



Ohio Focus

The MAA Ohio Section Newsletter

Volume 11

Fall 2020

Number 17.1

MAA Ohio Section Fall Meeting to be held On-Line - Friday October 23

Due to the Covid - 19 pandemic, the Fall Meeting of the Ohio Section of the MAA will be a virtual on-line affair to be held on the afternoon and evening of Friday October 23, 2020 starting at 3:00 until 7:00 PM . The meeting will consist of five invited talks as well as some structured and unstructured social time; there will be no contributed papers. The registration fee is \$10. A complete program and links to the online registration form will be made available at the Ohio MAA Website <http://sections.maa.org/ohio/>

The five invited talks will be given by Jim Albert, Professor Emeritus of Bowling Green University, Lew Ludwig from Denison, Anna Ghazarar from Miami of Ohio, Katie Cerrone from the University of Akron and Jim Fowler from Ohio State. Afterward there will be Zoom based break- out sessions.

Call for Nominations for Ohio Section Award for Distinguished Teaching

There are many outstanding mathematics educators in the Ohio Section. If you know of such an excellent educator, please consider nominating him or her for the Ohio Section Award for Distinguished College or University Teaching of Mathematics.

To make a nomination, complete the one-page nomination form, write a description of why you have chosen to nominate this individual, and solicit recommendations from colleagues and current or former students. Nomination forms and detailed instructions are available from the Ohio MAA Website at <http://sections.maa.org/ohio/Award/>. Nominees must be members of the MAA and the Ohio Section, and they must have more than seven years of teaching experience in the mathematical sciences at the college/ university level.

The award will be presented at the 2021 Spring Meeting of the Ohio Section and appropriate publicity will be generated at the winner's home institution. The winner will be considered for the Ohio Section's nominee for the MAA's 2021 Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching of Mathematics. Past Ohio Section winners who have gone on to receive the Haimo Award are Aparna Higgins (University of Dayton, 2005) and V. Frederick Rickey (Bowling Green State University, 1993).

continued on page 4

From Our President

In many ways, this year is unlike any other that we have experienced. For those who were fortunate enough to have lived in this region at the time, you may recall the Great Blizzard of '78. Occasionally locals will still speak of the sudden snow storm at the end of January that shut down travel, cut off power, and closed schools until they found a place to put the snow. One of the best things to come out of that experience was the community working together to meet everyone's needs. People with four-wheel drive vehicles or snowmobiles transported healthcare providers to hospitals and delivered necessary goods to stranded neighbors.

My hope is that when we recall the year of 2020 decades from now, that the memories will include how we worked together to help each other in a time of upheaval. One case is the section's Fall Workshop. Once it was decided that the Fall meeting would be held virtually, there was no longer a need to hold the workshop on the same weekend. CONSACT, under the leadership of Jim Anderson, arranged an online workshop on teaching mathematics primarily asynchronously. The initial response was so great that a second session had to be scheduled. This workshop was even able to reach many educators throughout Ohio that were not MAA members. Many thanks to Barbara D'Ambrosia and Jim Anderson for moderating the questions during Claire Stuve's presentation.



As alluded to earlier, this fall's meeting is scheduled to be an online event. The Ohio Section is working with Hawkes Learning to get the logistical and technical support before and during the meeting. The Program Chair, Matt Davis, is putting in extra effort to get these arrangements worked out with the assistance of the rest of the Program Committee, Najat Baji and Chris Swanson. Please make every effort to join us on October 23 and invite a colleague to participate with you. Because all meetings are taking place online, they will not need to coincide with the Fall Meeting. The Executive Committee and guests plan to meet on October 16 and standing committees should arrange to meet before then at a convenient time. Finally, I want to thank Gordon Wade of Bowling Green State University and Giorgi Shonia at Ohio University – Lancaster for their preparations for our section meetings in April and October, respectively, even though we did not get to visit there. We appreciate the work that they and their colleagues have invested and hope they will be able to host a meeting some time in the future.

