise and techniques of the Policy and Comms team in this regard has certainly increased in the last 6 months and this has been to the benefit of all themes. We also used the MailChimp system of sending emails to our mailing list members (this helped us record how many people opened the e-mail and how many clicked through). On February 5 the first one of these organised by Policy and Comms went to 573 people, it was opened by 30.9% of them and 8.7% of them clicked through to the site. While this was promising, a subsequent reminder email sent to a similar number of people was only opened and clicked through by 7 individuals (so perhaps another form of reminder would be needed for CW15). We wrote the upbeat blog post continuing promotion - [CW14: an amazing event about software and reproducibility](#) and this was followed by an insightful blog by Kenji Takeda from Microsoft Research - [Reproducible research – an impossible dream?](#)

Again we worked with the efficient team at ePay in Edinburgh for actual registration (this was the easiest way of making sure project finances were routed to the right place efficiently).

CW14 was a big success; people used works like 'energetic' and 'buzzing' to describe the atmosphere. We had 67 attending which made it the biggest Collaborations Workshop to date. 42 people stayed on for the Hackday and there were over 600 tweets. The outcomes are in the process of being made available on the website and many of the winning Hackday

entries are continuing to be developed; the winning one being https://github.com/OpenSourceHealthCheck which was very much inline with the theme of the workshop of helping make software support reproducible research by checking that repositories met certain quality criteria (with suggestions for improvement). There was a summary of the best tweets published Software and reproducible research - best of the tweets.

The Software for the Future II lunchtime surgery at CW14 by EPSRC's Louise Tillman was a success with 6-8 people keeping her fully engaged with questions.

At the current time, 29 out of the 67 attending have filled in feedback forms. Early analysis of the feedback is very encouraging:
- How useful was the workshop (4.3/5.0)
- How enjoyable was the workshop (4.5/5.0)
- Please rate the keynote (4.6/5.0)
- Please rate the Lightning Talks (4.3/5.0)
- Would you recommend the workshop to colleague (100% said Yes!)
- Would you attend the workshop next year (76% Yes, 24% Maybe, 0% No)
- How many new people did you meet at the workshop (average around 15)
- How many collaborations did you intend or start at the workshop with others present (1.7 on average)
- Hackday: How enjoyable was the hackday (4.7/5.0)

Neil Chue Hong closed the CW14 by saying there would be a CW15! I think the numbers supports this. We will consult the community about what the theme should be for CW15 but we are happy to hear comments on this from the Advisory board.

Reaching out to relevant communities

Community continued its endeavour to reach out to a relevant and wider audience through a wide variety of events

We attended the Digital Research 2013 meeting in September, and participated in Mozilla Festival 2013 in October with Neil Chue Hong and Aleksandra Pawlik running a 'What makes good code good (for science)' session and meeting with the wider Mozilla Science Lab team including Kaitlin Thaney, Greg Wilson, Amy Brown and Karthik Ram from rOpenSci and Josh Greenberg from the Sloan Foundation.

Carole Goble and Aleksandra Pawlik have been driving the setup of the ELIXIR-UK node, particularly looking at the scoping of the training platform and links with other training efforts.

Neil Chue Hong and Simon Hettrick attended SuperComputing 2013 in Denver, Colorado, along with SSI Fellows James Hetherington and Derek Groen. Neil was co-organiser of two very well-attended colocated workshops: Workshop on Sustainable Software for Science: practice and Experience and Software Engineering for High Performance Computing in the

Computational Sciences and Engineering. Both of these workshops have been selected to run again at SuperComputing 2014 in New Orleans.

Neil Chue Hong presented at a number of events, including the Scientific Software Days (which Aleksandra Pawlik had presented at in 2012), and the TGAC Scientific Symposia series.

Neil Chue Hong, Carole Goble and Simon Hettrick attended SPOTOn London in November 2013, meeting a number of researchers, policymakers and science writers.

Carole Goble attended the Fairport Conference in January 2014 and the INCF
David De Roure was part of the RCUK 5th India anniversary delegation and chaired the round table on Big Data and e-Infrastructure.

Aleksandra Pawlik and Simon Hettrick also attended PyData In London in February 2014 they were joined by Fellows Kayla Iacovino (2013) and Mark Basham (2014).

Aleksandra Pawlik has also made contact with the BioJS community who are involved in making and managing web based toolkits for visualizing biological data. BioJS are involved in a successful Open Call project and they are also connected with the ELIXIR and GOBLET activities in infrastructure and training both of which have relevance for the Institute.

The Institute agreed to support the Microsoft Azure training in Manchester in early April as a quid pro quo for MSR's support for CW14 and to reach out to the wider community attracted by using scalable computational resources for research. The Institute is also supporting the Women in HPC initiative that launched in April 2014 as it is complementary to our Women in Software blog series.

Changes from previous plan

In the future, Community will co-ordinate all workshops even if run by other themes, thus acting as the hub of how the Institute is engaging with the Community.

Collaboration

Tom Crick invited an SSI representative to come and talk at [HEA workshop](#) he is organising in May 2014.
Through the support of Microsoft Research for the CW14 and our support of the Microsoft Azure training in Manchester we are building closer links with Microsoft Research who are keen to see how they can best serve the Research Community.
Due to staff changes at the EGI we had the last of our meetings with Richard Mclennan in November 2013 who was supporting their Champions programme; it has been an interesting trade of information; what we gained from this was a more rigorous approach at making sure Fellows are reminded to promote the Institute when we have supported them through funds.

Aleksandra Pawlik was invited onto the steering committee of PyData London 2014 this made some excellent connections with people serving the research community.
Shoaib Sufi made a connection with Liz Cable from Leeds Trinity University at a Public Engagement Training Event in March 2014. She is running the UK's first Social Media Degree course. She plans to write a blog for us about how researchers can use social media to see what is happening in their domains.

Staffing

Aleksandra Pawlik started leading the Training theme as of August 2013 so her time on Community matters decreases to about 20%. She is still very active in the cross-over space between Training and Community.
In December the Community gained 50% of a newly hired Project Officer, Giacomo Peru. He has taken over responsibility for the timely processing of claims by Fellows (a previous issue raised by the Fellows) and helped with budgeting, venue and facilities organisation for the Collaborations Workshop.
From January 2014 Tim Parkinson has been spending 40% of his time on the Community team; primarily doing work on metrics and helping manage the Fellows 2014 (he also played a strong role in their recruitment and selection).
Shoaib Sufi remains the theme lead for Community and takes overall responsibility for Community activities as well as planning and organising matters pertaining to the theme such as the Fellowship Programme and the Collaborations Workshop.

