Software
Sustainability
Institute

EPCC
JCMB, Mayfield Road
Edinburgh, EH9 3JZ
United Kingdom

Mr. Josh Greenberg   27 July 2012
Sloan Foundation
630 Fifth Avenue, Suite 2550
New York, NY, 10111
USA

Dear Mr. Greenberg,

On behalf of the Software Sustainability Institute (SSI), I am writing in strong support of the follow-on proposal led by Greg Wilson to the Sloan Foundation to support the Software Carpentry initiative.

The Software Sustainability Institute, centred at the University of Edinburgh in collaboration with the Universities of Manchester, Oxford and Southampton, works in partnership with research communities to identify key software and helps them make it sustainable. Our vision is to make software useful for researchers by improving usability, maintainability and quality. This increases research productivity by enabling more people to use software, delivers added value through leveraging expertise and connections, and ensures future generations of researchers can continue to use and reuse software as a cornerstone of their research.

We started collaborating with Software Carpentry by contributing lectures to Version 4. However our work over the last two years with UK researchers across disciplines in the sciences, social sciences and humanities has revealed a wide range of expertise in software development skills, even amongst those identifying themselves as computational scientists. We also realised that this issue stemmed from a mostly ad-hoc approach to teaching that emphasises learning a language rather than understanding the basics of how to make software do what researchers need it to do.

Put bluntly, we cannot achieve our vision of reproducible, reusable research using software if the basic software skills are not present in the scientific community and Software Carpentry is the most effective, scalable way we have found to address this deficiency.

In 2012 we have strongly supported the Software Carpentry boot camps in the UK through providing staff as tutors and helpers, and facilitating the organisation of venues and advertising. From an initial two events which were oversubscribed four times over, we are now involved in planning or running another eight across the country, such has been the enthusiasm and take-up for the approach. More importantly, the feedback we have received from the participants of the workshops suggests that they are now able to conduct their research more effectively.

A lot of this would have been difficult to undertake on our own – in particular, the previous Sloan Foundation funding to Software Carpentry has helped to keep the momentum going through online follow-up sessions, and conduct surveys of participants to help improve the teaching. We are now strong advocates of the Software Carpentry philosophy, and have been bringing on board new supporters in the UK research councils and universities. We believe that there is a clear path to a sustainable Software Carpentry community in the UK and further funding from the Sloan Foundation, whilst not directly funding any of our own activities, will be of immense benefit to the UK research community.

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We are committed to collaborating with Software Carpentry in the next round, and in particular we will:

- Work to expand and improve the "boot camp + online tutorial" model of the past six months. One innovation trialled in the first two UK bootcamps was asking attendees to register in groups. Another trial we will be conducting in UK bootcamps planned for late 2012 looks at the number and specialisms of attendees.
- Trial new combinations of tools that could improve online instruction and facilitate ad hoc peer-to-peer mentoring.
- Contribute to new material showing scientists how to use the web as a read-write-execute medium in their research. Members of the SSI are also part of the team developing the Taverna web services workflow environment.
- Work with other members of the UK (and European) community to port existing material to meet the requirements of different types of researchers, e.g. understanding the concepts of revision control and peer review to users of Matlab and R.
- Work with the DiRAC HPC facility for the UK theoretical particle physics and astrophysics communities to understand how to support new users of this facility.
- Advertise and promote Software Carpentry to the UK and European computational science communities.
- Use existing collaborations and relationships with strategic European projects (e.g. ELIXIR, ISBE, EGI.eu and PRACE) to promote the training-led approach to increasing researcher capability.
- Work to identify a suitable model and roadmap towards a sustainable Software Carpentry community of trainers and peer mentors in the UK.

Software Carpentry is the most effective, pragmatic solution to deal with the software skills deficiency in UK research. The Software Sustainability Institute is firmly behind this proposal, and will be committing the equivalent of one member of staff on delivering and supporting Software Carpentry in the UK (and potentially Europe) over the next year.

Yours sincerely,

Neil Chue Hong
Director, Software Sustainability Institute

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