

Volume 10

Fall 2016

Number 9

College of Wooster to Host Panel and Variety of Speakers on October 28 - 29

The Fall Meeting of the Ohio Section of the MAA will take place October 28 - 29, 2016 at the College of Wooster in Wooster, Ohio. After committee meetings at noon, there is a panel discussion on the "State of Online Teaching of College Level Mathematics in Ohio". Then Bonita Lawrence, Marshall University, will speak as the Distinguished Teaching Award Winner. She will be aided by Clayton Brooks and students Chad Lott, and Paige Yankey, all of Marshall. Jenya Soprunova, Kent State University, is the after-dinner speaker while Erica Flapan, Pomona College, and Malena Espanol, University of Akron, will present on Saturday. There will also be contributed paper sessions on both Friday afternoon and Saturday morning for meeting participants. Graduate and undergraduate students in mathematics, mathematics education, or related fields are encouraged to attend.



Registration, exhibits and breaks take place in the lobby of Freedlander Theatre, on the corner of University and Bever Streets. It is across the street from Taylor Hall.

Nominate a Colleague for Section Distinguished Teaching Award

There are many outstanding mathematics educators in the Ohio Section, and one way to recognize them for their excellence is to nominate them for the Ohio Section Award for Distinguished College or University Teaching of Mathematics. If you know of such an excellent educator, please consider nominating him or her for this honor.

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 <u>http://sections.maa.org/ohio/</u> <u>Award/</u>. 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. of the Ohio Section, and appropriate publicity will be generated at the winner's home institution. The winner will become the Ohio Section's nominee for the MAA's 2017 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).

Nominations should be sent to Pam Warton, Secretary of the Ohio Section of the MAA, via e-mail to <u>war-</u><u>ton@findlay.edu</u> (preferred) or via postal mail to Pam Warton, Department of Mathematics, University of Findlay, 1000 N. Main St., Findlay, OH 45840. If you have questions or comments, please contact Danny Otero, Chair of the Teaching Award Committee, at otero@xavier.edu or 513-745-2012.

The award will be presented at the 2017 Spring Meeting

The nomination deadline is January 1, 2017.

Governor Reports on Proposed National Restructure

Last summer the MAA celebrated its centennial in Washington, D.C. This summer the MAA celebrated MathFest in Columbus, Ohio not far from the Ohio State University where it was founded and held its first meeting in late December of 1915. As you may know, Ohio was the first to be awarded a section of the MAA but the Ohio Section was not the first to hold a section meeting. That distinction goes to Kansas, while Ohio was the second



to hold a meeting. As the MAA begins its 101st year, it is nearing a vote on a significant overhaul of its bylaws.

After the joint meetings in Seattle, an Ad Hoc Committee on Governance and Bylaw Changes was formed to fine tune the proposed governance model approved by the Board of Governors and rewrite the bylaws to reflect the necessary changes. Revisions were presented by the committee to the Board of Governors at MathFest. The revised bylaws and articles of incorporation would allow the MAA to comply with the Illinois General Not for Profit Corporation Act of 1986, and adhere to IRS regulations so as to maintain its not-for-profit status as a 501(c)(3) corporation. Under the new bylaws, the MAA would be governed by a nine member Board of Directors (roughly the current Executive Committee of the Board of Governors) and a large Congress (roughly the current Board of Governors with representatives from all 29 Sections and other groups).

The new Board of Directors would include the President, a President-Elect (during the year immediately prior to serving) or a Past President (during the year immediately following the expiration of their term), a single Vice President, a Treasurer, a Secretary, an Associate Secretary, the Chair of the Committee on Sections, the Chair of the Congress, and a Congress Officer-at-large. This Board would have oversight responsibility for all the activities of the Association, including: setting policies and direction to activities of the Association; receiving reports from the Officers, committees, and senior staff; and exercising fiduciary responsibility.

The Congress would facilitate communication within the Association with its principal responsibilities including: approving strategic goals and priorities; advising the Board on changes to the Association bylaws; electing atlarge members of the Congress; and recommending to the Board programmatic and social policies for the Association. The Chair of the Congress and one of its other members would serve on the Board of Directors; all members of the Board of Directors would serve in the Congress. Each Section would elect a Section Representative to the Congress, rather than the current Section Governor.

The goal of these changes is to make the MAA's leadership more flexible and responsive, while still retaining broad representation of the membership. I support these goals and plan to vote for the revised bylaws and articles of incorporation.

