

Henry L. Alder Awards

Alison Lynch

California State University, Monterey Bay

Dr. Alison Lynch of California State University Monterey Bay (CSUMB) is an influential teacher and leader who has used her expertise in research-based pedagogies to improve student learning and transform the mathematics curriculum at her institution and beyond.

Dr. Lynch uses a variety of student-centered pedagogies to enhance student learning. In her intro-to-proofs course, for example, she utilizes an inquiry-based learning approach and activities that get students to read before class so they can take advantage of class time to work collaboratively. She also incorporates a proof portfolio project in which students write and revise proofs throughout the semester before submitting a polished final product. One student shared how much they appreciated Dr. Lynch's "role of a coach" versus "being the main fountain of knowledge" and how this course structure helped them facilitate their own learning. Departmental colleagues have similarly praised Dr. Lynch's work and reported students are much better prepared for subsequent courses due to taking Dr. Lynch's course.

Perhaps Dr. Lynch's greatest strength is her exceptional ability to share her expertise in teaching and learning practices and to mentor others in how to implement them. At the department level, Dr. Lynch spearheaded curricular redesign efforts for pre-calculus and a first-semester calculus course. For the pre-calculus course, she led a group working to incorporate research-based pedagogies. Together they wrote an in-house pre-calculus textbook and developed weekly course activities and lesson plans to facilitate student engagement. Dr. Lynch redesigned the first-semester calculus course by adopting a new textbook (Active Calculus) and developing daily class activities, lesson plans, detailed reading guides, and online homework sets. Her nominator shared that her colleagues "fully embraced these redesigns" and that once fully implemented by the department, the D/fail/withdraw rate for both courses fell dramatically.

Equally impressive is the professional development Dr. Lynch provided her colleagues during the COVID-19 pandemic. At a time when faculty across the country were unsure of how to transition to remote instruction, Dr. Lynch took the lead and organized a workshop series in the summer of 2020 to aid her colleagues in teaching remotely.

More recently, Dr. Lynch was awarded a \$100,000 grant from the California Educational Learning Lab to implement Standards-Based Grading (SBG) in

Calculus I at CSUMB and Hartnell College, a public community college in Salinas, California. Dr. Lynch led a team of faculty who developed SBG materials to be used at both institutions. In addition to implementing these materials into 11 sections of Calculus I and her offerings of Differential Equations and Linear Algebra, Dr. Lynch is in discussions with faculty in other STEM disciplines on campus about ways to implement SBG practices into their courses.

For these reasons and many more, we enthusiastically recognize Dr. Lynch's achievements with the 2023 Henry L. Alder Award.

Response

I am deeply honored and humbled to be a recipient of the 2023 Alder Award. Thank you to the MAA for this recognition and for supporting my development as an educator. My participation in Project NExT set a strong foundation for my teaching, and my continued engagement with the MAA has strengthened my work with students in so many ways. My work would not be possible without the support of my incredible colleagues at California State University, Monterey Bay. Every member of my department cares deeply about teaching and I have learned so much from them. I am especially grateful to Michael Scott, Joanne Lieberman, and Judith Canner, each of whom invited me into projects that mattered early in my career and modeled exceptional and caring leadership. Much of the work recognized in this citation was highly collaborative in nature and would not have been successful otherwise. Special thanks to Peri Shereen, Jefferey Wand, Lipika Dekka, Jennifer Clinkenbeard, and Alysia Goyer, who took on major projects with me to serve our students better. I also want to thank Nelson Graff and Rebecca Kersner for introducing me to Reading Apprenticeship and for being such ardent supporters of my work and the work of my colleagues. I am inspired by my students every day, and it is for them that I do the work that I do. Thank you to all the students who have trusted me with their learning, even when we were doing things that were new and uncomfortable. Finally, thank you to my husband, Bill, whose encouragement over the years has enabled me to dream big and bring my best self into the classroom.

Biographical Sketch

Alison Lynch is an associate professor of mathematics at California State University, Monterey Bay. She earned a BS in mathematics from the University of Delaware and a PhD in mathematics from the University of Wisconsin-Madison. She was a Project NExT fellow and was awarded the Distinguished College or University New Teacher of Mathematics Award by the Golden Section

of the MAA in 2021. She teaches across the mathematics curriculum, drawing on evidence-based pedagogies to support students in problem-solving, collaborating, and communicating mathematical ideas. She is especially passionate about supporting students in the transition from high school to college mathematics. She coordinates Calculus I and led redesigns of Precalculus and Calculus I to implement active learning, standards-based grading, and corequisite support structures. She co-developed a 12th-grade math course, Transition to College-Level Math, which has served almost 3,000 high school students since 2017. She also leads math circle sessions for students and teachers, provides professional development for K–16 mathematics instructors, and mentors students in undergraduate research.