2018 AMS Award for Impact on the Teaching and Learning of Mathematics

Eric Stade of the University of Colorado has been named the recipient of the 2018 AMS Award for Impact on the Teaching and Learning of Mathematics.

Eric Stade

Citation

Eric Stade, professor of mathematics at the University of Colorado, is an accomplished mathematician who has not only made sustainable and replicable contributions to mathematics education for students in the first two years of college but has also worked directly with precollege teachers to enhance their impact on mathematics achievement. His outstanding contributions exemplify perfectly the priorities of the award.

Dr. Stade has published consistently over his career in top journals and has authored a textbook on Fourier analysis. Moreover, he is an outstanding teacher who has received every teaching award that his home institution offers. Most recently, he won a University of Colorado Boulder Best Should Teach Gold Award (2015), an ASSETT Award of Excellence for Technology in Teaching (2013), and the Mathematical Association of America Rocky Mountain Section's Burton W. Jones Award for Distinguished College or University Teaching of Mathematics (2006). Moreover, in 2010 he received the University of Colorado's highest teaching honor, a Lifetime designation as President's Teaching Scholar, and in 2013 he was appointed a Fellow of the International Society for Design and Development in Education (ISDDE).

However, to earn the Impact Award, an individual's impact on teaching and learning must go beyond his or her own classroom to impact his colleagues or community. Within his department, Dr. Stade worked with colleagues to transform, first, the precalculus and calculus pathways and, later, more than five courses in the undergraduate mathematics curriculum. One of these courses is described as "a lively background in calculus for non-math majors," which was developed in conjunction with colleagues from the School of Education and the biology department. A signature feature of Dr. Stade's course redesign was the addition of learning assistants, or LAs, to the course structure. LAs are talented undergraduates who interact with graduate teaching assistants in recitations to help students make the leap from passive to active learning. Dr. Stade has been recognized for his work not only in awards but also in grants totaling over US$220,000 and in invited speaker engagements nationally (e.g., MSRI) and internationally (Fukui National Institute of Technology, Japan).

To see that his work is sustainable and replicable, one need only observe that his collaborative redesign projects are not only department-wide and interdisciplinary but are also institutionalized. In fact, Dr. Stade has taken the time to found organizations on campus such as the Colorado University Boulder Center for STEM Learning. The mission of this center is to improve science, technology, engineering, and mathematics (STEM) education at the University of Colorado Boulder and to serve as a state, national, and international resource for such efforts.

Dr. Stade is also a founding member of the Mathematics Teacher Education Partnership (MTEP), an initiative of the Association of Public and Land-Grant Universities (APLU), created to coordinate research, development, and implementation efforts for secondary mathematics teacher preparation programs and to promote research and best practices in the field. This organization is at the national level, and it focuses on bringing to scale best practices in training precollege teachers.

Dr. Stade's involvement in MTEP is no surprise, as he has been active in working with precollege teachers and students. He is currently involved in a ten-year ongoing outreach project, "CMTL: A Community of Math Teachers and Learners," funded by grants from the University of Colorado Outreach Committee. With this funding, "he has

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arranged to send over a hundred University of Colorado students, most of them prospective teachers, into Boulder Valley School District classrooms." The students help with homework clubs, math clubs, math nights, tutoring, and designing active learning math lessons.

For his many sustainable and replicable contributions to mathematics and mathematics education at both the precollege and college levels, the AMS Committee on Education is delighted to award Dr. Eric Stade the AMS Award for Impact on Teaching and Learning Mathematics.

Biographical Sketch

Eric Stade received his PhD from Columbia University in 1988. From 1988 to 1990 he was John Wesley Young Research Instructor of Mathematics at Dartmouth College. In 1990 he joined the University of Colorado Boulder as assistant professor, becoming associate professor in 1996 and full professor in 2002. In 1996 he served as consulting mathematician to O.R. Technology of Boulder, providing the mathematical modeling behind their design for a high-capacity computer disk drive. From 2012 to 2016 he was consulting mathematician to the Math Learning Center in Portland, Oregon, where he helped create Common Core-ready K–5 mathematics curricular materials that emphasize conception and visual approaches. Since 2015 he has been consulting mathematician to the Nueva School in Hillsborough/San Mateo, California. He was director of the Libby Arts Residential Academic Program, leading the redesign of the curriculum, broadening the focus on visual and performing arts to a more general emphasis on creativity across academic disciplines. He is presently director of the Sewall Residential Academic Program, leading the introduction of a focus on education and on the teaching professions into the curriculum. Stade tells the *Notices*: "Many of my students call me 'Dr. Slam.' It's a nickname I got when I played drums on a Math Department rock band, and it stuck." He also owns more than one hundred pairs of sneakers.

Response

Thank you for this tremendous honor. And thanks to the COE and the AMS for supporting undergraduate education—particularly work with preservice teachers and lower-division offerings. These are the most inspiring and rewarding parts of my job, and the AMS sends a powerful message by valuing and promoting these things. Thank you again. I am humbled and deeply appreciative.

About the Award

The Award for Impact on the Teaching and Learning of Mathematics was established by the AMS Committee on Education (COE) in 2013. The US$1,000 award is given annually to a mathematician (or group of mathematicians) who has made significant contributions of lasting value to mathematics education. Priorities of the award include recognition of (a) accomplished mathematicians who have worked directly with precollege teachers to enhance teachers' impact on mathematics achievement for all students, or (b) sustainable and replicable contributions by mathematicians to improve the mathematics education of students in the first two years of college. The endowment fund that supports the award was established in 2012 by a contribution from Kenneth I. and Mary Lou Gross in honor of their daughters Laura and Karen. The award is presented by the AMS COE acting on the recommendation of a selection subcommittee. For the 2018 award, the members of the subcommittee were:

- Katherine Stevenson (chair)
- Joseph Silverman
- Ravi Vakil

Previous recipients of the Impact Award are:

2014 Paul J. Sally, Jr.
2015 W. James Lewis
2016 Michael Gage and Arnold Pizer
2017 Kristin L. Umland

—AMS Committee on Education