

Department News

Programmers Continue to Excel

On November 10, EMU sent three teams to Virginia Tech where they had their strongest showing ever at the Intercollegiate College Programming Competition. The international computer science contest pits the best teams in the world against each other to solve as many of the problems as possible in five hours. This year, the eight problems covered topics ranging from polynomial detection and bicycle routing to dice-rolling probability and filename classification. The problems were so challenging this year that fewer than half of the teams solved a single problem. Of the 184 teams competing from the Mid-Atlantic region, EMU's top-placing team (**Daniel Harder, Ben Stutzman, Cameron Byer**) finished 18th by solving five problems, and the second-placing team (**Brandon Chupp, Austin Engle, Andrew Reimer-Berg**) solved two problems to finish 48th, edging out the top teams from other area schools (Bridgewater College, 49th and JMU, 52nd) and comparable Christian schools like Messiah (66th place). A third team (Dan Hackman, Darren Good, Jamie Stoltzfus) came quite close on two of the problems. All nine of the EMU students expressed how the training and competition strengthened their programming skills in substantial ways.

Hypersonic Aircraft Project

When mathematics, engineering, and computer science work together we can push forward the frontier of our technology! Aerospace is a very inter-disciplinary domain and a team in our department joined a major challenge: the design of a high

-speed, economically viable aircraft. We are going to work together with many other teams around the world, at CERN (European Organization for Nuclear Research) and ESA (the European Space Agency).

This is an education-driven student innovation project that uses a massive open online (MOOP) platform. The intention is to offer to supervised undergraduate students the opportunity to innovate collectively and in a new interdisciplinary manner. Sometimes, the next big thing is just waiting to be invented by a young student, sometimes we achieve complex engineering projects collectively. This project is team-related and open to new ideas!

Congratulations

Math Scholarship Recipient

Isaac (Ike) Esh was the recipient of the Breneman Longacher mathematics scholarship for the 2018-19 incoming class. Ike, from Strasburg, PA, has always enjoyed math, especially his calculus classes. He anticipates that his interactions with faculty and students here at EMU will help him explore career options and further define his future interests.

SSELP Scholars

Of EMU's seven recipients of the National Science Foundation "STEM Scholars Engaging in Local Problems" scholarship awards this fall, four are students in the Mathematical Sciences department: **Ally Mankamy** (math), and **Wade Banks, Jacob Horsley, and Andrew Schunn** (engineering). EMU STEM alumni can mentor a SSELP scholar by sharing about their career paths. If you are interested, please contact us at SSELP@emu.edu.

Faculty News

Welcoming Dr. Stefano Colafranceschi



We are pleased to announce that **Dr. Stefano Colafranceschi** joined our faculty as Assistant Professor of Engineering and Computer Science in the fall of 2018. Stefano attended Sapienza University (Rome – Italy) where he received the Bachelor and

Master in Aerospace and Astronautical Engineering. During his PhD in applied engineering and computer science, he started his career at CERN where he stayed for a decade working for the Compact Muon Solenoid (CMS) Experiment. After a postdoc in High Energy Physics at FloridaTech, he is now devoted to teaching and involving students in research projects. He enjoys technology that helps humankind, solving tricky challenges, and building things out of what is available.

Faculty Publication

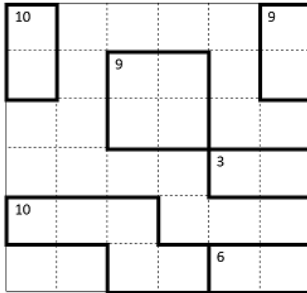
Department chair **Owen Byer** and undergraduate dean **Deirdre Smeltzer** had their second textbook published by MAA/AMS, in December 2018. *Journey into Discrete Mathematics* has been used at EMU, in pdf form, for about five years now, which has provided opportunity for "testing" the work with students. Student engagement helped to pinpoint what needed better explanation, or sometimes they would even catch mistakes - a discovery awarded with bonus points! Enthusiastic student feedback has indicated the book is an exceptional guide to a journey through discrete math.

Problem Corner

Congratulations go to **Sam Kauffman, David George, Milton Loyer,** and **Eric Brodersen** for obtaining the correct probability of 23/36 in our previous problem.

New Problem:

This issue's problem is again posed by sophomore Math/CS major **Cameron Byer**. In this puzzle, the digits 1 through 6 must each be used in each row and column, and within each heavily bolded set of contiguous blocks, the digits must sum to the number shown.



Send your solution to Owen Byer at byer@emu.edu

Do you know a prospective student who is interested in studying math at EMU?

Contact Owen Byer at byer@emu.edu for information about applying for the Brenneman-Longacher Endowed Math Scholarship.

Recipients receive \$1,250 per year for four academic years, as long as they continue in the math major.



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www.emu.edu/math Winter 2019

Engineering Partners with Theater



EMU's Introduction to Engineering & Design class has worked with their clients, theater program director Dr. Justin Poole and theater tech director Shannon Dove, to design the stage set for EMU's spring musical production of *Beauty and the Beast*. Students designed the grand staircase, windows, tables, pillars, and much more.

To see the end results of their designs and labors, come to see *Beauty and the Beast* at EMU's Main-Stage Theater in March, 2019. Show times are March 22, 28, 29, 30 at 7:00 pm and March 23, 24 at 3:00 pm.

For tickets, contact the box office at 540-432-4582 or go to emu.edu/box-office.