MAA Awards and Prizes

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MAA
MATHEMATICAL ASSOCIATION OF AMERICA

maa.org/awards

Awards and Prizes

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Henry L. Alder Awards

R. Abraham Edwards, *Lyman Briggs College, Michigan State University*

Alison Lynch, *California State University, Monterey Bay*

Andrea Arauza Rivera, *California State University, East Bay*

Carl B. Allendoerfer Awards

Tien Chih and Demitri Plessas
"A Search for Champion Boxers," *Mathematics Magazine*, 95:1, 37–48. doi.org/10.1080/0025570X.2022.2000819

Steven J. Brams and Peter S. Landweber
"Three Persons, Two Cuts: A New Cake-Cutting Algorithm," *Mathematics Magazine,* 95:2, 110–122. doi.org/10.1080/0025570X.2022.2023300

Chauvenet Prize

Kimmo Eriksson & Jonas Eliasson
"The Chicken Braess Paradox," *Mathematics Magazine,* 92 (2019), No. 3, 213–221.

Mary P. Dolciani Award

Stan Yoshinobu, *University of Toronto*

Euler Book Prize

Susan D'Agostino
How to Free Your Inner Mathematician: Notes on Mathematics and Life. United Kingdom: Oxford University Press, 2020.

Trevor Evans Award

Lara Pudwell
"The Hidden and Surprising Structure of Ordered Lists," *Math Horizons*, 29(3), February 2022, pp. 5–7. doi.org/10.1080/10724117.2021.2002646

Yueh-Gin Gung and Dr. Charles Y. Hu Award for Distinguished Service

Victor J. Katz, *Professor of Mathematics emeritus at the University of the District of Columbia*

Deborah and Franklin Tepper Haimo Award

Carol S. Schumacher, *Kenyon College*

Sarah C. Koch, *University of Michigan*

Adriana Salerno, *Bates College*

Paul R. Halmos – Lester R. Ford Awards

Tristram Bogart and Kevin Woods

"A Plethora of Polynomials: A Toolbox for Counting Problems," *The American Mathematical Monthly,* 129:3, 203–222. doi.org/10.1080/00029890.2022.2010487

Paul Thomas Young

"From Madhava-Leibniz to Lehmer's Limit," *The American Mathematical Monthly,* 129:6, 524–538. doi.org/10.1080/00029890.2022.2051405

Alex Rice

"Reciprocal Sums and Counting Functions," *The American Mathematical Monthly,* 129:10, 903–912. doi.org/10.1080/00029890.2022.2115268

Paul Ramond

"The Abel-Ruffini Theorem: Complex but Not Complicated," *The American Mathematical Monthly,* 129:3, 231–245. doi.org/10.1080/00029890.2022.2010494

Merten M. Hasse Prize

Matt Davis, Adam E. Parker, and Daniel A. N. Vargas

"Being Rational About Algebraic Numbers," *The College Mathematics Journal,* 52:5, 327–337. doi.org/10.1080/07468342.2021.1967651

MAA Award for Inclusivity

Rebecca E. Garcia, *Sam Houston State University*

George Pólya Awards

William Q. Erickson

"Haste Makes Waste: An Optimization Problem," *The College Mathematics Journal*, 53:2, 122–133. doi.org/10.1080/07468342.2021.2022955

Johnner Barrett

"Unlawful Calculations: A Look into Lie's Notebook," *The College Mathematics Journal*, 53:2, 104–115. doi.org/10.1080/07468342.2021.2019550

David P. Robbins Prize

Samantha Dahlberg, Angèle Foley, and Stephanie van Willigenburg

"Resolving Stanley's e-positivity of claw-contractible-free graphs." *J. Eur. Math. Soc.* (JEMS) 22 (2020), no. 8, 2673–2696. doi.org/10.4171/JEMS/974

Daniel Solow Author's Award

David Lippman

MyOpenMath

T. Christine Stevens Award for Leadership Development

Edward F. Aboufadel, *Grand Valley State University*

Meritorious Service Awards

Timothy Comar, *Benedictine University*
Illinois Section

Tom Richmond, *Western Kentucky University*
Kentucky Section

Lori McCune, *Western State University*
Missouri Section

Gary Towsley, *State University of New York at Geneseo* (emeritus)
Seaway Section

Benjamin Collins, *University of Wisconsin – Platteville, now Epic Systems Corporation*
Wisconsin Section

Competitions

The 83rd William Lowell Putnam Mathematical Competition

The William Lowell Putnam Mathematical Competition is the preeminent mathematics competition for undergraduate college students in the United States and Canada. Prizes are awarded to the participants with the highest scores and to the departments of mathematics of the five institutions the sum of whose top three scores is greatest.

The Putnam Fellows

Mingyang Deng, *Massachusetts Institute of Technology*
Papon Lapate, *Massachusetts Institute of Technology*
Brian Liu, *Massachusetts Institute of Technology*
Luke Robitaille, *Massachusetts Institute of Technology*
Daniel Zhu, *Massachusetts Institute of Technology*

Elizabeth Lowell Putnam Prize

Binwei Yan, *Massachusetts Institute of Technology*

Winning Teams

1. **Massachusetts Institute of Technology:** Mingyang Deng, Luke Robitaille, Daniel Zhu
2. **Harvard University:** Kevin Cong, Andrew Gu, Arav Karighattam
3. **Stanford University:** Quanlin Chen, Matthew Riedman, Rahul Thomas
4. **University of Maryland, College Park:** Clarence Lam, Isaac Mammel, Daniel Yuan
5. **Yale University:** Richie Hsiung, Deyuan Li, Andrew Milas

The United States of America Mathematical Olympiad

The USAMO is part of a worldwide system of national mathematics competitions, a movement in which both educators and research mathematicians are engaged in recognizing and celebrating the imagination and resourcefulness of our youth. The USAMO is a six-question, two-day, nine-hour essay/proof examination. This year it was held March 21–22.

Gold Medal Winners (in alphabetical order)

Advaith Avadhanam, *Saratoga High School*
Warren Bei, *Vancouver Olympiad School Inc.*
Evan Chang, *High Technology High School*

Jeffrey Chen, *University of Chicago Lab School*
Aidan Woojin Choi, *Seoul Science High School*
Huaye Lin, *Lexington High School*
Derek Liu, *Torrey Pines High School*
Elliott Liu, *Torrey Pines High School*
Maximus Lu, *Syosset High School*
Krishna Pothapragada, *Naperville North High School*
Liam Reddy, *University of Nevada at Las Vegas*
Eric Shen, *Lynbrook High School*
Jessica Wan, *Florida Atlantic University*
Alexander Wang, *Millburn High School*
Anthony Wang, *Saratoga High School*
Qiao Zhang, *Sierra Canyon School*

The International Mathematical Olympiad

Members of the team (in alphabetical order)

Huaye Lin, *Lexington High School*
Derek Liu, *Torrey Pines High School*
Maximus Lu, *Syosset High School*
Eric Shen, *Lynbrook High School*
Alexander Wang, *Millburn High School*
Alex Zhao, *Lakeside School*

The European Girls' Mathematical Olympiad

The European Girls' Mathematical Olympiad (EGMO) is a mathematical olympiad for girls which started in 2012. This year's competition was held in Slovenia. The United States took second place represented by the team of

Vivian Loh, gold medal
Kristie Sue, gold medal
Jessica Wan, gold medal
Isabella Zhu, gold medal

The Romanian Master of Mathematics

The Romanian Master of Mathematics is an annual competition for students at the pre-university level, held in Bucharest, Romania; the 14th RMM was held from February 27–March 4, 2023. The United States took first place represented by the team of

Alan Bu, silver
Huaye Lin, gold
Maximus Lu, gold
Alexander Wang, gold
Kevin Wu, bronze
Alex Zhao, gold

Edyth May Sliffe Awards

The Edyth May Sliffe Awards for Distinguished Mathematics Teaching in Middle School and High School are given annually to middle and high school mathematics teachers who have done outstanding work to motivate students in mathematics by participating in one of the MAA American Mathematics Competitions (AMC) competitions.

Amy Hazelton, *Beachwood Middle School*, Beachwood, OH

Anne Crumm, *Ralph Cadwallader Middle School*, Las Vegas, NV

Bee Lim, *Ingraham High School*, Seattle, WA

Cameo Lutz, *Riverton High School*, Riverton, Utah

Davut Yildiz, *Pioneer Academy*, Wayne, NJ

Dr. Chuck Garner, *Rockdale Magnet School for Science and Technology*, Conyers, GA

Dr. Joanna Papakonstantinou, *Episcopal High School*, Houston, TX

Edrick Lin, *Saint Clare School*, San Jose, CA

Emily Larsen, *East Ridge High School*, Woodbury, MN

Jennifer Smith, *Boulan Park Middle School*, Troy, MI

Ismail Marul, *Coral Academy of Science Las Vegas-Sandy Ridge Campus*, Henderson, NV

John Daniel, *Good Shepherd Lutheran School*, Novato, CA

John Walter, *Maggie L. Walker Governor's School*, Richmond, VA

Marilupe Hren, *Dulles High School*, Sugar Land, TX

Mark Norton, *Northwest Junior High School*, Coralville, IA

Michelle Binder, *Pizitz Middle School*, Vestavia Hills, AL

Movina Seepersaud, *East-West School of International Studies*, Flushing, NY

Renee Zacks, *Detroit Country Day School*, Beverly Hills, MI

Sema Duzyol, *Fulton Science Academy*, Alpharetta, GA

Shelby Aaberg, *Scottsbluff High School and Bluffs Middle School*, Scottsbluff, NE

Tatiana Ter-Saakov, *Main Line Classical Academy*, Bryn Mawr, PA

Tim Chavel, *Metrolina Regional Scholars Academy*, Charlotte, NC

Warren Tucker, *Hanover High School*, Hanover, NH

William Lin, *Yorba Linda Middle School*, Yorba Linda, CA

Young Women in Mathematics Awards and Certificates

The MAA American Mathematics Competitions' Young Women in Mathematics Awards and Certificates program honors the top-performing, self-identifying girl students on the AMC 8, 10, and 12. The top 5 scorers in each competition (including ties) split a $5,000 scholarship, and the top 5 scorers from each MAA Section receive a certificate. Here are the 2023 Award winners who provided their permission to be listed:

D. E. Shaw Group AMC 8 Award (in alphabetical order)

Rhea Ghosal, *West Ridge Middle School*
Sophia Huang, *The Bishop Strachan School*
Helen Law, *AlphaStar Academy*
Zhixin Liang, *Think Academy*
Isabella Orellano, *Tampa Bay Math Circle*
Aimee Qi, *Sharon High School*
Pengpeng Qu, *St. John's Academy*
Honwell Xing, *Olympiads School*

Maryam Mirzakhani AMC 10 A Award (in alphabetical order)

Danna Jia, *Langley High School*
Emma Li, *Gauss Academy of Mathematical Education*
Angela Liu, *SpringLight Education Institute*
Emily Liu, *Arnold O. Beckman High School*
Ashley Yu, *IDEA MATH*
Cecilia Yu, *Math House Academy*

Two Sigma AMC 10 B Award (in alphabetical order)

Shruti Arun, *Cherry Creek High School*
Laura Ouyang, *University of North Carolina at Chapel Hill*
Jessie Wang, *Westtown School*
Jiayi Wang, *Windermere Preparatory School*
Xiaoyue Yang, *Thomas Jefferson High School for Science and Technology*

Jane Street AMC 12 A Award (in alphabetical order)

Joy An, *Choate Rosemary Hall*
Nina Li, *Math House Academy*
Yuree (Alex) Oh, *Pomfret School*

Akamai AMC 12 B Award (in alphabetical order)

Joy An, *Choate Rosemary Hall*
Hannah Guan, *Austin Math Circle*
Yunseo (Kimmy) Jeon, *Epiphany Manhattan Academy*
Yaxin Lin, *DuPont Manual Magnet High School*
Yuree (Alex) Oh, *Pomfret School*
Jessica Wan, *Florida Atlantic University*

Awards and Prizes

Henry L. Alder Awards

In January 2003 the MAA established the Henry L. Alder Award for Distinguished Teaching by a Beginning College or University Mathematics Faculty Member to honor beginning college or university faculty whose teaching has been extraordinarily successful and whose effectiveness in teaching undergraduate mathematics is shown to have influence beyond their own classrooms. An awardee must have taught full time in a mathematical science in the United States or Canada for at least two, but not more than seven, years since receiving their PhD. Each year, at most three college or university teachers are to be honored with this national award and are to receive $1,000 and a certificate of recognition from the MAA. Award recipients will be expected to make a presentation at the national meeting of the MAA. Nominations for the award may be made by any member of the MAA or by any section of the MAA.

R. Abraham Edwards

Lyman Briggs College, Michigan State University

Dr. R. Abraham (Abe) Edwards received his PhD in mathematics education from Michigan State University in 2016 and joined the faculty at Michigan State's Lyman Briggs College as Teaching Professor that year. Dr. Edwards' teaching resume spans from College Algebra (in LBC's INQUIRE [INstilling QUantitative and Integrative Reasoning] program), through the calculus sequence and an honors research seminar in Experimental Mathematics, to a senior seminar on Mathematics in the Romantic Age and study abroad courses on Science in a Global Context and Mathematics in Historical and Cultural Contexts. In addition, he has mentored multiple student research projects (14+ projects, involving 19+ students), including one that received a university first place award and two that led to publications co-authored with students (appearing in *Convergence* and in *The College Mathematics Journal*). Throughout, Dr. Edwards utilizes his training and research in mathematics education and passion for mathematics and its history to be a highly effective and impactful instructor. He has contributed to developing, testing, and implementing Primary Source Projects through his collaboration with the NSF-funded TRIUMPHS group (TRansforming Instruction in Undergraduate

Mathematics via Primary Historical Sources). Through a careful selection of sources, Dr. Edwards is able to highlight the work of non-Western mathematicians, drawing in students who seldom see themselves reflected in their STEM classes.

Dr. Edwards transforms students who were apt to describe their mathematical background as painful into productive and engaged students who describe having enjoyed their experiences in his classes. A mark of his success is the number of students that continue on to success in higher level courses. One example is a College Algebra student whose ensuing mathematics courses with Dr. Edwards included Calculus II and III, a research project, and the study abroad course, and who is currently enrolled in a PhD chemistry program. His summer abroad course, Mathematics in Historical and Cultural Contexts, was offered in 2019 and 2022 with visits to Paris, Florence, and London. The course takes place in museums, cathedrals, libraries, and cafes, utilizing his collaboration with colleagues at European universities to give students "behind the scenes" access to remarkable sites and artifacts associated with the history of mathematics. Of particular note is that about half of the participants in this course started their first-year college mathematics experience with Dr. Edwards in College Algebra.

Beyond the classroom, Dr. Edwards demonstrates his commitment to mathematics education through mentorship of Undergraduate Learning Assistants at LBC, contributions to TRIUMPHS, leading a popular 2022 MathFest workshop, Learning from History: Teaching with Primary Source Projects in Your Mathematics Classroom, and other presentations on mathematics teaching at local, national, and international conferences. Dr. Edwards received the MAA Michigan Section's 2022 Distinguished Teaching Award and was a finalist for the Michigan State University-wide 2022 President's Teaching Award. With enthusiasm, we recognize Dr. Edwards as a recipient of the 2023 Henry L. Alder Award.

