

## CHARTER RENEWAL APPLICATION

This CHARTER RENEWAL APPLICATION applies to the SIAM Activity Group on Geometric Design (SIAG/GD). 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 SIAM Council and SIAM Board of Trustees seven times thereafter. The SIAG/GD has 202 members as of December 31, 2007.

According to its Rules of Procedure, the objective(s) of the SIAG/GD 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.

Within the framework of SIAM, the SIAG/GD will conduct activities that implement its purposes.

Its proposed functions were to undertake a number of 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.

\* \* \*

The SIAG/GD 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?

GD in the US is stable after a wave of consolidations of the key players in the US industry that saw competition replaced by consolidation.

In the EU, the field is attracting large EU-wide grants under the banner of iso-geometric modeling (a name and direction that was originally introduced in the US). This funding has a strong young-researcher component. Diversification and collaboration best characterizes the shifting environment as funding, at least in the US, moves towards collaborative teams.

Several hard problems in the reconstruction of surfaces, the theory of subdivision surfaces and volumes and the construction of high-quality surfaces have been successfully addressed in the last 3 years. Leveraging of GPUs for display and optimization and the improved linkage between object representation for design and analysis will have considerable impact over the next years.

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?

As per the SIAG membership numbers you sent us prior to the last conference, the SIAG is growing (to 217 members by Dec 2008). Our main focus is to increase industry-attendance and buy-in. The economic downturn caused a number of companies to drastically cut their travel budget. 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 the forward-looking symposium during the last conference.

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. Our bi-annual conferences, SIAM GD 2007, SIAM-GD/SPM 2009, and the co-sponsored SPM 2010 are the main conferences (SPM=solid and physical modeling). We successfully joined forces with the ACM conference Solid and Physical Modeling in 2009, which stabilized the attendance level compared to 2007 despite the downturn and the cost of the location (financial district, San Francisco). We proposed a program for the Gene Golub Summer School 2011.

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 track of minisymposia at an annual meeting? Tom Grandine organized a minisymposium of GD at the SIAM AM 2008. We plan again for 2011.

5. Please indicate other activities sponsored by the activity group, to include newsletters, prizes and websites. Have each of these been active and successful? Our web page <http://www.ifi.uio.no/siag/> lists relevant conference and workshops and GD news. We use e-mail sparingly (intentionally).

6. 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 2011 conference is in the planning phase. Our focus will be on getting more buy-in from industry and creating a suitable publication venue for academic papers presented at the conference. We are also debating a broader price in addition to the Bezier prize co-sponsored by ACM SPM.

7. How can SIAM help the activity group achieve its goals? It would be good to develop a website that makes past venues, formats (costs) of SIAM-sponsored conferences easily available prior to a vote at the bi-annual meeting to obtain more direct buy-in from the membership.

8. How can the activity group help SIAM in its general role of promoting applied mathematics and computational science? Keeping the members informed about SIAM activities and participating in SIAM organization.

This SIAG requests that the SIAM Council and Board of Trustees renew its charter for a two-year operating period beginning January 1, 2011.

Signed  
[SIAG/GD Chair] Jorg Peters  
[Date] March 22 2010