

## **Charter Renewal Application for the SIAM Activity Group on Geometric Design**

This CHARTER RENEWAL APPLICATION applies to the SIAM Activity Group on Geometric Design. The SIAG/GD was originally formed under the aegis of SIAM in 1989 by the SIAM Council and the SIAM Board of Trustees. Its initial operating period began July 1, 1989 and ended December 31, 1992. Its charter has been renewed by the Council and Board 8 (eight) times thereafter. This SIAG had 188 members, including 63 student members, as of 12/31/2011.

According to its Rules of Procedure, the objective(s) of the SIAM Activity Group on Geometric Design is to provide an environment for interaction between researchers and practitioners in the subjects of curve and surface design, solid modeling and manufacturing, computer graphics, supercomputing and graphics, and related topics.

### **Its purposed functions were:**

The SIAG on GD will organize activities in Geometric Design. The SIAG is expected to:

1. The SIAG will organize activities, including conferences and publications, to promote the interaction of practitioners and researchers and to keep the SIAM membership up to date on trends in geometric design.
2. The SIAG shall not present awards or otherwise recognize scientific achievement, professional service, or the like without prior approval by both the SIAM Major Awards Committee and the SIAM Council of the award criteria, the method of selection of recipient(s), the nature of the award, and all other aspects, if any, of each such award must have the prior approval of the SIAM Board of Trustees.

Other activities can include:

3. Organize minisymposia at the SIAM Annual Meeting in years where there is no SIAG conference.
4. At least once every five years either organize a track of at least six minisymposia at the SIAM Annual Meeting or have an activity group meeting held jointly with the annual meeting. The VP for Programs and the VP at Large will coordinate the scheduling with the SIAG chair.
5. Organize a biennial SIAM Conference on Geometric Design. The SIAG will consider dovetailing specialized workshops and conferences with the SIAM Annual meeting or other SIAG conferences. The chair of the conference organizing committee shall be either the program director or the chairperson of the SIAG or their designee. The organizing committee must be approved by the VP for Programs at least 16 months before the conference.
6. With the approval of the SIAM Program Committee, the SIAG may organize special sessions at SIAM meetings, and conduct special one- or two-day meetings immediately before or after a regular SIAM meeting. Other SIAG meetings may be organized only with the approval of the SIAM president and vice president for programs.
7. Maintain a website for the activity group <http://siag.project.ifi.uio.no/>

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. List all current officers of the activity group (including advisory board, if relevant).

Chair: Konrad Polthier

Vice Chair: Stefanie Hahmann

Secretary: Tom Peters

Program Director: Georg Umlauf

2. 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 years?

GD industry in the US and EU is unsteady after a wave of consolidations of the key players in the industry. This phase still seems to continue. In the EU, the field is attracting large EU-wide grants under the context of iso-geometric modeling. This funding has a strong young-researcher component.

Several hard problems in the reconstruction of surfaces, the construction of high-quality surfaces, meshing and parameterizations have been successfully addressed in the last 3 years. Using GPUs for display and computation purpose has also gained considerable attention. Thus, improving the link between object representation for design and analysis will have considerable impact over the next years.

Diversification and collaboration best characterizes the shifting focus as the research environment moves towards collaborative teams, in the US and the EU.

3. 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?

As per the SIAG membership numbers you sent us, the SIAG is shrinking to 188 members by December 2011 over the last three years. Having no further information, we can only speculate that this is due to the economic downturn, since industry participation was always a distinguishing mark of SIAG/GD. The economic downturn caused a number of companies to drastically cut their travel budgets. Thus, our main focus will be to increase industry-attendance and buy-in.

The academic attendance continues to be good. The interplay between industry and academics is the main selling point for SIAM/GD and has been emphasized with two parts of a forward-looking mini-symposium during the last conference.

4. 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 SIAG GD organizes the biennial conference on Geometric Design. This list of conferences may be found at: <http://www.siam.org/meetings/archives.php#GD>. The SIAM Conference on Geometric Design was held in Orlando, FL on October 24-27, 2011 and had 164 attendees including 110 paid non students and 30 paid students attending.

Our bi-annual conferences SIAM-GD/SPM 2009, SIAM-GD/SPM 2011, and the co-sponsored SPM 2010 and 2012 are the main conferences (SPM=solid and physical modeling). We successfully joined forces with the ACM conference Solid and Physical Modeling in 2009 and continued this cooperation until today. This stabilized the attendance level from 2007 to 2009 and increased the attendance level in 2011.

5. 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 track of minisymposia at an annual meeting or meet jointly with the SIAM Annual Meeting?

GD: Track at AN12.

Tor Dokken, Jorg Peters, and Tom Peters organized a track at SIAM AM 2012 consisting of four mini-symposia and one invited speaker.

6. 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 SIAG/GD runs the website <http://siag.project.ifi.uio.no/> to inform its members about news, upcoming conferences, and research problems.

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

The SIAM GD/ACM SPM 2013 conference is in the planning phase for a European location. Our focus will be on getting more industry and student participation. Through the union with ACM SPM we have a suitable publication venue for some academic papers presented at the conference.

We are preparing an industrial visitors program to get our industry and student members in contact, such that both groups can benefit from a SIAG/GD membership. A proposal to SIAM leadership is in its final stages and will be presented soon for consideration.

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

It would be good to develop a website for the industrial visitors program for job offerings as well as student applications.

9. How can the activity group help SIAM in its general role of promoting geometric design?

Keeping the members informed about SIAM activities and participation in SIAM organization and facilitate the emerging industrial visitors program.

This SIAG requests that the SIAM Council and Board of Trustees renew its charter for a two year operating period beginning January 1, 2013.

Konrad Polthier  
SIAG/GD Chair  
7/1/2012