Response

Teaching awards, although given to an individual, are a reflection of what we value as a community. I am grateful to the MAA for establishing a community of mathematics teacher-scholars who value innovative approaches to mathematics education, mentorship of young people, collaboration, creativity, and inclusivity. If my classroom reflects any of these values, it is due in large part to the work of others who have dedicated their own time and energy to making me a better teacher. This would include my colleagues at Michigan State University who inspire me by their examples of innovation and inter-disciplinary work, my students who support and challenge each other through collaboration and kindness, and my faith community who have helped me see

teaching as a means to glorify our Creator. I am grateful for the many opportunities I've had in my career to pursue ideas that push the boundaries of traditional mathematics teaching, such as leading a study abroad program in the history of mathematics, co-teaching with a historian of science, and designing new courses at the intersection of mathematics, poetry, and philosophy. I am thankful for the many exemplary teachers I've had, from Bruce Hoftyzer who taught me high-school algebra, to Bruce Sagan who taught me combinatorics, and so many others in-between. Finally, I am inspired each day by my wife, who teaches our children to value both great ideas, and great ideals.

Biographical Sketch

Dr. Edwards grew up in rural Ohio, in a home where there were few luxuries, but always plenty of books. He was inspired to pursue a mathematical life by a high school teacher. Along the way he has worked as a school janitor, taught high school math and science, directed concert band, performed in multiple plays, carried out statistical analysis for NASA, taught in community colleges, directed a church choir, and led a teacher exchange program to bring German pre-service teachers to the United States for field experience. He obtained a PhD in 2016 under the supervision of Vince Melfi. Since then, he has taught a wide variety of undergraduate mathematics courses at Michigan State University and tried to occupy a research space at the intersection of mathematics and history. It has been said that people who do interdisciplinary research have never been truly disciplined, but Dr. Edwards truly enjoys collaborating with historians, philosophers, sociologists, chemists, and other mathematicians. His favorite collaboration to date has been the NSF-funded "TRansforming Instruction in Undergraduate Mathematics via Primary Historical Sources" (TRIUMPHS) project. Every two years he convinces a crowd of undergraduates to roam around Europe with him, studying the history of mathematics and eating gelato. In his spare time, he reads books from long-dead theologians and plays a variety of musical instruments.

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 Deka, 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.

Henry L. Alder Awards

Andrea Arauza Rivera

California State University, East Bay

Dr. Andrea Arauza Rivera is an extraordinary teacher, collaborator, mentor, and leader.

She was born in Guadalajara, Mexico and her family moved between Texas, Mexico, and Nevada before settling in the California Central Valley. At CSU Stanislaus she earned her B.S. in Mathematics. In 2018, she completed a PhD in Mathematics at UC Riverside and then joined California State University, East Bay as an Assistant Professor in Fall, 2018.

At CSU East Bay, Dr. Arauza Rivera combats systemic and structural inequities through active, inclusive, and engaging instruction. Her values of joy, community, justice, and love can be seen elegantly woven throughout her contributions in three key areas: curriculum and instruction, equity through innovative assessment, and student research and projects.

Dr. Arauza Rivera sets the stage for all her courses with materials that are beautiful, unique, thought provoking and inspiring. She uses language and imagery to bring important concepts to life, allowing students to see mathematics through a new lens. Through the exploration of puzzles vs. problems and engagement vs. participation, she creates a space in which students are able to see themselves as thinkers about and creators of mathematical ideas. Dr. Arauza Rivera has contributed to the creation of a robust set of instructional materials for precalculus and was co-leader on a grant-funded intersegmental faculty team in implementing the materials across institutions. Dr. Arauza Rivera has created two new upper division courses while at CSU East Bay. Both courses not only introduce students to new content but were designed to engage students in independent projects that broaden their view of "doing" mathematics.

In her first three years at Cal State East Bay, Dr. Arauza Rivera has led 9 undergraduate research projects with 15 students. For example, she engaged freshmen and sophomore STEM majors to work on projects relating mathematics and the social/cultural/political systems in the Bay Area. She mentored undergraduate and graduate mathematics students in research on problems in fractal geometry. Her students are eloquent about the value of these experiences. More broadly, she has reinvigorated the colloquium series and brought the 2019 Pacific Math Alliance conference to CSUEB.

Dr. Arauza Rivera's commitment to infusing her values of joy, community, justice, and love in all that she does has changed student lives and opened

doors. Her generosity in creating and sharing her materials has impacted other instructors at CSUEB and beyond. She thinks deeply about her work and holds the community in her heart as she lifts up her students to be their best selves. She is well deserving of the honor of the 2023 Henry L. Alder Award.

Response

For me, being a math professor is an opportunity to serve and empower communities that have been actively excluded from the power and joy that stems from mathematics. Every day, I try to show up for my students, to honor the trust they have in me. This award is as much about the power of community as it is about my achievements as an educator. I'd like to thank my family for teaching me respect, responsibility and excellence. I'm grateful to Julie Glass, Edwin Lin, Maria Palomino, Yvette Morales, Sandra Torres, and Julia Olkin who wrote to nominate me for this award. The best part of it all was reading your words. Finally, I'd like to thank my ancestors for keeping me centered and gifting me with their wisdom.

Biographical Sketch

Dr. Andrea Arauza Rivera is a proud queer Chicana mathematician, born in Guadalajara, Mexico and raised in the US. Andrea began her academic journey at Modesto Junior College before transferring to CSU Stanislaus and then pursuing a PhD. She earned a PhD in mathematics from the University of California, Riverside in 2018. Her research is in the areas of functional analysis and fractal geometry. Andrea is now an assistant professor at Cal State East Bay where she shares the joy and power of mathematics with her students and reminds them "¡Sí se puede"!

Carl B. Allendoerfer Awards

The Carl B. Allendoerfer Award, established in 1976, is made to authors of expository articles published in *Mathematics Magazine*. Carl B. Allendoerfer, a distinguished mathematician at the University of Washington, served as president of the Mathematical Association of America, 1959–60.

Tien Chih and Demitri Plessas

"A Search for Champion Boxers," *Mathematics Magazine*, 95:1, 37–48.
doi.org/10.1080/0025570X.2022.2000819

What does boxing have in common with Google PageRank? This delightful article explains how boxers (or other athletes) can be compared using Markov chains, much like the way PageRank compares websites.

"A Search for Champion Boxers" begins with a quote by boxer Mike Tyson about his opponent Evander Holyfield, raising the question: How can fans aggregate data about wins, losses, and ties to rank boxers (some of whom may never have faced each other)? The authors give a brief, clear introduction to Markov matrices, using an analogy of "sharing water" that will be a welcome complement to the stochastic probability interpretation to readers who need to teach students about Markov chains.

The authors present several easy-to-understand examples of boxing networks—digraphs in which edges connect competitors who have faced each other, representing the flow of "value" (or evidence of skill) from a boxer who has lost a match to one who has won. The authors propose a logical approach to converting a matrix of wins and losses into a stochastic matrix, and for ensuring that disconnected networks still result in a unique ranking. The stable state, or left eigenvector for eigenvalue 1, then contains the score of each boxer, allowing them to be ranked. Section 4 of the paper presents a succinct summary of the algorithm for ranking boxers, helping readers to put it all together and appreciate the big picture.

The article then connects the mathematics back to the question from the beginning of the article by applying the algorithm to rank 20 top heavyweight boxers from the 1990s, including Mike Tyson and Evander Holyfield. The authors compare their approach to another matrix-based ranking system, the Colley method, both using a holistic description of the key differences between the approaches (PageRank is insensitive to the difference between 1, 5, or 100 victories between two opponents, but is more sensitive to upset victories), and by presenting a Colley-ranked list of the same 20 heavyweight boxers from the 1990s. The article concludes with suggestions of further questions about ranking athletes which are sure to inspire fans of both sports and Markov chains.

Throughout, "A Search for Champion Boxers" uses clear explanations, helpful diagrams, and a concrete application, making it a joy to read. This arti-

cle is not only a fun excursion into math and sports, but an excellent resource for those wishing to engage students in their first foray in stochastic matrices.

Responses

Tien Chih: I am grateful and humbled to be receiving the Carl B. Allendoerfer award. I am pleased to know that an idea inspired by late-night binge watching with my newborn son would lead to this honor. I want to thank my family for their support and inspiration.

Demitri Plessas: I am deeply humbled and honored to receive the Mathematical Association of America's Allendoerfer Award for our paper, "A Search for Champion Boxers." I recall reading Larry Gerstein's "Pythagorean Triples and Inner Products" in *Mathematics Magazine* as an undergraduate (Vol. 78, No. 3 (Jun., 2005), pp. 205–213). Gerstein's captivating approach to the subject matter opened my eyes to the beauty and power of the connections within mathematics. So, when my friend and colleague, Tien Chih, suggested we explore sports ranking, I was enthusiastic to join him. In "A Search for Champion Boxers," we sought to blend the elegance of mathematics with the dynamic world of sports, aiming to provide an accessible and engaging entry point for students and enthusiasts alike to the world of mathematics and data science. The award citation eloquently highlights the essence of our work—the connection between ranking in boxing, Google PageRank, and Markov chains. We strove to make complex concepts more approachable by presenting them in the context of ranking heavyweight boxers. Our hope was to inspire readers to delve deeper into the world of mathematics and see the potential for interdisciplinary exploration. I am grateful to the MAA for acknowledging our efforts and bestowing upon us the Allendoerfer Award. This recognition serves as a testament to the power of collaboration and the unending pursuit of knowledge. I would like to express my heartfelt appreciation to my co-author, Tien Chih, for his invaluable partnership in this endeavor, and to Larry Gerstein, whose inspiring work set me on the path to explore the beauty in the connections within mathematics.

Biographical Sketches

Tien Chih received his PhD from the University of Montana. He is an assistant professor of mathematics at Oxford College of Emory University. He enjoys cooking, gardening, and biking with his son.

Demitri Plessas earned a BS from Montana Tech, and an MA and PhD from the University of Montana. He loves blending mathematics and statistics to tackle unique healthcare modeling challenges as a Lead Data Scientist at Edifecs. As the proud father of a son and a daughter, his greatest joy in life is seeing the world through their eyes.

Carl B. Allendoerfer Awards

Steven J. Brams and Peter S. Landweber

"Three Persons, Two Cuts: A New Cake-Cutting Algorithm," *Mathematics Magazine,* 95:2, 110–122. doi.org/10.1080/0025570X.2022.2023300

How do you divide limited resources among multiple parties in an equitable, envy-free manner? This is the question of fair division, and it is as relevant today as it has been for centuries. Fortunately for us, many brilliant minds are on the case and have explored the concepts of fair division in various settings. In this delightful article "Three Persons, Two Cuts: A New Cake-Cutting Algorithm," Brams and Landweber add their improved analytic twist to a known cake-cutting algorithm.

The authors' exposition is very accessible. They first invite the reader through an intriguing and thorough recounting of the more recent developments in various cake-cutting algorithms. They carefully describe the nuts and bolts of these algorithms, together with their constraints and their pros and cons. From the start, the reader has a strong sense of how the authors' contribution improves upon the existing tools in fair division.

The authors describe their algorithm in five steps. They model the cake using the interval [0, 1] and the algorithm begins by having the three players submit their value functions (a probability density function) to a referee. Using integration, the referee uses these functions to determine two cutpoints that yield connected allocations to the players that are maximin envy-free or maximally equitable. The authors end their main contribution by illustrating their algorithm over two examples that are both clear and enlightening.

This well-organized and engaging article exemplifies the invitational tone one can convey through a generous discussion of the rich and complex mathematical history of cake-cutting algorithms. It serves as a valuable resource for those interested in pursuing further study and research in the fascinating world of fair division.

Responses

Steven J. Brams: It is a privilege and honor to receive this award, especially because I am a political scientist who enjoys working with mathematicians. Since beginning research on fair division with Alan D. Taylor at Union College in the early 1990s and writing two books with Alan on different aspects of this topic in the late 1990s, I have worked with mathematicians, statisticians, computer scientists, economists, and lawyers on both theoretical models and real-life applications, from divorce settlements to international dispute reso-

lution. My article with Peter Landweber in *Mathematics Magazine* shows how, in dividing divisible goods like cake or land—or indivisible goods like the marital property in a divorce—one can solve equations to determine where to make cuts that give three players portions that are envy-free (each player thinks he or she got the most valuable piece) and equitable (all players think they received the same percentage of the total). Previously, the only solution to this problem was to use simultaneously moving knives and have the players say when they create ties for the most valuable pieces. (This approach was not considered quite kosher, because it required the players to choose among infinitely many cuts.) Unfortunately, our solution does not extend to a greater number of players than three. So, it remains an open question to generalize cake-cutting algorithms like ours. But just as important as the mathematical theory underlying the fair division of divisible as well as indivisible goods is how it might be applied to practical problems of fair division, which will increasingly require the collaboration of mathematicians and researchers in other disciplines, which is a challenge I commend to mathematicians interested in using their skills to make the world a fairer place.

Peter S. Landweber: I am delighted to share the Allendoerfer Award with Steven Brams for providing assistance with the mathematics in the study of a very natural cake-cutting problem for 3 players. I have followed Steve's work on game theory and fair division for many years, in numerous books and papers, and so am especially delighted to join him as a co-author. Some time ago I taught a couple of undergraduate courses on game theory, which were good fun. For the first of these I took up Steve's offer to give a talk to my class, which gave us a valuable perspective on the subject. Noting that Professor Allendoerfer was a topologist, I hope it is not amiss to mention that topology has rebounded nicely from the period two decades ago when the Poincaré conjecture was proved, leading some researchers (and alert students) to feel that topology was no longer an active field. Indeed, topology is now playing a prominent role in topological data analysis, a growing field with impressive applications, as well as in other fields such as topological robotics in which I have written several joint papers.

Biographical Sketches

Steven J. Brams is professor of politics at NYU. He is author, co-author, or co-editor of 19 books and more than 300 articles. He has applied game theory and social-choice theory to voting and elections, bargaining and fairness, international relations, and the Bible, theology, and literature. He is a former president of the Peace Science Society (1990–91) and the Public Choice Society (2004–2006). He is a fellow of the American Association for the Advance-

ment of Science (1986), a Guggenheim Fellow (1986–87), and was a visiting scholar at the Russell Sage Foundation (1998–99).

Peter S. Landweber is currently emeritus professor of mathematics at Rutgers University. His principal field of study is algebraic topology, especially bordism and cobordism theory of manifolds. He discovered the Exact Functor Theorem, sometimes known as the LEFT.

Chauvenet Prize

The Chauvenet Prize, consisting of a prize of $1,000 and a certificate, is awarded to the author of an outstanding expository article on a mathematical topic. First awarded in 1925, the Prize is named for William Chauvenet, a professor of mathematics at the United States Naval Academy. It was established through a gift in 1925 from J.L. Coolidge, then MAA President. Winners of the Chauvenet Prize are among the most distinguished of mathematical expositors.

Kimmo Eriksson and Jonas Eliasson

"The Chicken Braess Paradox," *Mathematics Magazine,* 92 (2019), No. 3, 213–221. doi.org/10.1080/0025570X.2019.1571375

Eriksson and Eliasson structure this paper around a story of a simple street network, the regional council member who tries to solve a traffic problem intuitively (and fails miserably), and the council member who finally succeeds in solving it using mathematics. The Braess Paradox is the phenomenon that making one street in a network faster can result in slower travel overall, as the drivers change their behavior in a way that can lead to more congestion. This is an example of a collective action problem or social dilemma, similar in many ways to the tragedy of the commons. As the authors explain, it has been documented in practice as well as receiving much mathematical study. The novel idea here is the introduction of a single-lane road which is nevertheless open for traffic in both directions, leading to the idea of playing "Chicken" as in the title.

