



2021 Albert Leon Whiteman Memorial Prize

Judith Victor Grabiner was awarded the Whiteman Memorial Prize at the Annual Meeting of the AMS, held virtually January 6–9, 2021.



Judith Victor Grabiner

Citation

The 2021 Albert Leon Whiteman Memorial Prize is awarded to Judith Grabiner for her outstanding contributions to the history of mathematics, in particular her works on Cauchy, Lagrange, and MacLaurin; her widely recognized gift for expository writing; and a distinguished career of teaching, lecturing, and numerous publications promoting a better understanding of mathematics and the significant roles it plays in culture generally.

Biographical Sketch

Judith Victor Grabiner earned her BS in Mathematics in 1960 at the University of Chicago, where she discovered that history, philosophy, and literature could be just as interesting and intellectually challenging as science. A chance look at a Harvard catalogue revealed the existence of an interdisciplinary field called History of Science, so she decided to study it. She received her MA in 1962 from Radcliffe and her PhD in the History of Science in 1966 from Harvard, with thesis advisors I. Bernard Cohen and Dirk Struik. Her thesis was the beginning of her research program on eighteenth-century analysis. She focused on the use of algebraic inequalities in bounding approximations that revealed the key properties of the derivative, especially in the mean-value theorem, the theory of maxima and minima, power series, and the fundamental theorem of calculus.

After one-year jobs at the University of California, Santa Barbara, and California State University, Los Angeles, she became a professor of history at California State University, Dominguez Hills, where she received the Outstanding

Professor award in 1975. She was copresident of the West Coast History of Science Society (1973–1975), Book Review Editor of *Historia Mathematica* (1976–1988), and Chair of the Southern California Section of the Mathematical Association of America (MAA; 1982–1983). In 1985 she joined the mathematics faculty at Pitzer College in Claremont, California, where she held the Flora Sanborn Pitzer Chair in Mathematics until retiring in 2016. She has been a Visiting Scholar at the University of Leeds, the University of Edinburgh, Cambridge University, the Australian National University, and the University of Copenhagen. In 2013 she became a Fellow of the American Mathematical Society.

Grabiner's publications include three books: *The Origins of Cauchy's Rigorous Calculus* (1981), *The Calculus as Algebra* (1990), and *A Historian Looks Back: The Calculus as Algebra and Selected Writings* (2010), which won the Beckenbach Book Prize from the MAA in 2014. She has also published over forty refereed articles, three of which have won Carl Allendoerfer awards for articles of expository excellence in the *Mathematics Magazine*: "The Changing Concept of Change" (1984); "The Centrality of Mathematics in the History of Western Thought" (1988); and "Descartes and Problem-Solving" (1990). Four of her papers have won the MAA's Paul R. Halmos–Lester R. Ford award for articles of expository excellence in the *American Mathematical Monthly*: "Who Gave You the Epsilon? Cauchy and the Origins of Rigorous Calculus" (1984); "Was Newton's Calculus a Dead End?" (1998); "Newton, Maclaurin, and the Authority of Mathematics" (2005); and "How Did Lagrange 'Prove' the Parallel Postulate?" (2010). Her other articles include "Computers and the Nature of Man: A Historian's Perspective on Controversies about Artificial Intelligence" (1986), "Some Disputes of Consequence: Maclaurin among the Molasses Barrels" (1998), and "The Role of Mathematics in Liberal Arts Education" (2014).

Grabiner has given invited talks about her work in many international and national meetings, and she has been

both a Sigma Xi National Lecturer and an MAA National Lecturer. She is also the author of a highly rated course, "Mathematics, Philosophy, and the 'Real World,'" in the Teaching Company's Great Courses series. She received the national Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching from the MAA in 2003.

Since retiring, she has been tutoring at-risk elementary school students in mathematics, working in voter outreach, still doing research though at a slower pace, and reading far too many detective novels than is good for her.

Response from Judith Victor Grabiner

A response is a way to say thank you, and I shall do so. It is also the place to reflect on how extraordinarily lucky I've been to get where I've gotten and therefore on how important it is for the mathematics profession, for education in general, and for society as a whole to enhance opportunities for all to learn mathematics, regardless of wealth, ethnicity, religion, gender, sexual orientation, or disability.

So thanks to so many. My parents and high school teachers got me started. A National Merit Scholarship made it possible for me to attend the University of Chicago. At Chicago, Professor Saunders Mac Lane was the best mathematics teacher I ever had, and Humanities Professor Herman Sinaiko opened my eyes to the intellectual rigor of the humanities.

My fellow graduate students from different backgrounds at Harvard taught me about their worlds. Uta Merzbach was a great female role model for me at a crucial time. Dirk Struik of MIT taught me that a mathematician is a social being even when thinking about lines in hypercones in 7-dimensional space, and my mentor I. Bernard Cohen taught me to think like a historian.

The experimental college at Cal State Dominguez Hills gave me the freedom to design my own courses. The Association for Women in Mathematics provided a supportive community. The MAA has not only given me personal honors, it has been crucial to advancing the teaching of university-level mathematics. Barbara Beechler, the founder of Pitzer College's math program, figured out that I would be a good fit there and encouraged me to apply for their job. My Pitzer colleagues were willing to listen to my ideas about teaching mathematics and about the role of mathematics in liberal arts education.

My husband, Sandy Grabiner, has supported me in my career from the beginning, since our first date, when he enjoyed learning that Descartes, Newton, Maclaurin, Cauchy, and Weierstrass were more than just the names of theorems. And my students taught me how to teach and how to always be open to questions. They also gave me insights from their differing backgrounds, both into history and into the variety of ways people think about mathematics.

Above all, I thank the AMS and the Whiteman prize committee for admitting me to the august company of past recipients Tom Hawkins, Harold Edwards, Jeremy Gray, Joe Dauben, Umberto Bottazzini, and Karen Parshall, and for giving me this chance to say how important it is to open more doors for more people to enter the world of mathematics.

About the Prize

The Whiteman Prize is awarded every three years to recognize notable exposition and exceptional scholarship in the history of mathematics. The prize was established in 1998 using funds donated by Mrs. Sally Whiteman, in memory of her husband, the late Albert Leon Whiteman. The prize carries a cash award of US\$5,000.

The Whiteman Prize is awarded by the AMS Council acting on the recommendation of a selection committee. The members of the 2021 prize selection committee were:

- Dave Bayer
- Kim L. Plofker
- John Colin Stillwell (Chair)

A list of the past recipients of the Albert Leon Whiteman Memorial Prize can be found at https://www.ams.org/prizes-awards/pabrowse.cgi?parent_id=4.

Credits

Photo of Judith Victor Grabiner is courtesy of Pitzer College.