



*Advancing research. Creating connections.*

# *Technology, the young researcher, and the future*

STM Society Day

Society Scholarly Publishing, The Next Generation

April 10, 2019



**Catherine A. Roberts, Ph.D.**

Executive Director, American Mathematical Society



## Our Mission

**The American Mathematical Society is dedicated to advancing research and connecting the diverse global mathematical community through our publications, meetings and conferences, MathSciNet<sup>®</sup>, professional services, advocacy, and awareness programs.**

## Some Numbers

- Non-profit Professional Mathematics Society
- Founded in 1888
- Members: 30,000
- Staff: 222
- Governance: Bicameral (Council and Board of Trustees)
- Budget: \$32 million
- Revenue from Publishing: \$22 million
- Revenue from Endowment: \$4.5 million

# Strategic Priorities



- Equity, Diversity & Inclusion
- Early-career mathematicians
- BIG Math



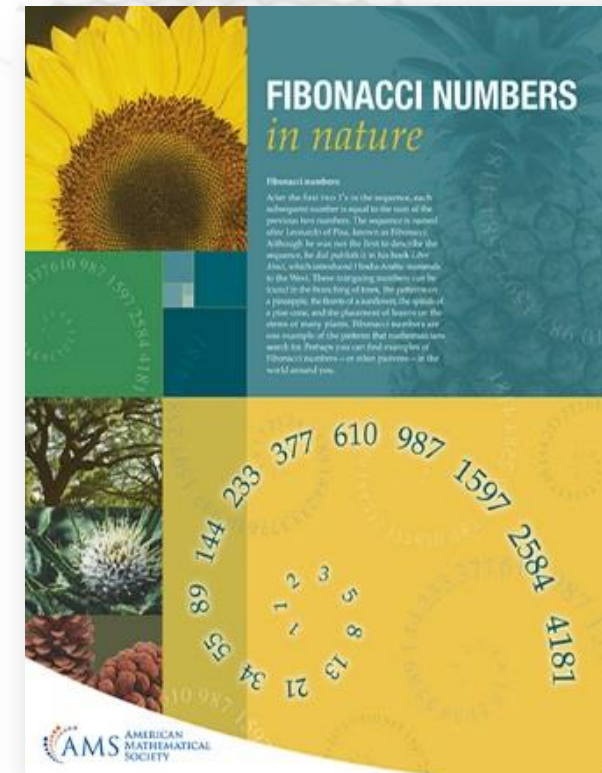
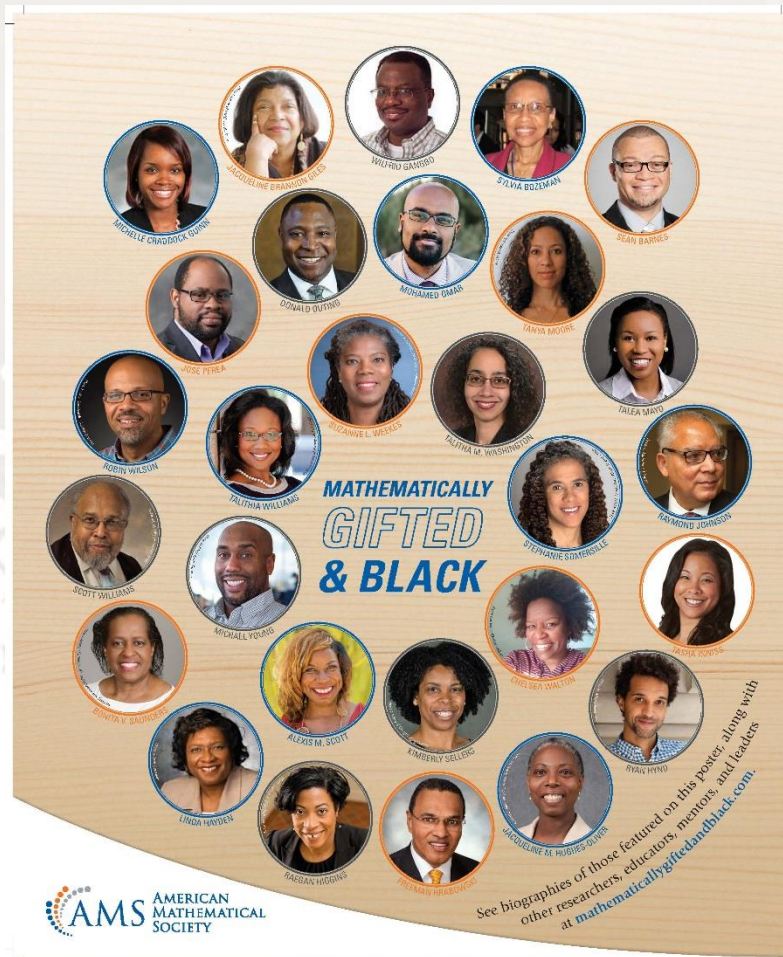


