

# The Line

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Connecting supporters and beneficiaries of the American Mathematical Society

## HALES ESTABLISHES BERTRAND RUSSELL PRIZE



Bertrand Russell, courtesy Wikimedia Commons

Professor Thomas C. Hales of the University of Pittsburgh has established the Bertrand Russell Prize of the AMS, which recognizes research or service contributions of mathematicians or related professionals that promote good in the world. Professor Hales talked about his inspiration for the prize.

### What about Bertrand Russell inspired you to endow a prize in his name?

Russell wrote that in his youth, “mathematics was my chief interest and my chief source of happiness.” Yet, his legacy extends far beyond mathematics. On the whole, Russell’s writings promote rational analysis in pursuit of humanitarian ends. The prize has related aims.

### If you were to award a prize to Russell, which of his achievements would you recognize?

I would award Russell a prize for his efforts during the Cold War to warn the world of the dangers of nuclear catastrophe.

The Russell–Einstein manifesto, published in 1955, led to the founding of the Pugwash Conferences, an organization devoted to the reduction of nuclear weapons and to the social responsibility of scientists. Pugwash and Joseph Rotblat (a signatory of the manifesto) shared the 1995 Nobel Peace Prize for their work.

### In what ways have your mathematics intersected Russell’s?

Bertrand Russell is the father of type theory. Historically, there were two resolutions of Russell’s paradox: axiomatic set theory and the theory of types. There is a direct chain of influence from Russell’s type theory to Alonzo Church’s simply-typed lambda calculus to Dana Scott’s logic of computable functions (LCF) to higher-order logic (HOL). The formal proof of theorems in HOL is one of my primary research interests.

### What is an example from the past of a person, mathematical achievement, or application you feel might warrant this prize?

I will pick an old example that has not lost its relevance.

Norbert Wiener, the creator of cybernetics and the mathematical theory of communication (with Shannon), campaigned for the ethical use of these technologies. With remarkable prescience, Wiener educated the public about social disruptions (such as widespread unemployment) that would result from automation unless mitigated through sound public planning.

*The first award will be made in January of 2018. Nomination dead-line: June 30, 2017. See [www.ams.org](http://www.ams.org) for details.*

## SCHOLARS HONOR ULF GRENANDER BY CREATING NEW PRIZE

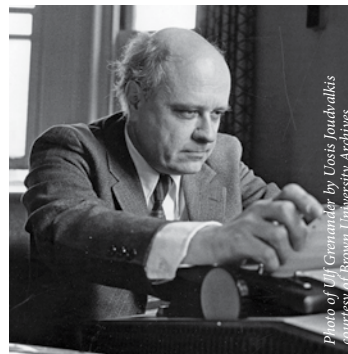


Photo of Ulf Grenander by Uosis Joubavalkis, courtesy of Brown University Archives

Ulf Grenander (1923–2016) worked in many areas but was known for his development and use of stochastic models in what he called “pattern theory” and for applying the models widely, e.g. to the music of marching bands, the shapes of hands, or the structure of historical events. “For me, the most memorable thing about Ulf is his audacity in seeking

stochastic models for the most diverse sets of phenomena,” says colleague David B. Mumford.

Stuart A. Geman, Donald E. McClure, and David Mumford have established the Ulf Grenander Prize in Stochastic Theory and Modeling to honor Grenander’s work and to provide recognition of innovation and excellence for work in the areas of probabilistic modeling, statistical inference, or related computational algorithms.

Naming a prize in this area of study for Grenander is apt, as McClure points out, in that “a hallmark of Grenander’s research was its focus on building a rigorous mathematical foundation for the new theories he was developing.” Adds Geman, “What I most admire is the remarkable marriage of stochastics and combinatorics in pattern theory.” One can see evidence of Grenander’s devotion to mathematics even in his obituary, which appeared in the *Providence Journal* in May 2016: “Elegant mathematical proofs will be accepted in lieu of flowers.”

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## HAVE AN IDEA FOR A PRIZE OR AWARD?