Much of the description given above is adapted from an MAA Focus article by Matt Boelkins, First Vice President of the MAA, that is scheduled to appear in the October/ November, 2016 issue. Please read that article for more information and links to the current and proposed bylaws and articles of incorporation.

The vote on changes to the bylaws will take place at the MAA business meeting slated to be held Saturday, January 7 at the Joint Meetings in Atlanta. In Columbus, the Board of Governors decided that this was the most prudent voting method to get a result in a timely fashion. At least 50 members of the Association must vote at the meeting, of whom at least 2/3 must approve of the changes. I encourage you to attend this meeting and exercise your right to vote!

News from Jim Daniel, MAA Treasurer, continues to be sobering. He reported at MathFest that in 2015, the MAA suffered its eleventh consecutive year of annual operating deficits, with a 2015 deficit about double what was budgeted. Starting in 2005, the MAA had three years of annual deficits averaging about \$31,000 and then seven years averaging about \$211,000; the deficits for 2015, 2016, and 2017 are averaging close to \$1,000,000. He stated that recent years have seen various actions to improve the MAA's financial situation, but these have clearly not solved the MAA's fiscal problems despite keeping things from being still worse than they are. While he is concerned about the Association's financial future, he remains optimistic that the MAA will find a way to financial stability.

Governor Higgins' Report

(Continued from page 2)

Some good news is that MAA membership increased substantially from 2014 to 2015, primarily due to changes in the Departmental Membership, which now allows departments to offer membership to all of their math students. Over 200 Departmental Members have introduced more than 6,600 students to the benefits of MAA. Core membership (members paying at or near full membership dues) also rose from 2014-15, and continued to track higher in 2016. I hope your department will apply for a departmental membership if it has not done so. You will find details about how to apply under membership at <u>www.maa.org</u>. And don't forget to renew your own membership!

I actually spent my first year as Governor of the Ohio Section in California where I shared a teaching position at California Lutheran University with my wife, Aparna Higgins, while we were on sabbatical leave. Last year I attended four section meetings, two in Ohio and two in California. I continue to be convinced that the strength and the future of the MAA is in its Sections.

It was great to see Judy Holdener (Kenyon College) and Chris Swanson (Ashland University and Ohio Section President) give invited presentations at MathFest. Judy's MAA Invited Address on "Immersion in Mathematics via Digital Art" and Chris's Undergraduate Student Activity presentation entitled "Games Mathematicians Play" were both excellent.

If you would like to get more involved with the MAA by

serving on a national committee, please let me know and I will pass your name along to MAA Secretary, Barbara Faires. Barbara's term as MAA Secretary will end soon and a committee to find her replacement has been formed. Please send any suggestions you may have for Barbara's replacement to the chair of the committee, Paul Zorn, at St. Olaf College.

I hope to see you at our fall Ohio Section Meeting at the College of Wooster! And if you attend the Joint Meetings in Atlanta, don't forget to make travel arrangements so that you can attend the MAA business meeting and vote on the new bylaws.

> Bill Higgins Wittenberg University Ohio Section Governor



Judy Holdener with her mathematical artwork, "Immersion".

Information Regarding Registration for Fall Meeting

Online registration is preferred. Visit the Section web site at <u>http://www.maa.org/Ohio</u> on or after Tuesday, September 13 for one-stop registration, banquet reservation, and abstract submission. The deadline for meeting pre-registration with banquet reservations is October 21. Abstracts for contributed papers must be submitted by October 14.

On-site meeting registration is always available, but lastminute banquet tickets cannot be guaranteed. Early registration helps those making the meeting arrangements and is always appreciated. Registration will be held beginning 12:00 p.m. on Friday in the lobby of Freedlander Theater (329 E University St., Wooster) and will continue Saturday morning at 8:00 a.m. Meeting participants who are unable to register online at <u>http://www.maa.org/Ohio</u> may register by mail by sending the following information: name, affiliation, address, phone, e-mail address (if any), type of position, and banquet buffet reservation. Send with check, payable to Ohio Section MAA, for applicable fees [registration fee (\$30 ordinary registration, \$15 retired or part-time, no fee for students or first-time attendees), \$24 banquet fee] to:

Ohio Section MAA Fall Meeting c/o Drew Pasteur Taylor Hall 308 E University St. Wooster, OH 44691. Registration by mail will be pending receipt of registration fees.

