

Committee on the Profession
Annual Report
2012

The Committee on the Profession (CoProf) held its annual meeting on September 29-30, 2012, at the Hilton Chicago O'Hare Airport Hotel. Abigail Thompson, University of California, Davis, chaired the meeting. Highlights of that meeting are provided below.

Regular agenda items:

- **Annual review:** CoProf's annual review, conducted by a subcommittee, was on the topic of the Society's activities related to Employment Issues and Opportunities. The subcommittee made the following recommendations, which were endorsed by CoProf:
 - We recommend that a sample survey be taken from those who received PhDs in a recent year to see the career outcomes of the exiting postdocs and instructors.
 - CoProf supports the principle of applying for a grant to do a more extensive survey.
 - We recommend that the AMS encourage universities either to use MathJobs.org for online applications or to determine a way to make their online sites compatible with MathJobs.org.
 - There has been concern that MathJobs has increased the number of applications per job. This leads to inefficiency and can impose a heavy burden, especially on small departments. One mechanism to reduce the impact is for schools to require additional materials (for instance, a cover letter).
 - We recommend that the AMS reorganize the websites that are linked from the "Career Information" page, in particular the *Job Sites for Math Majors* link, to be more user-friendly and easier to navigate.
 - We join the JCEO and recommend that the AMS encourage mathematics departments to make use of the Employment Center at the JMM for interviews.

CoProf members were also encouraged to share with the AMS information and resources from their departments for the *Job Sites for Math Majors* web page.

- **2012 Information Statement on the Culture of Research and Scholarship in Mathematics:** The Committee on the Profession has been making a series of statements that highlight ways in which the traditions of mathematics differ from those in other disciplines, especially other sciences and engineering. This year, CoProf considered a statement concerning the structure of graduate programs. The statement was approved and appears at the end of this report. It will be posted on the AMS web site.
- **Programs that Make a Difference:** Each year, CoProf recognizes at most two programs that: (1) aim to bring more persons from underrepresented backgrounds into some portion of the pipeline beginning at the undergraduate level and leading to an advanced degree in mathematics, or retain them in the pipeline; (2) have

achieved documentable success in doing so; and (3) are replicable models. The deadline for nominations was September 15, 2012, for programs to be considered for the 2013 recognition. The subcommittee will make its decision and request that it be approved by CoProf before December 1. Four nominations were continued from last year; we received three new nominations. The one or two programs that are chosen will be featured in the May 2013 issue of the *Notices* and will be presented on a web site linked to the AMS home page. The program recognized in 2012 was the Mathematical Sciences Research Institute (MSRI).

- **CoProf Panel at the 2013 JMM:** CoProf will have a panel on January 9, 4:40 – 6 pm, at the 2013 Joint Mathematics Meeting in San Diego. The panel, *Getting started as a research mathematician*, will be moderated by David Vogan, MIT.

Panel description: Your Ph.D. is just the beginning. This panel will discuss and assist in the non-trivial transition to a sustainable research career. Through their experiences panelists will provide tips and insights into such topics as: how to start and sustain collaborations, how to develop a research niche, how to find good mentors, and how to manage your teaching/research/service obligations. There will be ample opportunity for Q&A with the panelists.

- **Discussion topics:**
 - **Adjunctification of academia:** There has been concern that academic departments now employ large numbers of faculty who are not in tenured or tenure-track positions. CoProf agreed to form a subcommittee to consider this issue in mathematics.
 - **AMS response to the PCAST report.** In response to the President’s Council of Advisors on Science and Technology (PCAST) report, *“Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering and Mathematics,”* the American Mathematical Society has issued a statement in support of the report’s call to increase the number of college graduates with STEM training, while at the same time disagreeing with some of the recommendations made in the report for achieving this goal. CoProf discussed the PCAST report, the AMS response, and related issues.
- **Reports:** The following reports were included in the CoProf agenda:
 - **Report on Employment Services of the AMS**, written by Diane Boumenot, manager of the Member and Programs Department
 - **Report on Membership**, written by Diane Boumenot, manager of the Member and Programs Department
 - **Report on the Department Chairs Workshop**, written by Anita Benjamin of the Washington Office

Agenda items that will be taken to the Council:

- **Flexibility in time frames for AMS prizes, awards and fellowships:** CoProf was asked to consider whether it was appropriate to allow flexibility in the strict time limits for AMS prizes, awards and fellowships. CoProf approved the following statement:

For any program, fellowship, prize or award that has a maximum period of eligibility after receipt of the doctoral degree, the selection committee may use discretion in making exceptions to the limit on eligibility for candidates whose careers have been interrupted for personal, family or other reasons.