One of the events that was missed when the Annual Meeting was cancelled was recognizing the recipient of the Ohio Section Teaching Award. Although we made an announcement through MAA Connect, we should all be aware that M. B. Rao, University of Cincinnati, has earned this award for 2019 – 2020. The formal ceremony is scheduled for the upcoming Annual Meeting in 2021. At that time we will also be announcing the 2020 – 2021 winner, so plan on making a nomination. Details can be found at <http://sections.maa.org/ohio/Award/index.html>.

As we were suddenly moving to teaching online, I noticed that my upper level students, who had been in multiple classes together, were naturally looking to each other to understand the difficult material. Even my Calculus I class had opportunity to form study groups prior to the shut down, and though they were separated, they found ways to support each other. In our section, we are blessed to have many good friendships that we can rely on as we work remotely. Certainly we can still be open to include new partners in our community as we all work together. Let us make this challenging time an opportunity to strengthen our common bonds.

David Stuckey - Defiance College—MAA Ohio Section President

From Our Section Representative

As all of us have been dealing this year with the upheaval brought on by COVID-19, so too has the MAA. The decision to cancel MathFest this past summer was a difficult but necessary one, dictated by concern for the health and safety of its members. With more time to plan and pivot, MAA will join with the AMS and other allied professional organizations to hold a virtual JMM this coming winter. We all hope and pray that an in-person MathFest can be held next summer in Sacramento.

The MAA Congress held its meetings on the scheduled dates (that would have coincided with the dates of MathFest) in late July, but via Zoom. Incoming Chair Tim Chartier (Davidson College) gaveled us into session remotely. At the time, the nation was still raw with the news of the death of George Floyd, and members of Congress responded by reinforcing our commitment to uphold the newly articulated values of the Association to Inclusivity, Community, and Communication, with a session that strategized on ways we can plan diversity into MAA meetings, both at the national and Section levels.



The MAA leadership shared the newly published MAA 2019 Impact Report, which collects a wealth of information about the current status of the Association, its ever widening national and international reach, the many communities it serves and supports, its long list of exciting programs, publications and other resources, and its recently much improved financial situation (all the more valuable for the strength this now offers us in the wake of economic pressures felt everywhere from the pandemic). I urge you to search out and review this highly informative document (you'll find it at the MAA website, maa.org, under the menu About the MAA); I guarantee that you'll learn something amazing that you didn't know about the great work being done by MAA.

Let me report on two other items. Just as the pandemic began restricting our contacts with many of our human networks, MAA Connect came online this summer and has begun to replace previous email systems and assorted Facebook pages with a dedicated online community for MAA members to connect, communicate, collaborate and network. It will no doubt help to transform how we do business with each other in the Association going forward. The Ohio Section has its own Connect Group and can communicate with you through this channel if you join up through your MAA member login at maa.org.

Finally, MAA Executive Director Michael Pearson addressed Congress (and through us, you members as well) with a number of questions about how our organization should develop strategies for honoring our mission and values in the coming years, even as we cope with current challenges, like projected demographic decreases in the population of college students; social and public policy issues of concern, especially those that transcend partisan preferences; fiscal realities for education at all levels, which test our abilities to support and lead systemic reforms in mathematics curriculum, pedagogy, and assessment.

"How can MAA contribute to broadening the perception of who 'counts' as a mathematician?" asked Pearson. "How can we sustain interest among [our many students of mathematics, especially those who do not go on to academic careers], and engage them to strengthen our connections beyond the academy?"

If you have ideas about these issues, bring them to the Ohio Section meetings, or better, open a discussion online through Connect or offer your services by joining one of the Section's committees where we can best engage these issues with an eye to improve things on the ground.

You can always reach me at otero@xavier.edu.

Report on the Fall Workshop

(July 31 & August 7, 2020)

The Ohio Section held its "Fall Workshop" on July 31 and repeated the workshop on August 7. Both workshops were held online. There was no charge for the workshop. At the Summer Executive Officers' Meeting, it was decided that the topic of the Fall Workshop would be teaching mathematics online. It was also decided to hold the workshop before classes would start for the Fall semester. This way, participants of the workshop could use the information in the preparation of their classes.