New President Reminds of Award Deadlines and Opportunities

"Greetings from Rio de Janeiro" is the way that I wish I could start this message as I am an Olympics junkie and my bucket list includes attending the Olympic Games eventually. Alas, I am writing this message in Ashland, Ohio instead as the Olympics are on my television in the background. That being said, I do feel like I just returned from the Olympics of math conferences as I attended MathFest in Columbus last week and am very appreciative of the financial support the Ohio Section of the MAA provided so that I could represent the section at the Section Officers meeting. I am not always able to attend MathFest, but it is always one of the professional highlights of my year when I am able to attend. It was wonderful to see so many Ohio Section colleagues at the conference as well as a number of my former professors from Denison University. I have to admit I felt a little old when I noticed my name listed as an attendee celebrating 25 years of membership of the MAA, but leading the student activity "Games Mathematicians Play" and interacting with undergraduates at the conference allowed me to feel young.

I do wish to share a few information items from the Section Officers meeting. Barbara Faires will be retiring as the current MAA Secretary and the MAA is currently seeking candidates for the Secretary-Elect to begin participating in MAA governance and business in early 2017 before fully assuming duties as Secretary in February 2018 for a 5 year term. Review of completed applications began August 15th. Calvin Van Niewaal, Chair of Department Liaisons, presented a resolution that the Department Liaison Program will be



A limited number of copies of *A Centennial History of the Ohio Section of the Mathematical Association of America* will be available for purchase for \$5.00 at the MAA book table. Institutions may want to consider purchasing a copy for inclusion in their libraries.

discontinued as a national program and sections will be encouraged to develop and run their own liaison programs with the national MAA office willing to help in this transition. I am currently working with Chris O'Connor, Department Liaisons Coordinator for our section, to make certain our liaison list is up-to-date and



functioning well. Finally, I want to encourage you to consider nominating your colleagues for national MAA awards including the Henry L. Alder Award for Distinguished Teaching by a Beginning College or University Mathematics Faculty Member (Deadline: October 1), the Gung and Hu Distinguished Service Award (Deadline: December 1), the Daniel Solow Author's Award (Deadline: October 1) and the Dolciani Award (Deadline: September 1). Additional information about the nomination process can be found on the national MAA website. Also, remember that nominations for the Ohio Section Teaching Award are due January 1.

I want to thank you for the opportunity to serve as the President of the Ohio Section of the MAA for the next two years. While I have not always been able to attend the national MathFest meetings over my last 17 years as a professor, attending the Ohio section meetings have always invigorated me in the middle of each semester. I wish to thank the Program Committee chaired by Bill Fuller and the local arrangements coordinator Mihai Caragiu for the wonderful Spring 2016 Meeting of the Ohio Section at Ohio Northern University. Conference attendees received copies of the book A Centennial History of the Ohio Section of the Mathematical Association of America. If you missed out on getting a copy of the book, it will be on sale at future section meetings for \$5. Special thanks to the Centennial Committee members (David Kullman, Tom Dence, Tom Hern, Danny Otero and Al Stickney) for all of the ways they helped us celebrate our 100-year history including this final memento that I am certain will be on the bookshelves of section members for years to come. Many of the invited talks at the Spring meeting focused on the history of mathematics, including Danny Otero's Retiring President's Address "Gottfried Wilhelm Leibniz (1646-1716): 'an academy in himself.'" Thanks to Danny for his service as President of the Ohio (Continued on page 5)

Campus Notes and News From Across the Section

From Ashland University, Christopher Swanson is on senior study leave this year, splitting it over two semesters as he continues to serve as the Director of the Honors Program. **Robert Cyders** has been hired as a professional instructor in the College of Education, teaching a number of math education courses. Senior math major **Grace McCourt** won a Pi Mu Epsilon Student Speaker Award at MathFest.

Baldwin Wallace reports that Dr. Tim Riggle and Dr. Teresa Graham have retired after years of service at BWU. The Mathematics department welcomes Dr. Catherine Lane to the faculty and looks forward to working with her. Congratulations to Dr. Peggy Slavik on her successful thesis defense and graduation in December of 2015. Dr. David Calvis spoke on "Reaping the Benefits of Technology Without the Frustration" and Dr. Aaron Montgomery talked on "A Useful Shortcut for Computing (Some) Matrix Determinants and Inverses" at MathFest. As part of the PIC Math grant, Dr. Melissa Dennison ran a modeling course working with three groups of students on optimizing busing routes for the Berea School system and modeling vapor intrusion in partnership with local industry partners.

