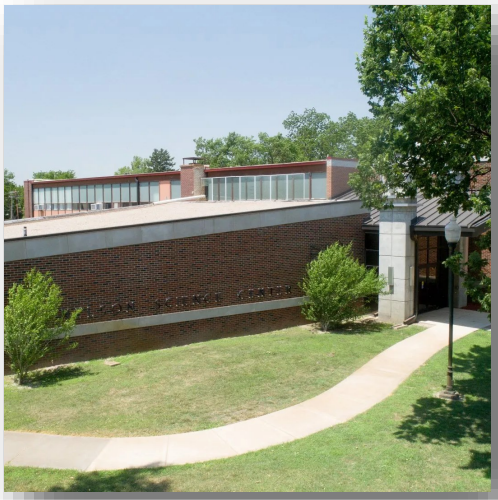
Kansas Section of the MAA

KSMAA News

Volume 14, Issue 1 Spring 2023



Spring 2023 Meeting

The Spring Meeting of the Kansas Section of the MAA will be held in person at Bethany College in Lindsborg, KS, April 14-15, 2023. The first talks will begin late Friday afternoon and Polya Lecturer Dr. Sarah Greenwald will speak that evening following a catered dinner. On Saturday morning we will have more contributed talks and an Invited Address from our MAA Board visitor, Dr. Adriana Salerno. Following a lunch break we will have another round (or more) of talks and then conclude with our business meeting. Maps of the Bethany College campus (interactive and pdf) can be found at https://www.bethanylb.edu/bethany-campus.

Dr. Sarah Greenwald, professor in the Department of Mathematical Sciences at Appalachian State University, will be delivering an invited Polya Lecture. Professor Greenwald earned a PhD in Riemannian geometry from the University of Pennsylvania and a BS in mathematics from Union College. She has won multiple awards and is an AWM Fellow. More information on Dr. Greenwald can be found at https://cs.appstate.edu/~sjg/ and https://en.wikipedia.org/wiki/Sarah_J._Greenwald .

Dr. Adriana Salerno, mathematics professor at Bates College and MAA Vice President, will be the MAA Section Visitor. Dr. Salerno's main research area is Number Theory, in particular the intersections of number theory with geometry, physics, and cryptography. She is also very interested in the communication and teaching of mathematics to create a more inclusive and equitable STEM workforce. Her webpage is at https://www.bates.edu/faculty-expertise/profile/adriana-j-salerno/.

Registration is $20 for students, $50 for MAA Members, and $60 for all others. Payment must be received at or before check-in on April 14th. The registration form needs to be completed by Friday April 7th.

If you are interested in giving a 20-minute talk, your information must be submitted prior to Friday March 31.

For more information and to register or to apply to give a talk, visit

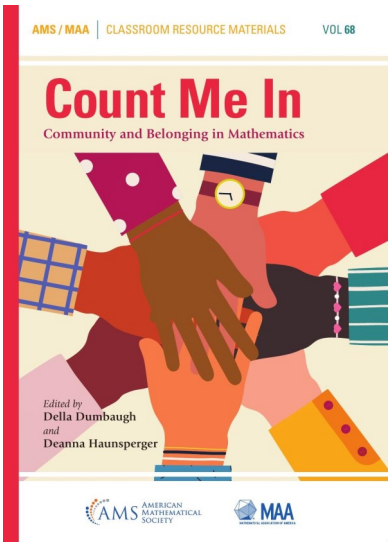
https://forms.office.com/r/iiBEw8Zy8b

2023 KANSAS COLLEGIATE MATH COMPETITION

The Kansas Collegiate Math Competition will be held in conjunction with the KSMAA section meeting on Saturday, April 15. Information will be sent to coaches via email. More information about the competition, including past exams and solutions, can be found at

https://www.pittstate.edu/math/kansas-collegiate-mathematics-competition.html.

RECENT MAA PRESS BOOK



Edited by : Della Dumbaugh, University of Richmond, Richmond, VA
Deanna Haunsperger, Carleton College, Northfield, MN

Count Me In:

Community and Belonging in Mathematics

This groundbreaking work explores the powerful role of communities in mathematics. It introduces readers to twenty-six different mathematical communities and addresses important questions about how they form, how they thrive, and how they advance individuals and the group as a whole. The chapters celebrate how diversity and sameness bind colleagues together, showing how geography, gender, or graph theory can create spaces for colleagues to establish connections in the discipline. They celebrate outcomes measured by mathematical results and by increased interest in studying mathematics. They highlight the value of relationships with peers and colleagues at various stages of their careers.

