

S2I2 Exploratory Workshop: Open Source Software as a Foundation for Scientific Research

The goal of this workshop is to discuss the viability and potential impact of the creation of a Scientific Software Innovation Institute (S2I2) that would support the use of open source software as a foundation for scientific research. The PIs would use their unique experience as leaders in the Sage and SciPy projects to put together a workshop and corresponding report that would address many questions relevant to such an institute.

Intellectual Merit:

The report that comes out of this workshop promises to provide a snapshot of the core issues of sustainability, peer review, and reproducibility, which are becoming a vital concern in all areas of the mathematical sciences. The report will provide a deep and unique perspective drawing on the extensive experience of the PI's.

Broader Impact:

In the long run, this workshop could lead to the creation of a new institute, which would develop and popularize free open source software infrastructure, peer review models, and reproducible research methodologies. This institute has the potential to dramatically change the tools used by all students, researchers, scientists, and engineers. Thus this one workshop could potentially have an impact on nearly everybody involved in any way in the mathematical sciences and engineering.

In the short term, the main broader impact would be that workshop participants will be more aware of sustainability and reproducibility issues in computational mathematics. Moreover, the workshop report and data will be made widely available, which could result in raised awareness of these issues by the mathematical sciences communities.