From the AMS

Sloan Grant to AMS and SIAM for Project on Employment Opportunities

The Alfred P. Sloan Foundation has awarded a grant of $345,000 to the AMS and the Society for Industrial and Applied Mathematics (SIAM) for a joint project of the two societies to broaden employment opportunities for mathematics doctorates.

The project will forge links between the academic mathematical sciences community and business, industry, and government in order to expand career opportunities outside of academia. "In the long term, this sort of interaction should help build good relations between industry and mathematics, which will help the entire mathematical enterprise," notes Samuel M. Rankin III, AMS Associate Executive Director. Rankin and James Crowley, Executive Director of SIAM, are co-principal investigators for the project.

The AMS plays a major role in the extensive program of employment services sponsored by the AMS-MAA-SIAM Joint Committee on Employment Opportunities, from the yearly Employment Register, to job listings on e-MATH, to the publication *Employment Information in the Mathematical Sciences*. A year ago, SIAM launched a project, funded by the National Science Foundation and the National Security Agency, called Mathematics in Industry. The project aims to provide ways to improve the match between graduate training in mathematics and the needs of business, industry, and government.

Pooling the expertise of the two organizations, the project funded by Sloan will have a wider reach and greater impact than if the two societies went their separate ways. Crowley sees the project as a natural pairing of strengths. "SIAM brings a strong connection to industry and applications," he remarks. "AMS brings a broader reach in academic departments. If we want to speak to the entire mathematical sciences community, it is important that we do so together."

The centerpiece of the project is the creation of a database of profiles of individuals who use mathematics extensively in their work. Such individuals would not necessarily have the job title "mathematician" but would use mathematics in a substantive way in their daily work. The profiles will describe the individuals' jobs, mathematical backgrounds, and any additional training they needed to prepare for their work. The Mathematics in Industry project has already begun to gather such information, through questionnaires sent to one hundred master's degree recipients and one hundred doctorates who got their degrees in the mathematical sciences and found jobs in business, industry, or government. "The Mathematics in Industry project has generated information that feeds naturally into the Sloan project," Crowley remarks.

This database, to be developed jointly by the two societies, will be used to assemble a cadre of volunteers who can assist academic mathematical sciences departments in advising, preparing, and mentoring graduate students. The project will also include a "query and discussion" bulletin board to provide an open forum in which graduate students, faculty, and mathematicians and others outside academia can make contacts and discuss the ins and outs of working in business, industry, or government. The project is intended to cover a wide range of areas, from automotive design to oil recovery to finance to insurance.

The information from the project will give departments input from practitioners about what kinds of skills and background mathematics doctorates need in order to be successful outside of academia. In addition, the project will help give hints about some of the prerequisites that go beyond coursework. "We hope to focus on the personal characteristics needed in industry," explains Rankin. "Teamwork and the ability to communicate with technical and nontechnical people are essential. Mathematicians survive in industry by their usefulness, so they have to be able to communicate the value they bring to the business."

Currently, little career information is available to help graduate students investigate the range of job opportunities open to those with mathematical training. The project will develop case studies of individuals, describing what they do day-to-day in their jobs and how they use their mathematical training. This material will be available in the database and accessible over the Internet. Some of the case studies will be published in the news publications of the two societies and collected into a brochure, to be updated every two years.

The project will also have a "career management" component designed to help graduate students successfully conduct job searches in business, industry, and government. Doing so requires a different approach from academia, and many mathematics students and faculty are unaware of the differences. This component of the project will help students with résumé development, interviewing skills, salary negotiations, and so on. "We also want to help new doctorates learn how to manage their careers over a lifetime and how to switch careers if they want to," Rankin says.

The currently difficult job market in mathematics has been an incentive in getting the program off the ground. "Departments are seeing that the opportunities in academia are not there for their students, and they are rightly concerned about this," Crowley notes. "So they are looking at other kinds of employment they can prepare their students for."

However, today's job market concerns are not the only reason for establishing this program. "The job crisis is a motivator," Rankin explains, "but our intent is that this project will become institutionalized and not just disappear in a few years. We see this as a valuable part of what the two societies offer in the way of employment services. It will be a long-term, continuing resource that will be there to assist the community."

Allyn Jackson

The Minneapolis Mathfest

The Minneapolis Mathfest, including the 96th Summer Meeting of the American Mathematical Society, was held August 15–17, 1994, at the University of Minnesota in Minneapolis. The meeting was attended by 485 members of the Society and 281 nonmembers.

Invited Addresses

There were three AMS invited addresses; the speakers, their institutions, and titles follow:

GEORGE E. ANDREWS, Pennsylvania State University, *The well-poised thread: Some amazing sums of Gauss, Kummer, Ramanujan, and others* (History of Mathematics Lecture).

PIERRE-LOUIS LIONS, University of Paris IX, *On Boltzmann's equation and its applications* (Progress in Mathematics Lecture).

KENNETH A. RIBET, University of California, Berkeley, *Galois representations and modular forms* (Progress in Mathematics Lecture).

The speakers were introduced by George Francis, Cathleen Morawetz, and Ronald Graham, respectively.

Special Sessions

There were three Special Sessions of the AMS. The titles of the sessions and the organizers are as follows:

q-Series, GEORGE ANDREWS and DENNIS STANTON, University of Minnesota.

History of mathematical logic and theoretical computer science, THOMAS L. DRUCKER, Modern Logic Publishing.

Computer graphics as a research tool in geometry and topology, DENNIS M. ROSEMAN, University of Iowa.

Contributed Papers

There were three sessions of contributed papers.

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