Together, these stories offer a guide—rather than a template—for building and sustaining a mathematical community. They call attention to critical strategies of rotating leadership and regular assessment and evaluation of goals and programs, and promote an ongoing awareness of the responsibilities of life that impinge on mathematical creativity and contributions.

Whether you are giving thought to starting a group, joining one already in existence, or encouraging a colleague to participate in the broader mathematical community, this book will meet you where you are—and move you beyond. It contains a plethora of ideas to foster a sense of belonging in the exciting discipline of mathematics.

NEW! The eBook edition of *Count Me In: Community and Belonging in Mathematics* is free to AMS members as a member benefit. **Download it here.**

MAA CONNECT
The online community for members to connect, communicate, and collaborate.

MAA invites you to join the online community, MAA Connect. This MAA member benefit is designed for MAA members to connect, communicate, and collaborate with peers. This is a platform to share ideas, ask questions, and network.

You can log in to MAA Connect using your MAA membership username and password. The webpage at https://connect.maa.org/home provides more information on getting started and how to use MAA Connect. Use this information to set up your profile, or use the Getting Started instructions as you familiarize yourself with the platform.

Various communities are included in MAA Connect. For example, each MAA Special Interest Group (SIGMAA) has a community. In addition, each section has its own community. Visit the Kansas Section Community (Click on Communities and then My Communities) to post questions to members of the section, to view section announcements, or to peruse section newsletters.

AMS-MAA Textbooks by Steve Kennedy

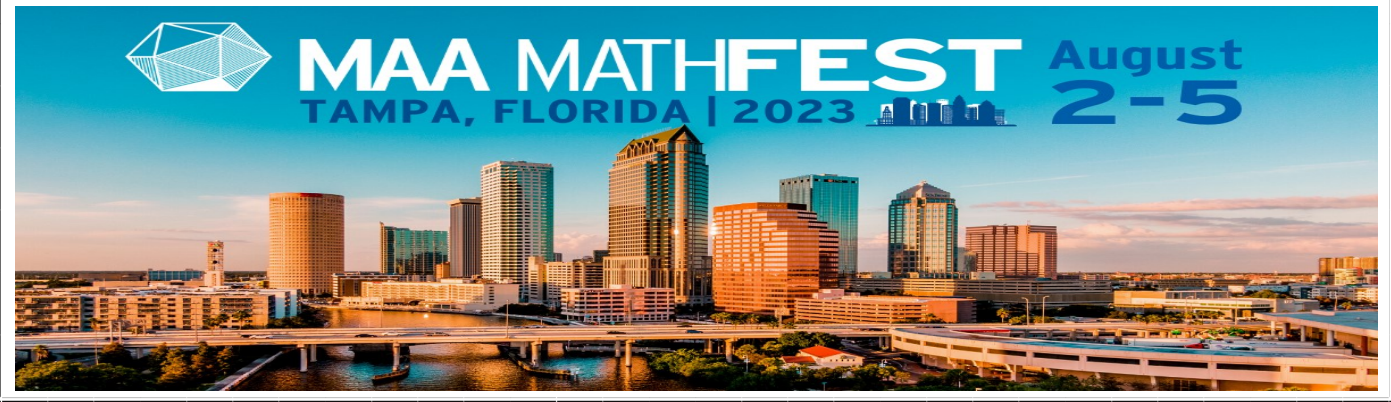
The undergraduate textbook program of the AMS Books—MAA Press is an important component of the missions of the two societies to advance mathematics. The book program serves the needs of mathematician-authors by providing them a forum for disseminating their teaching visions. For those members of the Association and the Society engaged in teaching we provide a wide variety of rigorously edited and handsomely printed textbooks for every course in the undergraduate curriculum. The students in those courses can enjoy our beautifully written and reasonably priced textbooks.

At AMS-MAA books our work and our values are designed around the needs of these constituencies. We value clear and elegant exposition, so we subject all our textbooks to a rigorous peer-review and editing process. We value inspired teaching, so encourage and assist our authors in designing and including appropriate exercises. We understand the motivation and need for pedagogical innovation, so we actively seek out practitioners of alternative pedagogies and publish their work. We are, ourselves, mathematicians, so we understand deeply how a coherent vision of an area or subdiscipline can be a miraculous piece of art and we work to find authors whose vision we admire. We deeply love books, so we work with designers and craftsman to make physically attractive books that are a pleasure to hold and to read. We are the largest non-profit publisher of English-language mathematics textbooks in the world and we aspire to become simply the largest publisher of mathematics textbooks. We are a collective of mathematicians, working from within the mathematics community, to advance our science.