Metrics

The Community Lead scoped the Collaborations Workshops and the Fellows Programme to define a number of metrics to measure the success of these two initiatives. It became clear that capturing the information up front was the cheapest way to collect the information. As a result, feedback forms and applications forms will be redesigned to provide the information we require for the next run of the Fellows Programme and for registrants to our events.

One of the things we are trying to measure is 'has being a Fellow helped your career'. The plan is to contact all the Fellows from 2012-2014, we anticipate reporting on this after the Advisory Board as there has not been enough time to chase all the respondents to get a representative set of responses.

Dissemination

Blog Posts

September:
    1. [Fellowship Programme 2014](#) announcement
    2. [Crowd-sourced computer networks](#)by Phil Fowler

3. [Now on the agenda at American Geophysical Union: software and research](#) based on a Skype telecon with all 4 Fellows engaged in the AGU Session: Allen Pope, Kayla Iacovino, Melody Sandells and Robin Wilson

October:

1. [Crowd-sourced computer networks](#) by Phil Fowler
2. [Top tips on software for data visualisation](#) by Jon Blower
3. [What makes good code good for science](#) by Neil

November:

1. [Don't fear the reaper - dealing with the bus factor](#) by Melody Sandells
2. [UK Polar Network 2013 Software and Polar Research Workshop](#) by Allen Pope and Laura Hobbs - Polar Research Network

December:

1. [The complexity of code is overestimated when we are not aware of the basic principles](#) by Leanne Wake (Fellow 2014)
2. [Academic blogging: top tips](#) by Tom Crick (Fellow 2014) - republished from article in Guardian Higher Education Network blog
3. [Feedback from Software and Research Town Hall at AGU 2013](#) by Aleksandra Pawlik
4. [Tips for sustainable software development on supercomputers](#) by Derek Groen - Fellows 2014 (number of Fellows blogged in december - a good sign of choosing engaging people.
5. ["Software and research" at the American Geophysical Union (AGU) Fall Meeting](#) by Aleksandra Pawlik

January 14:

1. [Five reasons to choose R for your computing needs](#) by By Stephen Eglen and Laurent Gatto, Software Sustainability Institute Fellows.

February:

1. [Windows Azure for research training - a perspective](#) by Philip Fowler (Fellows 2014)
2. [Introducing digital classics](#) by Giacomo Peru where he addresses his own original domain and the use of software

March:

1. [PyData London 2014](#) by Mark Basham (Fellow 2014)
2. [Reproducible research – an impossible dream?](#) By Kenji Takeda, Microsoft Research (CW14 Gold Sponsor)

Conference Reports

September 2013:

1. [Current and future directions of Citizen Science 2013](#) by Robin Wilson
2. [Computational Anthropology workshop 2013](#) by Nick Pearce
3. [Goldschmidt Conference 2013](#) by Kayla Iacovino

December 2013:

1. [Sustainable History, Ensuring Today's Digital History Survives](#) by Adam Crymble
2. [SWAT4LS Conference 2013](#) by Laura Moss

3. http://www.software.ac.uk/international-conference-information-and-communication-technologies-and-development-2013 International Conference on Information and Communication Technologies and Development 2013] by Caitlin Bentley
4. American Geophysical Union Fall Meeting 2013 by Melody Sandells
5. American Geophysical Union Fall Meeting 2013 by Allen Pope

February 2014:
1. IASC Network on Arctic Glaciology 2013 by Allen Pope (Fellow 2013)

March 2014:
1. Scottish Programming Languages Seminar 2014 Winter Meeting by Alexander Konovalov (Fellows 2014)

Other

September 2013:

- Carole Goble gave a talk at the 1st International Environmental Omics Synthesis Conference in Cardiff
- Carole Goble participated in the Biodiversity Informatics Horizons event in Rome

October 2013:

- Neil Chue Hong and Aleksandra Pawlik participated in and ran a "What Makes Good Code Good" session at MozFest 2013

November 2013:

- Neil Chue Hong and Simon Hettrick attended SPOTOn London
- Neil Chue Hong, Simon Hettrick, Mark Parsons, James Hetherington, Derek Groen attended SuperComputing 2013 in Denver, and ran two workshops: WSSSPE and SEHPCCSE
- David De Roure was part of the delegation to India on behalf of the RCUK, and chaired a round table on Big Data and e-Infrastructure

December 2013:

- Fellow Michael Croucher added SSI Fellows and related to a twitter list
- Encouraged the use of Tweeting to the new Fellows - some setup or started new accounts (e.g. Aleksandra Simperler and Liberty Foreman)
- Neil Chue Hong presented the keynote at the 7th Scientific Software Days, Austin
- Carole Goble participated in the Workshop "New Perspectives on Workflows and Data Management for the Analysis of Electrophysiological Data" in Juelich

January 2014:

- [Cambridge R Software Carpentry bootcamp success](#) Run by Fellows 2014 - Stephen Eglen and Laurent Gatto (example of multiple levels of interaction)
- Neil Chue Hong was an invited speaker at the CCPForge Users Meeting at RAL

February 2014:

- Neil Chue Hong was the invited international speaker at the NSF SI2 PIs meeting

March 2014:

- Neil Chue Hong gave one of the TGAC Scientific Symposia in Norwich
- Carole Goble gave a talk at ACM womENcourage Europe in Manchester
- Carole Goble gave a talk at the 11th International Conference on Urban Health in Manchester

Consultancy

Highlights

The Open Call

The Institute's Open Call for projects accepts submissions from researchers who wish to improve their software, their development practices, and their community of users and contributors. Our consultants work closely with successful applicant research teams to assess these aspects, providing recommendations for improvement, and assisting with the implementation of those recommendations. An Open Call project typically runs for between 2-6 months, where we work together with successful applicants to develop a tailored work plan suitable for the project.

There have been three completed rounds of the Open Call to date:
- Open Call round 1: September 2012 - January 2013
- Open Call round 2: February 2013 - April 2013.
- Open Call round 3: May 2013 - October 2013

The fourth round of the Open Call will close on April 30th 2014.

For more information on projects from the first and second rounds of the Open Call, please see the project updates in the March 2013-August 2013 Status Report and the published case studies on the website.