# Early-Career Scholars













# Promoting Math Awareness



# Social Media

## CONNECT WITH AMS **ON SOCIAL MEDIA**

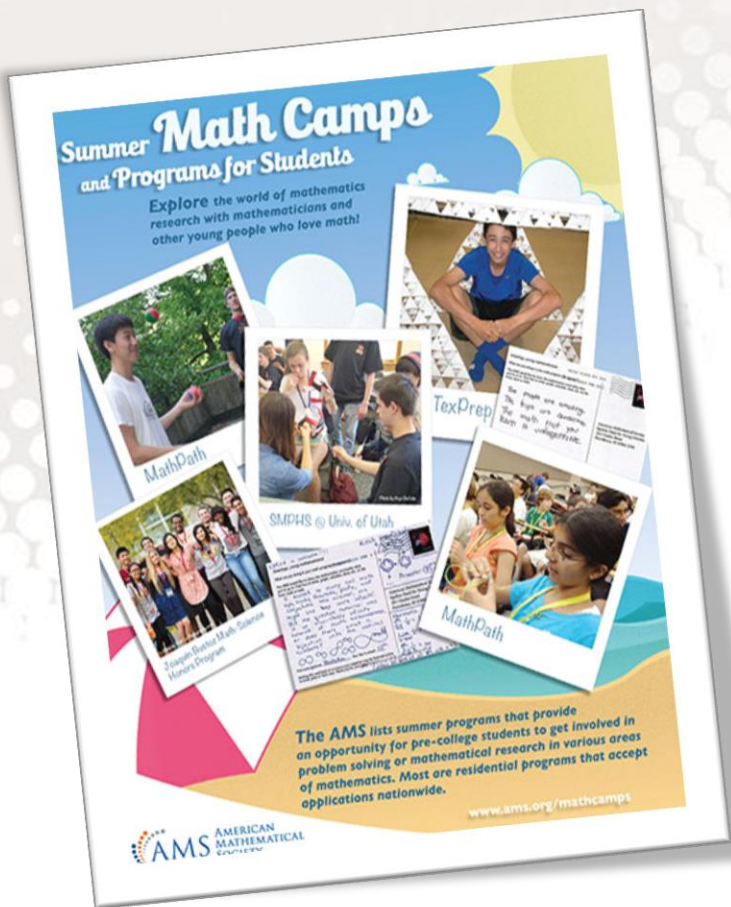
The AMS has a robust presence on social media with thousands of followers from all over the world.

-  [www.facebook.com/amermathsoc](https://www.facebook.com/amermathsoc)
-  [twitter.com/amermathsoc](https://twitter.com/amermathsoc)
-  [www.youtube.com/user/amermathsoc](https://www.youtube.com/user/amermathsoc)
-  [www.linkedin.com/company/american-mathematical-society/](https://www.linkedin.com/company/american-mathematical-society/)
-  [www.instagram.com/amermathsoc/](https://www.instagram.com/amermathsoc/)
-  [plus.google.com/+AmsOrg](https://plus.google.com/+AmsOrg)
-  Joint Mathematics Meetings Facebook [www.facebook.com/JointMathematicsMeetings/](https://www.facebook.com/JointMathematicsMeetings/)
-  Joint Mathematics Meetings Twitter [twitter.com/JointMath](https://twitter.com/JointMath)