If you are thinking of endowing a new prize or award, contact Robin Marek at [robin.marek@ams.org](mailto:robin.marek@ams.org), (401) 455–4089, or any AMS officer. Gifts of any size are welcome and encouraged to augment existing prize and award endowments.



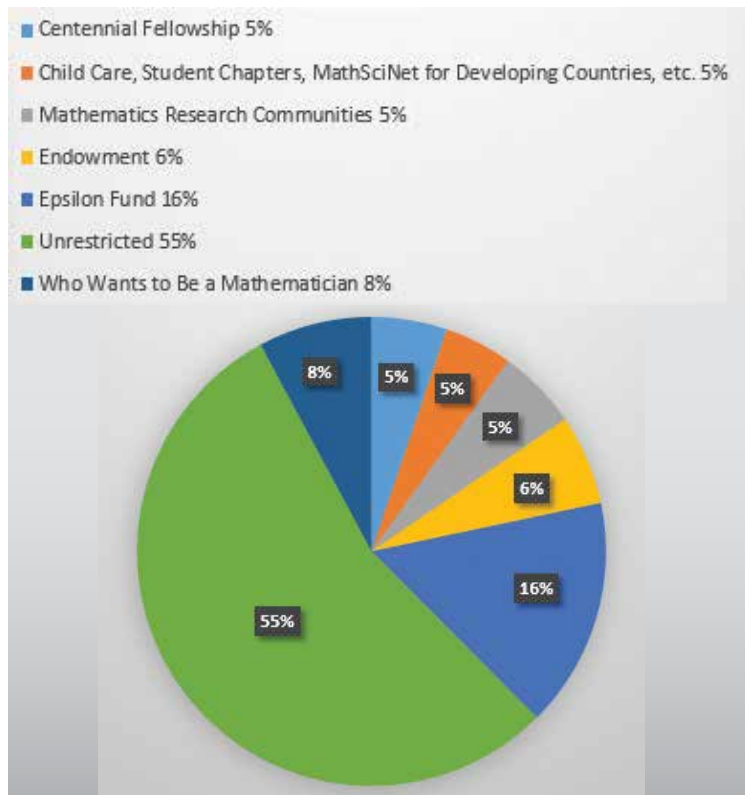
## LONG-TIME DONORS SEE AMS THROUGH CHANGING TIMES

Mathematicians often work on problems for years at a time. The AMS has benefitted from a similar level of commitment from our donors. To the long-time donors who have helped the Society adapt to the changing needs of the mathematics community: *Thank you!*

| # of donors | # years as donors | projects supported by donors   |
|-------------|-------------------|--|
| 2218        | 10 years          | 2007 - Mathjobs.org  |
| 1186        | 15 years          | 2002 - Epsilon Fund for Young Scholars Programs  |
| 630         | 20 years          | 1997 - MathSciNet for Developing Countries (originally National Data Access Fee program) |
| 176         | 25 years          | 1992 - fSU (former Soviet Union) Fund  |

## 2016 YEAR-END GIVING HAD WIDE REACH

AMS donors support mathematics in many ways. Below is a snapshot of how they directed their year-end giving in 2016. On behalf of all the beneficiaries: *Thank you!*



## SUPPORTING MATHEMATICS ADVOCACY IN WASHINGTON, DC



Karen Saxe began as director of the AMS Washington DC office January 1, 2017. She explains how donors help the advocacy work of the DC office.

**Donations to the Area of Greatest Need help fund efforts such as the AMS-AAAS Congressional Fellowship. How are donor dollars making a difference?**

The AMS-AAAS Congressional Fellowship is a key way the AMS has a voice in Washington. Fellows work as legislative assistants to a member of Congress or to congressional committees and provide input regarding STEM-related policy. As a past Fellow, I advised Hill colleagues about mathematics, its role in higher education, and how it is often the root of scientific and technological progress.