All of the projects from the first round of the Open Call completed on schedule in 2013, with BoneJ and the Imperial College Lower Limb Model finishing in September, and ForestGrowth-SRC finishing in early December. Highlights from these projects within the reporting period include:

- **ForestGrowth-SRC:** The porting of the ForestGrowth-SRC modelling codes to the IRIDIS4 cluster at Southampton yielded an 18-fold increase in simulation speed, reducing processing time from a few days to just a few hours. The skills and tools necessary to exploit running their codes on IRIDIS4 were also successfully transferred to the team. The team's bid into the University of Southampton's Institute for Life Science's fund (which included effort from an Institute developer for six months) was successful, with work beginning in January 2014.

- **ICLLM:** The multiple variants of the Imperial College Lower Limb Model code were successfully merged and imported into the selected Assembla source code repository, and the team were trained to use the skills necessary to use and maintain the repository. The project is continuing to implement the recommendations for documentation and results validation based on the Institute's development review.

- **BoneJ:** Building on the support we gave to the project in the earlier stages of their BBSRC Bioinformatics and Biological Research Fund proposal, we contributed a Letter of Support and a workplan based on our development review to the full proposal. Although unsuccessful, it was noted by the BoneJ lead that SSI's involvement really helped in the initial stages of the application, and this 'case for support' will be taken forward into future funding proposals with the Institute as a potential partner.

It should be noted that the approach of assessment, improvement and case for support (as seen in ForestGrowth-SRC and BoneJ) continues to act as a model for some of our consultancy engagements. This allows us to assess and not only help projects improve their software, but also their options and case for funding. At the same time it provides us with the opportunity to select and partner with suitable projects for future funding ourselves.

In terms of the second round of Open Call projects, LabBook and BASIL/FABBER completed in March 2014 with DawnScience scheduled to finish in mid-April. Highlights from this reporting period include:

- **LabBook:** Our assessment of the LabBook software, use of infrastructure and development practices has yielded recommendations and a roadmap for future work on how to make the software more accessible to new users and developers. To move this work forward, the group has employed a new member of staff whose role includes implementing these recommendations.

- **DawnScience:** A series of eleven interviews with the beamline scientists and other staff that use the DAWN software within Diamond was conducted in December 2013. This has resulted in two comprehensive reports on areas for improvement across the software and team working practices (similar to the one produced for ICAT), which have been well received by the team. The team are committed to implementing the resultant recommendations, and the Institute is scheduled to present and discuss these findings at a DawnScience collaboration meeting in June.

From the third round of Open Call projects which closed on October 31st, the following projects were selected:

- **ParaFEM** - Research Computing Services, University of Manchester (13th January 2013 - 2nd May 2014): The open source ParaFEM software library enjoys a long-standing prestige and very large user-base through their Wiley book 'Programming the Finite Element Method', which has over 600 citations, is on its 5th edition, and has been around since the 1980's. The group wish to take advantage of a Wiley marketing push to improve the software for an even wider audience, particularly fields utilising HPC that include aerospace, energy, and transport. So far, the Institute has delivered an evaluator release of the software to enable quick assessment by new users, with development of a test suite underway, to ensure correct compilation of the sophisticated full package on HPC systems. The project lead notes that they view the SSI as 'an essential partner in helping us achieve our ultimate goal: to turn

ParaFEM into the open source solid mechanics equivalent of OpenFOAM'.

- **TPLS** - Institute of Materials and Processes, University of Edinburgh (7th April 2014 - 31st August 2014): The well-established fluid dynamics TPLS numerical simulation open source software has strong use within groups at the Universities of Edinburgh and Dublin, and recently strong interest in using the software has been expressed elsewhere, including two groups at Imperial College, Brunel, and groups from the US, China and India. An acknowledged issue for new users and developers is the usability and modifiability of the software, and the Institute will assist in developing documentation and technical support practices for the group, as well as assisting in the refactoring of the code base to benefit developers and generally increasing its maintainability and code quality.

- **BioJS** - The Genome Analysis Centre, Norwich (April 2014 - TBD): BioJS is a community-based standard and repository of functional components for representing biological information on the web, and especially for visualising data. With interest from external groups such as those in Dundee, Cambridge and UCL, and its strong connections with ELIXIR, we will work with the team to assess and help improve their software, test suite, support and development practices. We are currently in discussions with the group about partnering with them for future funding, using the development review as a foundation for future proposals.

As part of the review process for this call, we also rejected applications from the Edinburgh Brain Research Imaging Centre (BRIC), with whom we have worked before but whose application was out of scope, and the Dept of Anthropology at Durham University, which submitted a poor application. It was also decided that two other applications, from the Dept. of Mathematical Sciences at Durham University (Cadabra) and from the Dept. of Physiology at the University of Oxford (CGAT) did not warrant a full Open Call project. However, it was concluded that a small amount of effort to conduct a development review and case for funding support for each project (only between 1-2 weeks) would have a good impact return on invested effort, and these are currently being scheduled for the next few months as lower priority activities.

Externally Funded Projects

For further background information on our external projects (Jisc Software Hub, APES and INQUIRE), please see the project updates in the March 2013-August 2013 Status Report and their entries in the 'Who do we work with?' page on our website.

A highlight from this reporting period is from the Jisc Software Hub project that completed in December 2013. The project developed a pilot web-based information resource for Jisc-produced software. The work produced, lessons learned and recommendations from this pilot will inform future Jisc activities for producing a fully-fledged software service for the community, and the Software Hub will continue to run as a pilot service.

Two projects from the first round of Software for the Future funding which the SSI is involved with have kicked off during the reporting period: LibHPC 2 (led by Imperial) and Non-Continuum Flows (led by Warwick).

Additional Consultancy Projects

Another project to which we are providing free consultancy effort is Recomputation.org from the University of St Andrews. This began in early February 2013, and is scheduled to finish on 29th August 2014.

The recomputation manifesto created quite an impact when it was published last year. Written by the project lead Ian Gent, it attracted over 10,000 viewers from across the world and caused a huge discussion on social media. The project aims to allow the reproduction of scientific results generated using software by other researchers, and is therefore intrinsically aligned with our own goal of supporting and promoting reproducibility in research. The aim of the service is to enable the efficient capture, storage, download and execution of computational experiments encapsulated within virtual machines. We have begun working with the project to help them develop and run this community service efficiently, assisting them with investigations into using suitable infrastructure (such as Microsoft's Azure cloud for reproducing experiments) and helping them to develop suitable processes and tools for researchers to prepare experiments for submission. Further information about this project is available on our website.

