



August 31, 2011

Mr. Josh Greenberg  
Alfred P. Sloan Foundation  
630 Fifth Avenue  
Suite 2550  
New York, NY, 10111

Dear Mr. Greenberg,

I am writing in support of the proposal being submitted by the Mozilla Foundation and Software Carpentry to develop workshops and online material to help computational scientists and engineers learn modern software development tools and practices. I have been working with scientists and engineers for almost 25 years, particularly in the area of high performance computing (HPC) systems and software. Although improvements in HPC systems have helped fuel the rise of computational science in recent decades, a major challenge is still the fact that most scientists and engineers lack training and experience in modern software development practice. This is not surprising, since research and education in these fields focuses on the mathematical and scientific foundations of these disciplines. Multidisciplinary teams, consisting of computing and problem domain experts, have built several successful scientific simulation codes. However, the level of participation in, and impact from computational science could be greatly increased if more scientists and engineers were equipped with at least a basic level of expertise in modern software development practice. Without these skills, computational scientists and engineers waste time in inefficient code development practices, and produce codes that are essentially unusable by anyone other than the original author. What is needed is an efficient and effective strategy for pushing the broad class of HPC users quickly up the learning curve of software development for these complex systems.

I believe this proposal is taking the right approach. Focusing on graduate students, with a combination of face-to-face workshops and asynchronous follow-on instruction, and using peer-to-peer relationships as much as possible—all of this tracks very well with our experience at Virginia Tech. We have offered many narrowly focused workshops on topics from parallel and high performance computing. Graduate students have always been the best population for these efforts, in terms of their motivation and energy for adopting practices. A critical mass of peers engaged in similar activities seems to be particularly important.

I strongly support the proposed effort. Virginia Tech would certainly be interested in hosting one of the proposed workshops and collaborating with Mozilla and Software Carpentry to offer these resources to our students.

Sincerely,

Calvin J. Ribbens  
Associate Professor  
Center for High End Computing Systems  
Department of Computer Science