

Pro Forma CHARTER RENEWAL APPLICATION

This CHARTER RENEWAL APPLICATION applies to the SIAM Activity Group on Supercomputing. The SIAM Activity Group (or SIAG) to which this renewal applies was originally formed under the aegis of SIAM on July 16, 1984 by the SIAM Council and July 17, 1984 by the SIAM Board of Trustees with its initial operating period beginning January 1, 1985 and ending December 31, 1987. Its charter has been renewed by the Council and Board seven times thereafter. This SIAG had 493 members as of December 31, 2006.

According to its Rules of Procedure, the objective(s) of the SIAG are to provide an environment for interaction between developers of large-scale applications programs, applied mathematicians, algorithm designers, and computer architects, to foster the development of analytic methods, efficient algorithms, and applications software in context with advances in computer architecture as applied to high performance computing.

Its purposed functions were to

- 1) Organize minisymposia at the SIAM Annual Meeting on years where there is no SIAG conference.
- 2) Organize a track of at least six minisymposia at the SIAM Annual Meeting at least once every five years.
- 3) Organize a biennial SIAM Conference on supercomputing (the SIAM Conference on Parallel Processing).

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The SIAG has complemented SIAM's activities and supported its proposed functions. The answers to the questions below indicate how this was accomplished and what the officers propose as the future directions for the SIAG.

1. How is the field covered by the activity group doing? Is it growing, is the focus shifting? What have been the significant advances over the last three years?

The field of high-performance computing is growing and becoming more interdisciplinary. At the high end, several supercomputing initiatives (e.g. DARPA HPCS in the United States) are supporting innovative research on hardware architecture, software systems, programming languages, and applications. At the "low" end of high-performance computing, the beginnings of the predicted multicore/manycore revolution are leading to increased interest in foundations, tools, and paradigms for applied parallel computation. In the meantime, we are seeing a significant increase in the use of high-performance parallel computation in new areas such as bioinformatics, knowledge discovery, and combinatorial scientific computing.

2. How is the activity group doing? Is it remaining vibrant? Is the size of the SIAG stable or increasing? How is the SIAG keeping up with the changes in the field? How are the broader interests of SIAM reflected in the activities of the SIAG?

The activity group has 493 members, of which 87 are students. The activity group has had between 450 and 500 members at the end of each of the past five years, and so the membership has been relatively steady. The total at the end of 2006 (493) was the highest number of the past five years.

3. Please list conferences/workshops the activity group has sponsored or co-sponsored over the past three years, and give a brief (one sentence or phrase) indication of the success or problems with each.

The activity organizes the biennial Conference on Parallel Processing. The last meeting was held in San Francisco in February, 2006. The next meeting is scheduled for March 2008 in Atlanta, GA. The 2006 meeting attracted 404 paying attendees, of which 69 were students.

4. Please indicate the number of minisymposia directly organized by the activity group at the last two SIAM annual meetings. When did the SIAG last organize a tract of minisymposia at an annual meeting?

We have no record of sponsoring a minisymposium at the SIAM Annual Meeting. We are sponsoring at least one minisymposium at ICIAM07.

5. Please indicate other activities sponsored by the activity group, to include newsletters, prizes and Web sites. Have each of these been active and successful?

Our main activity continues to be the robust SIAM PP conference. The AG members and officers are currently in discussion about how to increase our web presence for our members and for the supercomputing community at large.

A mailing list was created in 2006 to include all members of the activity group so that information relevant to the field of supercomputing could be communicated to the members.

The 2007 Combinatorial Scientific Computing Workshop (Feb 17-18 in Costa Mesa, CA) was organized in cooperation with the SIAG.

6. What activities are planned and proposed for the next period of the charter? Please describe scheduled and suggested future activities in detail.

The 2008 SIAM Conference on Parallel Processing for Scientific Computing will be held in Atlanta from March 12-14, 2008. We have a great slate of 9 invited speakers lined up and are currently working on the rest of the program.

7. How can SIAM help the activity group achieve its goals?

SIAM provides wonderful support to the SIAG both in general administration and in support for its biennial PP conference. An area that we would like to grow in is student membership. SIAM took an important step in this direction in 2006 by allowing student members to join two SIAGs without cost. We observe that graduate students are increasingly interested in parallel computing (possibly driven to some extent by widespread interest in multicore architectural developments, as well as cell processors and general-purpose graphics processing units). It would be great to find new ways to reach out to these students. We note that many of these students, and their advisors, are not traditional SIAM members; rather, they are from Computer Science or Computer Engineering departments.

8. How can the activity group help SIAM in its general role of promoting applied mathematics and computational science?

The SIAG should serve as a bridge between the applied mathematics and computer science communities, as well as a partner with both communities in arguing the case for research in applied mathematics and computational science at the national and international level.

This SIAG requests that the SIAM Council and Board of Trustees renew its charter for a two-year operating period beginning January 1, 2008.

Signed,

John R. Gilbert
June 8, 2007