This clearly and entertainingly written paper could serve as a nice introduction to game theory, but also has concepts which are likely new even to those who already know the basics. The fact that one of the authors is a traffic engineer allows a natural comparison of the ways in which game theorists and transportation specialists think about concepts. Yet despite this, the paper is remarkably free of jargon from either mathematics or traffic science. Eriksson and Eliasson have produced a work which can and should be appreciated by readers at all mathematical levels.

Responses

Kimmo Eriksson: When I first heard about the Braess paradox, at a conference, I was absolutely flabbergasted. I could not stop thinking about this paradox. This thinking led me to an extension, the "Chicken Braess paradox" which I felt deserved being presented to a wider audience. To include an ap-

plied perspective, I brought in my friend Jonas as a coauthor. We also received some excellent advice from the editor of Mathematics Magazine. Thanks to their help, I now have the incredible honor of having my name on the list of Chauvenet prize winners, a list that reads like a Who's Who of my greatest idols in mathematics!

Jonas Eliasson: Receiving a prize from a mathematics association makes me especially happy and proud. I was one of those kids that read mathematics books as a child, idolizing people like Hardy or Smale as other children idolized people like Maradona or David Bowie. After my MSc, however, I realized I wanted to engage with social sciences, and found transportation science: a field where mathematics, engineering, economics and political science meet to tackle difficult and important problems. But mathematics is still where I come from and where I feel most at home—and that's why being recognized by a mathematicians' association makes me so immensely proud and honoured!

Biographical Sketches

Kimmo Eriksson is a professor of mathematics at Mälardalen University in Sweden and a researcher at the Institute for Futures Studies. At age 25, he received his PhD degree in mathematics. At age 50, he received a second PhD degree in social psychology. Originally an algebraic combinatorialist, his current research combines mathematics and psychology to understand contemporary cultural evolution of moral attitudes and social norms. He is also a fan of comic opera. He has written the libretto to five one-act operas, four of which he has produced on stage; the fifth one is planned to be performed as entertainment on his 60th birthday party.

Jonas Eliasson is professor of transport systems at Linköping University (Sweden), and director of Transport Accessibility at the Swedish National Transport Administration. Previously, he was the director of the Stockholm City Transportation Administration, and professor of transport systems analysis at the Royal Institute of Technology. His research interests focus on transport modeling, economics and policy. He has been engaged as expert advisor to urban and national governments around the world regarding strategic transportation issues, for example leading the design of the Stockholm congestion pricing system. In his spare time, he is a pianist, organist, choir conductor and music composer.

Mary P. Dolciani Award

The Mary P. Dolciani Award recognizes a pure or applied mathematician who is making a distinguished contribution to the mathematical education of K–16 students in the United States or Canada. The recipient will be actively contributing to math education at the time of the selection.

Stan Yoshinobu

University of Toronto

Stan Yoshinobu earned his BA in mathematics from the University of California, San Diego in 1995 and his MA and PhD from UCLA, finishing in 2000. Stan worked as a research mathematician and published work in pure mathematics for a few years early in his career, but has focused his energies on mathematics education, pedagogy, and faculty development for the past 20 years. More than changing the nature of the mathematics we teach or the order and manner in which we teach it, Yoshinobu's approach has been to improve mathematical education through promoting student-centered inquiry-based learning—fundamentally changing the three-way relationship between teachers, learners, and mathematical content. He has been awarded Educational Advancement Foundation (EAF), National Science Foundation (NSF), and other (including MAA) grant funding for creating the Academy of Inquiry-Based Learning (AIBL), developing transformational workshops for college mathematics faculty, mathematics teacher educators, and facilitators to run more workshops. In this way, Professor Yoshinobu has been crucial in propagating a broad and growing community of IBL practitioners who are reshaping modern mathematics pedagogy.

Stan Yoshinobu writes:

> To me, inquiry-based learning or more generally teaching isn't fundamentally about teaching techniques or skills. These are important and necessary of course, and I'm not trying to minimize them. I focus and work on them daily! But teaching techniques, skills, and practices serve a larger vision for education, where students are deeply engaged as explorers and doers.

In 2010, Stan became the founding Director of the Academy of Inquiry-Based Learning (AIBL).

From 2006 to 2021, he obtained approximately $4M in grants to support and study IBL instruction and fund Inquiry Based Learning (IBL) workshops. His prolific "IBL Blog" sustains a tightly knit network of IBL leaders. He has posted at least 234 blog posts since 2011. A major pillar of the Academy

(AIBL) is that IBL raises and addresses concerns of equity and diversity. From the very beginning of AIBL in 2010, Stan's work argued for and instituted evidence-based research to expand understanding of best practices in IBL. Since 2003, he has presented numerous workshops, invited talks, and given conference & poster presentations on IBL instruction. He has extended IBL to projects for K–12 mathematics education, such as his work on mathematics curriculum development for at-risk children in grades 3–6 in San Luis Obispo, CA and his professional development for K–12 teachers to strengthen their mathematics content and inquiry-based teaching skills. This work offers high leverage, reaching teachers who then reach large numbers of students, and deploying higher education expertise to improve K–12 education as a public good. One nominator estimated that "In all, these workshops prepared 495 instructors to teach with more effective and equitable methods that reached over 22,000 students in the first year alone. A rigorous evaluation effort showed that instructors' classroom behaviors changed in ways that can be tied to their gains of knowledge, skills, and supportive beliefs from attending an IBL workshop." Stan Yoshinobu has played a central and pivotal role in IBL becoming a well-accepted pedagogical practice in mathematical education.

The work that Stan Yoshinobu and his Academy of Inquiry-Based Learning (AIBL) have done to rethink the nature of teaching has been so thoughtfully and inclusively developed and so practically and effectively disseminated that it has helped and will continue to help make great gains in K-16 mathematical education in the US. Just as the career of Mary P. Dolciani provided leadership to the mathematical community, Stan Yoshinobu's work serves as an important example of how teachers and scholars can have rich service lives that have an enormous impact on mathematical education. Perhaps one of the reasons that Stan has such breadth of service and has been so effective in influencing our community is due to his ability to be simultaneously optimistic and realistic, which makes him an enormously valuable leader for the IBL movement. For his creative and inspiring leadership, his unrelenting focus on equity and diversity in the mathematical community, and his huge, indeed, transformational impact on teachers and students in the US, Stan Yoshinobu is an inspiring choice for the 2023 Mary P. Dolciani Award.

Response

I am deeply honored and humbled to receive this award. This is not what I ever expected for myself. The recipients of the Dolciani Award are people I have looked up to my whole career, who have achieved brilliantly in mathematics education. I read their papers and follow their example in my work and daily teaching. I am a team player and collaborator by nature, and I am extremely fortunate to have worked with so many talented, intelligent, and

thoughtful people. They have shaped my thinking and made me a better teacher, professional developer, and person. Huge thanks to Sandra Laursen and the Ethnography and Evaluation Research (E&ER) team, Matt Jones, Dana Ernst, Carol Schumacher, TJ Hitchman, the NSF PRODUCT team, Ed Parker, my PhD advisor John Garnett, and so many more. I have too many people to thank, and I wish I could list them all here. I was drawn to IBL teaching after learning about how students struggle to learn math well and how many are pushed out of STEM fields due to failing in math classes. I learned by reading books and articles in Math Education, talking to experts, and listening to students. These three sources of evidence resonated with my own experiences as a student and teacher. Quite simply, I wanted to understand and do a better job as an educator. When I finally tried to teach a version of IBL in a Real Analysis course for math majors in 2003, I realized there were so many new skills and practices I wish I had known about. I had been working in the summers in K-12 professional development at the time (as part of the California Math Project), and I thought to myself it would have been nice to be able to attend an IBL workshop. That would have made fall term easier! Then I learned that Jennifer Christian Smith, who was at the University of Texas at the time, had been conducting research based on Mike Starbird's Number Theory course, and crucially had video recorded the entire semester. From that point, I eventually developed the first version of the IBL workshop model. While the workshop has evolved over time, the root of it is a community of math instructors working to address the implementation obstacles we have identified in the field and from math education research. None of us get through life and career alone, and we all build off the ideas that are around us. We all need community and a handful of people in our lives who believe in us, sometimes before we believed in ourselves. The world is held together by those who care. One of my personal guiding principles is to try to build community directly or indirectly in the ways I can. In this way, more students, teachers, and colleagues have people around them who believe in them and each other. That makes the world a better place.

Biographical Sketch

Stan is a teaching stream faculty member at the University of Toronto and Director of the Academy of Inquiry Based Learning. He has been teaching courses in undergraduate mathematics and mathematics education for more than 20 years using inquiry-based learning (IBL) and has organized IBL workshops since 2006 for college math faculty. Stan's scholarly interests include active learning, inquiry-based learning, professional development in higher education, and diversity, equity, and inclusion in education.

Euler Book Prize

The Euler Book Prize is awarded annually to an author or authors of an outstanding book about mathematics. The Prize is intended to recognize authors of exceptionally well written books with a positive impact on the public's view of mathematics and to encourage the writing of such books. Eligible books include mathematical monographs at the undergraduate level, histories, biographies, works of fiction, poetry; collections of essays, and works on mathematics as it is related to other areas of arts and sciences. To be considered for the Euler Prize a book must be published during the five years preceding the award and must be in English. The Euler book prize is $2,000.

The Euler Book Prize was established in 2005 and first given in 2007, the 300th anniversary of the birth of Leonhard Euler. This award also honors Virginia and Paul Halmos whose generosity made the award possible. The award is given every year at a national meeting of the Association.

Susan D'Agostino

How to Free Your Inner Mathematician: Notes on Mathematics and Life. United Kingdom: Oxford University Press, 2020.

Everybody has a mathematical story. All too often the story is of personal failure or growing disinterest and frustration, the growing conviction that "I'm just not a math person" and "It's all useless anyway." Perhaps, though, a different narrative is possible, a narrative where an individual points to specific ways a variety of mathematics helped them grow as whole human being, in body, mind, and spirit.

How to Free Your Inner Mathematician by Susan D'Agostino shows us how that might be possible. With its short easily digestible, but mathematically profound chapters, *How to Free Your Inner Mathematician* leads the reader through brief introductions to an enormous variety of mathematical topics. Some of the topics are standard fare for popular mathematics books, but many others are new. For each topic, whether old or new, the mathematics and its history and cultural significance are presented succinctly and elegantly. Inspiring life lessons are drawn from either the history or the mathematics itself. Each chapter fosters curiosity, creativity, and wonder. Anyone can pick it up and understand some quite complicated mathematics, no matter how little time or patience they have. The book will open the eyes of students to both interesting mathematics and to how that mathematics might be used to shape their lives. For teachers, the book is a model for how we can make mathematics relevant in ways that include, but surpass, applications to the sciences.

The book is an invitation to learn more about mathematics, the mathematics community, and oneself.

Response

As a Gen Xer growing up in metro New York City, I had an up-close view of the 1980s crack epidemic. Though I was too scared to experiment with recreational drugs, I also never aspired to be a goody-two-shoes. So, I found other ways to rebel. Given that I had dropped out of high school calculus with a failing grade, my goal to transform myself into a mathematician felt perfectly reckless. But once I embarked on my mathematical path, I discovered mind-bending objects such as the one-sided Mobius strip and wild arguments about the existence of different sizes of infinity. Who needed chemicals to alter one's consciousness when there was so much math? In writing *How to Free Your Inner Mathematician*, I sought to share some of the strangest and loveliest math that has inspired my mathematical journey—and to do so in plain English and with hand-drawn sketches rather than equations or jargon. My book is an invitation for anyone to join the community of mathematicians who celebrate abstract, critical thinking. Everyone is capable of thinking mathematically. Everyone has significant, untapped mathematical potential. Curiosity, desire, and persistence matter more in mathematical pursuits than innate talent. Whoever you are and whatever your mathematics background, my book offers an invitation to linger, listen to, and get distracted by your own mathematical thoughts. Thank you to the MAA for its appreciation of mathematical exposition. I am eternally grateful to my husband, Esteban Rubens, for his incredible love and support. I also thank my children, Marco and Sophia, for inspiring me with their curiosity and engagement in life. Thank you to my good friend and editor, Daniel Taber, and Oxford University Press for believing in my vision for this book. I also thank Bard College, Smith College, Dartmouth College, Johns Hopkins University, and the Enhancing Diversity in Graduate Education (EDGE) Program for significant and timely help freeing my inner mathematician.

Biographical Sketch

Susan D'Agostino is a mathematician and writer whose work has been published in *The Atlantic, Washington Post, Scientific American, Wired, Quanta, BBC, Nature, Financial Times, National Public Radio, Bulletin of the Atomic Scientists, Undark, Discover, Inside Higher Ed, Times Higher Education, Chronicle of Higher Education,* and other outlets. She speaks widely about math, technology, higher education, science journalism, and fostering inclusivity, including at the National Museum of Mathematics (MoMath) in New York

City, the Heidelberg Laureate Forum in Germany, the Institute for Advanced Study at Princeton, and at colleges throughout the United States. She earned a PhD in mathematics at Dartmouth College, an MA in science writing at Johns Hopkins University, and BA in anthropology at Bard College.

Trevor Evans Award

The Trevor Evans Award, established by the Board of Governors in 1992 and first awarded in 1996, is made to authors of expository articles accessible to undergraduates and published in *Math Horizons*. The Award is named for Trevor Evans, a distinguished mathematician, teacher, and writer at Emory University.

Lara Pudwell

"The Hidden and Surprising Structure of Ordered Lists," *Math Horizons*, 29(3), February 2022, pp. 5–7. doi.org/10.1080/10724117.2021.2002646

This engaging article takes the reader on a journey in which a graphical representation of permutations provokes an interesting counting problem with surprising results. The article begins with a clear definition and visualization of permutations. A well-chosen permutation of the digits 1-9 illustrates patterns within permutations, prompting the question of how many permutations avoid a given pattern. The article continues with progressively more complicated examples which prepare the reader for two surprising examples and an unsolved problem.

There are unexpected connections made to famous landmarks as the journey unfolds. A computer science problem from Donald Knuth motivates the counting question. A nicely illustrated explanation of a recursive solution of one counting problem leads directly to the Catalan numbers. A related problem is solved with a familiar recurrence relation, the generator of the Fibonacci numbers. The article concludes with some intriguing clues to send the reader on a journey into more complicated and unsolved problems.

Response

What a surprise to receive the Trevor Evans award! I am delighted to share one of my favorite areas of combinatorics with a broader audience. The path to writing this article was truly due to serendipitous encouragement from the community. In 2021, I gave a talk for the Math Encounters public lecture series at the National Museum of Mathematics. Jennifer Quinn urged me to write up a version of the talk for *Math Horizons*, which wouldn't have been on my mind without her enthusiasm. Thanks are due to Jenny for inspiration and to Tom Edgar for encouraging feedback during the editing process.

