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EMU Mathematical Sciences Department

Summer 2011

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Math Contestants Successful

The Consortium for Mathematics and Its Applications (Comap) sponsors the annual Mathematical Contest in Modeling (MCM) which challenges teams of students to clarify, analyze, and propose solutions to open-ended problems.

This February three EMU teams spent a long weekend working to determine the optimal shape of a “halfpipe” snowboard course to maximize the production of “vertical air” by a skilled snowboarder. One team achieved a Meritorious ranking, putting their paper in the top 15% of solutions submitted. We’d like to recognize sophomores **Amber Warren**, Amelia, Virginia; **Jonathan Nagy**, Lancaster, Pennsylvania; and **Aaron Springer**, Minier, Illinois for this impressive achievement and maintaining EMU’s tradition of success in this contest.



Photo by Jim Bishop

The MCM is an international contest for undergraduates and EMU participates at least every other year. Most students in the applied math course elect to take part in the contest as their course project. Leah Boyer who teaches the course also serves as the adviser for the teams during the contest. She is not permitted to discuss the problem with the teams during the contest weekend, but works to prepare them with general approaches and techniques during the first few weeks of the semester.

Satisfactory team solutions are put into one of four categories: Outstanding, Meritorious, Honorable Mention, and Successful Participant. This year 2,775 teams (347 from the U.S.) attempted one of the two problems.

Over the course of a long weekend in February, the students spend 96 hours working on a problem that is unlike anything they have ever seen. During that time they discuss the problem, formulate a mathematical model, compose a computer program, and write a 10 to 20 page solution paper.

Check out the EMU news article on the contest at: <http://emu.edu/now/news/2011/04/students-fare-well-in-math-contest/>

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Congratulations, Graduates!

This year marked the completion of degree requirements for students receiving degrees in the mathematical sciences. **Praveen Chhetri**, **Andrew Crocken**, **Dustin Good**, and **Stephen Thomas** have all completed (or will be completing this summer) requirements for the Computer Science major. **Dustin Good** is also completing the Mathematics major, and **Steven Rittenhouse** is completing the Math major with Secondary Education certification. In addition, **Jonathan Nagy** and **Edwin Torres** have successfully completed the Pre-Engineering program; Jonathan will be transferring to James Madison University and Edwin to Virginia Tech in order to complete their Engineering degrees.

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Science Center Renovation

Conversations about the Science Center renovation and addition have resumed with renewed energy. We are excited about the prospect of new facilities, the anticipated corresponding increase in STEM majors, and the possibility of new programs!

For more information visit: <http://www.emu.edu/science-seminars/about-the-science-center/>

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MSC Conference in Information Technology

This spring, EMU Computer Science faculty Charles Cooley and Dee Weikle helped organize and present at the first Mennonite Schools Council Conference for Information Technology. These conferences are hosted by Mennonite universities for teachers from Mennonite high schools in a different discipline each year. For the first time teachers in information technology were given the opportunity to participate. Seminars presented by EMU Computer Science and Digital Media faculty included blogging, basic circuit design, programming, and visual presentation tips. Teachers also had an opportunity to talk with one another and with EMU faculty, and to tour facilities at EMU.

There were participants from as far away as Salem, Oregon, and San Juan, Puerto Rico, in addition to more local participants from Pennsylvania and Virginia. The event was a success and attendees and presenters both

benefited from the interaction. The conference culminated in a Friday evening dinner with Loren and Pat Swartzendruber in the University Commons overlooking the beautiful Blue Ridge Mountains. It was a wonderful opportunity to demonstrate hospitality to our hard-working high school teachers and we enjoyed getting to know all who attended.

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Department News

This semester, our department has worked at increasing out-of-classroom learning and enrichment opportunities for our students.

The Computer Science faculty, Charles Cooley and Dee Weikle, started a **Security Club** for interested students. This group met weekly over lunch on Tuesdays, using old computers donated by EMU's Information Systems Department to learn about protecting computer systems from network attacks.

The **Math Club** sponsored regular activities this year, such as cookie baking and a movie night; during one week in April, the Math Club sent Math Awareness Week puzzlers to all EMU students via email, with daily prize drawings among those with correct responses.

The department hosted a first-annual departmental math competition, in which about a dozen students participated; the two top scorers, **Kendall Garber** and **Elias Kehr**, were honored in the end-of-semester Student Recognition chapel.

Dee Weikle began collaborative research projects with several Computer Science majors, and Deirdre Smeltzer took a group of four Multivariable Calculus students to the spring sectional meeting of the Mathematical Association of America at Randolph-Macon College.

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Problem Corner

We are sorry to report that we got no submissions (correct or incorrect) for our last problem! The next one is much easier, though. In fact, it can be solved mentally, using arithmetic known to an elementary school student. It comes from the American Math Monthly, 1940, Problem E366.

New Problem:

Two ferry boats ply back and forth across a river with constant speeds, turning at the banks without loss of time. They leave opposite shores at the same instant, meet for the first time 700 feet from one shore, continue on their way to opposite banks, return and meet for the second time 400 feet from the opposite shore. What is the width of the river?

Submit solutions to Owen Byer at byer@emu.edu.

Are you (or do you know) a prospective student who is interested in studying math at EMU?

Contact Deirdre Smeltzer at smeltzed@emu.edu for information about applying for the

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