Software Evaluation: Self Assessment

For those researchers wishing to conduct an evaluation of their own software, the Institute also provides an online Sustainability Evaluation Service (as well as information on how we conduct evaluations ourselves in case researchers wish to use our processes for self-evaluating their software). To date, 96 users have made use of the online evaluation facility in the reporting period (an increase of 81 since the last reporting period), and we are beginning to analyse the data to determine opportunities for enquiring about consultancy with those who submitted, as well as to identify any statistical trends on software issues faced by researchers.

Publicity

As mentioned at the last Advisory Board meeting, in January 2013 we were invited to contribute an article about the Institute to the Computing in Science and Engineering magazine. Covering the objectives and key achievements of the Institute across each of the four themes, the article was published in the November//December 2013 edition. Not only does this provide an informative overview of the Institute, it also provides us with a publication 'anchor' to which collaborators and others can cite our work in research papers and elsewhere, and we were also given permission to publish post-print (non-typefaced) versions

of the article on our website to allow access for those who may not have IEEExplore subscriptions.

We have also published 5 case studies in the reporting period, with another one to be published in April. Comments about our work from the project leads (from active or completed projects), from the published case studies, include:

- *"It was really helpful to sit down and go through everything, look at where things stand and what was currently 'broken'. I was impressed with the really fine detail that they went into"* - Michael Doube, BoneJ

- *"The Institute's team were invaluable and proposed a new workflow that involved adhering to coding standards, introducing a revision control system, and developing a code testing framework"* - Angela Kedgley, Imperial College Lower Limb Model

- *"SSI has done a great job in making the Forest Growth SRC software run smoothly and quickly"* - Gail Taylor, ForestGrowth-SRC

- *"This was a complex code that had been through many generations... What the Institute has done for us is create more sustainable and professional software that is accessible to other users. We're very happy with how it went"* - Sally Price, DMACRYS

Miscellaneous

Update: the feedback we received in November from the SeIUCCR Summer School Ask the Experts Session in August 2013 where we provide consultancy advice to 8 projects was very positive, with 63% of participants rating the session 'Very Good', and 27% 'Good'.

EPSRC Software for the Future II Leads

We are also investigating consultancy possibilities for partnering with projects considering the EPSRC Software for the Future II call:

- VAMPIRE - Manuel Trucco from Dundee and Tom MacGillivray from Edinburgh are interested in the Institute's advice and effort to assess and improve their VAMPIRE eye retinal imaging software for wider development and use.
- RODAN - Michael Butler from the University of Southampton would like to increase the robustness and general usability of the formal methods RODAN software suite of plugins, which is currently used by a number of projects and industrial partners.
- LAMMPS - Catherine O'Sullivan from Imperial College London contacted us about extending LAMMPS (molecular dynamics code) to particulates for soil science. She is interested both in gaining advice from the Institute and also an ongoing contribution from a developer to ensure that the coding is progressing in a sustainable manner.

- BioSimLab - Julien Michel from the University of Edinburgh has contacted us about providing community development support for the using the SIRE framework (on which we have previously collaborated with Bristol) within biomolecular simulation pipelines.

Effort

As noted in the last Advisory Board report, effort expended on other key Institute activities caused a shortage of effort for consultancy. At the time, additional effort was secured which helped to ameliorate this situation, but it was clear that a greater pool of consultant effort was required. Despite the initial hurdles already reported, Southampton's involvement in recruiting further consultancy staff has been successful. We secured a new full-time Software Consultant who started last October, and another Consultant at 50% FTE which is expected to rise to 100% FTE after July 2014. This has greatly helped to alleviate the shortage of effort across the Institute's consultancy activities, and increases our capacity for handling a greater number of consultancy projects in the future.

Dissemination

Our blog posts (with other four forthcoming from BASIL/FABBER, ParaFEM, LabBook, and DawnScience):

- Recomputation.org contributes to "a cornerstone of science, 14/03/14, Steve Crouch
- Re-imagining the lab, or, when science meets art, LabBook, 07/03/14, Mike Jackson
- Publishing open-source software – the impact of the BioJS collection, 27/02/14, Michael Marke (F1000 Research) - published as part of a coordinated BioJS press release
- Improving research software and increasing its uptake (Open Call), 31/01/14, Steve Crouch
- Scaling up biofuels research, ForestGrowth-SRC, 12/12/13, John Robinson
- Would you like free help with your software (Open Call), 22/10/13, Steve Crouch

Blog posts by others, promoting, referencing or reblogging us or our posts:

- The Software Sustainability Institute awards software development effort to the ParaFEM project, 02/04/14, Louise M. Lever

Case studies (with Policy and Communications):

- Software Hub - a central resource for Jisc software, Jisc Software Hub, 12/03/14
- Flexible working on crystal structure modelling, DMACRYS, 17/12/13
- Improving the development of popular bone analysis software, BoneJ, 28/11/13
- Preparing musculoskeletal software for public release, LowerLimbModel, 28/11/13

- Studying circadian rhythms in plants and insects, SynthSys, 28/11/13

Other publications, news articles, etc.:

- Re-imagining the lab, or, when science meets art, LabBook, published on EPCC blog, 13/03/14, Mike Jackson
- APES: Advanced Potential Energy Surfaces, EPCC Newsletter, Issue 74, Autumn 2013, pp.13
- Crouch, Stephen; Chue Hong, Neil; Hettrick, Simon; Jackson, Mike; Pawlik, Aleksandra; Sufi, Shoaib; Carr, Les; De Roure, David; Goble, Carole; Parsons, Mark, "The Software Sustainability Institute: Changing Research Software Attitudes and Practices," Computing in Science & Engineering , vol.15, no.6, pp.74,80, Nov-Dec 2013. DOI: 10.1109/MCSE.2013.133.