Biographical Sketch

Lara Pudwell is professor of mathematics and statistics at Valparaiso University, where she has been since 2008. She earned her BS in mathematics and

BA in computer science from Valparaiso University and her PhD at Rutgers University. She is a coauthor of *A Mathematician's Practical Guide to Mentoring Undergraduate Research*. Since 2021, she is also executive director of MathPath, a national residential summer camp for middle schoolers who love mathematics. She enjoys the experience of communicating mathematics with peers and with students of all ages.

Gung and Hu Distinguished Service Award

The Yueh-Gin Gung and Dr. Charles Y. Hu Award for Distinguished Service to Mathematics is the most prestigious award for service offered by the MAA. The Gung and Hu Award is the endowed successor to the MAA's Award for Distinguished Service to Mathematics, first presented in 1962. It is to be made for service to mathematics that has been widely recognized as extraordinarily successful. The period of service may be long or short, and the award may be made on the basis of one or several activities. The contribution should be such as to influence the field of mathematics or mathematical education in a significant and positive way on a national scale.

Victor J. Katz

Professor of Mathematics emeritus at the University of the District of Columbia

Victor Katz is widely recognized as a top scholar in the history of mathematics. We honor him with the 2023 Yueh-Gin Gung and Charles Y. Hu Award not for his scholarship, but for the way he leveraged this exceptional scholarship in the service of mathematics. We highlight two distinctive areas of impact: Katz's work has served a generation of teachers and students by repositioning the role of historical perspectives in mathematics education, revealing the human face of our field. It has also served the larger mathematical community by creating and organizing materials to show that mathematics is a multicultural enterprise that involves all humanity, not just the Men of Mathematics described by E. T. Bell. Katz has trained a generation of mathematicians to teach our history in a rigorous, responsible, and human way. His legacy lives on in *Convergence*, a lively journal that he co-founded in 2004.

An early sign that Katz was poised to influence a generation is the reception of his text, *A History of Mathematics: An Introduction,* first published in 1992. This text, written after he had taught the history of mathematics for many years at the University of the District of Columbia, showed the influence of his students who came from many places around the world. About to appear in its fourth edition, the book won the Watson Davis Prize of the History of Science Society in 1995. Already we see a commitment to highlighting non-Western contributions to mathematics. Perhaps the most significant of Katz's service contributions was founding the Institute for the History of Mathematics and Its Use in Teaching (IHMT) with Fred Rickey, funded by an NSF grant initially obtained in 1995. The institute produced several cohorts of teachers trained to develop their own courses on the history of mathematics. It is not too strong to say that this institute changed the way the subject is taught.

While the first rounds of IHMT focused primarily on teaching a history course, Katz's continued success winning NSF grants expanded the program to include secondary teachers and facilitated bringing historical materials into any mathematics course. Rather than corralling history into a single, separate course, this project popularized the idea of bringing historical perspectives and original sources into every course, an idea he had developed at UDC. While a strictly subject-based curriculum emphasizes depersonalized abstract structures, a curriculum enriched by historical understanding humanizes mathematics. It reminds us that mathematics is an ongoing human project where everyone's efforts are important.

In the IHMT project and in Katz's widely adopted text, non-Western perspectives on the history of mathematics play a strong role. A further sequence of sourcebooks amplified this theme: *The Mathematics of Egypt, Mesopotamia, China, India, and Islam* (Princeton University Press, 2007) and *Sourcebook in the Mathematics of Medieval Europe and North Africa* (Princeton University Press, 2017). In a time when we want to show that mathematics is not just something inherited from European thinkers, these materials are invaluable.

Evidence of the lasting impact of Katz's legacy is abundant. The health of HOM-SIGMAA, the Special Interest Group of the MAA for the History of Mathematics, shows continued enthusiasm for engaging with the history of mathematics. More significantly, the journal *Convergence*, founded by Katz with Frank Swetz, is going strong, having published its 19th volume. Katz's legacy extends far beyond U.S. shores.

For all these reasons, the MAA is delighted and honored to present the Yueh-Gin Gung and Charles Y. Hu Award to Victor Katz.

Response

It is a great honor to be recognized by the MAA through this award. But the accomplishments cited could never have been done without the assistance of numerous people. First and foremost, it was my wife Phyllis who encouraged me to write the textbook in the history of mathematics, when a publisher asked me to do so after rejecting my submission of a text teaching secondary mathematics using history. She has continued to support and encourage me in so many aspects of my career. Among the many historians of mathematics who were influential in my thinking about the history of mathematics were Ubiratan D'Ambrosio, Marcia Ascher, Joseph Dauben, Barnabas Hughes, Karen Parshall, and Uta Merzbach. And many people were influential in the creation and success of IHMT, including Fred Rickey, Florence Fasanelli, Marcia Sward, and Tina Straley. I also want to thank all of the participants

in IHMT, many of whom continue to contribute to teaching the history of mathematics and its use in the classroom after many years. As to *Convergence*, it was created through a grant to the MAA, with myself and Frank Swetz as the original editors. But much of its success is due to the editors who followed, Janet Beery, Janet Barnett, and Amy Ackerberg-Hastings, to each of whom I extend my profound thanks and appreciation. I look forward to many more years of watching so many people humanize the teaching of mathematics through its history.

Biographical Sketch

Victor J. Katz, professor of mathematics emeritus at the University of the District of Columbia, earned his BA from Princeton University in 1963 and his PhD from Brandeis University in 1968. He taught at the University of the District of Columbia and its predecessor, Federal City College, for 37 years, with leaves to serve as a Visiting Mathematician at the MAA as well as the Dean of Mathematics at the Ross School, an innovative independent school in East Hampton, New York. Besides his textbook, *A History of Mathematics: An Introduction,* which will soon appear in its fourth edition, and two *Sourcebooks* on ancient and medieval mathematics, Professor Katz has edited three books for the MAA dealing with the use of the history of mathematics in teaching mathematics as well as two collections of historical articles taken from journals of the MAA in the past 100 years. The materials from his two NSF-sponsored projects to help college and secondary school teachers learn the history of mathematics were published in 2005 by the MAA as *Historical Modules for the Teaching and Learning of Mathematics.* Professor Katz has been married for over 53 years to Dr. Phyllis Katz, who works in science education. Together, they have three adult children and eight grandchildren.

Deborah and Franklin Tepper Haimo Award

In 1991 the Mathematical Association of America instituted Awards for Distinguished College or University Teaching of Mathematics in order to honor college or university teachers who have been widely recognized as extraordinarily successful and whose teaching effectiveness has been shown to have had influence beyond their own institutions. In 1993 the MAA Board of Governors renamed the award to honor Deborah and Franklin Tepper Haimo. Each year, at most three college or university teachers are honored with this award.

Carol S. Schumacher

Kenyon College

Dr. Carol Schumacher is recognized for her excellent teaching for more than 30 years at Kenyon College, where getting to know her students both as young mathematicians and as human beings has been a hallmark of her teaching and mentorship. By building these connections, she establishes a community with the students that helps launch them on their future life paths. As one of her students wrote "She loves the beauty of mathematics and inspires the same in her students, often a primary reason a Calculus I student decides to major in mathematics, or an upper-level major decides to continue pursuing research and higher education beyond Kenyon."

However, her impact on mathematics is much greater than the sum of the students she has taught, as she has been involved with MAA Project NExT (New Experiences in Teaching) since its inception shortly after she earned tenure herself. To both Project NExT fellows and other workshop audiences, Carol has shared her approach to offering students "total immersion in the culture" of mathematics through active inquiry-based learning (IBL). To help instructors implement IBL in their mathematics classrooms, Dr. Schumacher has written two IBL texts: *Chapter Zero,* which serves to introduce students to methods of proof and sets, relations, and functions, and *Closer and Closer: Introducing Real Analysis.* Indeed, Carol Schumacher is a national leader in the use of inquiry-based learning in the postsecondary mathematics classroom.

Dr. Schumacher served more than a decade as a member of the MAA's Committee on the Undergraduate Program in Mathematics, chairing the committee from 2008 to 2011. During her tenure as chair, Carol initiated the process that led to the *2015 CUPM Curriculum Guide to Majors in the Mathematical Sciences.* She co-chaired the committee that prepared the final *Curriculum Guide* with Dr. Martha Siegel, who wrote that Carol's "particular

stewardship of the Course Area Group reports showed her grasp of the depth and the breadth of the undergraduate mathematics curriculum." Although the *Curriculum Guide* left pedagogical issues for another MAA committee, Dr. Schumacher's depth of expertise with inquiry-based learning and understanding of its impact on student learning was reflected in the *Curriculum Guide*'s Cognitive Recommendation 4: "Students should develop mathematical independence and experience open-ended inquiry."

The MAA recognizes Carol Schumacher for the profound impact she has had on multitudes of students directly as a faculty member at Kenyon College, through her mentorship of and inspiration to mathematics faculty through MAA Project NExT and the IBL community, and as a driving force behind the *2015 CUPM Curriculum Guide.* The MAA is honored to present her with the Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching of Mathematics.

Response

I am deeply moved to be one of this year's recipients of the Haimo Award. Previous awardees include many of the best mathematics teachers I know, many of them mentors to me. I am profoundly humbled to have my name listed along with theirs. As a teacher and a mathematician, I have been formed by wonderful teachers and fantastic colleagues. I am grateful to Susan and Sally Shockey, two sisters that taught my high school math courses and jump-started my love of mathematics. Bob Eslinger opened my eyes to creativity in mathematics and taught classes in which I experienced the thrill of mathematical discovery. Stan Yoshinobu reminds me that teaching and learning are, first and foremost, human activities; what we do in our classrooms can change students' lives in profound ways and that is an awesome responsibility. Mike Starbird inspires me to teach ambitiously, working to design courses that will continue to impact my students many years after they leave my class. My Kenyon colleagues motivate me with their creative teaching and tireless dedication to their students. I learn from them every day. (And I am continually amazed at the grace with which they put up with my crazy antics and strong opinions.) The MAA and Project NExT communities keep me supplied with stimulating new teaching ideas and revitalizing mathematical insights. Moreover, I am the teacher I am because of my wonderful parents, who always encouraged my love of learning; my loving (and hilarious!) husband Ben who is also a colleague and friend; beloved siblings (the genetic kind and also those that I was lucky enough to acquire through marriage) and my wonderful daughters, Sarah and Glynis. Finally, my students are an inexhaustible source of joy. They inspire me by enthusiastically engaging with new mathematical

ideas and doggedly working to overcome obstacles. They are always helping me find ways to improve my teaching for the next generation of students. One of the great thrills of my life was to teach mathematics to Sarah and Glynis. (Yes, they did take courses from their mom who learned a lot from them!)

Biographical Sketch

Carol S. Schumacher was born in Bolivia and lived there until she was a teenager when her family moved to Española, New Mexico. Carol went to high school in New Mexico. She earned a BA at Hendrix College in Arkansas and received a PhD in mathematics from The University of Texas at Austin. She wrote a thesis in the geometry of Banach spaces under the direction of the late Ted Odell. Carol has been a faculty member at Kenyon College in Ohio since 1988. Carol has served four terms as department chair, one term as chair of the faculty and is the recipient of Kenyon's Trustee Teaching Award. She is also the recipient of Ohio Section MAA's Distinguished Teaching Award.

Carol is the author of *Closer and Closer: Introducing Real Analysis* and *Chapter Zero: Fundamental Notions of Abstract Mathematics, 2E.* Both books are written for use in a course that emphasizes inquiry-based learning, an approach that she uses in many of her upper-level courses. Schumacher is active in the Mathematical Association of America. She was co-chair of the *2015 CUPM Curriculum Guide to Majors in the Mathematical Sciences* and served a term as MAA VP.

Deborah and Franklin Tepper Haimo Award

Sarah C. Koch

University of Michigan

Dr. Sarah Koch is an inspirational teacher whose influence extends from elementary school to graduate school. She is a tireless and relentless advocate for mathematics who leverages the power of communities to support, encourage, and inspire all students; especially those who are typically underrepresented in the STEM disciplines. This focus on community informs her work at the graduate level, at the undergraduate level, and most impressively at the elementary and secondary levels in under-resourced school districts in the Ann Arbor area. In the words of a nominator, Sarah is "an irrepressible force of nature: unceasingly upbeat, endlessly enthusiastic, supremely supportive, intensely innovative."

Since 2018, Sarah has been working with the Ypsilanti Community Middle School (YCMS), a predominantly African American middle school near Ann Arbor, to provide instruction and support of their mathematics curriculum. On a bi-weekly basis, Sarah and groups of about 20 University of Michigan students traveled to YCMS to provide tutoring and additional instruction for about 2 hours per session. To support this work and these students, she founded the Ypsilanti Math Corps to provide a supportive community that uses engagement in mathematics to inspire students to envision themselves as active participants in the STEM disciplines beyond high school and college.

Fostering community informs her pedagogy at the undergraduate and graduate levels where she regularly uses Inquiry Based Learning methods. And while this is not uncommon in higher education, Sarah creates "a sense of community and belonging in her classes by encouraging collaboration and making it clear that any student—irrespective of prior mathematical background—could succeed with hard work and dedication."

Professor Koch models "hard work and dedication" both in and out of the classroom. Students and colleagues note that she can often be found working nights and weekends, helping students in her classes, her advisees, the Math Club, and almost every other math focused group on campus and doing all this while building community with fun activities, food, and even exercise!

Like her work in Ypsilanti, much of her on-campus work outside the classroom focuses on building community for students who are typically underrepresented in the STEM disciplines. She organized the Graduate Opportunities for Women (GROW) conference and advises FEMMES., a student group dedicated to closing gender and racial divides in the STEM disciplines. In this work, Sarah works tirelessly to build and support communities so that all

students can envision themselves not only as contributors to these disciplines, but successful creators and innovators as well.

For her work in inspiring and supporting students at all levels and from all walks of life in pursuing mathematics, the MAA is honored to present Professor Sarah Koch with the Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching of Mathematics.

Response

Wow!!! Thank you!! This is an incredible honor!! I have had many wonderful teachers in my life—I would not be where I am today without their steadfast support and tremendous teaching. I would first like to thank Mr. Lemeris (Algebra I, Rundlett Junior High), Ms. Davis (AP Calc, Concord High), and Dr. Piper (Analysis I, RPI). A special thank you to my PhD advisor, John H Hubbard (Cornell) who helps me to see how alive (and fun!!!!) mathematics can be. Thank you to Bill Thurston (formerly at Cornell) who still challenges me to stretch my imagination, and thank you to my postdoc mentor, Curtis T McMullen (Harvard); I always find infinite inspiration in his beautiful lectures. I love my job, and that is due in no small part to all of the wonderful people I get to work with every day. Thank you to my friends and colleagues at the University of Michigan: you have given me the chance to create and build wonderful things. Thank you to my amazing undergraduate and graduate students: I am so proud of all that you have accomplished, and I can't wait to learn about all of the wonderful adventures you have!!! A very, very, very special thank you to Stephen DeBacker, Noah Luntzlara, PK (aka Steve Kahn), Dean Harper (aka Brittany Harper Wilkes), Ms. Carolyn (aka Carolyn Norton), and the Math Corps kids: working with you is one of the greatest joys in my life—I treasure each and every one of you. As we say in the Math Corps "Have a beautiful day by creating a beautiful day."