President Swanson's Message (Continued from page 4)

Section of the MAA and for all the advice he has shared with me thus far as I take over the responsibility. The Program Committee has planned another delightful meeting for us at the College of Wooster this fall featuring invited speakers Erica Flapan of Pomona College, Malena Espanol of the University of Akron, Jenya Soprunova of Kent State University and 2016 Section Teaching Award winner Bonita Lawrence of Marshall University. I look forward to seeing you October 28 - 29 in Wooster, one of my favorite small cities in Ohio, partially due to a number of excellent local restaurants. Drew Pasteur, the local arrangements coordinator, recommends reserving your hotel room early as the College of Wooster is in Amish Country, a popular destination in the fall.

With the beginning of my tenure as the Ohio Section's president, I have resigned as a co-coordinator of Ohio NExT, ending my involvement with the Ohio NExT workshops that started in Fall 1999 at the College of Wooster. It is going to feel strange not arriving for the section meeting until midday on Friday and I will truly

Otterbein University welcomes new faculty member **Dr. Pei Pei** this fall. She received her BS in Applied Mathematics and MS in Matrix Theory from East China Normal University and in 2014 earned her Ph.D. in Partial Differential Equations and Applied Analysis from the University of Nebraska-Lincoln.

At Sinclair Community College, Craig Birkemeier was promoted to Associate Professor effective fall 2016 and Lee Widmer joined the department as an Annually Contracted Faculty in fall 2016.

Wiebke Diestelkamp is the new chair of the Department of Mathematics at the University of Dayton. She succeeds Joe Mashburn, who served two terms as chair. They congratulate Ruihua Liu, who has been promoted to Professor. The department welcomes Andres Larrain-Hubach as an Assistant Professor. Andres earned a Ph.D. in geometry from Boston University in 2012. Lynne Yengulalp is on sabbatical for the 2016-2017 academic year, and Maher Qumsiyeh is on sabbatical for Fall 2016.

At **Wittenberg University**, **Alyssa Armstrong** (mathematics) and **Thomas Bitterman** (computer science) now have tenure track positions.

miss the interactions I have had with new faculty members throughout Ohio at the Ohio NExT banquets on Thursday night. I stepped down knowing that Ohio NExT is in good hands with the continued service of Katie Cerrone Arnold and Chandra Dinavahi and the new appointment of Michael Schroeder on the Organizing Committee. I wish to urge you to encourage faculty members at your universities within their first 5 years of teaching to participate in the Ohio NExT Workshop as it is a great program to welcome new faculty to the Ohio Section of the MAA and to help them form connections to other faculty members within the section. As President, I am hoping to send an e-mail to all new math faculty in Ohio Section welcoming them to the section and encouraging them to participate in Ohio NExT.

As you kick off your fall semester, teaching students **bronzed** by the summer sun, may your find **silver** linings in any clouds you encounter and I will see you at the Fall Meeting, which will certainly be as good as **gold**.

Chris Swanson Ashland University Ohio Section President

Contributed Papers Needed for Fall Meeting

Fifteen-minute presentations on any topic of general interest in mathematics or related areas are encouraged for the Contributed Paper Sessions on Friday afternoon and Saturday morning at the fall Ohio Section meeting. Reports on projects, research announcements, or anything you believe would be of interest to those in attendance are welcome. Contributors should send a title and brief abstract by Friday October 14.

Online submission with your meeting registration (at <u>http://sections.maa.org/ohio/</u>) is strongly preferred, but if necessary, you may submit your title and abstract to the chair of the Program Committee, Laurie Dunlap, by e-mail at <u>dunlapL@uakron.edu</u>, or by U.S. mail at The University of Akron Mathematics Department, Akron, OH 44325-4002. Abstracts should be between 25 and 75 words in length and should employ proper English

grammar and spelling. One speaker per session is greatly preferred, but two speakers in one session can be accommodated if necessary. Please use only plain text in your title and abstract as the abstract submittal system cannot process TeX or other graphics code.

Each presentation room will have a PC, a computer projector, and laptop connections. Presenters can either plug their laptops into the overhead projection system or plug a flash drive into the resident computer. If you wish to project from an Apple device then you must bring your own adapter. Internet access will be provided. Speakers with specific questions about technology availability should contact Drew Pasteur at <u>rpasteur@wooster.edu</u>. You may submit abstracts online at the Section web page: <u>http://sections.maa.org/ohio.</u>

Invited Speakers to Provide Workshops for Project NExT

Ohio NExT (New Experiences in Teaching) is a program for new faculty members. Its goal is to help newer faculty to network with colleagues, to share ideas and experiences that promote professional growth, and to encourage faculty to become involved in the Ohio Section.