# Student Programs





# Student Programs



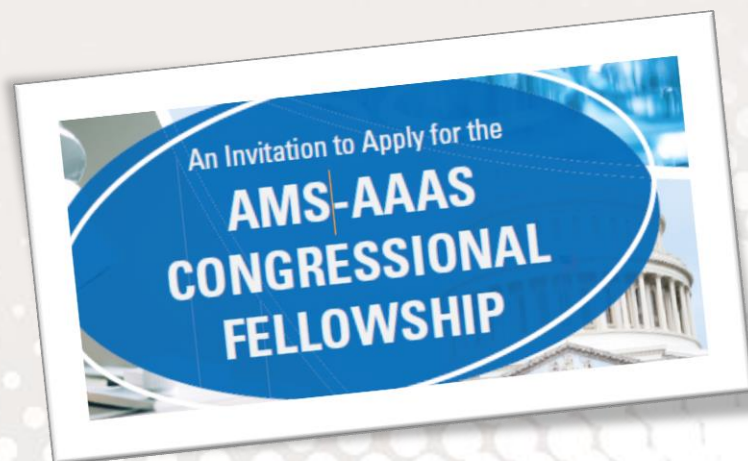


## Graduate Student Chapters





## Fellowships & Grants



## Meetings & Conferences

- Joint Mathematics Meetings (JMM)
- Sectional Meetings
- Conferences
- International Meetings
- Special Lectures





## Joint Mathematics Meetings (JMM)

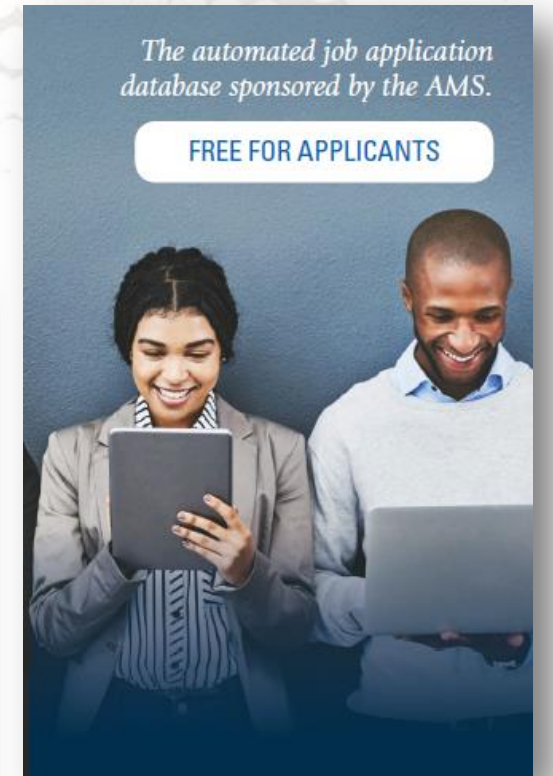
*The Joint Mathematics Meeting (JMM)  
is the world's largest gathering of  
mathematicians.*