Biographical Sketch

Sarah Koch, aka PK2, is a professor of mathematics at the University of Michigan in Ann Arbor. Her research is in the area of complex dynamical systems; she spends lots of time trying to understand the infinitely complicated structure of beautiful fractals that emerge in her work. She has a BS in math from RPI, and she has two PhDs in mathematics: one from the Université de Provence in Marseille, and one from Cornell University. Since arriving at Michigan (in 2013), she received the Class of 1923 Memorial Teaching Award in 2016, the Harold R. Johnson Diversity Service Award in 2020, and she was appointed as an Arthur F. Thurnau Professor in 2021. She is proud to be the Director of the Math Corps at U(M) and the organizer of the Math Mondays

in Ypsi Program (which has temporarily been replaced with Super Saturdays). In addition to doing math, she enjoys teaching, working with students, making kindness chains, and winning the step contest.

Deborah and Franklin Tepper Haimo Award

Adriana Salerno

Bates College

Dr. Adriana Salerno is an exemplary mathematician and educator, who cares deeply about her students and who invests a lot of time and energy creating a welcoming atmosphere in her classes so her students can thrive. She has shown time and again her ability to lead inside her institution and at the national and international level. She has worked tirelessly at every level to create a much more inclusive environment for students inside the classroom and for all of us in the mathematics community.

Inside the classroom, Dr. Salerno is an enthusiastic, passionate, devoted, and creative teacher. Even more importantly, she is an extremely effective teacher. Students at Bates College seek her course regardless of topic, stop her around campus years after being her students to tell her how much they enjoyed her classes, and actively pursue her as a mentor. Perhaps what makes her such an effective educator is her willingness to be human and connect with her students. Her colleagues and students attest that the atmosphere in her classroom is delightful: there is laughter, almost universal participation, lots of good questions, and camaraderie. Students trust her and are not afraid to speak up when they need clarification or don't understand.

Outside the classroom, Dr. Salerno's leadership has had a significant impact in every aspect of the mathematical community, and in higher education in general. At the local level, she started and led a math circle for sixth grade students in her city. At her institution, she makes an impact at the department and institutional level. She is the chair of her department, and the chair of the Diversity Action Team, Bates College's faculty committee for inclusion, diversity, and equity.

At the national level, Dr. Salerno has provided outstanding service to the community. She was the co-author and co-founder of the AMS Inclusion/Exclusion blog. This blog has played an important role in getting the mathematics community to critically examine its practices. It provides a venue for unheard voices and makes the community aware of relevant events. Dr. Salerno is an internationally sought-after educator, who has taught a mini-course on p-adic numbers in Dangbo, Benin, a class on lattices and cryptography in Abidjan, Côte d'Ivoire, and a class on algebraic number theory in Şirince, Turkey among many other talks and lectures around the world.

Dr. Salerno's dedication to her students and passion for teaching is admirable. Her desire and incredible record of work to make education more accessible and inclusive is an inspiration to all that know her and are impacted

by her. Her contributions to the larger mathematical community go beyond the United States and make her an internationally known and recognized mathematician and educator. For all of these reasons, the MAA is honored to present her with the Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching of Mathematics.

Response

I am incredibly honored to receive this award, and extremely thankful to my colleagues and students for this nomination. There is a certain irony to this, a teaching award given to me as an individual, when a key belief that drives my teaching practice is that teaching and learning are activities of a community. I believe good teaching happens in a collective. Students, colleagues, the mathematical community at large, and even my friends and family have shaped my teaching in fundamental ways. Much of what I do is listen and adapt, stay open to new ideas, and create space for others. A key part of my teaching is de-centering myself, hence my awkwardness about receiving this prestigious award! And so, I recognize this as an award that I share with all the folks who I've interacted with. First of all, this is an award to Bates students, who guide and inspire my teaching, and challenge me and each other to become our best selves in and out of the classroom. This is an award to my colleagues at Bates College, for being collaborators and co-creators in all my teaching. This is an award to all the people and organizations fighting for justice and equity in mathematics, who have inspired me to do the work. This is an award to the MAA and its Northeastern section, who submitted this nomination, a vibrant community filled with brilliant teachers. This is an award to MAA Project NExT, which gave me community when I needed it most, transitioning from being a student to being a college professor, and which continues to give me opportunities to learn more about teaching. This is an award to the University of Texas at Austin, where I first learned that one could teach without standing in front of a classroom-that teaching was more about what your students are learning than how much you know. This is an award to the Universidad Simon Bolivar, where I taught my first classes. And finally, this is an award to my friends and family, who I call on when things are not going well, and who talk me through tricky situations, and who constantly remind me that kindness, justice, and patience are worth the effort.

Biographical Sketch

Adriana Salerno was born and raised in Caracas, Venezuela, where she studied mathematics at the Universidad Simon Bolivar. She moved to the University of Texas at Austin to pursue her PhD in number theory. Her work

explores the intersection of number theory with geometry, physics, coding theory, and cryptography. Adriana loves writing about mathematics and is passionate about equity and inclusion. She co-founded and wrote for the AMS blogs "Ph.D. plus epsilon" and "inclusion/exclusion" for over a decade. Her teaching at Bates College was recognized with the MAA Northeastern Section's teaching award in 2021. She currently serves as a professor of mathematics at Bates College, a program officer for the National Science Foundation, and Vice-President of the MAA.

Paul R. Halmos - Lester R. Ford Awards

The Paul R. Halmos-Lester R. Ford Awards recognize authors of articles of expository excellence published in *The American Mathematical Monthly*. The awards were established in 1964 as the Ford awards, named for Lester R. Ford, Sr., a distinguished mathematician, editor of *The American Mathematical Monthly*, 1942–1946, and President of the Mathematical Association of America, 1947–1948. In 2012, the Board of Governors designated these awards as the Paul R. Halmos–Lester R. Ford Awards to recognize the support for the awards provided by the Halmos family and to recognize Paul R. Halmos, a distinguished mathematician and editor of the *Monthly*, 1982–1986.

Tristram Bogart and Kevin Woods

"A Plethora of Polynomials: A Toolbox for Counting Problems," *The American Mathematical Monthly,* 129:3, 203–222. doi.org/10.1080/00029890.2022.2010487

This article introduces the reader to parameterized families of counting problems whose solutions are polynomial-like. The authors begin with examples that illustrate Ehrhart's theorem (1962) about the number of integral points that lie in dilations of a polytope. They gradually increase the complexity of the counting problems, introducing multiple parameters, quantifiers, and Boolean operations. The numerous examples range across contexts, from buying Chicken McNuggets to chromatic polynomials for graphs to placing pieces on a chess board. All the examples fit under the umbrella of recent theorems of the authors and John Goodrick, which are provided toward the end of the paper.

Response

We are thrilled to receive this award from the MAA. These polynomial-like functions (called quasi-polynomials) pop up in a surprising number of places, in diverse areas of mathematics such as combinatorics, discrete geometry, commutative algebra, optimization, logic, etc. We have enjoyed creating a framework for understanding many of these appearances of quasi-polynomials, and the *Monthly* provided a great opportunity to share our discoveries with other mathematicians. It was a pleasure to write the article, and we are glad that people have enjoyed reading it! Thank you to our collaborators, the *Monthly* editorial staff, and the reviewers for their help with this paper, and thank you to the award committee for this honor.

Biographical Sketches

Tristram Bogart received his PhD from the University of Washington in 2007. After post docs at Queen's University and MSRI/San Francisco State University, he moved to Los Andes University in Bogotá, Colombia, where he is now an associate professor of mathematics.

Kevin Woods received his PhD from the University of Michigan in 2004. After a post doc at the University of California, Berkeley, he moved to Oberlin College in 2006, and he is now a professor of mathematics there. He is happiest when he is with his dog or is taking long walks, but he is sad that his dog cannot keep up on these long walks.

Paul R. Halmos - Lester R. Ford Awards

Paul Thomas Young

"From Madhava-Leibniz to Lehmer's Limit," *The American Mathematical Monthly,* 129:6, 524–538. doi.org/10.1080/00029890.2022.2051405

The starting point of this article is a paper by D.H. Lehmer. In this paper, Lehmer considered a family of infinite series revolving around the central binomial coefficient. Some ideas of this paper came from Apéry's "famous paper" about the irrationality of $\zeta(3)$.

The term "Lehmer limit" is coined by Dyson et al. in their 2012 paper, which was extended in a 2012 paper of Glasser. Their proof used the ideas from Gauss' hypergeometric functions using beta, gamma, and Bessel functions, and Fourier and Hankel transforms.

In the present paper, a short history of Gregory-Leibniz series is given and mentions the credits should also be extended to Madhava for the same series, hence the part of the paper's title. The background of the article is very nice and elementary, incorporating Taylor series, Stirling numbers of the second kind, and the Lehmer polynomials to mention a few. All of these are used in palatable doses, thus making the article accessible to anybody! The author also extended Lehmer's idea to the field of 2-adic numbers in a 2016 talk. Using this extension, his proof of the (complex) Lehmer limit is elementary in the sense that it does not employ the fancy tools mentioned in the previous paragraph. He emphasizes the connection between the Lehmer limit and Madhava-Leibniz formula for π.

It is nice to see how Lehmer's interesting series $S_k(z)$ transforms a power series whose partial sums converge only on a disk into a sequence of rational functions that converge on almost the entire complex plane.

Response

I am grateful to the Halmos-Ford committee and to the MAA for this award celebrating the art of mathematical exposition. In light of the long tradition of excellent articles in the *Monthly*, I am honored and humbled as a recipient. This article was among the most magical journeys on which mathematics has guided me. It certainly owes a great deal to the inspirational articles of Lehmer and of Dyson, Frankel, and Glasser. I am very grateful for the opportunity to share this thrill of discovery with the readership of the *Monthly*. I thank the College of Charleston for its support, and M. Lawrence Glasser for helpful, encouraging and stimulating exchanges.

Biographical Sketch

Paul Thomas Young received his PhD in mathematics from Oklahoma State University in 1988 and is a professor of mathematics at the College of Charleston, where he has taught for the last thirty-two years. The longest day of his life was Pi Day, 3/14/16, a thirty-six-hour day which he began playing bass in a club in Wuhan, and ended, after crossing the International Date Line, doing mathematics at his home in Charleston.

Paul R. Halmos - Lester R. Ford Awards

Alex Rice

"Reciprocal Sums and Counting Functions," *The American Mathematical Monthly,* 129:10, 903–912. doi.org/10.1080/00029890.2022.2115268

This accessible article explores the relationship between counting functions and sums of reciprocals of positive integers. Counting functions count the number of elements in a subset of the natural numbers up to a threshold $x>1$, for instance the function $\pi(x)$ which counts the number of primes up to x. Reciprocal sum functions add the reciprocals of a subset of the natural numbers, for instance the sum of the reciprocals of the primes, up to a threshold $x>1$. Classical and cutting-edge connections between counting functions and reciprocal sums for sets of positive integers are presented using only basic calculus, a well-known harmonic series estimate, and a partial summation formula that uses a discrete-continuous analog of integration by parts. From the extent to which the counting function and the reciprocal sum function inform each other for a set of positive integers, to an exposition on breakthrough work on the convergence or divergence of reciprocal sums of a set of positive integers and the presence of three term arithmetic progressions in the set (i.e., $\{n, n+d, n+2d\}$, $n, d \in \mathbb{N}$), this engaging article guides the reader through this exciting topic.

Response

I am equal parts surprised and grateful to receive this award. I am especially pleased for the recognition of this article on reciprocal sums and counting functions, my first contribution to the *Monthly*, because it includes components whose origins span the entirety of my career as a mathematical writer. For the earliest such example, a substantial chunk of the article's content can be traced to a project completed for an elementary number theory course during my third year as an undergraduate at the University of Georgia, presented to my peers the day after my 21st birthday. To honor that, I will paraphrase the acknowledgements from that paper: "I would like to express my infinite gratitude for the mathematical as well as personal support provided by all my mentors, friends, colleagues, without whom I may still be a journalism major."

Biographical Sketch

Alex Rice is an associate professor of mathematics at Millsaps College in Jackson, MS. He earned his BS in 2008, and his PhD in 2012, from the University

of Georgia, a short trip from his hometown of Roswell in metro Atlanta. Prior to arriving at Millsaps in 2017, he held visiting positions at Bucknell University in Lewisburg, PA, and the University of Rochester in New York. While his personal research lies primarily in arithmetic combinatorics, he also supervises an annual summer research program for Millsaps undergraduates, producing published work in discrete geometry, Ramsey theory, number theory, and hopefully more to come. Alex lives in Jackson with his partner, Sabrina, a psychology professor at Millsaps, and their beloved 16-year-old cat, Cauchy. Alex adopted and named Cauchy as an undergraduate, and she has accompanied him on his entire winding mathematical journey.

Paul R. Halmos - Lester R. Ford Awards

Paul Ramond

"The Abel-Ruffini Theorem: Complex but Not Complicated," *The American Mathematical Monthly,* 129:3, 231–245. doi.org/10.1080/00029890.2022.2010494

The unsolvability of the general quintic using radicals is, in the present day, usually taught as a corollary of the general machinery of Galois theory. However, as the author of this paper points out, Abel's proof of this fact, building on previous work of Ruffini and Lagrange, predates Galois' famous paper by six years. From a pedagogical perspective, the approach of Abel-Ruffini-Lagrange makes it much clearer how one would be led to consider "symmetries" of a solution, beginning with an analysis of the structure of the solutions for the quadratic, cubic, and quartic. This makes Abel's proof an ideal introduction to Galois theory, as well as being of interest for its own sake. This paper gives a delightful exposition of Abel's proof in wonderfully concrete geometrical terms, which is very welcome for those of us who think more easily in pictures than in algebra. As the author mentions, the main idea of this exposition goes back to V. I. Arnol'd and was made more accessible in works by L. Goldmakher and B. Katz. The present author has given an exposition which is both simplified and more self-contained. As such, it is highly recommended as preliminary reading for anyone planning to take, or teach, a course on Galois theory, as well as for anyone curious about what makes the quintic equation so different from the quadratic, cubic, and quartic equations. It is also a wonderful example of how to think about algebraic concepts, such as permutations and commutators, in pictorial terms.

Response

It is a true honour and a very pleasant surprise to receive this prize. The *Monthly* has played a very important role in shaping the researcher that I am today, mostly working in theoretical astrophysics, but always with a strong and keen interest in mathematics. I am thrilled that my elementary proof of this remarkable theorem of Abel and Ruffini's has been recognised for its geometrical elegance and its simplicity of exposition, and I hope that it will convey to its readers the pleasure I have had writing it.

Biographical Sketch

Paul Ramond is a post-doctoral researcher at the Paris Observatory, working mostly in theoretical astrophysics. His research consists in solving the equations of the general theory of relativity for the motion of black holes and very

dense stars orbiting each other in a cosmic ballet, causing spacetime around them to vibrate in harmony and producing gravitational waves. He also has a strong and keen interest in all branches of science, including mathematics, and has been reading through the Monthly since its early years as a physics student at the university. He is involved in the popularisation of science through various media, and enjoys informing people about the elegance of physics, the intricacies of acoustics and the importance of scientific knowledge in our modern world. But most of all, he enjoys cooking, woodworking and gardening with his wife in their solitary Chelles, in the forest of the beautiful countryside of northern France.

Merten M. Hasse Prize

The Merten M. Hasse Prize is for a noteworthy expository paper appearing in an Association publication, at least one of whose authors is a younger mathematician, generally under the age of forty. The prize is to be $1,000, together with a certificate, and is to be awarded at Summer Meetings of the Mathematical Association of America in odd-numbered years. The award is to be made for material published during the four calendar years beginning January 1 five years prior to the time of the award. The prize may be given for a paper which has already been recognized by an Allendoerfer, Ford, or Pólya Award.