On Thursday evening, October 27th, the night preceding the Ohio Section Spring Meeting, members of Ohio NExT will gather for a banquet beginning at 7:00 p.m. in the Library dining room of the Wooster Inn. This is a great opportunity to meet old friends and make new ones. After the banquet, the NExTers will spend an hour or so discussing a topic related to the profession.

Then, on Friday morning, October 28th, the Ohio NExT program will continue in the Governance Room of the Scot Center on the College of Wooster campus. The program will feature two workshops, as well as contributed talks by Ohio NExTers. We are pleased to announce that Erica Flapan of Pomona College will lead a workshop entitled "My struggles to become a mathematician, solve my two body problem, and get a tenure track job" and Bonita Lawrence of Marshall University will lead the 2nd workshop, "Inspiration or 'All we want are the facts, Ma'am'." At last spring's meeting, the NExT workshop at Ohio Northern University featured Dan Baczkowski of the University of Findlay and Fred Rickey, Professor Emeritus of the United States Military Academy for the fifty-minute workshops. Mitra Devkota of Shawnee State University and Malena Espanol of The University of Akron presented 15-minute talks.

Ohio NExT is open to anyone in the Ohio Section who is in his/her first five years of teaching in Ohio. If this applies to you, please consider joining us this spring for our NExT Banquet and Workshop, as well as the Ohio Section Meeting that follows. Contact Katie Cerrone (kc24@uakron.edu) for membership information and details.

Ohio NExT is coordinated by Katie Cerrone, University of Akron (<u>kc24@uakron.edu</u>), Chandra Dinavahi of the University of Findlay (<u>dinavahi@findlay.edu</u>) and Michael Schroeder, Marshall University (<u>schroederm@marshall.edu</u>).

Discount Code Available for Fall Meeting

The MAA has a variety of book series that encompass many areas and levels of collegiate mathematics, including biography, history, recreational mathematics, problems, textbooks, classroom resource materials, advanced monographs, and notes on pedagogy. For a select time, members may use a code for a 35% discount on books purchased at the MAA Store, <u>maa.org/press</u>. It cannot be combined with any other offers or discounts. The code for the fall meeting is **OHFA2016** and is valid from **October 23-November 6, 2016**.

"A Study of Dynamic Equations Using Mechanical Integration"



Bonita Lawrence

Differential Analyzer The Marshall Lab offers undergraduate and graduate students the opportunity to investigate both the quantitative and qualitative behavior of solutions of certain classes of differential equations using primarily mechanical differential analyzers. After a bit of training to use the machines, students have the freedom to plan their research study, program the machine, run the problem and analyze the results. Recently, the team has been studying the behavior of solutions on sets known as time scales. In particular, the group has been studying time scales that are unions of closed intervals. The goal is to study the behavior of solutions as the sets converge to a single closed interval. A discussion of the relationship between the mechanics of the machine and the mathematics that it models will be presented as well as a demonstration by my graduate students of how we run a problem on one of the small traveling machines known as DA Vinci!

Panel to Discuss Online Teaching

At the Fall meeting, CONCUR (Committee on Curriculum) is organizing a panel discussion titled "**State of Online Teaching of College Level Mathematics in Ohio**." This will be the opening session on Friday afternoon. There will be four panel members to share their experiences when they teach a course online, things that worked for them and things which did not.

The panel members are **Jim Fowler**, Ohio State University, **Karen Mitchell**, Marshall University, **Laura Stapelton**, Marshall University, and **Richard Uchida**, Sinclair Community College. After each has shared, there will be opportunity for discussion with the audience. Please plan to attend this event to share your experiences and get insights for future use.

Inspired by her high school mathematics teacher, Mary Helen Miller, **Dr. Bonita Lawrence** began her formal mathematics training at Cameron University in Lawton, Oklahoma. After a short career as a classroom teacher, she returned to the university to continue her education, earning a Master's degree at Auburn University and a Ph.D. at the University of Texas at Arlington. Her Ph.D. dissertation was written in the area of Stochastic Differential Equations.

Intrigued by studies of the similarities and differences between the differential and difference equations, her research studies now focus on results in the area of Dynamic Equations on Time Scales. Dr. Lawrence is a Professor of Mathematics at Marshall University and is the Lead Researcher for the Marshall University Differential Analyzer Lab. Her lab houses the only publicly accessible differential analyzer of its size in the USA (and beyond). She is the recipient of several College and University teaching and research awards and was named the 2009 – 2010 West Virginia Professor of the Year. Dr. Lawrence is married to Dr. Clayton Brooks, also a Professor of Mathematics at Marshall University.



