CALL FOR PAPERS
SE4HPCS'15: The 2015 International Workshop on Software Engineering for High Performance Computing in Science
Tuesday, May 19 - in Conjunction with ICSE 2015 – Florence, Italy
http://SE4Science.org/workshops/se4hpcs15/

This workshop is concerned with identifying and understanding the unique aspects of software engineering (SE) for the development of scientific softawre that exploits High Performance Computing (HPC) architectures. Specifically, we are interested in:
- Scientific software applications that solve complex software- or data-intensive research problems. These applications range from large parallel models/simulations of the physical world using HPC systems to smaller scale simulations developed by a single scientist or engineer on a desktop machine or a small cluster, which may be later scaled to an HPC enviornment.
- Applications that support scientific research and experiments at scale. Such applications include, but are not limited to, systems for managing and/or manipulating large amounts of data and systems that provide HPC infrastructure for scientific or engineering applications.
- The process for building, reusing, and publishing HPC software and data used in scientific experiments or engineering innovations. Among others, these process include agile approaches, open source/open data issues, testing HPC software, and managing software or data repositories for publishing goals.

The development of scientific HPC software is significantly different than the development of business information systems, from which many of the SE best practices, tools and techniques have been drawn. Moreover, most conference and journal venues focus either on SE on Computational Science or on HPC, but rarely on the intersection of the three domains. Specifically, within the scientific HPC community, there are few places to publish research related to the special SE challenges faced by scientists engaged in software- or data-intensive experiments. The goal of this workshop is to provide a venue for researchers to interact and to support the building of a research agenda to deal with the complex software development issues present in HPC science. Furthermore, the discussion among the researchers will be invaluable in identifying those aspects of SE that should be considered for education programs.

This workshop will build upon results from previous editions of the workshop in the SE-CSE series (http://SE4Science.org/workshops). Similar to the format of the previous workshops, in addition to presentation and discussion of the accepted papers, significant time during the 2015 workshop will be devoted to the continuation of discussions from previous workshops and to general open discussion.

Submission Instructions
We encourages participation from members of the SE, computational science and HPC communities. Papers of at most 7 pages are solicited to address issues including but not limited to: 1) Case studies of software development processes used in scientific HPC applications; 2) Design patterns and software architectures for scientific HPC software; 3) SE metrics and tool support for scientific HPC applications; 4) Issues in publishing or reusing scientific research software and data; 5) The use of empirical studies to better understand the environment, tools, languages, and processes used in research application development and how they might be improved; 6) V&V techniques specifically targeted for the scientific HPC domain; 7) SE education for scientific HPC developers. Additionally, practical experience reports are welcome and encouraged. In order to increase participation, we will also accept shorter (~3-4 page) position papers. A position paper should include POSITION PAPER in the title.

Accepted papers will appear in the ICSE Companion Proceedings in the IEEE Digital Library. Selected papers will also appear in a special issue of a relevant journal/magazine (pending approval).

Please observe the following:
1. Full Papers should be at most 7 pages formatted according to the ICSE 2015 guidelines
2. Submit your paper in PDF: https://easychair.org/conferences/?conf=se4hpcs15
3. Important Dates: Submission – January 23, 2015; Notification – February 18, 2015
For more information, please contact Jeffrey Carver (carver@cs.ua.edu) or Paolo Ciancarini (paolo.ciancarini@unibo.it).