

MODELING CONTEST

Each year the Consortium for Mathematics and Its Applications (COMAP) organizes a contest in mathematical modeling. The contest consists of two modeling problems, one involving discrete mathematics, the other continuous mathematics. Teams of three undergraduates choose one of the problems and work on it over a long weekend, 12:01 AM Friday to 11:59 PM Monday. They download the problems from the web at the start and must work on their own, although they are allowed the use of reference materials, computers, etc. The teams work wherever they want, often around the clock. The UW's teams had access to the MSCC computer lab throughout the weekend. Monday evening the teams turn in their completed papers to their faculty advisers who send them in by UPS. The teams write a paper that describes the problem, their solution strategy, results, etc.

The UW had two teams of undergraduate ACMS or Math majors competing this year.

Both teams chose to work on problem B, which is, roughly formulated, the problem of the efficient evacuation of the population of the coast of South Carolina ahead of the landfall of a major hurricane. The motivation for the problem comes from the monumental traffic jam that occurred ahead of Hurricane Floyd in 1999. In response to this, the state of South Carolina has devised new ways of dealing with such situations. The contest problem is to analyze the new proposals and discuss alternatives to them.

The results of the 2001 contest are in. There were 281 teams from around the world that chose to work on Problem B. Of these, there were 6 Outstanding Winners, 43 Meritorious Winners, 65 Honorable Mentions and 167 Successful Participants.

The UW team composed of Ryan Card, Ernie Esser, and Jeff Giansiracusa received a Meritorious rating, and the team composed of Nicole Franklin, Zach Frazier, and Lonnie Princehouse received an Honorable Mention. Our congratulations to the members of these teams.

This year a total of 496 teams participated in the contest. Forty-seven per cent of them were from countries other than the US. Teams entered from Australia, Canada, England, Finland, Hong Kong, Ireland, Lithuania, P.R.China, Singapore, and South Africa.

For more details about the contest see the web site <http://www.comap.com/undergraduate/contests/mcm/> for the results and the web site <http://www.comap.com/undergraduate/contests/mcm/problems.htm> for the problems.

“Mathematics is the only infinite human activity. It is conceivable that humanity could eventually learn everything in physics or biology. But humanity certainly won't ever be able to find out everything in mathematics, because the subject is infinite. Numbers themselves are infinite.”

- Paul Erdős

APPLIED AND COMPUTATIONAL MATHEMATICAL SCIENCES PROGRAM



The ACMS Program at the University of Washington is an interdisciplinary undergraduate program in the mathematical sciences, which is jointly administered by the Departments of Applied Mathematics, Computer Science, Mathematics, and Statistics. Launched in the Autumn quarter of 1997, this innovative program was designed in direct

response to the ever increasing need for mathematical skills in a broad array of technical careers in business, industry, and research. The goal is to better train students in the computational, mathematical, and statistical skills required in the development and analysis of mathematical models for complex integrated systems. Beyond building a solid foundation in mathematics, students must choose from among eight areas of specialization for advanced training. These areas are Biological and Life Sciences, Discrete Mathematics and Algorithms, Engineering and Physical Sciences, Mathematical Economics, Operations Research, Scientific Computing and Numerical Algorithms, Social and Behavioral Sciences, and Statistics. In the four years since its inception it has grown to include over 160 active majors; it has 101 alumni.

Here are some of the highlights of the ACMS program during the 2000-2001 academic year:

- ACMS students received research funding from the UW's National Science Foundation grant for the Vertical Integration in Research and Education (VIGRE).
- ACMS students presented the results of their research at the Undergraduate Research Symposium.
- ACMS majors participated in the Engineering Co-op program.
- Two teams of students participated in the international modeling contest sponsored by the Consortium for Mathematics and its Applications. Both did very well. The contest is described in an adjacent article.
- This year the award for Outstanding ACMS Major was given to Ernie Esser and the award for Outstanding ACMS graduate was given to Jennifer Temple.
- Kristin Spaulding graduated in ACMS with Distinction for completing a Senior thesis on the modeling of optical fiber lasers.

- After five years of outstanding service as the Director of the ACMS Program, Randy LeVeque has stepped down from this post. Randy was the first Program Director for ACMS. The rapid growth and the interdisciplinary nature of the program posed and will continue to pose many challenges for the University, the mathematical sciences departments, and the program leadership. Randy was very successful in meeting these challenges on an almost daily basis. He, the program steering committee, and the program advisors Julie Martinson and Brooke Miller can be credited with bringing to the State of Washington a new, very sound,

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