Ben Finkel wants you! Just because the Ohio Section Centennial celebration is now in the past doesn't mean that we can't continue to study and celebrate the Section's rich history. Look for the third in an indeterminately long series of *Archive Dive, Live!* exhibits at the Fall 2016 meeting at the College of Wooster. Interesting documents and photos from the Section Archives will illustrate this history as we move into our second century.

"Assignment Problem, Cheater's Rubik's Cube, and Tropical Determinant"

Jenya Soprunova

Consider *n* workers and *n* jobs, where we know how much each worker charges for each job. The classical assignment problem deals with assigning the jobs, one for each worker, so that the overall cost is as small as possible. We will discuss a polynomial-time algorithm for solving this problem that was developed by Harold Kuhn in 1955.

Next, consider the usual Rubik's cube with 9 square stickers on each side colored in one of six colors. We want to solve Rubik's cube by peeling off the stickers and replacing them so that each of the faces has all stickers of one color. We will figure out how many stickers we would need to peel off and replace in the worst case scenario and will also discuss a few generalizations of this problem.

We will explain a connection between these two seemingly very different problems and will also talk about tropical determinants, linear programming, Hall's marriage theorem, and the Birkhoff polytope. Jenya Soprunova is an Associate Professor of Mathematics at Kent State University. She received her Ph.D. from the University of Toronto in 2002.



Jenya has worked as coordinator and

advisor for the NSF funded REU program at Kent State. She coordinates the Choose Ohio First: Success in Math program and a Masters' program for secondary mathematics teachers at Kent State.

Her research interests include combinatorial and computational algebraic geometry, discrete geometry, and algebraic coding theory.

"Deblurring Images with Mathematical Models"

When we use a camera, we want the recorded image to be an accurate representation of the scene that we see. However, in some situations such as photographing a moving object, what we obtain can be a blurred image. In image deblurring, we seek to recover the original, sharp image



by using a mathematical model of the blurring process. In this lecture, we will see a brief introduction to the basic image deblurring problem and some mathematical tools to address it.

Malena Espanol

Malena Espanol is an Assistant Professor of Applied Mathematics at The University of Akron. Originally from Argentina, she received her B.S. from the University of Buenos Aires in 2003 and her Ph.D. from Tufts University in 2009. After graduation, she spent 3 years as a postdoctoral fellow at the California Institute of Technology. Malena is a national Project NExT Fellow (Brown'13 dot) and has participated in several Ohio NExT workshops. She serves as the faculty advisor for both UAkron SIAM student Chapter and the Women in Math group. She is also a member of the SIAM Diversity Advisory Committee.

Malena's research interests are in applied and computational mathematics with applications to image processing and materials science. Malena has been the recipient of several grants that include an MAA-Tensor Women and Mathematics and two NSF grants.

Quotes gleaned from across the section:

"Mathematics knows no races or geographic boundaries; for mathematics, the cultural world is one country."-Hilbert "A man is like a fraction whose numerator is what he is and whose denominator is what he thinks of himself. The larger the denominator the smaller the fraction." - [Count] Lev Nikolgevich Tolstoy "There probably is a God. Many things are easier to explain if there is than if there isn't." – John von Neumann

"Intrinsic Properties of Graphs in R³"

Knot theory is the study of embeddings of simple closed curves in \mathbb{R}^3 . A natural extension of knot theory is the study of embeddings of graphs in \mathbb{R}^3 . However, in contrast with knots, the structure of a graph can be complex, and this can affect all of its embeddings. If every embedding of a graph has a particular property, then we say that property is *intrinsic* to the graph. For example, a graph is said to be *intrinsically knotted* if every embedding of the graph in \mathbb{R}^3 contains a knot. In this talk, I will discuss intrinsic knotting and other intrinsic properties of graphs.



Erica Flapan



Erica Flapan joined the faculty at Pomona College in 1986. Since 2006, she has been the Lingurn H. Burkhead Professor of Mathematics at Pomona College. In addition to teaching at Pomona College, Flapan taught at the Summer Mathematics Program for freshmen and sophomore Women at Carleton College from 2000 until 2015. In 2011, Flapan won the Mathematical Association of America's Haimo award for distinguished college or university teaching of mathematics. Then in 2012, she was selected as an inaugural fellow of the American Mathematical Society. She is currently a Polya Lecturer for the MAA.