**Beyond philanthropic giving, how can mathematics professionals donate their time and energy to government advocacy? How might students best use their position and voices?**

Congressional members are rightly concerned about the economic health of their home districts and states. The economic welfare of a state is tied to the role that universities play, and mathematicians contribute significantly to college educations. Indeed, failure in mathematics courses is the number one reason that students fail to graduate college. So, mathematicians play a key role in the graduation rates; this in turn affects their local economy. Mathematicians and students can visit the local offices of their members of Congress to tell this story. Congressional members love to meet students and hear stories.

**One of your mathematical interests is redistricting [Notices, Dec 2016]. In what ways can mathematicians and related professionals be useful to such government work?**

I served in Minnesota on the Citizens Redistricting Commission following the 2010 census. Redistricting can be viewed as a mathematical problem (indeed, the only three criteria that all states must follow, according to Supreme Court rulings, are mathematical ones). There are many issues that arise at town council meetings all across the country that would benefit from mathematicians' and other scientists' expertise; in Minnesota these range from districting to wind farm placement to school bus routing.

Dr. Saxe encourages your involvement and looks forward to communicating the Washington DC office's work to all AMS members, friends, and donors. See [www.ams.org/policy](http://www.ams.org/policy).



## PHILANTHROPY AT WORK AT THE 2017 JOINT MATHEMATICS MEETINGS

Your gifts made great things happen at the 2017 JMM!

*Who Wants to Be a Mathematician* highlighted the next generation of mathematicians. Child Care Grants helped 63 families.



Unrestricted gifts aided Mathemati-con and Employment Center



and helped make time with colleagues and friends possible.



Photos by Kate Awtrey,  
Atlanta Convention Photography



# Thank you.

## GREEN FAMILY FUND WILL SUPPORT INCLUSION AND DIVERSITY

Starting in 2018, recipients of the Mathematics Programs That Make a Difference Award will receive an amount of US\$1,000 along with their citation, thanks to the Mark Green and Kathryn Kert Green Fund for Inclusion and Diversity.

UCLA Distinguished Research Professor Mark Green and his wife, the artist Kathryn Kert Green, endowed this new family fund at the AMS in order to provide flexibility over time in promoting diversity and inclusiveness in mathematics.

Professor Green's work to support the mathematics community has kept pace with his extensive research record. A former Trustee of the AMS, Green has served on numerous Society committees, and was vice chair of a National Research Council committee that helped develop *The Mathematical Sciences in 2025* report. He is a co-founder, former director, and trustee of the Institute for Pure and Applied Mathematics (IPAM), which fosters interdisciplinary collaborations between mathematicians and researchers in other areas to address pressing scientific problems. He is also a member of the group Transforming Post-Secondary Education in Mathematics (TPSE Math).

Says Professor Green about their vision to promote inclusivity in the mathematics community: "This is a value that was important in the families Kathryn and I grew up in, and one which we wanted to carry forward in our own lives."



Photo courtesy of Mark Green and Kathryn Kert Green

**"This is a value that was important in the families Kathryn and I grew up in, and one which we wanted to carry forward in our own lives."**

Dr. Helen G. Grundman, AMS Director of Education and Diversity, acknowledged their commitment, saying, "It's wonderful to see people like the Greens stepping up to support the important work the AMS and others are doing to make the mathematics community more diverse and inclusive!"

The AMS thanks the Greens for their vision and generosity.

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## AMS News Inside!

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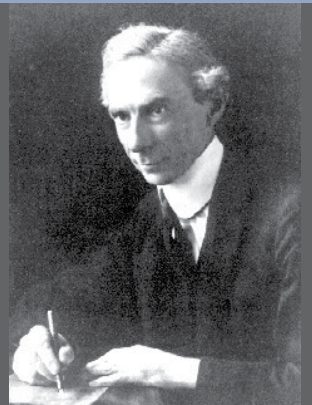
**SUPPORTING  
WASHINGTON, DC EFFORTS**



**GREEN FAMILY FUND TO  
SUPPORT INCLUSION AND DIVERSITY**



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**ALSO: SCHOLARS ESTABLISH ULF GRENANDER PRIZE IN STOCHASTIC THEORY AND MODELING**

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