- **Centennial Fellowship:** At the request of the chair of the most recent Centennial Fellowship Committee, CoProf discussed revising the following statement which is included in the description of the Centennial Fellowship:

Recipients may not hold the Centennial Fellowship concurrently with another research fellowship such as a Sloan or NSF Postdoctoral fellowship.

CoProf approved the following revision:

Recipients may not hold the Centennial Fellowship concurrently with another major research award such as a Sloan fellowship, NSF Postdoctoral fellowship or CAREER award.

- **AMS Activity Groups:** CoProf approved the 3-page narrative describing the proposed AMS Activity Groups and recommended that a pilot program be started with minimal regulations and procedures for AMS members only when the software is operational. This narrative, along with an appendix of procedures, had been approved by CoMC and forwarded to CoProf for consideration and is included at the end of this report. CoMC will be asked if it concurs with the revised recommendation before the proposal is taken to the Council.
- **Young Scholars Awards:** The Young Scholars Awards Committee had prepared a report for CoProf that was considered at the 2011 CoProf meeting. Several of the recommendations were approved at that time, and others were deferred until this year. CoProf approved the following revised recommendations concerning the Young Scholars Awards during the 2012 meeting:
 - Set a minimum award of \$2,500 for mature programs that are excellent and will thus be given AMS endorsement by such an award. The normal award levels should be between \$5,000 and \$15,000 with the \$5,000 level (seed funding) for promising experiments that need our encouragement.

- The prohibition on funding preparations for math competitions should be relaxed to allow for the funding of programs where this is a component, but this is not the main emphasis.

CoProf also advised the AMS staff to work with the Young Scholars Awards Committee to simplify the application, as recommended in the report.

- **Charge to the AMS Archives Committee:** CoProf approved the following revision of the charge to the Archives Committee, as proposed by Bob Daverman:

This committee has dual modes of operation. Its members are the AMS representatives to the AMS-MAA Joint Archives Committee, which seeks to determine areas in which joint efforts are desirable, to stimulate the deposition of mathematical papers in appropriate archives, and to suggest procedures to assure that material suitable for archives is not lost. On its own, the committee also functions to implement an agreement between the Society and Brown University, overseeing the selection of material with archival value from among records currently held by the Society, and aiding Brown University Library in the solicitation and screening of privately held materials of potential archival value.

Agenda items relating to prizes:

- **Joint Prize Session at the JMM:** A joint subcommittee of CoProf and the Committee on Meetings and Conferences (CoMC) has discussed possible recommendations to the Joint Meetings Committee (JMC) for changes to the Joint Prize Session at the Joint Mathematics Meetings. CoProf endorsed the following recommendation that was proposed by Don McClure and endorsed by CoMC at its meeting held in March 2012:

One principle that could be adopted is to award only prizes and awards at JMM that are highly selective and truly national in scope.

- **Timing of Prize Announcements:** AMS Secretary Bob Daverman asked CoProf about whether the AMS should change its policy of embargoing the news about the recipients of AMS prizes until the Joint Prize Session was over. The MAA and AWM are no longer doing this. CoProf recommended that the AMS announce the prize winners prior to the 2013 JMM. CoProf may revisit this issue at a future meeting.
- **AWIS-AWARDS Project:** The AMS has been asked to participate in a program designed by the Association for Women in Science and funded by the National Science Foundation to explore how societies in the sciences can award more prizes to women. In June, 2010, three representatives of the AMS attended a workshop for this program; these representatives wrote up a set of recommendations for the AMS. A CoProf subcommittee discussed these recommendations, and decided that the AMS needed to do several things: have more information about nominations for AMS prizes on the AMS web site and

establish a canvassing committee to help generate additional nominations for prizes. A prize oversight committee was established as a subcommittee of CoProf to consider implementing these recommendations and others from the Task Force on Prizes. Patricia Hersh, a member of the Prize Oversight Subcommittee, attended the second AWARDS Workshop held in Alexandria, VA, on May 20-21, 2012, and gave an oral report to CoProf about the workshop.

- **Report from the Prize Oversight Subcommittee:** The current Prize Oversight Subcommittee (POC) discussed the desirability of having Prize Selection Committees both nominate candidates and select the awardee. That is very much the AMS practice. Given the relatively few nominations that are usually provided, it is considered highly necessary practice at present -- a prohibition of adding to nominations would be functional only if supplementary steps, such as forming a canvassing committee, were put into place.

