

**SIAG APDE MEETING: Mesa, AZ, December 9-12, 2007**  
**Discussion of Future SIAG/APDE Meetings**

## **1 Proposed topics of discussion**

The session chaired by Ralph Schowalter (Oregon State University) and Patricia Bauman (Purdue University) met on Wednesday, December 12. A panel was set up to moderate the discussion. Linda Thiel represented SIAM at the meeting.

The conference chairs, Kevin Zumbrun (Indiana University) and Carme Calderer (University of Minnesota), prepared a list of possible questions listed below.

- How would you describe your areas of research and scientific interest?
- What are the "hot" problems in your field?
- What is going on?
- What future trends do you envision in your field?
- How does your field relate to other fields?
- What is the potential industrial impact?
- For the mathematically educated layman, how would you describe your areas of interest?
- What are the mathematical tools involved in your research?
- How does your research impact undergraduate education?
- Are there any undergraduate courses in your institution that deal with your research topics at some level? Would it be reasonable to develop a course?
- Do you often give seminars and colloquium talks to graduate and undergraduate students?
- Is there a SIAM student chapter in your institution? Would you consider starting one?

These questions were summarized into three topics:

- Comments and suggestions about the present meeting, and how these can benefit meetings in the future.
- Comments and suggestions of pedagogical and training natures.
- Topics (research, innovation, scholarly, organizational,...) that we recognized as important, and that we want to bring home, for the improvement of our own institutions and future SIAG meetings.

## 2 Discussion and Feedback

### 2.1 Logistics

One of the attendees suggested that SIAM should consider hotels in downtown locations for future meetings. They are more accessible, have more character and in some cases may be cheaper.

Linda replied that information on these often-discussed issues can be found in the SIAM webpage. She added that two of the main features in selecting a conference location are: price (negotiated) and conference facilities (working projectors, supporting staff, ...).

It was also suggested that people from the local universities should be given a role in the organization of the SIAG meeting. For instance, SIAM contact them with their list of hotel possibilities for local feedback.

### 2.2 Scientific program

It was also suggested that in future meetings the chairs should improve on the following issues:

- Increase the participation of young people, postdocs and graduate students.
- Increase the number of contributed sessions and talks.
- Avoid competition between contributed sessions and minisymposia.
- Insert contributed talks in the minisymposia. Minisymposium organizers should reserve one or two talks for young people.
- Insert a session that highlights projects involving undergraduate students.
- Contributed talks should be of the same length as minisymposia talks.
- Take another look at poster sessions. It was mentioned that poster sessions often are fourth tier (invited-minisymposium-contributed-poster session) and people try to avoid them. Ralph Schowalter mentioned that he had acquired a new taste for them, since they allow a one-on-one discussion. He also pointed out that poster sessions are very effective and much clearer, in many cases, than transparencies or laptop presentations. They can facilitate research exposure and they are particularly beneficial to young people that are about to enter the job market. Ralph recalled that a previous meeting in Santa Fe had an outstanding poster session which would be worthwhile revisiting for future implementation.
- It was also mentioned that future organizers should look into the poster sessions of the Dynamical Systems SIAG meetings. They are an important component of the meeting.

- SIAM should look into the possibility of offering some special registration rate to students contributing to the poster session.
- Explore a way to combine regular talks with poster sessions.
- Consider having an officer for student relations.

## 2.3 Pedagogical and training issues

These are suggestions that meeting participants could bring back to their institutions with the purpose of improving education at several levels.

- Does your institution have a SIAM student chapter? Would you be willing to promote one?
- In connection with graduate programs in mathematics, and the success of students in such programs, a significant problem was brought up: students from *small* colleges often have difficulties in completing graduate studies. It was found that, due to a reduced curriculum, they enter *larger* universities insufficiently prepared, or at least, less prepared than some students from foreign institutions or large US universities.
- One of the panel members, Irena Lasiecka (University of Virginia), mentioned preparatory summer programs for students from small colleges who were planning on going to graduate school. She also mention a successful program run in Park City every summer.
- There was interest in continuing discussions in the future on how to implement and pursue funding for more such programs. One idea was that several universities with large graduate programs join forces to organize such transitional summer schools.
- To attract good undergraduate students and encourage them to pursue graduate school by providing them with good information, it was suggested that departments hold informal *poster days*. The University of Maryland, College Park, runs a very successful annual *Poster Day*.
- Organize research seminars aimed at first-year graduate students by faculty members in varied research fields.
- Develop Math Clubs.

## 2.4 Research topics

- Add emphasis on modeling, and develop activities to *empower* interdisciplinary communication.
- Emphasize materials science as a very good source of mathematical problems.

- Place some emphasis on models coming from biology and medical science and their possible framing in terms of PDE's.
- Increase the number of industrial talks at the invited and minisymposium level.
- Explore the possibility of offering pre-tutorial sessions in the meeting. Possible difficulties were brought up regarding cost and time availability.

Another issue that was brought up dealt with sharing resources and empowering mathematicians in developing countries; for instance, searching for private resources to invite them to meetings, and also find university sponsors of short visits.