Our values are exquisite and elegant exposition, rigorous devotion to mathematics, and service to mathematics. Our two textbooks series, while each honoring these values, differ slightly in character; each reflects something of the ethos of its respective parent organization. AMS Textbooks tend to have a higher level of abstraction, a more traditional style of presentation, and a more formal writing voice. MAA Textbooks tend to contain more motivation, more examples, are more likely to be adapted to innovative pedagogy, and often are written in a casual, conversational style. We are certain that you will find in our offerings beautiful, inspiring textbooks that your students will read and treasure and that you will be delighted to teach from.

Check out AMS/MAA Textbooks at

https://bookstore.ams.org/TEXT



From 100 Years Ago in the MAA Monthly

NINTH REGULAR MEETING OF THE KANSAS SECTION.

The ninth regular meeting of the Kansas Section was held at the Central High School, Topeka, Kansas, January 20, 1923, in connection with a meeting of the Kansas Association of Mathematics Teachers. Two sessions were held, the first of which was a joint session with the Kansas Association. Professor W. H. Garrett presided at the first session and Professor A. E. White at the second.

The attendance was sixty-two, including the following twenty-three members of the Association:

Florence Black, W. H. Garrett, W. A. Harshbarger, T. B. Henry, Emma Hyde, S. Lefschetz, C. F. Lewis, T. Lindquist, O. B. Loewen, Anna Marm, U. G. Mitchell, Thirza Mossman, P. Pretz (institutional representative), B. L. Remick, D. H. Richert, J. A. G. Shirk, G. W. Smith, E. B. Stouffer, W. T. Stratton, H. G. Titt, Eula Weeks, J. J. Wheeler, A. E. White.

The following officers were elected for the coming year: Chairman, Professor LINDQUIST; Vice-Chairman, Professor TITT; Secretary-Treasurer, Professor MITCHELL.

The following papers were presented:

(1) "The development of the junior high school movement in Kansas and its effect on the efficiency of mathematics instruction in the seventh, eighth and ninth grades" by Professor T. LINDQUIST.

(2) "The National Committee's report on the reorganization of secondary mathematics" by Dr. EULA A. WEEKS.

(3) "Some peculiar limiting functions and their graphs" by Professor G. W. SMITH.

(4) "The teaching of unified mathematics" by Professor P. PRETZ.

(5) "The area of a cone having an elliptical base" by Miss THIRZA MOSSMAN.

(6) "A new method of determining sufficient conditions for real roots of equations" by Miss WEALTHY BABCOCK, (by invitation).

(7) "A map of $\sinh z$" by Professor T. B. HENRY.

At the joint session there was a general discussion of the topic "Should the State Board of Education recognize the existence of the junior high school system in the state?" and it was voted to appoint a committee of three to work for the standardization of junior high school mathematics in the state.

After the presentation of each paper there was a general discussion. Abstracts of the papers are given below, the numbers corresponding to numbers in the list of titles:

1. Professor Lindquist brought out the following facts: (*a*) the first junior high schools in Kansas were organized in 1911; (*b*) of 61 cities with population above 2000 which replied to a questionnaire in 1921, 22 reported using the 6–3–3 plan, 21 the 6–2–4 plan and 18 no junior high school organization; (*c*) schools using the 6–3–3 plan reported 9200 junior high school pupils and those using the 6–2–4 reported 5000; (*d*) this indicates that 64 per cent. of the junior high school pupils in Kansas are in schools which have a three-year junior high school course.

Continuation of *From 100 Years Ago in the MAA Monthly*

Since a number of cities known to have junior high schools failed to answer the questionnaire, 20,000 is a conservative estimate of the number of pupils attending junior high schools in Kansas in 1921; (*e*) nearly all of the teachers in the junior high schools of the state have had at least two years of college training and about one half hold bachelor's degrees.

2. Dr. Weeks gave a general résumé of the work of the National Committee and emphasized especially the need for reading, discussion and criticism by teachers of the work of the Committee, if its reports are to be most valuable.

