

## **SIAM Activity Group Applied Mathematics Education Charter Renewal Application**

This CHARTER RENEWAL APPLICATION applies to the SIAM Activity Group on Applied Mathematics Education. The SIAM Activity Group (or SIAG/ED) to which this renewal applies was originally formed under the aegis of SIAM in July, 2014 by the SIAM Council and in July, 2014 by the SIAM Board of Trustees with its initial operating period beginning 7/31/14 and ending 12/31/16. Its charter has been renewed by the Council and Board – this is the first time - thereafter.

This SIAG has 313 members, including 233 student members, as of December 31, 2015.

According to its Rules of Procedure, the objective(s) of the SIAG are:

It is the purpose of the SIAM Activity Group on Applied Mathematics Education to advance the development and practice of educational programs, courses and resources in applied mathematics interpreted as broadly as possible. This will include but not be limited to organizing conferences, maintaining a curated web-based repository of resources in modeling, computational and applied mathematics and mathematical sciences including the applications domains. The potential constituencies of the SIAG will include college faculty in fields represented by SIAM's membership: faculty with an interest in applied and computational mathematics; this includes members with primary interest in applications domains; mathematics teacher educators, especially for in-service professional development (since SIAM's involvement in pre-service teacher education is not extensive); and graduate students in applied mathematical areas with ambitions for careers in academia with a strong education component. Within the framework of SIAM, the SIAG will conduct activities that implement its purposes.

The SIAG on Applied Mathematics Education will organize activities in Educational Innovation, Practice, Improvement and Faculty development. The SIAG is expected to:

1. Organize minisymposia at the SIAM Annual Meeting in years where there is no SIAG conference.
2. 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. Other activities can include:
3. Organize a biennial SIAM Conference on development and practice of educational programs, courses and resources in applied mathematics. 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.

4. 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.

SIAG meetings, workshops, and conferences may be organized only with the approval of the SIAM president and the SIAM vice president for programs.

To which have been added (list prizes, publications, conferences not included in the ROP):

Nothing additional *yet*, though preliminary discussions have included the idea of having a SIAG prize, and potentially a journal. The latter is a bigger undertaking but is one which is needed. The Math community is often criticized for not having such publication outlets and suffers by comparison with Chemistry, Biology, Physics and Engineering in this respect. If there is to be a journal, there is significant potential advantage in it being a SIAM journal so that the emphasis can be on “relevant” mathematics (applied, computational and modeling-based)

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.

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

Chair: Peter Turner

Vice Chair: Jeff Humpherys

Program Director: Padhu Seshaiyer

Secretary: Ben Galluzzo

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 years?

This is the first renewal so of course all membership is growth. The total membership is satisfactory though we certainly hope the “paid” membership grows in the future.

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?

Again, as this is the first renewal it is premature to answer this in detail. Certainly remaining vibrant. The submission to the first conference are highly satisfactory; arguably we (along with others) are leading rather than “keeping up with” changes in the field. The main interaction with the broader interests of SIAM are reflected most in the pipeline of students and future

researchers, and in our growing role in helping influence policy especially in the STEM education arena.

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

The SIAG Activity Group on Applied Mathematics Education organizes the biennial conference on Applied Mathematics Education. The SIAM Conference on SIAG/ED in 2016 will be the first conference for SIAG/ED. This is held in conjunction with the SIAG/MPE (Mathematics of Planet Earth).

ED16 will (almost certainly) also include the third Modeling across the Curriculum workshop, with a focus on Business-Industry-Government connections) as a themed track. Final word on NSF funding for BIG-MaC is anticipated very soon.

Additionally, SIAG/ED organized undergraduate sessions at SIAM CSE15, and at SIAM AN16.

We have also been represented on the TPSE-Math Advisory Group and the SIAM-NCTM committee on Modeling. This was also reflected in joint sessions at JMM and a panel at the recent NCTM conference in San Francisco.

The GAIMME report (Guidelines for Assessment and Instruction in Mathematical Modeling Education) was an upshot of MaC II and as such is, at least partly, a SIAG/ED product, too.

4. Please indicate the number of minisymposia directly organized by the activity group at the next planned SIAM annual meeting. When will the SIAG organize a track at an annual meeting or meet jointly with the SIAM Annual Meeting?

*\*Because of the number of Activity Groups, the current guidelines are that an Activity Group should organize a track about every seven (7) Annual Meetings or meet jointly with the Annual Meeting within a seven (7) meeting period.\**

Originally there were to be two, but that is now just one for AN16 – on undergraduate research projects. Also two at CSE15.

Given the seven year cycle for organizing a track, I would recommend SIAG/ED enter that cycle in 2018 if that can be worked.

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?

Mostly covered above. Still working on the idea of a web-based repository of resources, but no real progress to date.

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

Next SIAG/ED conference in 2018 (dates TBD)

Minisymposia at CSE and or AN meetings, as well as collaboration in JMM and similar external meetings.

We expect a proposal for a prize, and perhaps for a journal during the renewal period.

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

I am sure we'll need guidance on both prize and journal proposals when we get to that point. The support from SIAMM staff has been excellent, but the new officers will need prompting to plan ED18 earlier than we did for ED16.

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

SIAG/ED and its members can be a strong voice in national (primarily) efforts to promote the applied mathematics education theme as central to the STEM focus. Working in partnership with officers and staff we can amplify these efforts beyond what has been achievable with just VP/ Education Committee by involving a broader and larger community in this effort.

This SIAG requests that the SIAM Council and Board of Trustees renew its charter for a 2 year operating period beginning January 1, 2017.

Signed  
[SIAG Chair]  
[Date]