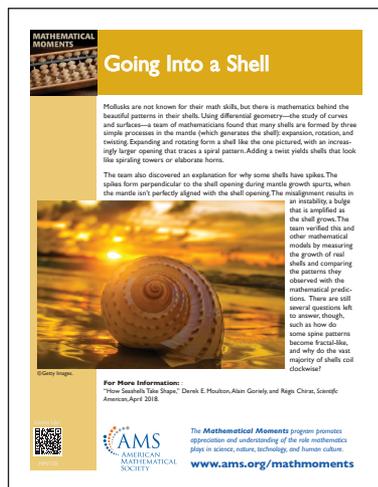


# Inside the AMS

## 2019 Class of Fellows of the AMS Selected

A list of those who have been selected for the 2019 Class of Fellows of the AMS will appear on the AMS website prior to November 1, 2018. The list will be located at: [www.ams.org/profession/new-fellows](http://www.ams.org/profession/new-fellows).

## From the AMS Public Awareness Office



**MATHEMATICAL MOMENTS**  
**Going into a Shell**

Mollusks are not known for their math skills, but there is mathematics behind the beautiful patterns in their shells. Using differential geometry—the study of curves and surfaces—a team of mathematicians found that many shells are formed by three simple processes in the mantle (which generates the shell) expansion, rotation, and twisting. Expanding and rotating form a shell like the one pictured, with an increasingly larger opening that traces a spiral pattern. Adding a twist yields shells that look like spiraling towers or elaborate horns.

The team also discovered an explanation for why some shells have spikes. The spikes form perpendicular to the shell opening during mantle growth spurts, when the mantle isn't perfectly aligned with the shell opening. The misalignment results in an instability, a bulge that is amplified as the shell grows. The team verified this and other mathematical models by measuring the growth of real shells and comparing the patterns they observed with the mathematical predictions. There are still several questions left to answer, though, such as how do some spiral patterns become fractal-like, and why do the vast majority of shells coil clockwise?

**For More Information:**  
"How Seashells Take Shape" Derek E. Moulton, Alan Gornitzky and Regis Chira, *Scientific American*, April 2018

The **Mathematical Moments** program promotes appreciation and understanding of the role mathematics plays in science, culture, technology, and human culture.  
[www.ams.org/mathmoments](http://www.ams.org/mathmoments)

AMS  
AMERICAN MATHEMATICAL SOCIETY

### Mathematical Moments

Recent topics include the mechanical forces behind the shapes of shells, the Netflix Challenge, *Hidden Figures*, and bus bunching. You can hear a podcast interview with Derek Moulton, University of Oxford, on the shapes of shells, as well as many other interviews, and download the free PDFs at [www.ams.org/mathmoments](http://www.ams.org/mathmoments).

### AMS on Social Media

We invite AMS members to follow AMS on Facebook ([facebook.com/amermathsoc](https://facebook.com/amermathsoc)), Twitter ([twitter.com/amermathsoc](https://twitter.com/amermathsoc)), YouTube ([youtube.com/user/amermathsoc](https://youtube.com/user/amermathsoc)), LinkedIn ([linkedin.com/company/American-mathematical-society/](https://linkedin.com/company/American-mathematical-society/)) or Instagram ([Instagram.com/amermathsoc/](https://Instagram.com/amermathsoc/)) to:

- See our posts as one way to keep abreast of mathematics, people, events, and AMS news
- Like, comment, share, and retweet posts to be an “ambassador” for the AMS and mathematics.

—Annette Emerson and Mike Breen  
AMS Public Awareness Officers  
[paoffice@ams.org](mailto:paoffice@ams.org)

## AMS Congressional Fellowship

The AMS, in conjunction with the American Association for the Advancement of Science (AAAS), will sponsor a Congressional Fellow from September 2019 through August 2020. The Fellow will spend the year working on the staff of a Member of Congress or a congressional committee, as a special legislative assistant in legislative and policy areas requiring scientific and technical input.

The Fellowship is designed to provide a unique public policy learning experience, to demonstrate the value of science–government interaction, and to bring a technical background and external perspective to the decision-making process in the Congress.

An AMS Fellowship Committee will select the AMS Congressional Fellow. The Fellowship stipend is US\$81,548 for the Fellowship period, with allowances for relocation and professional travel and a contribution toward health insurance. Applicants must have a PhD or an equivalent doctoral-level degree in mathematics by the application deadline.

For information and to apply, go to [bit.ly/AMSCongressionalFellowship](https://bit.ly/AMSCongressionalFellowship). The deadline for applications is **February 15, 2019**.

—AMS Office of Government Relations

## Jump into Science Communication

With placements at national print media such as *National Geographic*, *Wired*, *Scientific American*, the *Washington Post* and *LA Times*, national radio and TV stations such as NPR and CNN, TV programs such as *NOVA*, and local newspapers and radio and TV stations, the AAAS Mass Media Fellowship is the premier experience for mathematicians who want to try out science communication.

During the ten-week Fellowship, scientists, mathematicians, and engineers are placed in newsrooms around the country to report on today’s headlines in the fast-paced world of science journalism.

Fellows observe and participate in the process by which events and ideas become news, improve their communication skills by describing complex technical subjects in a manner understandable to the lay public, and increase

their understanding of editorial decision making and how information is effectively disseminated. They go through a short boot camp of journalism training at the beginning of summer, keep in touch with each other throughout the summer, and meet again at the end to wrap up the fellowship.