## Employment Services

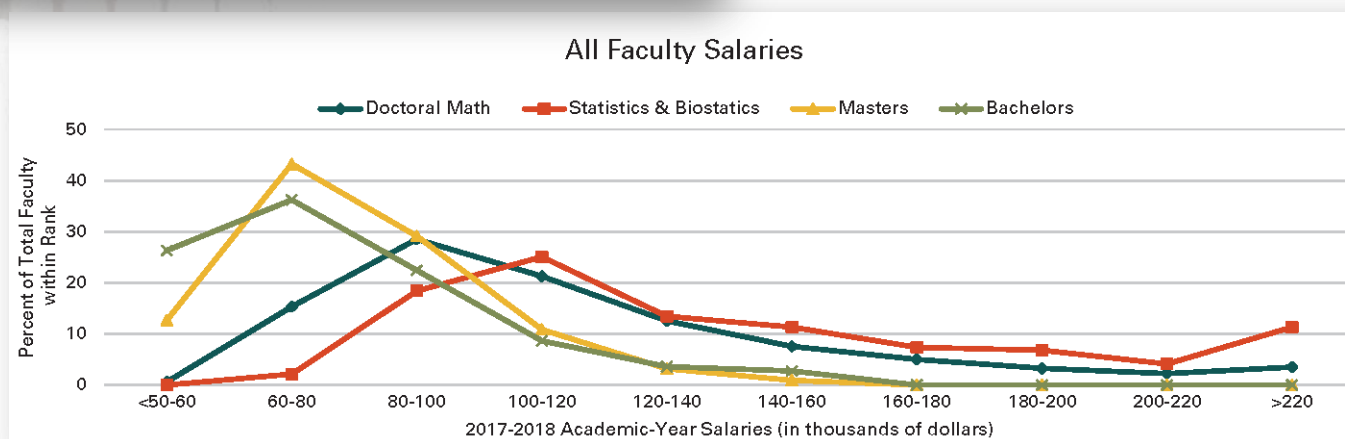
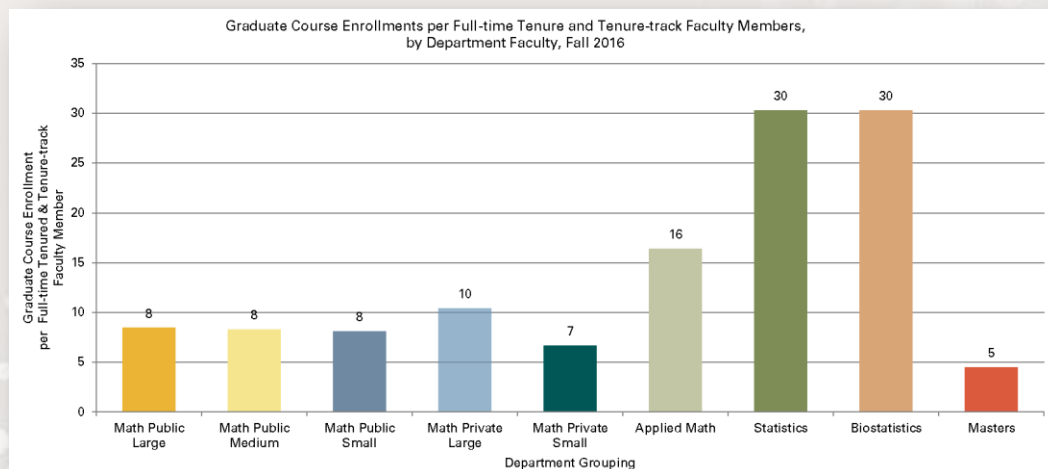
- [MathJobs.org](https://www.mathjobs.org)
- Employment Center
- Employment Information in the Mathematical Sciences (EIMS)
- *Notices of the American Mathematical Society*



[MathJobs.Org](https://www.mathjobs.org)

## Data on the Profession

- Mathematical and Statistical Sciences Annual Survey
- CBMS Surveys



## Mathematics Research Communities

- For early-career mathematicians
- Intensive, one-week, collaborative research conferences
- Professional development and mentoring
- Funding for future collaborations and research presentations





## Prizes & Awards



# Advocacy for the Profession

115TH CONGRESS  
2D SESSION

## H. R. 7252

To direct the Attorney General to enter into an agreement with the National Academies to conduct a study to develop guidelines, best practices, and examples for congressional redistricting.

---

IN THE HOUSE OF REPRESENTATIVES  
DECEMBER 11, 2018

Mr. **McNERNEY** introduced the following bill; which was referred to the Committee on the Judiciary

---

### A BILL

To direct the Attorney General to enter into an agreement with the National Academies to conduct a study to develop guidelines, best practices, and examples for congressional redistricting.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. SHORT TITLE.**

This Act may be cited as the "Fair And Inclusive Redistricting Map Act" or the "FAIR Map Act".