The POC suggests that such a canvassing committee would not work well for prizes like the Exemplary Program Award or the CoProf-sponsored Programs That Make a Difference Awards, which are best promoted by the interested departments. And something like the Conant Prize -- for best paper in the Notices or the Bulletin -- may get adequate input from the editors of the two journals involved. But a canvassing committee might make effective recommendations about all of the more standard research awards (e.g., Bocher, Cole, Eisenbud, Robbins, Satter, Steele, Veblen, Birkhoff, Wiener). It might require a large committee to meaningfully cover such diverse areas of mathematics.

The POC asked CoProf to discuss the idea of a canvassing committee or taking other steps, in addition to, or instead of, establishing a canvassing committee to generate more prize nominations? CoProf discussed a number of ideas, including sending emails to members or departments asking for nominations. As a result of the discussion, Ron Stern volunteered to write a draft of a best practices document. The best practices will include a statement that strongly discourages the prize committee to both nominate and select the winner.

- **Review of Prizes:** In January 2011, the Council agreed with the recommendation of the Executive Committee and Board of Trustees (ECBT) that the CoProf should “regularly review, every 3 – 5 years, the minimal value, frequency and number of existing prizes and awards, and make recommendations for changes or the introduction of new prizes or awards.” [*minutes of the Council meeting of January 5, 2011*]. This was last done by CoProf in 2007. CoProf decided that it was appropriate for the Prize Oversight Subcommittee undertake this review after the Board of Trustees makes a decision about the spending rate of the endowment at the November 2012 ECBT meeting.

Next meeting: The Committee on the Profession will hold its next meeting on September 28 - 29, 2013, At AMS Headquarters, in Providence, RI. The Committee selected the Society’s activities in the area of increased communication and cooperation

with other disciplines as the topic of the next year's annual review. This topic was last reviewed in 2006. The topic for the 2013 information statement on the culture of mathematics will be decided after the committee gets input from department chairs about issues of concern.

Ellen J. Maycock
Associate Executive Director
November 28, 2012

2012 Statement

The Culture of Research and Scholarship in Mathematics: the structure of graduate programs

Although mathematics is very closely associated with the natural sciences, the structure of mathematics graduate programs differs from those of other scientific disciplines in several fundamental ways. These include the transition from coursework to research, the advisor's role, and funding sources.

Due to the richness and maturity of the mathematical sciences, graduate students typically require two to three years of post-baccalaureate course work before reaching the frontiers of the discipline, choosing an advisor, and beginning dissertation research. During the years of coursework, beginning graduate students typically are advised via departmental structures – such as a committee, a vice chair, or a nominal faculty advisor - rather than a dissertation advisor or major professor.

The role of the dissertation advisor of a mathematics graduate student differs from that of an advisor in the natural sciences, especially laboratory sciences. It is often the case that the student's dissertation work is independent work, which broadly supports the advisor's research direction but may not contribute directly to the advisor's current research project. Accordingly, dissertation advisors are sometimes coauthors of publications arising from doctoral theses, but not always. Advising a graduate student in mathematics may not contribute to the advisor's research output to the same degree as it does in other sciences.

Degree program requirements for undergraduate majors in science and engineering create high demand for mathematics instruction taught in lecture/recitation format, and therefore a high demand for graduate teaching assistants. On the other hand, federal agencies support a smaller fraction of active researchers in the mathematical sciences compared to the physical and biological sciences¹; the awards support a smaller proportion of graduate students² and rarely provide more than partial support³. Consequently, mathematics students are typically supported as teaching assistants by the department rather than as research assistants by the major professor⁴.

¹ See <http://www.nsf.gov/statistics/seind12/append/c5/at05-22.pdf>,
<http://www.nsf.gov/statistics/seind12/append/c5/at05-24.pdf>

² See <http://www.nsf.gov/statistics/seind12/append/c2/at02-06.pdf>

³ Based on average award size, see <http://dellweb.bfa.nsf.gov/awdfr3/default.asp>

⁴ Data from the [National Center for Science and Engineering Statistics \(NCSES\)](http://www.nsf.gov/statistics/seind12/append/c2/at02-05.pdf). See table <http://www.nsf.gov/statistics/seind12/append/c2/at02-05.pdf> as corrected in <http://www.nsf.gov/statistics/seind12/errata.htm>.

