2016 Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student

Amol Aggarwal was awarded the 2016 Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student at the 122nd Annual Meeting of the AMS in Seattle, Washington, in January 2016.

Citation

Amol Aggarwal is the recipient of the 2016 AMS-MAA-SIAM Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student for his outstanding research in combinatorics. He has four published papers, which have appeared in *Journal of Combinatorial Theory, Series A; European Journal of Combinatorics; Discrete Mathematics*; and *Electronic Journal of Combinatorics*. His numerous letters of support describe these papers as being of postdoctoral caliber.

Aggarwal participated in the 2014 University of Minnesota–Duluth Research Experience for Undergraduates, in the 2013 MIT Undergraduate Research Opportunities Program, and in the 2012 MIT Summer Program for Undergraduate Research. The research Aggarwal conducted as a high school student under the direction of Professor János Pach has recently been published.

Aggarwal has also been awarded the National Science Foundation Graduate Research Fellowship and the National Defense Science and Engineering Graduate Fellowship, and he was named a finalist for the Hertz Foundation Fellowship. As a high school student, he was a finalist in the 2011 Intel Science Talent Search and a 2010 Siemens Research Competition semifinalist.

Biographical Sketch

Amol Aggarwal was born and raised in New York until the age of eleven. He then moved with his family to California, where he went to middle school and high school. It was in high school when Amol was introduced to mathematical research, after unwittingly working on an unsolved question in combinatorial geometry about convex point configurations. After graduating from Saratoga High School in 2011, Amol attended the Massachusetts Institute of Technology, where he had the privilege of learning a diverse selection of mathematical topics from experts in the field. As a student at MIT, Amol pursued several research projects in different areas, including integrable probability, random matrices and map enumeration, and simultaneous core partitions. Recently having graduated from MIT with a major in mathematics, Amol is currently a doctoral student at Harvard University, where he is planning to focus on probability theory.

Response from Amol Aggarwal

I am deeply honored to receive the 2016 Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student, and I express my profound gratitude to Mrs. Frank Morgan and the AMS-MAA-SIAM committee, both for selecting me for this award and for inspiring young mathematicians to pursue research. The list of people who have influenced my perspective towards mathematics goes well beyond the capacity of this response, but please permit me to mention a few names regardless. First,

Amol Aggarwal

I would like to thank my research advisors. These include János Pach, who selflessly agreed to advise me in my first research project when I was still in high school; Joe Gallian, who generously invited me to participate in his REU; and Alexei Borodin, who has consistently offered me both practical advice and academic knowledge throughout my time at MIT. Second, I would like to thank several mathematicians who had the time and patience to talk to me about their fields of interest. These include Victor Guillemin, Ivan Corwin, Jacob Fox, Alan Edelman, Rishi Nath, and Michael La Croix. Third, I thank my friends, whose kindness, creativity, and joy for life continues to inspire me. Finally, my deepest thanks go to my family, whose everlasting support has shaped who I am today.

Citation for Honorable Mention: Evan O'Dorney

Evan O'Dorney is recognized with an Honorable Mention for the 2016 Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student. He has several published papers in the areas of number theory, algebra, and combinatorics, which have appeared in *Integers, Linear Algebra and Its Applications, Semigroup Forum*, and *Annals of Combinatorics.*

O'Dorney has participated in REUs at Emory University and the University of Minnesota–Duluth. He is a recipient of the Churchill Scholarship and is a three-time Putnam Fellow. As a high-school student, he was a four-time medalist at the International Mathematical Olympiad, a three-time winner of the U.S. Mathematical Olympiad, and the national champion of the 2011 Intel Science Talent Search.

Biographical Sketch

Evan O'Dorney, a resident of Danville, California, was fascinated by numbers from an early age and gained an appreciation for mathematics from many popular books, especially the works of Martin Gardner. Throughout high school, he enrolled in college-level math courses at the University of California Berkeley. He received his BA in mathematics summa cum laude from Harvard University in 2015. He is currently attending the one-year "Part III" program at Cambridge University, UK, after which he plans to pursue a PhD at Princeton University under Manjul Bhargava. His nonmathematical pursuits include composing and improvising on the piano and organ and praying the rosary.

Response from Evan O'Dorney

It is a privilege to be counted among the young mathematicians that AMS, MAA, and SIAM honor through the institution of the 2016 Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student. I thank the many advisors who made my undergraduate research career possible, especially Lek-Heng Lim (who introduced me to mathematical research in the tenth grade), Zvezda Stankova, Ravi Vakil, Brian Conrad, Joe Gallian, Ken Ono, David Zureick-Brown, Joe Harris, Benedict Gross, and Noam Elkies.

About the Prize

The Frank and Brennie Morgan Prize is awarded annually for outstanding research in mathematics by an undergraduate student (or students having submitted joint work). Students in Canada, Mexico, or the United States or its possessions are eligible for consideration for the prize. Established in 1995, the prize was endowed by Mrs. Frank (Brennie) Morgan of Allentown, Pennsylvania, and carries the name of her late husband. The prize is given jointly by the AMS, the Mathematical Association of America (MAA), and the Society for Industrial and Applied Mathematics (SIAM), and it carries a cash award of US$1,200.

Recipients of the 2016 Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student are chosen by a joint AMS-MAA-SIAM selection committee. For the 2016 prize, the members of the selection committee were the following individuals:

- Bela Bajnok
- Jacob Fox
- Johnny Guzman
- Steven J. Leon
- Susan E. Martonosi (Chair)
- Sarah Dianne Olson

The complete list of recipients of the Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student follows.

1995	Kannan Soundararajan
1996	Manjul Bhargava
1998	Jade Vinson (1997)
1999	Daniel Biss
2000	Sean McLaughlin
2001	Jacob Lurie
2002	Ciprian Manolescu
2003	Joshua Greene
2004	Melanie Wood
2005	Reid Barton
2006	Jacob Fox
2007	Daniel Kane
2008	Nathan Kaplan
2009	Aaron Pixton
2010	Scott Duke Kominers
2011	Maria Monks
2012	John Pardon
2013	Fan Wei
2014	Eric Larson
2015	Levent Alpoge
2016	Amol Aggarwal