**SEC. 2. CONGRESSIONAL DISTRICT MAP STUDY.**

(a) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the Attorney General shall conduct a study to—

(1) develop guidelines, best practices, and examples consistent with the criteria in subsection (b) to a

## Rep. McNerney Introduces Legislation to Combat Partisan Gerrymandering

Dec 11, 2018 | Press Release

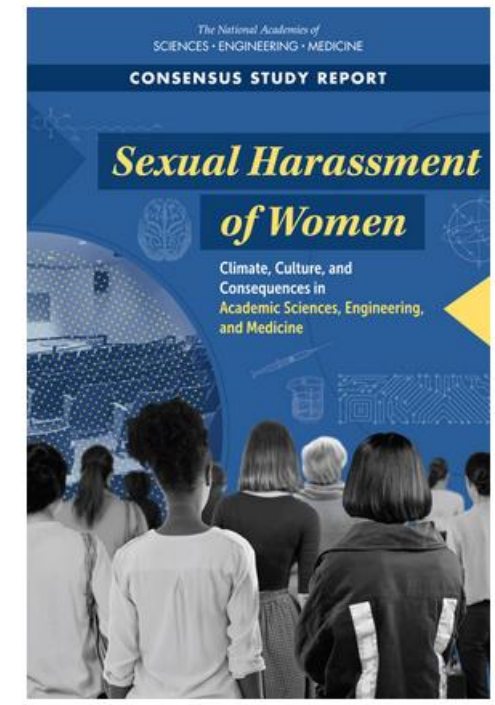
Washington, DC – In an effort to reduce the role of partisan bias in congressional district mapping and return power to the American voters, Congressman Jerry McNerney (CA-09) has introduced legislation to establish a set of standards centered on scientific and mathematical techniques.

The Fair and Inclusive Redistricting (FAIR) Map Act, H.R. 7252, would direct the National Academy of Sciences to conduct a study to develop guidelines, best practices and examples for congressional redistricting. The Academy's recommendations would also have to maintain geographic contiguity, compactness, and comply with the constitutional equal population requirement as well as the Voting Rights Act of 1965.

"Our nation's congressional districts are drawn by the very people who would benefit from partisan practices," said Congressman McNerney. "This results in highly biased districts that can make elections unfair and discourage voters. My proposal seeks to increase transparency, starting with creating an impartial process free from self-interested influence. It puts our elections back in the hands of the voters."

Gerrymandering, which is the manipulation of district boundaries to favor a particular political party, has become a high-profile issue in recent years, with legal challenges arising in a number of states. This past election, voters took action to try and curb gerrymandering, with three states voting to take the power of redistricting out of the hands of their state legislators.

"The act of drawing voting districts is vital to the functioning of American democracy," said Karen Saxe, Associate Executive Director of the Office of Government Relations for the American Mathematical Society. "The mathematical and statistical sciences have always played a fundamental role in drawing voting district plans, and with modern predictive techniques and computing power, can play an even more powerful role in this process. The American Mathematical Society does not endorse any one approach or metric for measuring fairness of voting district plans. We do urge, however, that mathematics and statistical science be employed to evaluate the fairness of district plans. I





# Advocacy for the Profession



- Testimony to Congress
- Congressional briefings and exhibitions
- Tools to take action
- Ensure math research is funded



## Publications

- Blogs & Website
- Books
- Journals
- MathSciNet®



Visit [ams.org/publications](https://ams.org/publications) for more information.

## Blogs & [www.ams.org](http://www.ams.org)

- Beyond Reviews: Inside MathSciNet
- Blog on Math Blogs
- Book Ends
- Capital Currents
- e-Mentoring Network
- Graduate Student Blog
- inclusion/exclusion
- Math Mamas
- On Teaching and Learning Mathematics
- PhD + epsilon

Visit [blogs.ams.org](http://blogs.ams.org) for more information.