Dr. Claire Stuve from the University of Toledo was the presenter for both workshops. Claire had developed an online version of the Trigonometry course that won the Blackboard Catalyst Award for Inclusive Education. This international award honors those whose methods have ensured their pedagogy, content, technology, and educational services are fully inclusive and supportive of all learners with disabilities. At the workshops, she presented the best practices for teaching mathematics 100% asynchronously that included what changes to make if there's also a synchronous component, keeping students engaged in synchronous teaching and also in the asynchronous portions, and online assessments and avoiding cheating.

The workshop was well received. On July 15, an email was sent to the department chairs of 100 colleges and universities announcing the workshop to be held on July 31. The workshop was also advertised on the Ohio Section webpage. On July 17, there were 100 people registered for this workshop. Claire graciously offered to repeat the workshop on August 7. There were 140 faculty from 44 colleges and universities registered for the two workshops and 2 faculty from 2 high schools. Of the 142 registrants, 105 were not members of the Ohio Section. Fifty-three registrants attended the workshop on July 31 and 55 registrants attended the workshop on August 7. Barbara D'Ambrosia and Jim Anderson helped monitor questions in the Chat at both workshops.

Here are some of the results of the workshop survey.

The workshop met my expectations.	Strongly Agree 62.5%	Agree 31.3%
I will be able to apply the knowledge learned.	Strongly Agree 56.3%	Agree 37.5%
How do you rate the workshop overall?	Excellent 71.9%	Good 21.9%
How do you rate the presenter overall?	Excellent 84.4%	Good 9.4%

Continued from Page 1:

Nominations should be sent to Barbara D'Ambrosia, Secretary of the Ohio Section of the MAA, via e-mail to bdambrosia@jcu.edu (preferred) or via postal mail to:

Barbara D'Ambrosia
Department of Mathematics and Computer Science
John Carroll University
1 John Carroll Blvd.
University Heights, OH 44118.

Cartesian Logic: The converse to "I think, therefore I am" : One evening Rene Descartes went to relax at a local tavern. The tender approached and said, "Ah, good evening Monsieur Descartes! Shall I serve you the usual drink?". Descartes replied, "I think not.", and promptly vanished.

Around the Ohio Section: Campus Notes

From **Baldwin-Wallace** (submitted by Brent Strunk): The faculty of Baldwin Wallace University would like to congratulate Dr. Peggy Slavik on her successful application for promotion and tenure, and Dr. Catherine Lane on her successful application for promotion.

Students have returned to campus at Baldwin Wallace University for hybrid instruction. Students are required to wear face masks while inside and to social distance at all times. Classrooms have been reconfigured with 6 feet of social distancing and provided with cleaning materials to help sanitize the work spaces. Random sample testing, contact tracing, active quarantine and isolation methods, and a student pledge have helped keep the case count low. Cancelling fall break and reducing long weekend breaks have helped protect the campus in this period of time. For the Mathematics Department, this has made social events for students challenging, but the faculty are adapting and coming up with creative solutions for our students both in and out of the classroom.

From **Denison University** (submitted by Lew Ludwig): Denison University is happy to announce that Dr. David White earned tenure and been promoted to Associate Professor of Mathematics. David's next goal is to finish his first book, *Introduction to Data Systems* (to be published by Springer; joint with Tom Bressoud), which provides students an accessible introduction to forms/formats of data, databases, data wrangling, web scraping, APIs, and data aptitude.

From **John Carroll University** (submitted by Barbara D'Ambrosia): Here's the news from JCU: After 58 years on the Faculty at John Carroll University, Bob Kolesar retired in May 2020. We wish him a happy and well-deserved retirement!

Also leaving JCU at the end of the 2019-2020 academic year were three visiting faculty members: Dan Bossaller, who is now in a post-doc position at Baylor University; Mirjeta Pasha, who is now in a post-doc at Arizona State University; and Bob Short, who is still in Cleveland but is now working at the NASA Glenn Research Center.