Matt Davis, Adam E. Parker, and Daniel A. N. Vargas

"Being Rational About Algebraic Numbers," *The College Mathematics Journal,* 52:5, 327–337. doi.org/0.1080/07468342.2021.1967651

The 2023 Merten Hasse Award for expository writing goes to "Being Rational About Algebraic Numbers"" by Matt Davis, Adam E. Parker, and Daniel A. N. Vargas. This well-written paper generalizes an algorithm known to the ancient Greeks that constructs rational approximations to the square root of 2. The authors bring together many different areas of mathematics—including eigenvectors, limits, and continued fractions—to produce recursively defined rational sequences that converge to any given real algebraic number. Well-chosen examples and interesting background material appear throughout the exposition. Each of the authors contributed significantly to the paper, which started with an observation made by a seventh-grade student and blossomed into the present project following a talk at an MAA conference. The writing is engaging and accessible, perfectly suited to the journal's target audience.

Responses

Matt Davis: We are so honored and pleased to receive the Merten M. Hasse award. The collaboration that led to this paper began at an MAA Ohio Section meeting, and we had no idea quite where it would go when we started! We were consistently surprised and delighted to find the many connected threads in the paper, and we are happy to be able to share them.

Adam Parker: I am very honored to have won the 2023 Merten Hasse Award. I hope readers find both the mathematics and the story connecting the three authors interesting.

Daniel A. N. Vargas: Danny thanks the Emery/Weiner School in general and, in particular, Wylie Stemple for connecting Danny with Dr. Parker and

Jacob Guidry for his inspiration and encouragement in all things mathematical.

Biographical Sketches

Matt Davis received his bachelor's degrees in mathematics and music from Ball State University and attended graduate school at the University of Wisconsin-Madison, completing his PhD under the supervision of Arun Ram. After a postdoctoral fellowship at Harvey Mudd College, he started his current position at Muskingum University. He was a Project NExT Fellow (Brown '13) and has been involved with the Ohio Section of the MAA, including previously serving as Chair of the Program Committee. His mathematical interests include voting theory and combinatorial representation theory.

Adam E. Parker received BS degrees in Mathematics and Psychology from the University of Michigan in 1999, followed by his PhD in Algebraic Geometry from the University of Texas at Austin in 2005. For the past 17 years he has been at Wittenberg University in Springfield, Ohio, where he is now professor of mathematics. A sepia dot (2006–07 Project NExT Fellow), he has been involved in several parts of the MAA, particularly the Ohio Section. He teaches a wide range of courses and often incorporates primary sources in his teaching, especially in differential equations. In his spare time, he enjoys sports, cooking, eating, and spending time with his dog, Rosie.

Daniel A. N. Vargas is an undergraduate student at Harvey Mudd College and expects to get his BS in mathematics in 2025. He is grateful for the mentorship of Jon Jacobsen and Michael Orrison at Harvey Mudd, and for the encouragement and collaboration of his co-authors. Danny is a Harvey Mudd College National Merit Scholar and a Hispanic Scholarship Fund Scholar.

MAA Award for Inclusivity

This award is given annually to a person or persons (not a program) who has performed significant, sustained work to broaden access to mathematics. The award may be made based on one or several activities that exemplify inclusivity and embrace and affirm diversity. The contribution should be such as to influence the community and culture of mathematics or mathematical education in a significant and positive way on a national scale or have that potential.

Rebecca E. Garcia

Sam Houston State University

Rebecca E. Garcia earned a bachelor's degree at Loyola Marymount University of Los Angeles, CA, a master's degree from the University of California at Berkeley and a doctor of philosophy from New Mexico State University. Her research interests are at the intersection of computational and commutative algebra and combinatorics, with contributions in computational algebraic combinatorics, the theory of sandpile groups, and dimension theory of partially ordered sets. In 2017, Garcia advanced to the rank of professor at Sam Houston State University (SHSU), Department of Mathematics and Statistics.

Rebecca Garcia is a mathematician whose career reflects consistent threads of concern for creating new generations of mathematicians that are more diverse and for enriching the mathematical experiences of students at all levels. The choices she made in her professional life are a reflection of her love for her community and her commitment to equity, diversity and inclusion. Her own biographical sketch set the stage for a life of service when she wrote "I am Chamorro, born and raised in the island of Guam, and as far as I know, the first Chamorro to receive a doctoral degree in pure mathematics." This status as "the first" has led her to engage in efforts across the mathematics community to ensure that there will be many more students of diverse backgrounds to follow in her footsteps. For example, she works to grow the community of Indigenous Mathematicians by promoting the collaborative effort IndigenousMathematicians.org, a website to connect, network, and inspire the next generation of Indigenous Mathematicians.

Currently Rebecca Garcia serves as Co-Director of the Mathematical Sciences Research Institute's Undergraduate Program (MSRI-UP). MSRI-UP is a national undergraduate research program that aims to increase the number of underrepresented students obtaining advanced degrees in mathematical science. Garcia was the lead director for two of the past five summer programs at MSRI-UP. In the very recent past, Garcia has taken a leadership role in other funded efforts within the mathematics community that allowed her to

influence the mathematical development of students at the college or pre-college level. In most of these projects she works with professional mathematics organizations of which she is an active member. For example, she is currently co-director of the National Research Experiences for Undergraduates Program for the MAA and also co-director for the Travel Grants for Women in the Mathematical Sciences awarded through the Association for Women in Mathematics. Prior to those she was founder and co-director of the Pacific Undergraduate Research Experience in Mathematics (PURE Math), a five-year mentoring and research program. Other service in this arena includes running Math Circles at SHSU and a preparatory program for local middle school students. These provide just a glimpse of the many efforts through which Rebecca Garcia's commitment to diversity and inclusion has been realized.

Response

I am deeply humbled and grateful to receive the MAA Inclusivity Award. This recognition is also a testament to the work of all those who share my passion for creating a more just, diverse, equitable, and inclusive math community. My heartfelt thanks goes out to everyone who made this recognition possible: my dearest students, colleagues and friends, the MAA, and my beloved family. Their support, encouragement, and guidance have been invaluable, and I could not have achieved this without them. Saina ma'åse todu ham-yu! My experiences as a native Chamorro woman mathematician have given me first hand perspective of the many issues faced by underrepresented in the mathematical sciences: battling negative stereotypes, no sense of belonging, the feeling of isolation, exclusion from opportunities, the struggle in finding resources, being overlooked, the lack of self-confidence, etc. Our roles as mathematicians and educators must expand to address and confront the inequities that have dammed the river of opportunity for marginalized students and colleagues. Dismantling this dam will help restore balance to our community, but there is a great deal of effort and care that we all must take in doing this kind of work—otherwise, a devastating flood of misinformation and resentment will create policies that would further destroy the delicate bonds that keep us from washing out completely. We must each do our part in removing it layer by layer, beginning with learning more about the issues that marginalized groups face, then learning what to do and what not to do in our classrooms, in our meetings, in our hallways, in our lives. Bit by bit, we must tear down the constructs that stifle talent and growth, especially those that lie within our own selves. As I reflect on this honor, I am reminded of the words of Rev. Dr. Martin Luther King, Jr. who writes, "And there comes a time when we must take a position that is neither safe, nor politic, nor popular, but

one must take it because it is right." It is our moral obligation to continue to work to bring diversity, equity, and inclusion in the mathematical sciences in all aspects of our profession and to fight racism in all its forms. It is my hope that my work in promoting inclusivity and diversity in mathematics has made people feel welcomed, valued, and empowered. And that, to me, would be the greatest reward of all..

Biographical Sketch

Rebecca E. Garcia is Professor of Mathematics at Sam Houston State University, Co-Director of the Mathematical Sciences Research Institute Undergraduate Program (MSRI-UP), and Project Director for the MAA National Research Experience for Undergraduates (NREUP). She is a native Chamorro, born and raised in Guam. Her journey in mathematics began at Loyola Marymount University in Los Angeles, CA, where she earned her bachelor's degree. She earned her master's degree from the University of California at Berkeley, and her doctoral degree from New Mexico State University under the direction of Irena Swanson. Her research interests are at the intersection of computational and commutative algebra and combinatorics, with contributions in computational algebraic combinatorics, theory of sandpile groups, and dimension theory of partially ordered sets.

Her record of service is a reflection of her love for her community and a commitment to equity, diversity, and inclusion: from running math circles at SHSU and preparatory programs for local middle school students to directing national undergraduate research programs that aim to increase the number of underrepresented students attaining advanced degrees in the mathematical sciences. She is dedicated to growing the community of indigenous mathematicians beginning with co-directing and founding of the five-year mentoring and research program Pacific Undergraduate Research Experience in Mathematics (PURE Math). Currently, Dr. Garcia is part of the collaborative effort IndigenousMathematicians.org, a website and community dedicated to spotlighting the journey and mathematical contributions of Indigenous mathematicians including Native Americans, Native Alaskans, Native Hawai'ians, and Native Pacific Islanders.

Dr. Garcia is an active member of the American Mathematical Society, the Mathematical Association of America, the Association for Women in Mathematics, the Society for the Advancement of Chicanos and Native Americans in Science. She is the recipient of the 2015 Texas Section MAA Award for Distinguished College and University Teaching of Mathematics. She is the proud mother of three daughters and the loving wife of fellow mathematician, Dr. Luis David Garcia Puente, professor of mathematics and computer science at Colorado College.

George Pólya Awards

The George Pólya Awards, established in 1976, are made to authors of articles of expository excellence published in the *College Mathematics Journal*. The awards are named for George Pólya, who was a distinguished mathematician, well-known author, and professor at Stanford University.

William Q. Erickson

"Haste Makes Waste: An Optimization Problem," *The College Mathematics Journal*, 53:2, 122–133. doi.org/10.1080/07468342.2021.2022955

In "Haste Makes Waste: An Optimization Problem", William Erickson introduces his readers to fictional heroes Ivan and Olga who collaboratively tackle one of the most valuable optimization problems of the common era: How do we minimize our travel time during the morning commute to work? Being excellent mathematicians, Ivan and Olga use all the tools at their disposal: pens, napkins, *Mathematica*, and mediocre coffee. The morning analysis begins by assuming the speed of the traffic is a positive function of time and they focus their energy on determining when one should leave home in order to arrive at work in the minimal amount of time. Using some clever graphical analyses of inverse functions and accumulation functions, they produce an appealing visual interpretation of the underlying critical points and identify the absolute minimum through a numerical approximation. Not quite satisfied with the original simplifying assumption requiring the traffic to always have positive speed, Olga and Ivan next consider the case where traffic speed is allowed to be momentarily zero and, prompted by a quotation from Albert Einstein, conclude their morning of calculations by tackling the more realistic situations of traffic jams (zero speed on intervals of time). These arguments rely on visualizing limits of right and left Riemann sums, fortifying the thought process with more coffee, introducing an infimum function, and exploiting the usefulness of one-sided derivatives.

Both students and instructors will find Erickson's article a joy to read. Not only is it fun and very accessible to undergraduate students, but it is also surprisingly challenging as well. The article incorporates elements of mathematical modeling and demonstrates careful thought about elementary calculus, all the while employing a nice dose of geometric and covariational reasoning. It is a great example of real-world problem solving, challenging the reader with graphical interpretations of the model and providing thoughtful uses of inverse functions and the interpretation of definite integrals.

As with any interesting mathematical presentation, Erickson leaves the reader with more questions than they started with. "Haste Makes Waste"

provides a great starting point to involve undergraduates in mathematical exploration and discovery.

Response

I am deeply honored to receive this award, especially because of my admiration for its namesake, the great George Pólya. I had hoped that my article would offer students yet another example of Pólya's central message: "Your problem may be modest, but if it challenges your curiosity and brings into play your inventive faculties, and if you solve it by your own means, you may experience the tension and enjoy the triumph of discovery." This little traffic problem did in fact occur to me while driving through morning rush hour on the way to calculus class; at first, I intended it as a five-minute warmup for my students, but soon realized it was more involved than expected. The solving and the writing were pure fun (thanks in part to the real-life Olga, whose personality heavily inspired the heroine of the article), and I wish that same joy to teachers and students thinking about the problem. Sincerely grateful to the MAA and the *College Mathematics Journal* for this honor, I would also like to thank my advisor, Jeb Willenbring, who encouraged these side projects during graduate school, along with the anonymous referee for the thoughtful suggestions on the first draft.

Biographical Sketch

William Erickson is a postdoctoral research fellow at Baylor University. After eight years happily teaching middle- and high-school math and Latin, he earned his doctorate from the University of Wisconsin-Milwaukee in 2022, under the supervision of Jeb Willenbring. His research interests lie in representation theory, combinatorics, and algebraic statistics.

George Pólya Awards

Johnner Barrett

"Unlawful Calculations: A Look into Lie's Notebook," *The College Mathematics Journal*, 53:2, 104–115. doi.org/10.1080/07468342.2021.2019550

Many great thinkers throughout history, including mathematicians, have faced challenges and obstacles in their pursuit of knowledge and understanding. And, sometimes, mathematicians and their cryptic-looking notes may catch the unwanted attention of law enforcement officials. In the article "Unlawful Calculations: A Look Into Lie's Notebook," Johnner Barrett explores the mathematical advances that arose out of a collaboration between Sophus Lie and Felix Klein during the Franco-Prussian War—a voyage of mathematical discovery that landed Lie in prison!

This engaging article connects the humanity driving mathematics with concepts from calculus (such as slope or vector fields) and differential equations (such as separation of variables) to geometric notions such as slides. "Blending pictures and calculation in this way to solve problems was exactly what Lie did." (Barrett, p. 107) And that is exactly what Barrett leads the reader to do, providing a missing link between the practice and theory of vector calculus and differential equations. Barrett begins his review of Lie's notebook by carefully explaining how vector fields can be viewed as partial derivatives and associated with certain transformations, or "slides", thereby yielding a geometric interpretation of the technique of separation of variables. In fact, by examining slides that leave certain graphs unchanged, one may discover a clever change of variable to help solve a given ODE. Barrett's article contains many examples and exercises to help train the reader in this geometric approach to differential equations.

"Unlawful Calculations" simultaneously provides motivation for undergraduates to take a course in differential equations while also providing new and useful techniques for those already familiar with such coursework. And, for those faculty who teach advanced courses in applications of mathematics, Barrett's article shows a successful approach to blending history, practice, theory, and a variety of mathematical ideas. Lie's month-long stay in prison gave him "plenty of peace and quiet" to help formulate his ideas. Readers will enjoy the engaging exposition, underlying mathematical connections, and clever geometric reasoning.

Response

Truth is more exciting than fiction. Menzio's and Lie's tales tell themselves. An advisor had told me of Lie's plight. Then my wife pointed out Catherine

Rampell's article about Menzio and slowly, "Unlawful Calculations" came to life. I had prepared a talk involving some of the examples in "Unlawful Calculations" and these combined easily with the story. I am delighted "Unlawful Calculations" has earned the George Pólya Award, highlighting symmetries of differential equations. Visualizing differential equations in this way uses both sides of the brain, a key to success. This is the result of many years of study and connects vector calculus and differential equations in an accessible way. May this inspire people to explore Lie's geometric methods in a law-abiding fashion.