## Books

*We are one of few remaining independent medium-sized publishers. We publish 100 new titles a year.*



*Lisa Gaal* *Marcel Berger* *Cédric Villani*  
*Luis A. Caffarelli* *Tatiana Toro* *Dusa McDuff*  
*Shlomo Sternberg* *Terence Tao* *John Milnor*  
*Jean-Pierre Serre* *Victor Guillemin* *Karen Vogtmann*  
*Ingrid Daubechies* *Sigurdur Helgason*

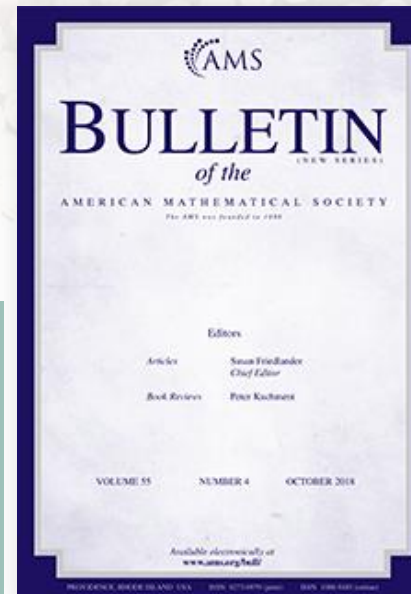
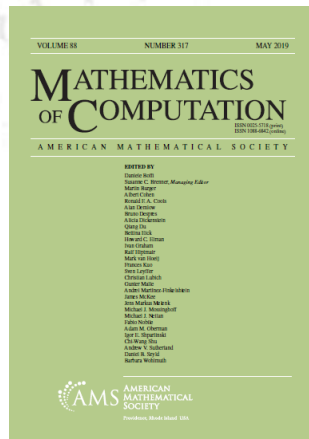
**Join** the company  
of great mathematicians  
**BECOME AN AMS AUTHOR**