Web site:

- How to cite us, citation guidelines for project collaborators, 31/01/14, Neil Chue Hong, Steve Crouch, Simon Hettrick

Policy and Communications

Highlights
- The RSE campaign has taken off and been popular - and is now a registered association
- Our Twitter community has become responsive and has been answering questions and fulfilling requests
- A valuable lesson was learned in the difference between what policymakers think is important, and what our audience is interested in (see Women in Software)

Quick statistics for 1 September 2013 - 31 March 2014
- 87 blog posts
- 71,244 unique visitors to the website
- 515 new followers on Twitter (bringing total to 2186)
- 679 retweets
- 15 days at 1000 unique visits

Overview of the last seven months

Although the RSE campaign has been progressing well and there have been some interesting campaigns on the blog - such as Women in Software - the last seven months

have allowed less time for concentrating on campaigns. With Simon Hettrick taking over the leadership of the Southampton group, some time has necessarily had to be devoted to management of the team. Now that the changeover has been completed, management should take up less time in the following six months. A focus on funding and success metrics have also had an impact on the time available for running campaigns.
Research Software Engineers' campaign

The first workshop for Research Software Engineers (RSEs) took place in September. It was discussed in the last six-month report, and will not be described further except to repeat that the workshop sold out and saw much passionate debate.
Following the workshop, the job of creating an RSE community began. The purchase of an appropriate domain, and the creation and design of a website was performed in collaboration with the RSE committee. The website was launched on 10 March 2014 and, with relatively little publicity, 185 people had signed up to the associated mailing list by the start of April. This was viewed as a very positive start to the community.

The survey is the next big step with the RSE community. Without the information from the survey, we will not be able to progress the campaign. This level of importance has put some pressure on the construction of the survey, which must be rugged and lead to reliable results. Some help came from informal contacts with social scientists, but when we sought more solid advice from the National Centre for Research Methods, they could not help.

The RSE community became a registered association (using One Click Orgs) in March. This provides the community with a constitution and an easy way to set up committees and voting rights. After the launch of the RSE website, we were contacted by Canada's advanced research and innovation network who want to run a similar community and want to learn from our experiences. Members of the RSE committee have also been publicising the RSE campaign during presentations over the last seven months. A meaningful achievement was the inclusion of the term "Research Software Engineer" in the EPSRC's e-Infrastructure Roadmap.

Community interaction

A notable change over the last seven months is the way in which the Twitter community has become significantly more active. For the first time in the history of the Institute, in September we tweeted about our need for an author for a post and the Twitter community delivered. Since then we have found that the Twitter community has been responsive not just to requests for authors, but also for answering questions that we have posed. Particularly exciting is that we have seen some Twitter followers answering questions asked by our other Twitter followers: the start of a proper community.

Women in software

In November, at a workshop about computer science employability, there was great interest in the subject of diversity in the world of software. Based on this level of excitement, we decided to run a blog series that investigated views and experiences from women in software. We have published eight posts to date ranging from a view from Microsoft Research to that of an A-level student.

This series has been an education for the communications team, because despite the interest shown in the subject amongst policy-makers, there has been relatively little interest by our audience – only a couple of hundred visits per post. Despite the relatively low interest, the series will continue because of its specific value to some segments of our audience.

General

Following an invitation from BIS to discuss Computer Science employability, we published a post that described the outcomes of the "Women in software" workshop and our take on the these. The Register contacted us and asked to re-post the blog, which we allowed. This led to over a thousand hits and 163 comments on the blog post.

We received a second invitation from BIS to attend a Cybersecurity skills reception, which led to the collection of some useful contacts.

The over 600 contacts that we have amassed over the last four years were finally collated and organised to produce a unified contact list that we can use to target particular groups. This list has been used with Mailchimp to create an automatically generated weekly newsletter which provides us with the opportunity to re-use the weeks blog posts and news items by sending them as an email newsletter.

Following the publication of an article about the Software Sustainability Institute in CiSE, we now have a paper that can be used as a citation.

The report from the e-Infrastructure trainers workshop, reported to the last Advisory Board, was released in October. This summarised the discussions that took place at the workshop.

We are developing an app that can be used to read the posts from our blog. This app is almost completed and a prototype version will be available at the Advisory Board.
Finally, the "Better Software, Better Research" stickers continue to be very popular.

Licenceathon

The Licenceathon is our idea for getting researchers at different universities to find out who owns their IP and then blog about how they discovered the information. The idea is that it would be a useful resource to other researchers and would also raise the issue that university IP is somewhat opaque.

The Licenceathon presents a problem. Everyone we discuss it with is very keen on the idea, and it feels like the type of campaign that could get the Institute some significant exposure. However, we lack the resources to run it. Despite this adversity, we hope to get the campaign started before the next Advisory Board meeting.

Website

There has been no major focus on the website during the last seven months. Tagging of pages has been added to make it easier for readers to find content related to the page they are reading.

A dull but important milestone has been achieved. In January we conducted a fire drill of the website to see whether we could recreate it if the website was hacked or removed. The website was restored within an hour of its simulated demise, which gives us confidence that we could do the same in the case of a real life problem.

Training

Software Carpentry

UK Coordination and Administration

The Institute provides administrative support for Software Carpentry bootcamps in the UK. The support includes: finding and securing instructors for bootcamps, liaising with hosts and helping them organize bootcamps, setting up the necessary infrastructure (registration, mailing lists, etc) and recording relevant information in the Software Carpentry repository (database).

Luke Tweddle was working as the Institute's Software Carpentry administrator until mid-December 2013. His role was then taken up by Giacomo Peru and Aleksandra Pawlik. Giacomo provides the administration support in 0.3 FTE and Aleksandra around 0.2 FTE. If Software Carpentry in the UK develops further as planned, and the Institute's engagement in the initiative grows, the administration will most likely require 1 FTE staff.

Boot camps

In the past 6 months (September 2013 - March 2014) the Institute helped to organize and run 11 Software Carpentry bootcamps.

Table 1: Software Carpentry bootcamps run in the UK from September 2013 to March 2014

Date	Location	Main audience	Instructors
24-25/02/2014	TGAC	Bio-scientists	Aleksandra Pawlik, Rob Davey (TGAC)
18-19/02/2014	UCL	UCL students and staff	James Hetherington*, Owain Kenway, Miguel Bernabeu Llinares, Mayeul d'Avezac
13-14/01/2014	Manchester	Manchester University staff and postgraduate students (MATLAB flavoured bootcamp)	Aleksandra Pawlik, Shoaib Sufi Jos Martin, Ken Deeley and Juan Martinez (all MatLab)
07-08/01/2014	DAMTP, Cambridge	University of Cambridge postgraduate students and staff (R flavoured bootcamp)	Aleksandra Pawlik, Stephen Eglen*, Laurent Gatto*
12-13/12/2013	Glasgow	SUPA	Ben Morris, James Morrison
16-18/12/2013	Dundee	Dundee University staff and postgraduate students	Martin Jones, David Martin

03-04/12/2013	EPCC, Edinburgh	Open to wide audience	<u>Mike Jackson</u>, Mario Antonioletti
14-15/11/2013	Exeter	University of Exeter students and staff	Chris Woods, David Martin
24-25/10/2013	Greenwich	Open to wide audience	Greg Wilson, James Hetherington*
12-13/09/2013	Bristol	University of Bristol students and staff	Karthik Ram, Chris Woods
26-27/09/2013	ULC	UCL students and staff	James Hetherington*

(*) indicates an Institute's Fellow organizing and/or instructing at the bootcamp
<u>underline</u> indicates Institute's staff member instructing and the bootcamp

James Hetherington started organising regular internal Software Carpentry bootcamp at UCL. The bootcamps are restricted to the UCL postgraduate students and staff. James involved part of his Research Software Development Team (Owain Kenway, Miguel Bernabeu Llinares, Mayeul d'Avezac) in running and instructing at the bootcamps. These team members have signed up for the instructors training and should be graduating as certified instructors in late Spring / early Summer 2014.