We welcome visiting faculty member Paromita Banerjee, who completed her Ph.D. in Applied Mathematics at Case Western Reserve University this past summer.

From the **University of Dayton** (submitted by Wiebke Diestelkamp): The Department of Mathematics at UD is happy to announce that Jon Brown, Catherine Kublik and Dan Ren have been tenured and promoted to the rank of Associate Professor. Julie Simon has been promoted to Senior Lecturer. We have welcomed four new faculty members this fall: Jacob Shapiro is an assistant professor, and Sam Brensinger, Colin Craft and Cathryn Curry are lecturers. Jacob received his PhD from Purdue University in 2018 and just completed a postdoc at Australian National University. Sam received his PhD from the University of Iowa this year. Colin received his PhD from the University of North Texas last year and has been teaching at UNT. Cathryn received an MA in mathematics from the University of Wisconsin - Madison in 2014, and she has been teaching at Wright State University since then. Brink Harrison retired in May and is now enjoying life in Maine. Lynne Yengulalp has left UD and is now an Assistant Teaching Professor and Assistant Director of the Math & Stats Center at Wake Forest University. We miss both of them greatly and wish them all the best in the next chapter of their lives.

From **Youngstown State University** (submitted by Eric Wingler): At YSU, we had two of our faculty members retire. They are David Pollack and George Yates.

Regarding the mode of teaching at YSU, we are using several methods: online, face-to-face (with masks), and a mixture of both. (Some classrooms were not big enough for an entire class.)

Here's an interesting mathematical factoid:

The sum of the squares of the first 7 primes (2—17) and the sum of the cubes of the integers 1 up to 6 then 5 down to 1 both sum to the same famous (or infamous) integer. What is it?

Speaker: Jim Fowler - The Ohio State University
Title: Computer-Assisted Mathematics

Abstract: People use computers to help with computations, but can computers also help us write proofs? This talk is a friendly introduction to proof assistants, that is, to computer programs which help humans write proofs and verify their correctness. The underlying machinery is "type theory" so we'll spend most of our time getting acquainted with "types." By the end, you will perhaps believe that writing proofs and writing programs are not so different after all. This is a "live" talk in the sense that we'll see real examples running on a real computer, specifically using Agda.

Jim Fowler, Ph.D. is an Associate Professor of Mathematics at The Ohio State University. His research interests broadly include geometry, topology, and math education. Prior to working at The Ohio State University, he earned an undergraduate degree from Harvard University and earned a Ph.D. from the University of Chicago. Forbes magazine said he "is making calculus go viral."



Speaker: Katie Cerrone, University of Akron
Title: Engaging Students in the New (and Old) Classroom

Abstract: In the spring I had planned to talk about how to engage students in the traditional classroom. I believe that concept is even more relevant in our new "classrooms." Some of us are teaching online, either synchronous or asynchronous, others are teaching classes split up with only some attending in person while the rest watch online. It's a new world and this presentation will continue the discussion of how to engage our students in any class.

Katie Cerrone is an Akron Zip through and through. She received her B.S. in Mechanical Engineering from UA in 2004 followed by her M.S. in Mathematics in 2006. After taking a short break to travel she returned to UA as a faculty member in the College of Applied Science and Technology in 2007 and began working on her Ph.D. in Curriculum and Instruction, which she received in 2012. Her research interests are student transition from high school to college and the use of technology to improve instruction. Katie first became active in the section by attending the Ohio NExT workshops, which she has always found extremely worthwhile as she enjoys meeting new section members and learning how others are improving their teaching. She has served as the OMSC Liaison, been a member of CONTEAL and as the Ohio NExT Co-coordinator.



Speaker: Lew Ludwig
Title: Knot mosaics - something for everyone”

Abstract: Since their inception in 2008 by Lomonaco and Kauffman, knot mosaics have provided a wealth of areas to study - mosaic number, composition, and tabulation to name a few. In this presentation we will give a general introduction to the topic and provide open, accessible questions suitable for undergraduate research. This presentation is intended for a general audience.

