

A NOTE FROM THE CHAIR



I hope you will enjoy browsing our annual newsletter. The breadth of activities and achievements of our students and faculty should convince you that these are exciting times for our department. The first article demonstrates clearly that the very best undergraduates at the University of Washington are choosing mathematics as a major. We have been blessed with a significant number of fellowships and awards for our

top graduate students, and our faculty continue to receive recognition for their outstanding research.

Our research environment here was highlighted this year by visits by Ed Witten (Fields Medalist), Peter Shor (Nevanlinna Prize), and Perci Diaconis (MacArthur Foundation Award). Lectures by Michael Freedman (Fields Medalist) and UW Math Professor Neal Koblitz in a celebration of the Microsoft Theory Group joining our department as Affiliate Professors were another highlight. We've begun an exciting new collaboration with Western Canadian Universities in the Pacific Institute of Mathematical Sciences. This program should greatly enhance our connections with industry and business as well as provide an infrastructure for research support.

The College of Arts and Sciences has increased its support of mathematics by providing matching funds for our new departmental research awards for several years, by selecting mathematics as the only department in the College to receive a special differential raise fund so that ten of our faculty could receive raises of over 10%, and together with the Provost's office by providing funding for substantial raises averaging nearly 30% for three additional faculty who received competitive offers from other universities. The College and the Associate Provost have provided critical support for our "Tools for Transformation" proposal for over \$640,000 to fund the significant changes to our calculus program. The College and the Office of Research have also provided start-up funding for our joint project with Applied Mathematics and Statistics in the Pacific Institute of Mathematical Sciences.

Two years ago I wrote in this column that "the pattern of mathematical research is a sequence of periods of persistent, dedicated work interspersed with exciting highs at the time of discovery." At the time, we were experiencing times of re-dedication. We are now clearly on the rise – surely exciting times for our department.

We welcome your participation in the activities of our department. Let us know what you are doing with your mathematics training, help us recruit the best and brightest students to mathematics at the University of Washington, or support our work with your contributions. Of course, if you are passing through Seattle, please stop by to say hello to us in the department. You are always welcome here!

PIMS, *continued from page 1.*

courses. The fourth graduate industrial mathematics modeling camp (GMMC 4) will take place at the University of Victoria, June 11-15, 2001. The fifth industrial problem solving workshop (IPSW 5) will take place at the University of Washington, June 18-22, 2001.

The combination GMMC and IPSW has been a very successful program. As an example, last year The Michelin Group was one of the participating companies. They make tires for all types of vehicles, from bicycles to the space shuttle. Every day they produce more than 830,000 tires over a broad product range, with the smallest under 200 grams (0.5 pounds) and the biggest over 5 tons. The problem posed was: *How do you find the vibration characteristics of each of the many layers of a tire when you can only determine the composite vibrations after the tire is made?* One method is to build many tires with the various layers rotated by specific amounts. But how many tires must be made? Michelin Engineer Bill Mawbry from Michelin's research group spent the week with the team. The team, led by mentor Professor Michael Lamoureux of the University of Calgary, made significant progress in solving the problem. Mr. Mawbry said that he could see direct savings of up to \$500,000 a year from their work.

Building on the strength and vitality of its programs, PIMS is able to serve the mathematics community as a catalyst in other ways. PIMS has paid special attention to the communication and dissemination of mathematical ideas through public outreach, mathematical education, and training at all school levels. *Mathematics is Everywhere* is a poster campaign featuring the ever-growing importance of mathematics in modern society. Since January, 2000, a monthly poster including a mathematics question has appeared in selected buses in Vancouver and Victoria. People are encouraged to find out more about the question and its ramifications by consulting the PIMS webpage (<http://www.pims.math.ca/>). As an incentive there is a prize of one hundred Canadian dollars to be given each month to one of the correct answers. One of our projects for the year 2001 is to implement a campaign like this in Seattle. To be able to fund fully the operations of PIMS in Seattle in future years as well as other PIMS activities in which we will be involved we need to find additional sources of funding. We plan to take advantage of the new NSF Mathematical Sciences Research Institutes competition to apply for support.

–Tatiana Toro, PIMS UW Site Director

Mathematics

This newsletter is published annually for alumni and friends of Mathematics at the University of Washington.

Newsletter Staff:

Donald Marshall, Chair, chair@math.washington.edu
 Edgar Lee Stout, Editor, stout@math.washington.edu
 Mary Sheetz, Production, sheetz@math.washington.edu
<http://www.math.washington.edu>