SSI team member Devasena Inupakutika will be graduating as Software Carpentry instructor in May 2014 and run the bootcamp at the National Oceanography Centre, University of Southampton.

The MATLAB Software Carpentry bootcamp in Manchester (organized with a lot of support from the Institute's Fellow Mike Croucher) received very good feedback from the participants. The additional benefit is that MATLAB agreed to make their training materials (used for this particular bootcamp) publicly available. Currently Software Carpentry is considering running more MATLAB-flavoured Software Carpentry bootcamps and developing related training materials.

Apart from the Software Carpentry bootcamps we helped to run two one-day workshops for biologists and bioinformaticians hosted by The Genome Analysis Centre (TGAC) in Norwich in November 2013 (see table below). The workshops were mainly domain-focused and the doman-specific modules were taught by Titus Brown (Michigan State University). Aleksandra Pawlik helped at both workshops and taught modules such as version control and command line use.

Table 2: TGAC Workshops for bio-scientists

Date	Location	Workshop focus	Audience	Instructors
07/11/2013	TGAC, Norwich	NGS Data Analysis for Biologists, TGAC	Open (biologists)	<u>Aleksandra Pawlik</u>, Titus Brown
06/11/2013	TGAC, Norwich	Bioinformaticians TGAC	Open (bioinformaticians)	<u>Aleksandra Pawlik</u>, Titus Brown

Sustainability and development plan

In August/September 2013 Software Carpentry introduced a voluntary US $1500 donation for each bootcamp. The donation is requested if the hosts want to use the "Software Carpentry" brand (the materials are still free to use under the CC-BY license). The donation is an attempt to ensure the sustainability of Software Carpentry and covers administrative costs and other overheads. The instructors are still volunteers and do not receive any remuneration for their work. The hosts are still asked to cover the travel and accommodation expenses for the instructors.

Initially the UK bootcamps were not asked to pay the donation, because they went through the Institute's administration. The assumption was that the exemption from this donation was made possible by the active role of the Institute. Since the Institute's mission is to provide and improve training in software skills for UK-based researchers, the administration and the overhead costs were covered from the Institute's funds. However, the donation was also seen as an attempt to indicate to the hosts that planning and running a Software Carpentry bootcamp requires significant effort and some form of support, so, eventually, it has been decided that the UK bootcamps (that is, the bootcamps facilitated by the Institute) will also be asked to contribute the donation. Currently, the payment is handled and wholly retained by the central Software Carpentry administration (based in Canada).

Currently, the sustainability model for Software Carpentry is undergoing discussions in which the Institute is actively involved. Greg Wilson from Software Carpentry and Kaitlin Thaney, the Director of Mozilla Science Lab (within which Software Carpentry now sits) are considering various solutions. One of these solutions, initially proposed by Vicky Schneider from TGAC (see section "Possible collaboration with TGAC"), is a membership model in which institutions interested in hosting Software Carpentry bootcamps would pay a regular fee/donation which would allow them to run a given number of bootcamps per year. The decision on the funding and sustainability model for Software Carpentry will have an impact on how Software Carpentry is run and supported by the Institute. It will also shape the sustainability of Software Carpentry in the United Kingdom.

Instructors training

Currently the training for the instructors is provided online by Greg Wilson in the form of a 12 weeks course and includes reading selected relevant publications, preparing assignments and participating in fortnightly conference calls. Despite the fact that the training takes on average up to 2-3 hours per week, the overall duration represents an obstacle to prospective candidates.

The first round of face-to-face Software Carpentry instructors training in the UK and Europe is planned for October 2014. It will be hosted by The Genome Analysis Centre in Norwich and will be modeled on the first face-to-face training which takes place in Toronto in 28-30 April (for details see below section "Collaboration with The Genome Analysis Centre TGAC, UK"). The training will be attended by Aleksandra Pawlik. Phil Fowler, an Institute's Fellow and Rob

Davey from TGAC will also attend the training in order to become a certified Software Carpentry instructors.

The Institute has been considering franchising the instructors training in order to grow the pool of certified Software Carpentry instructors in the UK.

Planned bootcamps

Currently there are three bootcamps which are confirmed (see table below). Three UK bootcamps are planned and currently we are negotiating the dates and other details with the hosts. The Centre for Advanced Training at EMBL in Germany is also interested in running regular Software Carpentry bootcamps and becoming a "local centre" with a group of certified instructors. The initiative at EMBL was started by Aidan Budd who discussed the possibility of running bootcamps with Aleksandra Pawlik at the ELIXIR/Goblet meeting in TGAC 4-5 November 2013.

Date	Location	Main audience	Instructors	
8-9 May 2014	National Oceanography Centre Southampton	University of Southampton postgraduate students and staff	Devasena Inupakutika, Bogdan Vera	
25-26 June 2014	University of Reading, School of Mathematical and Physical Sciences	University of Reading students selected for industry placements	Devasena Inupakutika, Christina Koch	
10-11 July 2014	University of Nottingham	Ecologists - Open (?)	Devasena Inupakutika	
5-6 June 2014	Italian National Institute for Nuclear Physics, Pisa, Italy	Italian National Institute for Nuclear Physics staff	Aleksandra Pawlik, Rémi Emonet	
09-10 April 2014	GARNET, Coventry	Plant-sciences	Aleksandra Pawlik, Christina Koch	32
TBC	Cranfield University	Cranfield University students and staff	Mark Stillwell	
TBC	University of Oxford, Medical Sciences and Biochemistry Department (?)	University of Oxford, Medical Sciences and Biochemistry Department students and staff	Phil Fowler*	
TBC	University of Cambridge, Department of Genetics	University of Cambridge, Department of Genetics students and staff (?)	TBC	
TBC	Centre for Advanced Training, EMBL, Germany	EMBL Researchers (?)	TBC	

Training for Centers for Doctoral Training

The EPSRC funds 70 Centres for Doctoral Training covering different research domains. The Institute contributed to 3 successful proposals for the next round of these Centres.