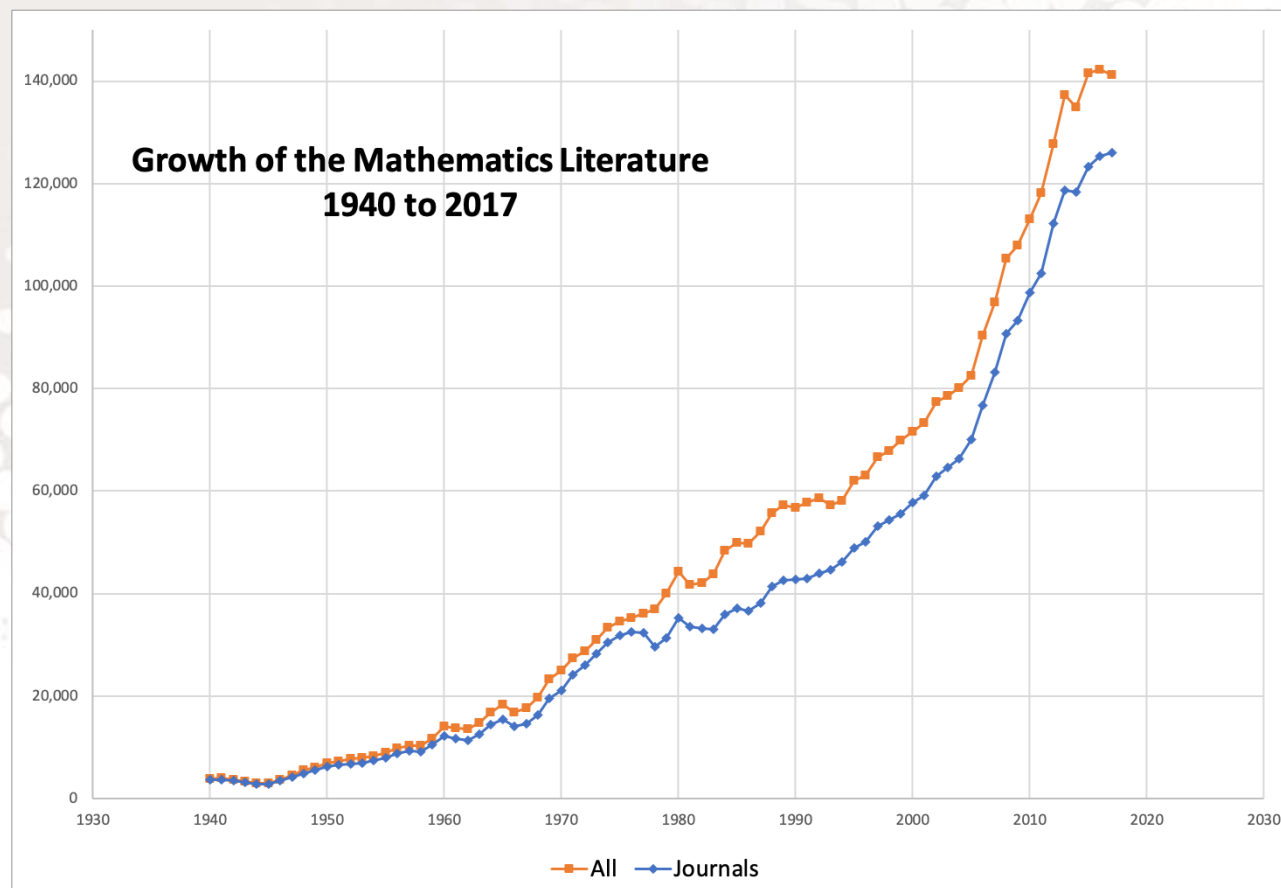
# Journals

- 10 Research Journals
- 2 Member Journals
- 4 Translation Journals
- 8 Distributed Journals





## Growth of the Literature



- A guide to the literature made for mathematicians, by mathematicians
- 18 PhD mathematicians, plus help from experts including librarians, catalogers, and programmers