Lew Ludwig, Professor of Mathematics, is a mathematician at Denison University. His research in the field of topology mainly focuses on knot theory, a study in which he engages undergraduate students; nearly a third of his publications involve undergraduate collaborators. Lew created and co-hosted the **Undergraduate Knot Theory Conference**, the [Un-Knot Conference](#), at Denison University in 2009, 2012, and 2016 which cumulatively supported over 300 undergraduate students, their faculty mentors, and researchers with over \$100,00 in NSF funding. He has given numerous talks on his work nationally and internationally for all audience levels, including a [hands-on workshop](#) for K-12 students for the American Mathematical Society for the two-day [USA Science and Engineering Festival](#) in Washington, D.C. which drew over 150,000 attendees. He is co-editor on the forthcoming book, the *Encyclopedia of Knot Theory* from the CRC Press/Taylor & Francis Group.



Speaker: Jim Albert
Title: Teaching Data Science to Undergraduates

Abstract: With the help of a NSF grant, Bowling Green State University started in Fall 2015 a new undergraduate data science program within a department of mathematics and statistics. This program is a synthesis of courses in mathematics, statistics and computer science designed to prepare the students for opportunities in data science. We describe the new data science and statistical learning courses and discuss challenges in the development of this program.

Jim Albert recently retired as Distinguished University Professor at Bowling Green State University. His interests include Bayesian modeling, statistical computing, and applications of statistical thinking in sports. He has written or coauthored books on Bayesian modeling, the use of the statistical language R, and applying statistical thinking in baseball.



Speaker: Anna Ghazara
Title: Equilibria, Patterns, and Waves in Reaction-Diffusion Equations

Abstract: Some natural phenomena are modeled effectively using reaction-diffusion equations with an unbounded, one-dimensional spatial variable. For such equations, solutions of physical interest include constant states (equilibria), patterns which are time-independent solutions with a spatial structure, and traveling waves which are solutions that preserve their shape while moving in some preferred direction with constant velocity. Existence and properties of these solutions may be studied using applied dynamical systems, or the analysis of pdes, or simulations, but, more often, a combination of these approaches-. The applications that support such solutions are plentiful and the solutions are often observable in real life or experiments. The applied dynamical systems techniques used to explore their existence are geometrically intuitive. In this talk I will argue that the topic of equilibria, patterns, and waves in reaction-

Dr. Anna Ghazaryan received a PhD in Mathematics from the Ohio State University in 2005. Before moving to Miami University in 2010, she held postdoctoral positions at the University of North Carolina-Chapel Hill and the University of Kansas in Lawrence. At Miami University, she has been a faculty member of the Department of Mathematics, currently in the rank of Associate Professor. The area of Ghazaryan's research is Applied Dynamical Systems, more precisely, traveling waves as solutions of partial differential equations. She has been an active member of the SIAM activity group on Dynamical Systems. In 2018-2019, she served as a secretary of this activity group and as Chief Editor of DSWeb magazine, which is an online, quarterly publication run by the activity group. Her involvement in the activities of Association for Women in Math includes serving on the AWM Mentoring Committee as a co-chair in 2009-2010 and the chair in 2010-2017.



Ohio Section Meetings

Spring 2021 Annual Meeting Mar. 26-27
Kent State University. Kent OH (tentative)

Fall 2021 Section Meeting, University of Toledo

Spring 2022 Section Meeting, Xavier University

National MAA-AMS

MathFest 2021: Sacramento, CA | August 4-7, 2021

MathFest 2022: Washington, DC | August 3-6, 2022

Mathfest 2023: Tampa, FL | August 2-5, 2023

MathFest 2024: Indianapolis, IN | August 7-10, 2024

AMS Annual Joint Meeting 2021: (VIRTUAL)

OHIO FOCUS

The newsletter of the Ohio Section of the Mathematical Association of America, which first appeared in 1973, is published twice yearly in time to reach members before the fall and spring meetings. Newsletters are published online at www.maa.org/Ohio. Notification emails are sent using addresses provided by the MAA.