The possible forms of collaboration between the Institute and the CDTs that we discussed, may be outlined as follows:

1) Designing, developing and delivering training ourselves. The training would be based on the Software Carpentry model and the training which we have delivered so far. The difficulties that we would face is the lack of available resources (the Institute's staff capable of delivering the training are already engaged in a number of different activities and sub-projects). This idea option may not scale up well, though plans to offer a "CDT students come to us" model where we run two or three courses a year advertised to students at all CDTs may help reduce the instructor and travel burden. The risk is also that the Institute will be perceived as training-only facility.

2) Providing consultancy on designing, developing and delivering. This would include training the trainers. Since the Institute aims to franchise the Software Carpentry instructors training (with support from TGAC) this option of working with the Centres for Doctoral Training in the long run should be more feasible and scale up well.

Training metrics

The initial metrics for the Institute's training activities were developed in December 2013. The metrics assess the demand for the training which the Institute offers (primarily Software Carpentry and training for Doctoral Training Centres). The metrics are now being tested and discussed further.

The assessment of the effectiveness and impact of Software Carpentry is also one of the Institute's Fellows, Alexandra Simperler's, Fellowship project. Alexandra is currently preparing to interview Software Carpentry alumni in the UK. Alexandra has applied for ethics approval with her university (Imperial) and should receive the approval within the coming weeks. This will allow her to start the interviews.

We have also been in touch with Jory Schossau (Michigan State), who is administering questionnaires and doing phone interviews with Software Carpentry alumni. Jory works directly with Greg Wilson.

We are exploring an opportunity to understand how SWC bootcamps help students develop skills needed by the industry. The organiser of the upcoming bootcamp at the University of Reading, Kathie Bowden, plans to have the bootcamp only for students who are going for a placement immediately afterwards. Kathie collects feedback from the organisations where the students go. This feedback could potentially be useful for metrics collection. We still need

to discuss the details with Kathie but it could be an opportunity of obtaining some useful data without the necessity of contributing a lot of time and effort from the Institute.

Microsoft Azure Training

The Institute was involved in two UK-based training events on Microsoft Azure for Research. The first one was organised in Oxford, 20-21 January 2014 and attended by Aleksandra Pawlik, Devasena Inupakutika and an SSI Fellow, Phil Fowler. The second training took place in Manchester, 3-4 April 2014 and was supported by Shoaib Sufi and Carole Goble.

One of the ideas for using the Azure for Research in training activities run by the Institute is to set up Virtual Machines for Software Carpentry bootcamps. This idea is currently under discussion with Greg Wilson. There are further discussions in which Kenji Takeda from Microsoft is engaged on developing new training material for "Microsoft Software Carpentry bootcamps".

Aleksandra Pawlik is also putting together a proposal for using Microsoft Azure for ELIXIR-UK training purposes.

Open Data Institute training

Aleksandra Pawlik and Neil Chue Hong attended the Open Data Institute course "Open Data in a Day" on 11th February 2014.

Collaborations

5-day Workshop with University of Exeter, CLES Bioscience

Konrad Paszkiewicz from the University of Exeter approached us inviting to join the proposal for NERC bids for short-term courses.
The proposed workshop would be 5 day hands-on short course to teach the use of the Amazon EC2 cloud, Unix, program installation, data manipulation, the use of R for data exploration and analysis. It will also provide an intensive introduction to task automation and programming concepts using Python as well as teach software engineering best practices such as using version control and unit testing. All of these will be taught in the context of biological and environmental examples.

The proposal is due by 31st May 2014.

Software Carpentry for environmental scientists with the University of Leeds

Andrew Walker from the University of Leeds has approached us inviting us to be involved in a proposal to develop additional materials for environmental scientists that builds on the

existing Software Carpentry material. This would cover time-series and geospatial data and the addition of a group development task to exercise the skills being taught.

Currently we have identified two Horizon 2020 calls for which the Institute could bid with a view to funding its future training activities:

INFRASUPP-4-2015 – New professions and skills for e-Infrastructures
(Deadline: January 2015) - which a focus on training policy, curriculum development, and career paths

MSCA-ITN-2014-ETN - European Training Networks
(Deadline: April 2015 tbc) - with a view to a training network providing computational skills to researchers across Europe (including Software Carpentry and a followup to the SeiUCCR network)

The Institute is entertaining discussion sessions internally between Neil Chue Hong, Simon Hettrick, Giacomo Peru and Aleksandra Pawlik, and externally with Vicky Schneider, the Head of Scientific Training, Education and Learning at The Genome Analysis Centre (TGAC) and Claire Deveraux, Secretary to the e-Infrastructure Leadership Council, and the UK NGI Manager based at STFC.

A 2 days face-to-face meeting focussed on these bids is scheduled for the 10-11 June in Norwich at TGAC.

Collaboration with The Genome Analysis Centre TGAC, UK

The Institute has been actively engaged in establishing a working relationship with The Genome Analysis Centre (TGAC) in Norwich, which is both a research and a training facility for life sciences. Scientific Training, Education & Learning at TGAC is led by Vicky Schneider, who has been very supportive and interested in the training activities done by the Institute.

Aleksandra Pawlik attended the ELIXIR-Goblet meeting hosted at TGAC on 4-5 November 2013. Aleksandra presented the Institute and its work at the meeting which was attended by the representatives of all ELIXIR nodes. This helped establish closer relationship between the Institute and ELIXIR (in particular ELIXIR-UK) which is already producing a positive impact in the recognition of the Institute as a provider of consultancy on software skills training for researchers (in particular in life sciences). Aleksandra Pawlik attended a meeting on structural bioinformatics training for ELIXIR-UK on 17-18 Feb 2014 (hosted at EBI).

Further to this, Aleksandra co-organized and taught at a Software Carpentry bootcamp at TGAC on 3-4 February 2014. TGAC is keen to run regular Software Carpentry bootcamps and plans to host the first UK-based face-to-face instructors training (see below).