Biographical Sketch

Johnner Barrett began studying group actions and differential equations at Penn State University and continued at Oregon State University. "Unlawful Calculations" is the entertaining product of these studies. Johnner communicates complex concepts in understandable terms, making mathematics accessible to a broad range of people in many disciplines. Beyond mathematics, Johnner is a performing musician, recreational linguist and martial artist.

David P. Robbins Prize

In 2005, the family of David P. Robbins gave the Mathematical Association of America funds sufficient to support a prize honoring the author or authors of a paper reporting on novel research in algebra, combinatorics, or discrete mathematics. The David P. Robbins Prize of $5,000 is awarded every third year at a national meeting of the Association. Papers are judged on quality of research, clarity of exposition, and accessibility to undergraduates. The paper must have been published within six years of the presentation of the prize, and must be written in English. In the event of joint authors, the prize shall be divided equally. The recipient need not be a member of the Association.

Samantha Dahlberg, Angèle Foley, and Stephanie van Willigenburg

"Resolving Stanley's e-positivity of claw-contractible-free graphs." *J. Eur. Math. Soc.* (JEMS) 22 (2020), no. 8, 2673–2696. doi.org/10.4171/JEMS/974

A coloring of the vertices of a graph is called *proper* if no two adjacent vertices have the same color. Proper colorings have been studied since the late 1800s and have a wide range of applications. The *chromatic polynomial* $\chi_G(t)$ counts the number of proper colorings of a graph G with t given colors. In the 1990s Stanley introduced a multivariate generalization of this polynomial: the chromatic symmetric function $X_G(x_1, x_2,\ldots)$, where the variables x_i represent the colors. One obtains χG(t) from $X_G(x_1, x_2,\ldots)$ by setting t of the variables x_i equal to 1 and the remaining ones to 0. Every symmetric function can be written as a linear combination of elementary symmetric functions, and a symmetric function is called *e-positive* if all the coefficients are non-negative when the function is written in the elementary basis. In his seminal 1995 paper, Stanley asked whether the chromatic symmetric function of graphs that were not contractible to a claw were *e*-positive. For twenty-five years this question remained unanswered, until Dahlberg, Foley, and van Willigenburg settled the question negatively by constructing several infinite families of graphs that show that claws and *e*-positivity are unrelated.

Many questions related to the chromatic symmetric function of a graph remain open and constitute very active research problems in algebraic combinatorics. In particular, conjectures related to the *e*-positivity of the chromatic symmetric function are still open and have applications to geometry and representation theory. The paper "Resolving Stanley's e-positivity of claw-contractible-free graphs" by Dahlberg, Foley, and van Willigenburg contains high quality results that are beautifully written and provide an engaging invitation for undergraduates to get involved in research.

Responses

Samantha Dahlberg: When I first received the email, I couldn't believe it. It was only after reading the excited replies from my co-authors, did I actually understand that this was real. I am extremely honored to be receiving this award with my two co-authors Dr. Angèle Foley and Dr. Stephanie van Willigenburg. The paper was the perfect collaborative storm formed from our individual talents and expertise. I am grateful to have met and worked with my coauthors. The entire journey of this paper has been nothing less than joyous, and I am humbled that the MAA has chosen to give this paper an award. I would also like to thank my thesis advisor, Dr. Bruce Sagan, whose patience and encouragement throughout my graduate school education and following mathematical career have been a cornerstone and an example I exemplify when mentoring. Also, a thank you to my other postdoctoral mentors, Dr. Susanna Fishel and Dr. Hemanshu Kaul, who have encouraged me and supported me throughout my journey. Some of the kindling that inspired this paper came from computer searches using Sage, a Python-based language. Computers have come so far since dial-up in the 1990's, the decade Richard Stanley wrote his unanswered question. While dial-up might have been able to do these calculations on the 21 connected graphs on five vertices, I would bet average computers in the 1990s couldn't have done these calculations on the 112 connected graphs on 6 vertices, where we found our first counterexamples to Stanley's question. We found even our modern computers had limits during our follow-up search for a more particular kind of graph. It took three days to search through graphs on eight vertices, with no avail. We predicted it would take three years to finish the search on nine vertices. Ridiculous! However, we decided a weekend worth of searching would give us more information. On that Monday I had a note on my desk from Dr. van Willigenburg saying "Please see me" (My word, I was so very worried. Was I in trouble?). Later that day I meekly entered her office to find a very excited Dr. van Willigenburg. Our computer search turned something out! (My word, I was so very relieved). We now had the makings for a very fun result and paper. Thank you, Steph and Angèle, for the fun times.

Angèle Foley: I am honoured and grateful to receive the Robbins Prize, especially as Robbins' work has inspired much of my own research on alternating sign matrices. I am especially delighted to share this award with co-authors. In graduate school, I was surprised to learn that mathematicians were among the most widely-travelled researchers in the university. Why? Because mathematics runs on the exchange of ideas, at conferences or together at a chalkboard. Such collaboration is the lifeblood of mathematical research, and good research partners are as valuable as they are rare. Good mentors are also rare,

and I appreciate all those who have helped form me into the mathematician I am today. And although I have had many fine mentors, the first and best was my father, Professor Michael Foley, who taught me to love words and who awakened in me the beauty of discovering new things.

Stephanie van Willigenburg: I am extremely grateful and truly elated to receive the 2023 MAA David P. Robbins Prize, which I dedicate to my parents, Judy and Evert van Willigenburg; my sister, Michelle van Willigenburg; and my husband, Niall Christie. Your love and support have propelled me further than I thought possible, and words cannot express my love and gratitude. I am as proud of you as you are of me. Heartfelt thanks also go to my postdoc mentor at Cornell, Lou Billera, for being the most superlative mentor and role-model I could wish for, and for convincing me to become a mathematician. Many thanks are also owed to Richard Stanley for posing the problem and for being so enthusiastic when we shared our solution with you—25 years later. I am indebted to my fantastic research group, my students, and my dear friends at UBC and in algebraic combinatorics for making work feel like play. Equal thanks go to my cherished non-mathematical friends who bring balance to the equation that is my life. Amongst my dear (mathematical) friends are my brilliant coauthors Samantha and Angèle, whom I thank heartily for a most thrilling and delightful collaboration. I will always treasure our epic adventure together and remember how it took our unique combination of skills to crack the problem. Once we had, I truly felt that we were onto something special, and my final earnest thanks go to the MAA and the Robbins Prize Committee for deciding this too.

Biographical Sketches

Samantha Dahlberg is a native Michigander who received her undergraduate degree from Grand Valley State University in 2010. She earned her PhD in mathematics from Michigan State University in 2016. Under the advising of Dr. Bruce Sagan she got to delve into the wonderful world of combinatorics with the irresistible gateway topic of pattern avoidance in permutations. After graduating, Samantha had several postdoctoral positions. The first was at the University of British Columbia, with Dr. Stephanie van Willigenburg, where Samantha explored chromatic symmetric functions as well as snowboarded down the beautiful mountains in Vancouver. The second was at Arizona State University, with Dr. Susanna Fishel, where Samantha dived into the combinatorial and geometric world of reduced words of permutations as well as hiked up desert mountains. The third was at Illinois Institute of Technology, where she is currently employed and is working with Dr. Hemanshu Kaul. There she is surveying various new probabilistic and algebraic techniques to apply to

variations on graph colorings as well as enjoying walking on the other side of Lake Michigan that you can see in Chicago.

Angèle Foley is a professor at Wilfrid Laurier University in Waterloo, Ontario, Canada. She graduated with a BSc (mathematics) from the University of Prince Edward Island, and an MMath (pure mathematics) and a PhD (combinatorics and optimization) from the University of Waterloo. After completing her PhD, she kept moving west, first to Christchurch, New Zealand, and then to Southampton, United Kingdom, before completing the circle by returning to Waterloo. She has worked at Laurier for over 20 years as a professor in the Department of Physics and Computer Science, and she is cross appointed to the Department of Mathematics. Her research interests are in the area of algebraic combinatorics, particularly symmetric functions, tableaux, and all things enumerative. Mathematics is one of her favourite ways of making art, and she devotes herself to creating theorems and proofs that exemplify Keats' aphorism: "Beauty is truth, truth Beauty." A mathematician and a writer, she has published in numerous mathematics and computer science journals and conferences, in economics journals, in a physics journal, and in a literary quarterly.

Stephanie van Willigenburg is a professor of mathematics at the University of British Columbia (UBC) in Vancouver, Canada. Before this, she obtained her PhD from St Andrews University in Scotland and was a visiting assistant professor at Cornell University.

Her many awards for research include winning the Krieger-Nelson Prize from the Canadian Mathematical Society for outstanding research in 2017, and she was inducted as a Fellow of the American Mathematical Society in 2023. She is a dedicated mentor to her research group, has won a Killam Award for teaching, and has given numerous plenary lectures including an Invited Address at the Joint Mathematics Meeting.

Stephanie is also currently the associate dean for equity, diversity and inclusion in science at UBC. She is one of the co-founders of the Algebraic Combinatorics Research Community that fosters mentoring, collaborations and networking for minorities in her area of algebraic combinatorics and related areas.

Daniel Solow Author's Award

This annual award recognizes the author or authors of undergraduate mathematics teaching materials (textbook, lecture notes, computer software, web-based learning materials, video lectures, and others, as approved by the Council on Prizes). The primary criteria for selection will be the material's impact on undergraduate education in mathematics and/or the mathematical sciences (operations research, statistics, computer science, applied mathematics).

David Lippman

MyOpenMath.

MyOpenMath is a free online course management and assessment system for mathematics courses, providing delivery of homework, quizzes, and tests with rich mathematical content, and scoring with immediate feedback on algorithmically generated questions with numerical or algebraic expression answers. It offers a full course management system, including file posting, discussion forums, and a full gradebook. According to the history provided at the system website, "*MyOpenMath* was born out of free, open-source software (IMathAS) developed by David Lippman, a community college math professor in Washington State, starting in 2005. He first ran a state-wide installation of IMathAS. Then, faculty from around the state got involved, and collaboratively contributed much of the content. Out of the Open Course Library project in Washington, several complete courses based on open textbooks were created." In 2011, Lippman launched *MyOpenMath*. In 2017, Lumen created their own version of *MyOpenMath*, called Lumen OHM, to differentiate their supported service from the free, community *MyOpenMath* platform. In 2018, *MyOpenMath* became a non-profit organization, which continues to lead the development of IMathAS and to manage *MyOpenMath*, adding content regularly to expand its utility to dozens of instructors and tens of thousands of students at universities, colleges and community colleges across the world. Today, *MyOpenMath* offers support for 25 published courses, including College Algebra, Trigonometry, Statistics, Calculus, Differential Equations, and Linear Algebra, as well as free access to a library of nearly 1,000,000 mathematics problems.

Letters of support for this award testify to the impact that *MyOpenMath* has had on students and instructors alike. One writer told how "in the past many students would drop [my] class when they found out they could not afford the course materials; now the system is free for them to use. All courses [at my institution] incorporate *MyOpenMath*, saving our students" thousands

of dollars. "It has a super positive effect on all our students." Several spoke about how "easy to use" the platform is, for students and instructors alike: students find navigating the system and monitoring their grades straightforward; instructors mentioned that "with no coding background, [I] was able to modify some questions for a practice exam." A writer confessed that *MyOpenMath* "was a life saver during the pandemic," since both teachers and students could easily work together solving problems in *MyOpenMath* on Zoom. They cited Lippman as "the brainchild of the system," and supporters praised him for his regular contributions of content, especially of helpful videos for students, and for his helpful responsiveness to handle questions. In addition, Lippman has organized a community of support for *MyOpenMath*, including content providers and a forum for finding help with using and authoring for the platform.

The MAA is happy to recognize David Lippman of Pierce College for establishing the *MyOpenMath* platform and offering leadership with authoring and supporting the content that has been made available there. Congratulations on being the 2023 recipient of the MAA Daniel Solow Award!

Response

I am honored to be recognized for my work on *MyOpenMath*. I started the platform over 15 years ago with the simple goal to reduce the cost of educational materials for my students and have been amazed by how it has grown and how a vibrant community of users has developed. I'm proud of the millions of dollars we have saved students on educational materials. I want to give a huge shout-out to the fantastic user community, whose question writing and course building and willingness to share their work with others is what truly has made the platform successful.

Biographical Sketch

David Lippman has been teaching math at Pierce College Fort Steilacoom in Lakewood, Washington since 2000. David has been a strong advocate for and creator of open resources in the mathematics world since 2005, including creating *MyOpenMath* and authoring several open textbooks.

T. Christine Stevens Award for Leadership Development

The MAA's four core values—community, inclusivity, communication, and teaching and learning—clearly explain what's important to us. Named in honor of the co-founder of MAA Project NExT, the MAA T. Christine Stevens Award for Leadership Development is the Association's recognition of the importance of professional development that seeks to build leadership capacity. It is to be awarded annually to a person or persons who has (have) performed significant, sustained work to cultivate and strengthen leadership skills within the mathematical sciences, across the full range of professional activities. The award shall be based on one or several activities that are meant to inspire future or current leaders who are committed to MAA's mission, values, and vision. The contribution should be such as to influence the community and culture of mathematics, statistics, or mathematics education in significant and positive ways on a national scale or have that potential. Rather than being a career or retrospective award, this award celebrates effective leadership efforts and encourages the awardee to sustain their efforts.

Edward F. Aboufadel

Grand Valley State University

Dr. Edward F. Aboufadel earned his PhD from Rutgers University in 1992. He has now served for 28 years at Grand Valley State University (GVSU) holding positions that include Assistant Chair and Chair of the Mathematics Department, and Assistant/Associate Vice President for Academic Affairs.

Dr. Aboufadel has been a leader in the mathematical sciences for almost three decades during which he has contributed to the development of many other leaders. His many accomplishments include chairing the MAA's Committee on Faculty and Departments; serving as Secretary of Section A (Mathematics) for the American Association for the Advancement of Science (AAAS); chairing the AAAS's Subcommittee on Fellows; conceiving and facilitating a leadership development seminar at GVSU (across academic disciplines); modeling collaborative, inclusive, problem-solving leadership; and writing extensively about leadership and leadership development. The AAAS presented Dr. Aboufadel with a special proclamation for the work of the Subcommittee under his leadership. Dr. Aboufadel also worked on multiple leadership-related issues such as the Diversity of the Fellows program, studying the effectiveness of various policies, and writing the revocation policy for breaches of ethics. Dr. Aboufadel has invested considerable time and energy serving the MAA in matters related to leadership in the mathematical community. He led the MAA's Committee on Faculty and Departments through

crafting position statements on important issues such as teaching, resources, and faculty development.

While Dr. Aboufadel has worked to improve policy and practice among leaders in the mathematical community, he has also invested himself personally in the development of future leaders in the community. Dr. Aboufadel is an advocate for inclusive leadership practices that promote diversity, equity, and inclusion. He's been recognized at GVSU for his extensive work supporting LGBTQIA+ students, faculty, and staff through his administrative role in the provost's office. In 2020, he received the GVSU Milton E. Ford LGBT Resource Center Solidarity Award, "given to an individual who demonstrates an exceptional commitment to supporting and advocating for the LGBTQIA+ community." In 2021, as part of his work for the MAA, he contributed to the AAAS's SEA CHANGE program, which "aims to advance institutional transformation in support of diversity, equity, and inclusion, especially in colleges and universities."

