

Daniel Solow Award

Timothy Chartier

Davidson College

The Mathematical Association of America is pleased to present its 2019 Daniel Solow Award to Dr. Timothy Chartier for his works: *Numerical Methods: Design, Analysis, and Computer Implementation of Algorithms*, *Math Bytes: Google Bombs, Chocolate-Covered Pi, and Other Cool Bits in Computing*, *When Life is Linear: From Computer Graphics to Bracketology*, and his *Princeton University Press Mathematics Blog*.

Dr. Chartier engages his readers through his enthusiasm for mathematics, and his writings illustrate his extraordinary ability to reach a wide range of audience. He can communicate with the most celebrated mathematicians hoping to expand their circle of knowledge, as well as the “math haters” who are working to fulfill a math requirement. Through strong exposition and playfulness, he illuminates both the nature of mathematics itself, as well as the interesting ways in which math is used in other disciplines. Simply stated, Dr. Chartier’s materials make his readers want to learn more.

As one nominator describes it, “[Tim’s writing] accomplishes the difficult task of being mathematically challenging while also being interesting and relevant to today’s students. Students working with his materials learn mathematics, often at a higher level than the course they are enrolled in. They not only learn techniques, they learn to think about mathematical options and helpful (or dangerous) ways to use technology. They do so because Tim’s work has a ‘cool’ factor that gets them excited about the material and wanting to create their own cool mathematics. Thus, the students learn skills that are often impressively sophisticated. More importantly, they get excited about mathematics and want to do more; in some cases, this represents a 180-degree reversal of attitude.”

Another nominator states, “I look forward to finding ways to incorporate more of his writing into my courses in the future, as his texts have an approachability and a focus on applications and real-life motivation for mathematical topics that inspire and resonate with undergraduates.”

Certainly, one of Dr. Chartier’s greatest strengths is in connecting with undergraduates, whether they be at his own institution or elsewhere. He is known for effectively incorporating applications within his educational materials, thereby illustrating the usefulness of a mathematical notion or theory. His publications have had a major impact on numerous undergraduates within mathematics and throughout the mathematical sciences.

Additionally, Dr. Chartier’s work has been positively reviewed in *MAA Focus*, *Science*, *New York Journal of Books*, *SIAM News*, and *GrrlScientist*, *The Guardian*. These reviews speak to Dr. Chartier’s emphasis on applications and their relevance to students. The MAA applauds Dr. Chartier for his excellence in expository writing and for his tireless quest to bring mathematics to as many people as possible.

Response

Einstein remarked, “Have the courage to take your own thoughts seriously.” Effective teaching creates a space for someone to embrace the unknown and learn to stand in uncertainty, waiting for knowledge and intuition’s guidance. Education is a collaborative journey between teacher and student where both guide and learn. For these reasons, receiving the Daniel Solow Author’s Award overwhelms me with gratitude to students who engaged in concepts and shared their discoveries, teachers who inspired me to create content, and friends and family who support my quest to teach and write in ways that reflect the whimsical artist ever active within me.

I want to thank my family as each of the commitments noted in the citation is one we made as a unit.

One of my greatest joys is sharing life's journey with my wife Tanya. She inspires me as a teacher and challenges me to be the educator I want and hope to be. I thank my children, Noah and Mikayla, who share their joy of learning. I also thank my parents for the hours we've shared discussing learning, communicating, and creating affirming and safe environments.

I want to specifically thank Vickie Kearn. Meeting Vickie was a springboard moment in my career. She helped me dream and find my mathematical voice. Through it all, Vickie is and has been a friend to me and my family.

I also thank Amy Langville, who enthusiastically collaborates as a colleague, mentor, and friend.

I want to thank Davidson College. I am grateful to teach at a place where I am surrounded by faculty and staff who focus intently on quality, long-lasting educational experiences.

Finally, I want to thank the MAA, which has helped me see that I have a voice, and my less-trodden path has a place.

For those who've read and used my writing, I ever look forward to seeing what you've done and being inspired by your work.

Biographical Sketch

Tim Chartier is a Professor of Mathematics and Computer Science at Davidson College. He specializes in numerical linear algebra, with his recent work focusing on data analytics. He frequently consults for businesses on data analytics questions, which have included consultation on problems for ESPN, the New York Times, the US Olympic Committee and teams in the NBA, NFL and NASCAR. He oversees a group of 70 student researchers in supplying analytics to Davidson College sports teams. Tim serves Section Representative to the MAA Congress for the MAA's Southeastern Section and has served as Vice President of the MAA. Tim is a recipient of the Henry L. Alder Award. His research and scholarship were recognized with an Alfred P. Sloan Research Fellowship. Published by Princeton University Press, Tim wrote *Math Bytes: Google Bombs, Chocolate-Covered Pi, and Other Cool Bits in Computing* and coauthored the textbook *Numerical Methods: Design, Analysis, and Computer Implementation of Algorithms*. He also authored the book *When Life is Linear: From Computer Graphics to Bracketology* which won the MAA's Beckenbach Book. Through the Teaching Company, Dr. Chartier completed a 24-lecture series entitled *Big Data: How Data Analytics Is Transforming the World*. In K-12 education, Tim has also worked with Google and Pixar on their educational initiatives.