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SIAM AND ACM HONOR SOFTWARE DEVELOPERS FOR LARGE-SCALE SCIENTIFIC COMPUTING TOOLKIT

Prize is awarded to recognize contributions to mathematical and computational tools and methods

NEW YORK/PHILADELPHIA, September 29, 2014 – The Society for Industrial and Applied Mathematics (SIAM) and the Association for Computing Machinery (ACM) are pleased to present the 2015 SIAM/ACM Prize in Computational Science and Engineering to the PETSc core development team for the development of PETSc (Portable Extensible Toolkit for Scientific Computation), a suite of data structures and routines intended for use in large-scale application projects.

The prize is being awarded to Satish Balay, Jed Brown, William Gropp, Matthew Knepley, Lois Curfman McInnes, Barry Smith, and Hong Zhang for their collaborative work in developing the PETSc software package, which has transformed the way large-scale software libraries are developed, supported, and used within the CS&E community. The creation of this innovative and seminal numerical software package provides the scientific and engineering community with robust, efficient, scalable, and extensible tools that are the backbone of numerous high performance applications. The sustained impact of this work has been felt worldwide.

The prize of $5,000 is awarded biennially by SIAM and ACM in recognition of outstanding contributions to the development and use of mathematical and computational tools and methods for the solution of science and engineering problems. The prize will be awarded at the SIAM Conference on Computational Science and Engineering to be held in Salt Lake City, Utah, February 25-March 1, 2015.

PETSc, an initiative of Argonne National Laboratory, where it continues to be developed, employs the Message Passing Interface (MPI), a standardized, portable message-passing system used by modern computer software on a wide variety of parallel computers. PETSc, which is easy to use for beginners, is carefully designed to allow advanced users to have detailed control over the solution process.

The project is a collaboration among William Gropp of the University of Illinois; Lois Curfman McInnes, Satish Balay, Jed Brown, Barry Smith, and Hong Zhang of Argonne National Laboratory; and Matt Knepley of the University of Chicago.

The team's innovations have had a powerful and positive effect on the high performance computing community, have improved support for users, and helped to foster deep partnerships within scientific teams.

PETSc includes a large suite of parallel linear, nonlinear equation solvers, and ordinary differential equation (ODE) integrators that are usable for application codes written in C, C++, Fortran and Python. These tools enable scalable solutions of scientific applications that are modeled by partial differential equations. Designed using an object-oriented architecture, PETSc is built on a concept that allows many people to contribute and maintain their own libraries in a distributed fashion.

About ACM

ACM, the Association for Computing Machinery www.acm.org, is the world's largest educational and scientific computing society, uniting computing educators, researchers and professionals to inspire dialogue, share resources and address the field's challenges. ACM strengthens the computing profession's collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking.

About SIAM

SIAM, the Society for Industrial and Applied Mathematics, www.siam.org, headquartered in Philadelphia, Pennsylvania, is an international society of over 14, 000 individual members, including applied and computational mathematicians and computer scientists, as well as other scientists and engineers. Members from 85 countries are researchers, educators, students, and practitioners in industry, government, laboratories, and academia. The Society, which also includes nearly 500 academic and corporate institutional members, serves and advances the disciplines of applied mathematics and computational science by publishing a variety of books and prestigious peer-reviewed research journals, by conducting conferences, and by hosting activity groups in various areas of mathematics. SIAM provides many opportunities for students including regional sections and student chapters.

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