

2018 Award for an Exemplary Program or Achievement in a Mathematics Department

The Math Center for Educational Programs (MathCEP) at the University of Minnesota is the recipient of the 2018 Award for an Exemplary Program or Achievement in a Mathematics Department. See a profile of this program and a conversation with its current director on page 580.

Citation

The American Mathematical Society is pleased to announce that the 2018 Award for an Exemplary Program or Achievement in a Mathematics Department goes to the Math Center for Educational Programs (MathCEP) at the University of Minnesota for its outreach programs aimed at children K-12, teachers, graduate students, and postdocs.



MathCep and UMTYMP director Jonathan Rogness.

The flagship program of MathCEP is the University of Minnesota Talented Youth Mathematics Program (UMTYMP), an accelerated five-year program of courses and mentoring for middle school and high school students. The first two years of UMTYMP cover the high

school mathematics curriculum from algebra through precalculus; then in the next three years, students take honors courses on calculus, set theory, logic and methods of proof, linear algebra, and vector calculus. If students complete all of these courses before graduating from high school, they can take advanced topics courses offered by UMTYMP as well as upper level math classes of their choice at the university. Such students also have the opportunity to be involved in research projects and to participate in real world modeling. All of the courses offered by UMTYMP not only aim to teach students the material, but also how to write mathematics. In addition, faculty work with students in the program to develop independence, motivation, good work habits, and problem-solving skills.



MathCep and UMTYMP founder and former director Harvey Keynes.

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Girls Excel in Math students play with tessellations.

UMTYMP has existed for forty years and has served more than 6,000 students, with over 500 participants at any given time. Each year UMTYMP admits 140–150 new middle school students, and despite the intensity and time commitment involved, the program has an 85 percent retention rate from one year to the next. While UMTYMP started at the University of Minnesota campus in Minneapolis, it now also runs classes on other college and university campuses throughout Minnesota, including Duluth, Rochester, Moorhead, and St. Cloud. Almost all UMTYMP alumni go into STEM fields with an average of 18.17 percent going into mathematics. The goal of the program is not only to create future mathematicians; rather it is to give participants a deep understanding and appreciation of mathematics which they will carry with them into whatever fields of study they choose.

MathCEP offers multiple other programs in addition to UMTYMP. This includes Saturday morning enrichment programs for children, summer camps, professional development for teachers, a master's degree in mathematics with an emphasis on math education, and post-doc positions targeted at new PhDs who are interested in careers at teaching oriented institutions. Of particular note is the MathCEP outreach program Girls Excel in Math which is an enrichment program serving more than 250 girls in grades 4–6. The goals of this program are to excite girls about math, create a sense of community, build confidence, and reinforce the feeling that they belong and can excel in mathematics. In addition, this program is designed to motivate its participants to apply to UMTYMP in 5th or 6th grade, thereby increasing the number of female participants in UMTYMP.

Altogether, MathCEP is unique in the number of outreach programs it offers, the number of people its programs serve, the success of alumni from UMTYMP in STEM fields including mathematics, and the longevity of the flagship program UMTYMP. Not only is MathCEP a truly exemplary program, but its directors are happy to advise other colleges and universities who might be interested in trying to implement similar programs at their institutions.

For all of these reasons, we are delighted to present the AMS Award for Exemplary Program or Achievement in a Mathematics Department to the Math Center for Educational Programs at the University of Minnesota.

About the Award

The Award for an Exemplary Program or Achievement in a Mathematics Department was established by the AMS Council in 2004 and was given for the first time in 2006.

The purpose is to recognize a department that has distinguished itself by undertaking an unusual or particularly effective program of value to the mathematics community, internally or in relation to the rest of society. Departments of mathematical sciences in North America that offer at least a bachelor's degree in mathematical sciences are eligible. Through the generous support of an anonymous donor, the award carries a cash prize of US\$5,000. The award is presented by the AMS Council acting on the recommendation of a selection committee. The members of the 2018 selection Committee are Craig Evans, Erica Flapan (Chair), Rhonda Hughes, Cristoph Thiele, and Sylvia Wiegand.

The 2018 Award for an Exemplary Program or Achievement in a Mathematics Department is the thirteenth bestowed by the American Mathematical Society. Previous recipients of the award are Harvey Mudd College (2006); University of California, Los Angeles (2007); University of Iowa (2008); University of Nebraska, Lincoln (2009); North Carolina State University (2010); University of Arizona (2011); Bryn Mawr College (2012); University of Texas at Arlington (2013); Williams College (2014); Iowa State University (2015); California State University at Northridge (2016); and The Department of Mathematics at the University of Illinois—Champaign (2017).

For more information, see: www.ams.org/department-award.

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