AMS Activity Groups (AMSAGs)

1. Introduction.

Activity groups (also known as “special interest groups” or “focus groups”) are groups of mathematicians with a common (research) interest, who form a community based on their particular interest. Our sister organizations the MAA and SIAM have a long tradition of highly successful activity groups. This is a proposal to create AMS Activity Groups (AMSAGs). Examples of possible AMSAGs would be activity groups in representation theory, algebraic geometry, analytic number theory, algebraic number theory, low dimensional topology, analysis, dynamical systems, or any other specialized interest/research area. The primary form of interaction in the group will be electronic. The AMS will provide various web and social networking tools allow the membership to connect, share information, and form a professional network focused on the theme of the activity group.

2. What an AMS Activity Group would be.

AMSAGs provide a focused forum for AMS members interested in exploring a targeted area of mathematics. The intent is to use electronic communications via various web and social networking software in facilitating exchanges of information and updates on current research trends, and support collaborations and mentoring relationships among AMS members in research subareas. The use of electronic media allows easy communication between members regardless of geographic location. The hope is that this will decrease mathematical isolation and raise awareness of current trends in research and research activity in a broad section of the mathematical community.

Activity group membership is open to both AMS members and nonmembers. The proposed dues structure is that it be either free or at a nominal fee to AMS members. We suggest a more than nominal fee for non-AMS members, perhaps coming after a free trial period. The committee had lengthy discussions on this point. There are two conflicting aspects. Many on the committee felt that an open and free as possible site was important to have a vibrant, open, intellectual atmosphere and to successfully compete with existing (albeit less focused) online math forums. On the other hand, there is a real necessity for the AMS to cover its costs of operation and provide benefit to AMS membership. However only AMS members can propose an activity group. (See the Appendix for a sample of a possible set of procedures for forming an activity group.) There will be officers of the group to handle the administrative tasks: a chair and vice chair of the group as well as a secretary. They will monitor the website and posts to it as well as handle membership in the activity group. They can also designate other members of the group to handle specific tasks.

The features of an AMSAG site could include the following:

- A messaging system. This would be a group discussion forum and chat room, perhaps similar in style to Facebook. Members would be able to read and post information, questions, and comments. Posts could be made available by the poster to just the group or to the whole web. An officer of the group would be

- responsible for editing or deleting posts. There could also be a mechanism for members to send private messages to another member or group of members.
- A resource repository. Members could upload files such as papers in pdf format, scans, programs, pictures, etc. The uploaded file would be submitted with some information describing the file. This information would go into a searchable database.
 - A Wiki facility. Members could create Wiki-style pages and have the option of making them visible only to the group or available on the web. There would be templates for standard things like conferences or problems lists.
 - A repository for collaborative document editing.
 - A space for member profiles. This would make it easier for members to find other mathematicians with similar research interests.
 - A space for requesting a mentor or volunteering to act as a mentor. An officer of the group would oversee the matching of mentors to mentees.

Activity Groups are essentially grassroots organizations and fully depend on the membership to organize them and run them. They empower the AMS membership to organize their own activities, as long as they cohere to the rules set by the AMS (see appendix for samples of possible rules). The AMS only provides the electronic infrastructure. The AMS does not run or create activity groups. The benefits of the activity group are that it builds a community and its members with a wealth of professional networking opportunities. While the primary focus of these groups is electronic, we envision that AMSAGs could also propose Special Sections or workshops at AMS national or sectional meetings via the normal request channels.

3. Implementation

The schedule for implementation is driven by the ability of the AMS technical staff to adapt and implement software for facilitating the activity groups. The committee has had some initial discussions with the AMS technical staff and this undertaking seems possible. A template for an AMSAG page has to be designed and implemented. There has to be a way to restricting access to the page to members of the activity group. We feel it would be prudent to have at least two test groups run for some period to work out any wrinkles before opening up the formation of and enrollment in AMSAGs to the full AMS membership.

4. Summary

We believe that the formation of AMS Activity Groups is consistent with the AMS mission to promote and support research and education in mathematics. Our hope is that AMSAGs will facilitate more research and scholarly activity in mathematics over a broad spectrum of people. As public discourse in general has become electronically based, AMSAGs keeps the AMS relevant to the dissemination of scholarly information in mathematics. We believe AMSAGs will also attract new members to the AMS and engage current members so that they will be less likely to let their membership lapse. It also could be an excellent recruiting tool to engage students early on in areas of their

interest and gets them to join the AMS and become a lifelong member. The AMS Activity Groups have the potential to sustain and grow the membership of the AMS. It will engage more members in AMS sponsored activities and will strengthen the feeling that being a member of the AMS offers them a wealth of benefits, including a close community of mathematicians with similar interest.