The Institute (represented by Neil Chue Hong and Aleksandra Pawlik), TGAC and Software Carpentry, put through a proposal for funding from FOSTER for "training events on open access, open data and open science". If successful, the funds will be used to run a three days workshop for maximum 40 prospective trainers, who will be taught how to teach programming along with more general educational concepts such as:

- understanding the latest concepts of educational psychology and instructional design, and how to apply them to teaching software programming for researchers;
- creating assessment questions to distinguish students levels of ability;
- understanding the difference between modes of teaching;
- learning how to reflect and revise after teaching.

The ultimate goal is to create a wider network of trainers in Europe to meet the demand that is being shown by requests from organisations for training.

Possible collaboration with Cyfronet Krakow, Poland

Cyfronet (Academic Computing Centre) in Krakow provides support and infrastructure for researchers from various disciplines. The first meeting with Cyfronet was in May 2013 (and, before then, during the EGI Forum in Manchester in April 2014). Cyfronet helped running the first Software Carepntry bootcamp in Poland in May 2013. Following these meeting Cyfronet expressed interest in developing further collaboration with the Institute. In particular Cyfronet wants to focus on developing and delivering their training services.
Cyfronet expressed interest in partnering in the H2020 proposals which should be beneficial for the Institute as most calls require the proposals to include different European partners. One of the possible calls which Cyfronet could be partnering is MSCA-ITN-2014-ETN - European Training Networks.

Effort

With further development of the training activities, in particular Software Carpentry and Centres for Doctoral Training, it is crucial that more staff support and time is allocated for the training activities.

Dissemination

Blog posts

1. 13/03/2014 – Aleksandra Pawlik, Training Lead, SSI *Software Carpentry at TGAC*
2. 14/04/2014 - Simon Hettrick, Deputy Director *SSI Can you learn to code... for free?*
3. 03/02/2014 - Philip Fowler, Software Sustainability Institute Fellow and Postdoctoral researcher, University of Oxford *Windows Azure for research training - a perspective*
4. 03/02/2014 - Sam Relton PhD student, University of Manchester: *MATLAB Software Carpentry bootcamp – highlights from an attendee*

5. 30/01/2014 - Kenji Takeda, Microsoft Research, *Cloud computing for researchers made easy: what, why and how?*
6. 24/01/2014 - Stephen Eglen and Laurent Gatto, University of Cambridge and Software Sustainability Institute Fellows: *Five reasons to choose R for your computing needs*
7. 17/12/2014 - Aleksandra Pawlik, Training Lead, SSI: *Feedback from Software and Research Town Hall at AGU 2013*
8. 05/12/2014 - Mike Jackson, Software Architect, SSI: *Software Carpentry returns to Edinburgh*
9. 03/12/2014 - Aleksandra Pawlik, Training Lead, SSI: *"Software and research" at the American Geophysical Union (AGU) Fall Meeting*
10. 28/11/2014 - Nick Brown, Applications Developer, EPCC: *DiRAC driving test comes to Edinburgh*
11. 25/11/2014 - Ben Morris, PhD student in Evolution, Ecology and Organismal Biology at University of North Carolina Using: *Make for reproducible scientific analyses*
12. 14/10/2014 - Mike Jackson, Software Architect, SSI: *Software Carpentry UK enrolments to date*
13. 23/09/2014 - Aleksandra Pawlik, Training Lead, SSI: *Now on the agenda at American Geophysical Union: software and research*

News items

1. 19/02/2014 *Azure training in Manchester and online Excel in Research training*
2. 15/02/2014 *Cambridge R Software Carpentry bootcamp success*
3. 03/10/2013 *Software Carpentry boot camp - 3rd - 4th December, Edinburgh*

Top tips and guides

1. 01/04/2014 - Mike Jackson, Software Architect, SSI: *Exploring the integration of Subversion and Git with CVS*
2. 24/03/2014 - Mike Jackson, Software Architect, SSI: *Top tips for writing a case for a funding a software developer*
3. 05/02/2014 - Matt Turk, Columbia University *Top tips for using Mercurial*
4. 28/01/2014 - Neil Chue Hong, Simon Hettrick, Aleksandra Pawlik and Giacomo Peru, SSI *Top tips for lightning talks*
5. 21/01/2014 - Mike Jackson, Software Architect, SSI: *Top tips for managing support requests*
6. 16/01/2014 - Derek Groen, Software Sustainability Institute Fellow and Research Assistant, Centre for Computational Science, University College London: *Tips for sustainable software development on supercomputers*
7. 04/12/2014 - Alex Nenadic, Alan Williams, Robert Haines and Alasdair Gray of MyGrid, Anton Güntsch of the Freie Universität Berlin, and Aleksandra Pawlik of the Software Sustainability Institute: *Top tips on creating Web Services*
8. 04/10/2014 - Jon Blower Technical Director at Reading e-Science Centre: *Top tips on software for data visualization*

Our blog posts on the Software Carpentry website

1. 14/03/2014 Aleksandra Pawlik, *Software Carpentry at TGAC*
2. 03/03/2014 Aleksandra Pawlik *SSI Collaborations Workshop and Hackday*
3. 18/01/2014 Aleksandra Pawlik *Feedback from the First Cambridge R Bootcamp*
4. 24/01/2014 Aleksandra Pawlik *Feedback from the First MATLAB Bootcamp*
5. 08/10/2014 Mike Jackson *A new UK administrator for Software Carpentry*
6. 24/09/2013 Aleksandra Pawlik *SSI Fellowship Programme 2014*
7. 02/12/2013 Aleksandra Pawlik *Software and Research Session at AGU 2013*
8. 05/12/2103 Mike Jackson *Feedback from Edinburgh*

Blog posts by others promoting, referencing or reblogging us or our posts

1. 3/02/2014 Sam Relton's blog on MATLAB Software Carpentry bootcamp
   http://samrelton.wordpress.com/2014/02/03/software-carpentry-highlights/
2. 09/01/2014 Amy Brown on the Software Carpentry blog *Job Opportunity at University College London* – about the job available at James Hetherington's Research Software Development Team
3. 07/01/2014 Greg Wilson *'Best Practices' Has Been Published* – on "Best Practices for Scientific Computing" paper which was co-authored by Neil Chue Hong
4. 09/12/2014 Greg Wilson *News from the SSI* – on the Fellows 2014 selection
5. 28/11/2013 Nick Brown, *DiRAC Driving Test Comes to Edinburgh* (original blog post on the EPCC website
   http://www.epcc.ed.ac.uk/blog/2013/11/25/dirac-driving-test-comes-edinburgh)