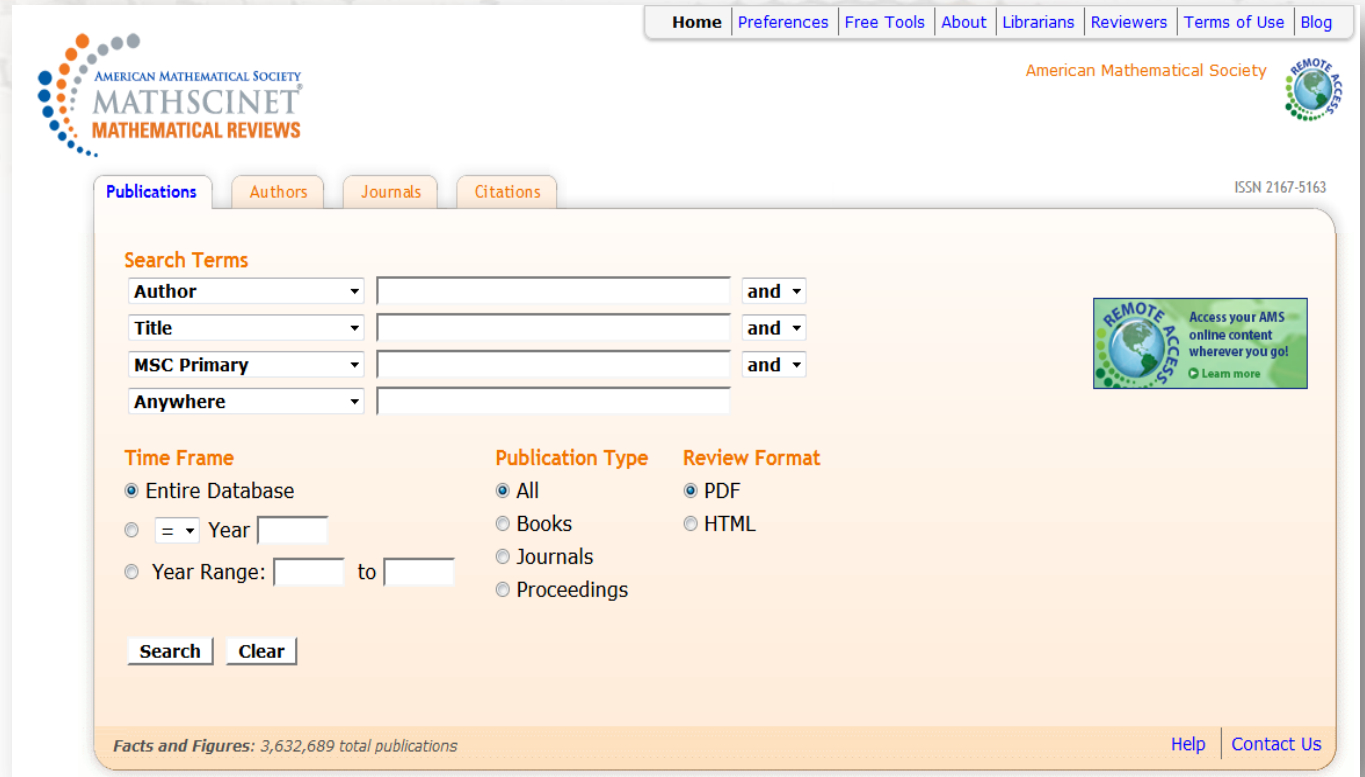
## Mathematical Reviews MathSciNet





# Mathematical Reviews MathSciNet

- Info on 3+ million articles and books, with direct links to 2+ million articles in 1,800+ journals
- Bibliographic listings dating back to the early 1800s
- Links to articles, journals, and publishers
- Linked reference lists
- Citation information on articles, books, and journals



The screenshot shows the MathSciNet search interface. At the top, there is a navigation bar with links: Home, Preferences, Free Tools, About, Librarians, Reviewers, Terms of Use, and Blog. Below this is the American Mathematical Society logo and the text "American Mathematical Society". The main search area has tabs for Publications, Authors, Journals, and Citations. The "Publications" tab is selected. The search form includes fields for Search Terms: Author, Title, MSC Primary, and Anywhere, each with a dropdown menu and a search button. Below the search terms are sections for Time Frame, Publication Type, and Review Format. The Time Frame section has radio buttons for "Entire Database", "Year" (with a dropdown), and "Year Range" (with two input fields). The Publication Type section has radio buttons for "All", "Books", "Journals", and "Proceedings". The Review Format section has radio buttons for "PDF" and "HTML". At the bottom of the search form are "Search" and "Clear" buttons. A footer bar contains the text "Facts and Figures: 3,632,689 total publications" and links for "Help" and "Contact Us".

Home | Preferences | Free Tools | About | Librarians | Reviewers | Terms of Use | Blog

American Mathematical Society

ISSN 2167-5163

Publications | Authors | Journals | Citations

**Search Terms**

Author  and

Title  and

MSC Primary  and

Anywhere

**Time Frame**

☒ Entire Database

☐ = Year

☐ Year Range:  to

**Publication Type**

☒ All

☐ Books

☐ Journals

☐ Proceedings

**Review Format**

☒ PDF

☐ HTML

Facts and Figures: 3,632,689 total publications

[Help](#) | [Contact Us](#)



## Technology & Publishing Engagement

- LaTeX & TeX User Group
- MathJax
- AMS Math Viewer
- AMS Open Math Notes
- ArXiv
- Apps for conferences

*We are innovators and supporters of a variety of technological advances that support our profession.*



## “what keeps me up at night?”

- Sustaining membership
- Concern about library budgets
- Impact of open access shifts on our revenue
- Succession planning, recruitment, retention
- The pipeline of our profession
- The future of academia as an employer of PhD mathematicians



## Openness in Mathematics Publishing

The ArXiv is a repository of electronic preprints in mathematics and physics that are approved for posting after moderation, but not full peer review.

Started in 1991, hosted at Cornell University

Submission rate: 10,000+ preprints per month



## Openness in Mathematics Publishing

The AMS is fully compliant with green Open Access

- author may post accepted, pre-publication version of manuscript on their personal web page, on their institution's noncommercial repository, and on arXiv.org
- embargo period is 5 years
- CHORUS (meet funder mandates for 12 month embargo)

## Openness in Mathematics Publishing

The AMS has two gold Open Access journals:

- mirror journals “Proceedings B” and “Transactions B”
- author retain copyright under Creative Commons Attribution License or Creative Commons Attribution – Noncommercial License
- \$750 article processing charge (APC)





*Advancing research. Creating connections.*