After the Fellowship, alumni participate in science communication in a variety of career fields, including science journalism, advocacy, education, and community outreach. In the forty-four-year program history, the more than 700 fellows have become renowned leaders in the scientific community, award-winning TV and documentary producers, authors, producers, and leaders in cutting-edge science communication.

The AMS sponsors one Fellowship placement each year. This year's Fellow, Yen Duong, finished her PhD in geometric group theory at University of Illinois at Chicago in fall 2017. Over her summer at the *Raleigh News and Observer*, Yen published more than twenty articles explaining science to the lay public. From a computer science paper (which included sigma algebras) to psychology papers that used statistical distributions and models to animal science stories, her topics varied in terms of mathematical content but held one thing in common: a respect for and foundation in evidence and logical thinking.

Read about the rest of the 2018 Fellowship class at [www.aaas.org/page/2018-mass-media-fellows](http://www.aaas.org/page/2018-mass-media-fellows). See more information about the AMS Mass Media fellows at [www.ams.org/programs/ams-fellowships/media-fellow/massmediafellow](http://www.ams.org/programs/ams-fellowships/media-fellow/massmediafellow).

Applications may be filed at either URL for the AMS-AAAS 2019 Mass Media Fellowship during the application period, **October 16, 2018–January 15, 2019**.

—*Rebekah Corlew, PhD*  
*Project Director, Public Engagement, AAAS*

## Deaths of AMS Members

THEODORE W. ANDERSON, of Stanford, California, died on September 17, 2016. Born on June 5, 1918, he was a member of the Society for 76 years.

I. EDWARD BLOCK, of Elkins Park, Pennsylvania, died on February 18, 2015. Born on August 8, 1924, he was a member of the Society for 66 years.

ALAN COBHAM, of East Granby, Connecticut, died on June 28, 2011. Born on November 4, 1927, he was a member of the Society for 57 years.

GORDON MCCREA FISHER, of Ridgefield, Connecticut, died on February 27, 2016. Born on October 5, 1925, he was a member of the Society for 61 years.

MICHAEL B. FREEMAN, of Ridgefield, Washington, died on November 1, 2016. Born on July 5, 1936, he was a member of the Society for 55 years.

WOLFGANG GASCHUTZ, of Kiel, Germany, died on November 7, 2016. Born on June 11, 1920, he was a member of the Society for 61 years.

JOHN GREGORY, of Ithaca, New York, died on April 27, 2012. Born on October 7, 1940, he was a member of the Society for 41 years.

HAROLD B. HANES JR., of Richmond, Indiana, died on April 19, 2008. Born on April 10, 1931, he was a member of the Society for 49 years.

ROGER D. JOHNSON JR., professor, Georgia Institute of Technology, died on April 22, 2016. Born on March 27, 1930, he was a member of the Society for 64 years.

BJARNI JONSSON, of Cincinnati, Ohio, died on September 30, 2016. Born on February 15, 1920, he was a member of the Society for 70 years.

JOSEPH B. KELLER, professor, Stanford University, died on September 7, 2016. Born on July 31, 1923, he was a member of the Society for 56 years.

PAUL LEVY, of Brooklyn, New York, died on March 28, 2016. Born on May 25, 1941, he was a member of the Society for 49 years.

SIBE MARDESIC, of Croatia, died in 2016. Born on June 20, 1927, he was a member of the Society for 58 years.

JOHN D. NELLIGAN, of Mt. Prospect, Illinois, died on September 12, 2016. Born on September 10, 1936, he was a member of the Society for 51 years.

NANCY C. OGDEN, of Austin, Texas, died on August 23, 2012. Born on July 30, 1927, she was a member of the Society for 42 years.

ROBERT E. REED, of Voorheesville, New York, died on July 1, 2002. Born on April 27, 1929, he was a member of the Society for 41 years.

CRIS T. ROOSENRAAD, of Northfield, Minnesota, died on October 24, 2016. Born on July 28, 1941, he was a member of the Society for 50 years.

JOSEPH J. ROTMAN, professor, University of Illinois, died on October 10, 2016. Born on May 26, 1934, he was a member of the Society for 59 years.

FRANK S. SCALORA, of Bronxville, New York, died on October 25, 2013. Born on June 16, 1927, he was a member of the Society for 63 years.

PAUL C. SHIELDS, of Cotati, California, died on September 15, 2016. Born on November 10, 1933, he was a member of the Society for 58 years.

M. STEPHANIE SLOYAN, professor, Georgian Court University, died on December 21, 2007. Born on April 18, 1918, she was a member of the Society for 44 years.

ALEXANDER VASIL'EV, professor, University of Bergen, died on October 20, 2016. Born on April 1, 1962, he was a member of the Society for 24 years.

WILLIAM A. VEECH, professor, Rice University, died on August 30, 2016. Born on December 24, 1938, he was a member of the Society for 55 years.

MARCELLUS E. WADDILL, of Winston-Salem, North Carolina, died on August 24, 2016. Born on April 28, 1930, he was a member of the Society for 45 years.

JEROME H. WEINER, professor, Brown University, died on September 19, 2016. Born on April 5, 1923, he was a member of the Society for 67 years.

ROBERT J. WISNER, of Las Cruces, New Mexico, died on October 29, 2016. Born on November 18, 1925, he was a member of the Society for 28 years.