

## Henry L. Alder Awards

### Kenneth Monks

*Front Range Community College- Boulder County Campus (BCC)*

Dr. Monks' love for mathematics is a family tradition. He shares his lifelong love of math as an inspirational teacher who will go to extraordinary lengths to help students achieve great things. Always eager to explore new ways of engaging students, he asks his students to take risks. Students in his Differential Equations/Linear Algebra course collaborate on homework using a free shared-editing cloud platform for LaTeX documents called Overleaf. He has authored open-source calculus texts and develops group projects for his courses in which students present in miniconference format. A particularly unique addition to his curriculum is the use of history of mathematics to add context to the material. At the invitation of the PIs of the NSF-funded TRansforming Instruction in Undergraduate Mathematics Education via Primary Historical Sources (TRIUMPHS) project, Dr. Monks has authored three "primary source projects" (PSPs) that offer students the general benefits of inquiry-based learning within this unique historical approach. These time-intensive approaches truly stretch students outside their traditional math comfort zone.

Outside the classroom, Dr. Monks adds to the overall community of FRCC and beyond. He coordinates the math lab, the Putnam club, master teacher awards, and faculty senate, as well as presenting at various academic conferences. The Putnam students have done remarkably well for freshman and sophomore level students, with a team score in the top third nationally in 2019, competing against four-year schools. Along with his family of mathematicians, they offer a summer math camp (Prove it! Math Academy) for high school students. They teach students to transition from computation-based questions to proof-based questions used in math competitions such as USA(J)MO and USAMTS. In addition, he stays busy with his research program and duties as president of the Colorado Mathematical Association of Two-Year Colleges. Having been recognized with teaching awards at his institution and in his MAA section, we believe Dr. Kenneth M Monks' dedication to the teaching and learning of mathematics deserves full consideration for the Alder Award.

### Response

I was beyond blessed with my academic upbringing. From fond memories of my mother lovingly reading somewhere right around a Graham's number of books with me as a toddler, to my mathematician father providing one-on-one homeschooling for me in mathematics throughout middle and high school, to all of my professors at University of Scranton offering independent study after independent study, to my incredibly generous graduate school mentors Alexander Hulpke and Tim Penttila, I had something like a Harry Potter-level of mentors supporting me throughout my journey towards becoming a mathematician (fortunately with substantially less murder along the way). Even though I still didn't know how to cast a spell with my mouth closed, I was very excited once I obtained my PhD to plunge into teaching. I found the perfect venue for that at Front Range Community College - Boulder County Campus. To be able to work at an open-access institution, where I could help droves of first-generation college students who did not have that same gale-force tailwind that I had, is an absolute dream for me. For so many of the students, all it takes is one really energetic positive mentor to help them out here and there and believe in them, and to show them the beauty and plain simple fun that is inherent to mathematics.

I do put in a somewhat comically large amount of time into my work, and therein I owe huge thanks to my beautiful wife Faith Mata for her patience, love, and support, and for forcing me to sleep once in a while. My students are very grateful for the time I put in, and their thanks make it all incredibly worthwhile. Receiving this level of recognition from the broader mathematical community is an incredible

cherry (my favorite fruit) on top, and more than a little humbling when you read the list of past winners. Thanks so much for the support; I suppose I should keep going

### **Biographical Sketch**

Kenneth M. Monks was born in 1984 in Northeast Pennsylvania, where his mother and father respectively teach in the mathematics departments of Penn State University - Hazleton Campus and University of Scranton. After being homeschooled by his father in mathematics, he completed a Bachelor of Mathematics at University of Scranton. He matriculated at Colorado State University where he earned a master's and then a PhD in mathematics. Upon graduation, he became faculty at Front Range Community College - Boulder County Campus (BCC), where he has worked ever since. In his time at BCC, he has found great success as a mentor to the students there, especially in coaching a competitive Putnam Club, which placed in the top third in the nation in 2019. He has become a highly active member of the OER movement, transitioning the entire BCC calculus sequence to custom authored OER in his time there. Furthermore, he has become a site tester/author/fanboy for TRIUMPHS (TRansforming Instruction in Undergraduate Mathematics via Primary Historical Sources), an NSF-backed group that is creating Primary Source Projects for the mathematics classroom and studying the effect of using them. When not talking about Euler, Ken loves lifting weights with his beautiful strong wife Faith, cooking and eating excessive amounts of eggs and pasta with their hungry 1-year old Rocco, and playing music in the Northern Colorado scene.