Erica Flapan has published extensively in topology and its applications to chemistry and molecular biology. In addition to her research papers, she has published an article in the College Mathematics Journal entitled "How to be a good teacher is an undecidable problem," as well as four books. Her first book, entitled "When Topology Meets Chemistry" was published jointly by the Mathematical Association of America and Cambridge University Press. Her second book entitled "Applications of Knot Theory," is a collection of articles that Flapan co-edited with Professor Dorothy Buck of Imperial College London. Flapan also co-authored a textbook entitled "Number Theory: A Lively Introduction with Proofs, Applications, and Stories" with James Pommersheim and Tim Marks, published by John Wiley and Sons. Finally, the AMS recently published her book entitled "Knots, Molecules, and the Universe: An Introduction to Topology", which is intended for first and second year college students.

Michelle Everson to Lead Fall Workshop on Statistics Education

Immediately after the conclusion of the Fall meeting, CONSACT (Committee on Section Activities) is sponsoring a workshop on "Becoming a Teacher of Statistics". The registration fee of \$25 includes a box lunch. Participants should preregister for the workshop and they can do this at the same time that they register for the Fall meeting.

The purpose of this workshop will be to explore many resources within the Statistics Education community that can be used by new teachers of statistics. We will discuss the recent revision of the the American Statistical Association's Guidelines for Assessment and Instruction in Statistics Education (GAISE) College Report, with a focus on designing an introductory statistics course based on the GAISE recommendations. Activity and assessment ideas will be shared, and there will be opportunities to explore different technologies--many of them free or low cost--that can be incorporated into an introductory course.

The workshop will feature Dr. Michelle Everson, Professor and Program Specialist in the Statistics Department at Ohio State University. Michelle earned her Ph.D. in Educational Psychology at the University of Minnesota. She is the recipient of the University of Minnesota College of Education and Human Development's 2009 Distinguished Teaching Award, the American Statistical Association (ASA) Waller Education Award in 2011, and the Staff Award from the Statistics Department at OSU this year. She is a former editor of the Journal of Statistics Education and was co-chair of the committee which recently revised the GAISE College Report.

Fall Meeting Program

Registration will be in the lobby of Freedlander Theater (329 E University St., Wooster). Questions can be directed to Drew Pasteur at <u>rpasteur@wooster.edu</u> or <u>330-263-2486</u>.

Friday, October 28				Saturday, October 29		
12:00- 4:00	Registration	Freedlander Theatre		8:00-10:00	Registration	Freedlander Lobby
12:00-	Committee Meetings:	LODDy		8:00-10:00	Book Vendors and Exhibits	Freedlander Lobby
1:00	CONCUR (Curriculum)	Taylor 205		8:00-9:25	Coffee and Pastries	Freedlander Lobby
	CONSACT (Section Activities)	Taylor 206		8:50-9:25	Committee On Local	Taylor 308
	CONTEAL (Teacher Education & Licensure)	Taylor 209			Arrangements and Executive Committee	
1:00-4:00	Vendor & Book Exhibits	Freedlander Lobby		0.05.0.05	needed)	
1:15-1:30	Welcome and Announcements	TBD		9:25-9:35	Announcements	Lean Lecture Hall
1:30-2:30	Panel Discussion: "State of Online Teaching of College Level Mathematics in Ohio" Jim Fowler, Karen Mitchell, Laura	McGaw Chapel		9:35-10:35	Invited Address: "Intrinsic Properties of Graphs in R ³ " Erica Flapan	Lean Lecture Hall
	Stapelton, and Richard Uchida.			10:35-10:50	Break	Freedlander Lobby
2:30-2:50	Break	Freedlander Lobby		10:50-11:45	Contributed Paper Session	Taylor 110, 111, 205, 206
2.50-3.50	Distinguished Teaching	Hall				203, 200, 207
	Award Winner: "A Study of Dynamic Equations Using Mechanical Integration" Bonita Lawrence with			11:45-12:00	Break	Freedlander Lobby
	assistance from Clayton Brooks and students Chad Lott and Paige Yankey.			12:00-1:00	Invited Address: "Deblurring Images with	Lean Lecture Hall
4:00-5:40	Executive Committee Meeting	Taylor 308			Mathematical Models" Malena	
4:20-6:15	Contributed Paper Sessions	Taylor 110, 111, 205, 206, 207		1:00-1:10	Espanol Closing Remarks	Lean Lecture Hall
6:15-6:50	Social Time	Kittredge Hall				
6:50-8:00	Banquet	Kittredge Hall		Event locations are subject to change. Check the official program you receive when you register for the meeting in the Freedlander Theatre Lobby. Also, check the Section web page, www.maa.org/ Ohio, for program updates, online registration, and contributed paper submissions.		
8:00-9:00	Invited Address: "Assignment Problem, Cheater's Rubik's Cube, and Tropical Determinant " Jenya Soprunova	Kittredge Hall				

Driving Directions

If using a GPS, enter the address of Freedlander Theatre (329 E. University St., Wooster, OH 44691)

From the East, West, or South: Take US 30 to OH-302/Bever St., then take Bever St. north through downtown Wooster, and continue one more mile to campus.