Editor: Brian Shelburne,
bshelburne@wittenberg.edu
Professor Emeritus - Department of Mathematics and
Computer Science - Wittenberg University
Springfield OH 45501

The deadline for the next newsletter is January 15 15, 2021. E-mail copy is preferred. Please send copy to the editor (see above), and also to the Section Webmaster, Michael Schroeder, Marshall University
schroederm@marshall.edu for posting on the web

2020-2021 Ohio Section Officers and Committees

ELECTED OFFICERS

President

David Stuckey, Defiance College
dstuckey@defiance.edu (2022)

Past-President

Katie Cerrone-Arnold, University of Akron,
kc24@uakron.edu (2020)

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Vacant

Section Representative

Daniel Otero, Xavier University
otero@xavier.edu (2021)

Secretary

Barbara D'Ambrosia, John Carroll Univ.
bdambrosia@jcu.edu (2021)

Secretary-Elect

Kyle Calderhead, Malone University
kcalderhead@malone.edu (2021)

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tpwakefield@ysu.edu (2022)

Treasurer-Elect

Vacant

OTHER OFFICERS

Department Liaisons Coordinator

Chris O'Connor, Shawnee State Univ.
coconnor@shawnee.edu (2020)

Webmaster

Michael Schroeder, Marshall University
schroederm@marshall.edu (2022)

On-line Registration

Zhijun Yin, University of Akron
zyin@uakron.edu (2023)

Newsletter Editor

Brian Shelburne, Wittenberg University
bshelburne@wittenberg.edu (2022)

Ohio Project NExT Co-Coordinators

Chandra Dinavahi, U. of Findlay
dinavahi@findlay.edu (2021)

Michael Schroeder, Marshall University
schroederm@marshall.edu (2022)

Liz Haynes-Wiget, Wilmington College
elizabeth_haynes-wiget@wilmington.edu (2022)

OhioMATYC Liaison to OhioMAA

Jim Anderson, University of Toledo
jim.anderson@utoledo.edu (2020)

OCTM Liaison

Liz Haynes-Wiget, Wilmington College
elizabeth_haynes-wiget@wilmington.edu (2021)

Archivist

Daniel Otero, Xavier University
otero@xavier.edu (2020)

COMMITTEES

* Denotes committee chair. Elected Officers and Committee Chairs are voting members of the Executive Committee. Terms expire at the end of the Spring meetings of the year listed. See the Bylaws.

Program Committee

*Matt Davis, Muskingum University (2021)

Najat Baji, Sinclair Comm. C. (2022)

Chris Swanson, Ashland University

CONTEAL

*Aaron Blodgett, Univ of Findlay (2023)

Najat Baji, Sinclair Comm. C. (2021)

Laurie Dunlap, U. Akron (2020)

Bradford Findell, Ohio State University (2021)

James Fitzsimmons, Wilmington Coll. (2022)

Ian Hogan, Central State University (2021)

CONSTUM

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Alyssa Hoofnagle, Wittenberg Univ. (2023)

M B Rao, University of Cincinnati (2022)

Chris Swanson, Ashland University (2022)

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Diana Eames, University of Akron (2022)

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Barbara D'Ambrosia, John Carroll Univ. (secretary, nonvoting)

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*Katie Cerrone-Arnold, U. Akron (Past-President)

M B Rao U Cincinnati. (2022)

Gordon Swain, Ashland University (2021)

Barbara D'Ambrosia, John Carroll Univ. (secretary, nonvoting)

LOCAL ARRANGEMENTS FOR MEETINGS

Spring 2021: Kent State
Andrew Tonge, atonge@kent.edu

Fall 2021: University of Toledo
Jim Anderson: jim.anderson@utoledo.edu

The shortest math joke: let epsilon be < 0

Please report any errors or omissions to the Newsletter Editor: Brian Shelburne at bshelburne@wittenberg.edu