3. Professor Smith showed that expressions can be set up, the limit of which represents a certain function $f(x)$ for $0 \leqq x < a$ and another function $g(x)$ for $x > a$. By properly introducing $\sqrt{x^2 - b^2}$ and $\sqrt{c^2 - x^2}$ he set up expressions which have real values only in the interval $b \leqq x \leqq c$. Many examples were given and for some of these several of the approximation curves were plotted.

4. Professor Pretz stated that the teaching of unified mathematics is an issue in the field of education that must be met and judged on its merits by the teachers of mathematics themselves. On the basis of his own experience and the experience and opinions of others he believed that unified courses can be taught successfully in both secondary schools and colleges. He advocated the teaching of unified mathematics, chiefly because he believed the unified scheme to be more broadly scientific than other plans. The proper preparation of teachers of unified courses was emphasized.

5. The lateral area of a cone whose base is an ellipse can be expressed as an elliptic integral. If the vertex of the cone is over the principal axis of the ellipse, the area is computable. This area is in general represented by an elliptic integral, but in the special cases of the right circular cone, the cone of zero altitude, and the cone whose vertex lies on a certain hyperbola in a plane vertical to the base, the area integral is non-elliptic.

6. Miss Babcock outlined a method of determining conditions to be placed upon the coefficients of an equation such that the roots of the equation would be real. The general symmetric determinant of order equal to the degree of the equation was expressed in terms of its coaxial minors of the first and second orders, and these minors then expressed in terms of the coefficients of the equation, so that, as a result, the equation was expressed in the form of a symmetric determinant. Conditions to be placed upon the coefficients of the equation, sufficient to make the roots real, may be determined from this symmetrical determinant form of expression. These conditions were given for equations of the third and fourth degrees.

7. Professor Henry presented a comprehensive discussion of the conformal representation of hyperbolic functions of a complex variable, with graphic representations of the results obtained.

U. G. MITCHELL, *Secretary-Treasurer.*

KSMAA OFFICERS 2022-2023

Section Representative:

Brian Hollenbeck
Emporia State University
Emporia, KS 66801
bhollenb@emporia.edu
(620) 341-5644

Chairperson:

Nickolas Hein
Benedictine College
Atchison, KS 66002
nhein@benedictine.edu
(913) 360-7525

Vice Chair:

Pari Ford
Bethany College
Lindsborg, KS 67456
fordpl@bethanylb.edu
(785)227-3380, x4322

Vice Chair-Elect:

Sarah Cook
Washburn University
Topeka, KS 66621
sarah.cook@washburn.edu
(785) 227-3380

Treasurer:

Qiang Shi
Emporia State University
Emporia, KS 66801
qshi@emporia.edu
(620) 341-5452

Secretary:

Jennifer Wagner
Washburn University
Topeka, KS 66621
Jennifer.wagner1@washburn.edu
(785)670-3224

Historian:

Tim Flood
Pittsburg State University
Pittsburg, KS 66762
tflood@pittstate.edu
(620) 235-4401

Coordinator of Section Liaisons:
Tim Flood
Pittsburg State University
Pittsburg, KS 66762
tflood@pittstate.edu
(620) 235-4401

Public Information Coordinator/ Newsletter Editor/Webmaster:

Cynthia Huffman
Pittsburg State University
Pittsburg, KS 66762
cjhuffman@pittstate.edu
(620) 235-4409

Competition Co-Coordinator:

Dionyssis Mantzavinos
Department of Mathematics
University of Kansas
Lawrence, KS 66045
mantzavinos@ku.edu
(785) 864-4324

Competition Co-Coordinator:

Scott Thuong
Department of Mathematics
Pittsburg State University
Pittsburg, KS 66762
sthuong@pittstate.edu
(620) 235-4408

KSMAA NEWSLETTER

The KSMAA Newsletter is published twice a year; once early in the year and then again in the fall. A link to each newsletter will be sent out via email by the MAA. The newsletters are also archived on the section webpage at https://www.kansas.maa.org/ .

The newsletter can also be a forum for sharing news or disseminating information to other mathematics departments across the state. If your department has any news to be included in the KSMAA Newsletter, please send it to KSMAA Public Information Coordinator:

Dr. Cynthia Huffman
Math Department
Pittsburg State University
Pittsburg, KS 66762
cjhuffman@pittstate.edu
(620) 235-4409