Dr. Aboufadel is a prolific author on a wide range of topics, and one of his frequent subjects is academic leadership and related issues. He has multiple pieces in *MAA FOCUS*, including articles on inclusive hiring; on being an associate dean; and a collection of first-person perspectives on teaching and leading during COVID (including his own story). He is co-author of a 2018 MAA task force report titled "The Importance of Mathematical Sciences at Colleges and Universities in the 21st Century." As part of a *PRIMUS* special issue for department chairs, Aboufadel authored "The DEAL Seminar" about a reading seminar he conceived and developed as training for future academic leaders. His piece on leadership recently appeared in The EvoLLLution.

The MAA's T. Christine Stevens Award for Leadership Development is to be awarded to a person who has "performed significant, sustained work to develop leadership within the mathematical sciences, across the full range of professional activities", and Dr. Aboufadel is most deserving of this honor.

Response

I am deeply honored to receive the 2023 MAA's T. Christine Stevens Award for Leadership Development. This work can only be done in collaboration with fantastic, creative colleagues, and I appreciate the opportunities that have arisen over the last several years to collaborate with others on initiatives of the MAA, the American Association for the Advancement of Science (AAAS), my home institution (GVSU), and elsewhere. Working with mathematicians nationally and around the world on MAA issues, it has been clear to me that the keys to being a successful student or expert of mathematics—preparation, study, practice, perseverance—are also essential to becoming an effective and successful leader.

Biographical Sketch

Dr. Edward Aboufadel is associate vice president for academic affairs and professor of mathematics at Grand Valley State University, in Allendale, Michigan. His portfolio of responsibilities includes two primary areas "faculty affairs (e.g., personnel, governance, policy) and academic facilities. Ed earned his PhD in mathematics from Rutgers University and his BS from Michigan State University. He has been at Grand Valley State University since 1995, and he is an applied mathematician whose scholarship revolves around the solution of realistic problems via mathematics. Ed is the recipient of GVSU's Outstanding Teacher Award and the Niemeyer Award. Before joining the provost's office in 2016, Ed served as a department chair for seven years.

Nationally, Ed served for eight years as the Secretary of the Mathematics section of the American Association for the Advancement of Science, and for several years, he was the Chair of a select AAAS committee concerned with their Fellows program, leading to their revocation policy. He is also an active member of the Mathematical Association of America, having chaired the MAA's Committee on Faculty & Departments for several years, as well as editing the In Memoriam pages. Ed is a Fellow of the AAAS.

Ed is currently a member of the board of Voters Not Politicians, the Michigan-based organization that has led on pro-voter ballot initiatives in the state. In the past, he was a Research Information Volunteer for one of the chapters of JDRF in Michigan. In 2022, he ran a spirited campaign for a seat on his local school board. Ed stays in shape running 5K's and 10K's.

Meritorious Service Awards

Certificates of Meritorious Services are presented, on the recommendation of the Sections of the Association, for service at the national level or for service to a Section of the Association. The first such awards were made in 1984. Each year, honorees from several Sections are recognized.

Timothy Comar

Benedictine University

Timothy Comar has been involved with the Illinois Section of the MAA since 2005. He has served in nearly every role on our board including Director at-Large, Section NExT Director, Director for Private Colleges, Chair Elect, Chair, and Past Chair and is serving his second term as Section Representative to the MAA Congress. During his tenure, he has made numerous contributions to committees within our section. He was the lead organizer for two Section meetings and was a co-organizer of the Tri-Section meeting with the Indiana and Michigan Sections. He was an advocate for creating awards to recognize outstanding research by undergraduate and graduate students in our section. He also pushed to recognize those with outstanding teaching early in their career. His initiatives have helped to support and grow our community.

Tim has played a significant role at the national level. He has served as the Chair, Program Chair, and Electronic Communications for the MAA Special Interest Group in Mathematical and Computational Biology (BIO SIGMAA). He has organized or co-organized many Contributed Paper Sessions and Invited Paper Sessions at MAA Mathfest and the Joint Mathematics Meetings for BIO SIGMAA. He has served on the Mathematics Across the Disciplines Subcommittee of the CUPM and on the Committee on Sessions of Contributed Papers. He is currently serving his second term as Chair of the Committee on Sessions of Contributed Papers. As the ISMAA Section Representative to the MAA Congress, he served on the Nominating Committee of the Congress. For Project NExT, he gave a workshop on integrating the life sciences into undergraduate mathematics course and served on a panel on undergraduate research. He is most deserving of this recognition.

Response

I am honored to receive this Award. The MAA has been the main professional organization through which I have been able to grow professionally and establish meaningful relationships throughout my career. This includes my

early experience with Project NExT, participation in many PREP workshops, and roles I have played as a participant, committee member and leader in the ISMAA and MAA. I would like to thank the ISMAA for nominating me for this award. It has been a pleasure serving the ISMAA community, the BIO SIGMAA community, and the greater MAA community. I would like to thank those from whom I have learned and those with whom I have worked for throughout my tenure. A central theme of my work for the MAA has been to give back by creating opportunities for faculty and students for professional development and participation in ISMAA and MAA activities. Seeing others grow through these activities has been most rewarding.

Biographical Sketch

Dr. Timothy D. Comar earned his undergraduate degree in mathematics from Brown University in 1991 and his PhD in mathematics from the University of Michigan in 1996. He is a 1997 Project NExT Fellow (Peach Dot). He has been a professor of mathematics at Benedictine University in Lisle, IL since 2001. Even though he still has a passion for his original research area of low-dimensional topology and hyperbolic geometry, he has devoted most of his career to research and undergraduate education in mathematical biology. He has had many undergraduate research students in mathematical biology, several of whom have earned awards for their work.

Meritorious Service Awards

Tom Richmond

Western Kentucky University

The Kentucky Section of the MAA (KYMAA) is pleased to nominate Thomas A. Richmond of Western Kentucky University (WKU) for the MAA Meritorious Service Award. Since arriving at WKU as a fresh PhD in 1986, Tom has been an outstanding teacher, scholar, and mentor. His publications are extensive and varied. He has held the honor of being a University Distinguished Professor since 2016 and received the WKU Ogden College of Science and Engineering Award for Advising for 2009-2010. He has been active in the MAA both in Kentucky and nationally. His talks at section meetings were always eagerly anticipated. He served as Chair-Elect in 2006–2007, Chair in 2008–2009, and Representative to the national MAA in 2017–2019. Most importantly, Tom always provided a thoughtful, helpful, and wise voice in section deliberations.

Response

It has been a pleasure to be associated with the Kentucky Section for one third of its 106-year history. It is always a joy to work with students and colleagues from the section. I am honored and humbled to be selected for this award.

Biographical Sketch

Tom Richmond has been on the faculty at Western Kentucky University since 1986. He received the Kentucky Section teaching award in 2014. His main areas of research are topology and order. He has published 2 books and around 50 articles, including 15 with student coauthors and 9 in MAA journals.

Meritorious Service Awards

Lori McCune

Western State University

The Missouri Section is pleased to nominate Dr. Lori McCune for the 2023 MAA Meritorious Service Award. We think Lori would be an excellent candidate for this award. She has been a stalwart, hard-working member of the section for 10 years. Here is a list of some of her achievements:

- She regularly presents talks at Section Meetings.
- She was elected as Section Chair Elect in 2014, serving 2014–15. Then she served as Section Chair 2015–2016, then as Past Chair 2016–2017.
- She organized the 2016 Missouri Section Meeting at Missouri Western.
- She has served as Liaison Coordinator from 2019 to 2021, and was elected Section Chair in April 2021, a position she still holds.
- She has been active at the state level on the Corequisite at Scale Taskforce and on the Math Advisory Council as the MWSU representative.
- She served on the Missouri Section Nominating Committee several times.

We wholeheartedly support Dr. Lori McCune's nomination for the Meritorious Service Award; she is more than worthy of it.

Response

I am honored to receive the MAA's Meritorious Service Award Nomination from the Missouri Section. My involvement with the section began early in my career when my department was on deck to host the section meeting and needed someone to step in as Section Chair Elect. I am thankful to my department colleagues who nominated me for that role and I am grateful for the amazing and dedicated members of the section who became my role models in those early years. I am also thankful for the leadership of the colleagues that I have had the pleasure to serve with on the Executive Committee, especially in these recent uncertain pandemic years. Being able to interact with my Missouri colleagues at the annual Spring section meeting is a highlight of each academic year. I am thankful for the opportunity to be involved in such a worthwhile organization and to my colleagues for this nomination.

Biographical Sketch

Lori McCune is an associate professor of mathematics at Missouri Western State University, where she has been since 2012. She earned a BS in math-

ematics from the University of Akron and both an MS and PhD in mathematics from the University of Nebraska-Lincoln. She is currently Chair of the Missouri Section of the MAA and her current research interests include recreational mathematics and the mathematics of voting. She feels lucky to get to collaborate with her mathematician husband, David McCune, in research and in service to the MAA. Together, they have three children: Annalise, Kieran, and Claire, who can usually be found sitting (quietly) in the back of the MAA Missouri Section talks (or dashing through the hallways) at the Spring Meetings.

Meritorious Service Awards

Gary Towsley

State University of New York at Geneseo (emeritus)

The Seaway Section is delighted to be able to express its deep gratitude to Dr. Gary Towsley, Distinguished Teaching Professor Emeritus, State University of New York at Geneseo, via this Meritorious Service Award.

Dr. Towsley served in the section leadership roles of First Vice Chair, Chair Elect, Chair, and Past Chair from 2004–2008. His service continued as Section Treasurer from 2010–2019 and as Governor of the Section from 2012–2015. He even edited our section newsletter, the *Seaway Current*, from 2007–2012. In all ways possible, Gary Towsley has been at the center of the work of the section for over 15 years. His nine years as Treasurer is particularly notable but not just for the longevity of this service. As treasurer, Gary was usually present at executive meetings and could lend his considered experience and wisdom to the current leadership of the section.

At the 75th birthday celebration of the Seaway Section in 2015, Gary Towsley shared with the Seaway membership a historical account of the Section's activities from its beginnings in 1940 to 2015. In preparation for the invited address, Professor Towsley digitized a 50-year history written in 1990 and added an account of the subsequent 25 years. In addition, Professor Towsley compiled an archive listing prior Section meetings and speakers, officers, governors, and awards. His work ensures the history of the section is well preserved for all current and future section members.

Finally, we would like to note Dr. Towsley's considerable service as a regular high-quality speaker. Across several decades, he has delivered numerous invited and banquet addresses at Seaway meetings, he has offered colloquia at many colleges in our section and spoken regularly at national meetings. This is the highest form of service to our discipline—sharing his love and knowledge of mathematics widely with students and faculty.

Response

I am deeply honored to receive this award knowing what the past recipients have brought to the Seaway Section. The section has been one of the centers of my mathematical career and service to the section has never really felt like work.

Biographical Sketch

Gary Towsley is Distinguished Teaching Professor Emeritus at SUNY Geneseo. He retired in June 2020 after teaching at Geneseo for 45 years. He earned

a BS in mathematics from Case Institute of Technology, an MS and a PhD in mathematics from the University of Rochester. His dissertation was in the area of compact Riemann surfaces. While at Geneseo, he taught a wide range of courses in mathematics diverse both in subject and in level. He also team taught many interdisciplinary courses with faculty from other departments at the college. The most notable of these courses was Poetry and Cosmology in the Middle Ages, team taught with Professor Ronald Herzman of the English department. This course was offered 17 times. He received the Seaway Sections Clarence Stephens Award for Excellence in Teaching and the Deborah and Franklin Tepper Haimo Award from the MAA. He has been a member of the Seaway Section for a long time and has enjoyed, (except for rewriting the by-laws), working in and for the section in many different roles.

Meritorious Service Awards

Benjamin Collins

University of Wisconsin – Platteville, now Epic Systems Corporation

The Wisconsin Section of the Mathematical Association of America is pleased to select Dr. Benjamin Collins as its 2023 Meritorious Service Award recipient. Dr. Collins became active in the Wisconsin Section soon after taking a faculty position at the University of Wisconsin – Platteville in 2000. He served three years as Director of Project NExT in Wisconsin (later renamed Section NExT). After that he was appointed the Wisconsin Section Public Information Officer, a position he held for 15 years. As Public Information Officer, Ben went beyond the call of duty. Not only did he

- produce the Section's semiannual newsletter,
- maintain the Section's website,
- communicate regularly with campus liaisons,

he was also instrumental in

- shepherding the Section through two by-laws revisions,
- creating, promoting, and producing most of the interviews for the Know Your Wisconsin Mathematician program, which has featured semiannual interviews of prominent mathematicians in Wisconsin since 2006 (including an interview with himself),
- providing the technological support that allowed the Section to transition to online meeting registration,
- hosting most of the student Face-Off competitions that challenged student teams and entertained faculty at many Wisconsin Section Spring Meetings,
- becoming a self-appointed Wisconsin Section historian in preparation for the MAA centennial celebration and in doing so, compiling a comprehensive historical review of Section officers and activities.

Dr. Collins benefitted the Section with the insights he gained through his six-year membership on the MAA Committee on Sections. In spite of retiring from teaching and taking a position at Epic Systems Corporation, his involvement in the MAA has not ended. He is an active member of the MAA Business, Industry, and Government Special Interest Group (BIGSIG). The Wisconsin Section continues to benefit from Benjamin Collins' involvement.

Response

I am honored to receive the Meritorious Service Award from the MAA. In my years working with the MAA, both in the Wisconsin Section, and on Asso-

ciation-level committees, I have served with many wonderful and dedicated individuals, far too numerous to thank individually. I believe that the strength of the MAA is in its members, and I hope to be able to continue to serve for years to come.

Biographical Sketch

Benjamin V.C. Collins has been a member of the MAA since his days as an undergraduate student at Central College in Iowa, where he received his bachelor's degree in 1986. He earned a master's degree from the University of Michigan in 1988 and received his PhD from the University of Wisconsin-Madison in 1996, under the direction of Paul Terwilliger. He has taught at St. John's University/The College of St. Benedict (MN) and Midland Lutheran College (now Midland University, NE). He served for 20 years on the faculty at the University of Wisconsin-Platteville, before retiring in 2020. He is now a Technical Solutions Engineer for Epic Systems in Verona, Wisconsin. He has served the MAA as Director of Project NExT-Wisconsin (now Section NExT-Wisconsin), Public Information Officer for the Wisconsin Section, a member of the Association's Committee on Sections, and as Vice Chair for Services for the Special Interest Group on Business, Industry, and Government (BIG-SIGMAA)

MAA
MATHEMATICAL ASSOCIATION OF AMERICA

NOMINATIONS OPEN FOR AWARDS AND PRIZES

Nominations due by August 1.

Deborah and Franklin Tepper Haimo Award

Nominations due by October 1.

Teaching, Service, and Research Awards

Henry Alder Award
Certificate of Merit
Mary P. Dolciani Award
Gung & Hu Award
Inclusivity Award
JPBM Communications Award
Meritorious Service Award
Morgan Prize
Selden Prize
Sliffe Awards
T. Christine Stevens Award for Leadership Development

Writing Awards

Allendoefer Award
Beckenbach Book Prize
Chauvenet Prize
Euler Book Prize
Evans Award
Halmos-Ford Award
Hasse Prize
Pólya Award
Robbins Prize
Daniel Solow Author's Award

Info on each award and nomination forms can be found at
maa.org/awards.

Michael Dorff presenting Silvia Bozeman with the inaugural Inclusivity Award at MAA MathFest 2019 in Cincinnati, OH.