

CHARTER RENEWAL APPLICATION

This CHARTER RENEWAL APPLICATION applies to the SIAM Activity Group on Discrete Mathematics. The SIAG DM was originally formed under the aegis of SIAM on July 19, 1984 by the SIAM Council and July 20, 1984 by the SIAM Board of Trustees. Its initial operating period began January 1, 1985 and ended December 31, 1987. Its charter has been renewed by the council and board nine times thereafter. This SIAG has 780 members as of December 31, 2010.

According to its Rules of Procedure, the objectives of the SIAG are to foster research in discrete mathematics and the development of its applications, and to bring together and stimulate interaction between the various and diverse communities of mathematical scientists such as those who specialize in combinatorics, computer science, communications, and operations research. Within the framework of SIAM, the SIAG will conduct activities that implement its purposes.

Its purposed functions are 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.
Other activities can include:
- (3) Organize a biennial SIAM Conference on discrete mathematics. The SIAG will consider dovetailing specialized workshops and conferences with the SIAM Annual meeting or other SIAG conferences.

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The SIAG has complemented SIAM's activities and supported its purposed 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 [two/three] years?

Discrete Mathematics continues to grow and prosper. Highlights in recent years include Arithmetic Combinatorics (involved with Fields Medal award projects) and Structural Graph Theory (including the Perfect Graph Theorem). The field of Discrete Algorithms continues to flourish, as well as applications to Bioinformatics and Communications.

- (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 SIAG/DM had 780 members at the end of the last calendar year, of which 393 were students. This is the highest number of members ever recorded for the group. However, most of the growth has been the result of student membership. Non-student membership is similar to what it was 12 years ago.

The concern identified two years ago that many of the leaders of our field are not members of the SIAG (or SIAM) remains.

The electronic newsletter is informative for members of activities in the field. Feedback we get from members suggests that their main interest in the SIAG is the biennial SIAM-DM conference, regarded by many as the best of the many meetings in the field. Members have not stepped up or expressed the wish to initiate other activities in the AG.

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

Our activity group organizes the biennial SIAM DM conference. The last conference (June, 2010) was held at the Hyatt Regency Austin in Austin, Texas. The conference was very successful, attracting over 350 attendees — this is only the fourth time in 15 occurrences that the meeting has attracted over 300 attendees. Popular opinion is that the excellent “line-up” of plenary speakers, including Fields Medalist Terry Tao and Schock Prize recipient Richard Stanley, contributed to the success.

Also, the SIAG jointly organizes with ACM SIGACT the annual ACM-SIAM Symposium on Discrete Algorithms (SODA). SODA has become one of the leading conferences in Theoretical Computer Science in terms of prestige and selectivity, with meeting attendance during this period:

SODA 2010 (in Austin, TX) - 325, and
SODA 2011 (in San Francisco, CA) - 338, of which 115 were students.

While at the 2010 Business Meeting some members proposed separating SODA from the SIAG, the SIAG Board continues to support being part of SODA. During this term, our SIAG Chair cooperated with both SIAM and with our counterparts in the ACM SIGACT to restructure the SODA Steering Committee. This was successful (and the Committee now has five members instead of three). We recruited an excellent new member for the Steering Committee (who joined the SIAG).

- (4) Please indicate the number of minisymposia directly organized by the activity group at the last [two/three] SIAM Annual Meetings. When did the SIAG last organize a track of minisymposia at an annual meeting?

SIAG DM members organized the following minisymposia at the 2009 Annual SIAM Meeting:

- (a) (organized by D. West) “Graph Theory and Related Topics I and II”,
- (b) (organized by M. Ferrara and M. Jacobson) “Paths, Cycles and other Structures in Graphs I and II”, and
- (c) (organized by J. Griggs) “Combinatorics of Partially Ordered Sets”.

SIAG DM members organized the following minisymposium at the 2010 Annual SIAM Meeting:

(organized by T. Bohman, A. Frieze, P. Tetali) “Probabilistic Combinatorics and Algorithms”.

There is no SIAM Annual Meeting in 2011, because of the ICIAM in Vancouver. SIAG DM Chair Jerry Griggs refereed the minisymposium proposals and contributed paper submissions related to Discrete Math, of which there will be several.

- (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?

The second König Prize was awarded to finishing doctoral student Jacob Fox of Princeton (now on the faculty of M.I.T.) at SIAM DM 2010.

Our electronic newsletter continues to be published regularly by Ryan Martin, with a corresponding archive available from the SIAG DM web-page.

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

The main activities are to prepare SIAM DM 2012 in June, 2012 at Dalhousie University in Halifax, Nova Scotia. The Board leads the selection process for the third König Prize, which will be given out at SIAM DM12. The AG also co-sponsors the ACM-SIAM SODA 2012 (to be held in Kyoto, Japan) and SODA 2013.

SODA requires little effort by the SIAG Board, beyond filling vacancies on the SODA Steering Committee.

On the other hand, the Board works with SIAM staff on the location and timing of the SIAM DM meeting, as well as setting up the Organizational Committee. Feedback at the DM10 Business Meeting and in surveys indicated that there was a desire to hold DM12 at a university rather than a hotel, partly in the hope of reducing costs for attendees. It ended up being a long process to negotiate the agreement with Dalhousie University to host DM12, and the local organizers have to take on considerable responsibility to be sure the meeting runs smoothly (something SIAM staff would typically be doing). The Board expects this will be a terrific meeting, but it remains to be seen whether the costs are significantly reduced. Getting DM12 set up was the largest undertaking by the SIAG Board this term.

The cost of attending DM meetings is a sensitive issue for our SIAG members. It appears to be the case that funds available for researchers in Discrete Math are less than for many other SIAM fields.

- (7) How can SIAM help the activity group achieve its goals?

SIAM may help secure permanent funding for the SIAG DM König Prize for young researchers. (Google has provided funds for the first 5 prizes. A solicitation to Google for permanent funding of the prize went unanswered. A SIAG member suggested that it is not in a company's financial interests to endow a prize.)

SIAM may have ideas and experience for pursuing industry support for the SIAM DM conference to reduce registration fees and to fund more travel grants for students (e.g. Elsevier expressed interest in the past).

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

By organizing minisymposia at the SIAM Annual Meetings, organizing the biennial SIAM DM Conference, co-organizing the SODA conference, and circulating news in its newsletter. The Board may provide more leads to SIAM News for interesting stories related to Discrete Math.

This SIAG requests that the SIAM Council and Board of Trustees renew its charter for a two-year operating period beginning January 1, 2012.

Signed,

Jerrold Griggs, SIAG Chair

June 1, 2011