From the North: Take I-71 to exit 204, then OH-83 South, which becomes Burbank Rd. in Wooster. Use the righthand lane to continue on Burbank Rd at the fork just past Lowe's, then 1/4 mile later turn right to stay on Burbank Rd., which becomes Bever St. just before arriving at campus.

From the Northeast: Take I-76 west to the exit 13A for OH-21 South, then OH-585 South. Coming into Wooster, take a right onto Portage Rd., then a left onto Cleveland Rd. then use the right lane to stay on Cleveland Rd. At the next traffic light after the fork, make a slight left onto Bever St., which leads shortly to campus.

Hotel Information

There are blocks of rooms at two local hotels, both about two miles from campus. At the Hilton Garden Inn (959 Dover Rd.; 330-202-7701) the rate is \$119 for a room with either one king bed or two queen beds, and rooms need to be reserved by September 29. The Days Inn (789 E Milltown Rd.; 330-345-1500) has rooms with two queen beds for \$73, and the cutoff date is October 1. For the Section NExT attendees staying Thursday night, the Hilton Garden Inn is the only hotel with rooms reserved.



Parking Information

Attendees can park near the primary conference buildings in college lots at the corner of Bever St and Pine Ave, and on Henrietta St at Bever St. There is ample nearby parking available in the residential area adjacent to campus, west of Bever St. A full campus map is available at the College of Wooster website: <u>https://</u> www.wooster.edu/ media/files/about/visit/map.pdf

University of Dayton Hosting Biennial Event for Undergraduates

The Department of Mathematics will host its 27th Biennial Alumni Seminar on Saturday, November 12, 2016. Alums of the department will return to campus to talk to students about careers in mathematics. The event occurs in conjunction with the 17th Annual Kenneth C. Schraut Annual Lecture. More information about the Alumni Seminar will be available at <u>https://</u> <u>www.udayton.edu/artssciences/academics/</u> mathematics/events/index.php.

Twenty Teams Participate in Student Competition

The thirteenth annual Leo Schneider Student Team Competition was held at Ohio Northern University on Friday, April 8, 2016. Sixty students participated, forming twenty teams and representing eleven institutions: Ashland University, Bethany College, Case Western Reserve University, Cleveland State University, Malone University, Marshall University, Ohio Northern University, St. Francis, The University of Akron, University of Findlay, and Wittenberg University.

First Place (\$150): Case Western Reserve University ---Raul Arturo Hernandez Golzalez, Tejas Joshi, and David Pendergast.

Second Place (\$120): Case Western Reserve University

--- Jennifer Lin, Gregory Knapp, and Alex Balsells.

Third Place (\$90): Marshall University --- Sara Brumbaugh, Ben Jones, and Kiersten Looney.

A sudoku tournament and pizza party were held on the evening on April 8.

The fourteenth annual competition will take place March 31, 2017 at Sinclair Community College. The CON-STUM website has more details:

http://www.constum.ohiomaa.org/.

We encourage students to register for the competition and also prepare a talk for the Spring meeting. Look for more information in the Spring edition of *Focus*.

2016-2017 Ohio Section Officers and Committees

ELECTED OFFICERS

President

Chris Swanson, Ashland University (2018) 419-289-5264; cswanson@ashland.edu

Past-President

Daniel Otero, Xavier University 513-745-2012; otero@xavier.edu (2017)

Section Governor

William Higgins, Wittenberg University 937-327-7859; whiggins@witenberg.edu (2018)

Secretary

Pamela Warton, University of Findlay 419-434-4147; warton@findlay.edu (2018)

Treasurer

Brian Shelburne, Wittenberg University 937-327-7862; bshelburne@wittenberg.edu (2019)

OTHER OFFICERS

Department Liaisons Coordinator

Chris O'Connor, Shawnee State Univ 740- 351-3309; coconnor@shawnee.edu (2017)

Webmaster

Darren Wick, Ashland University 419-289-5795; dwick@ashland.edu (2017)

On-line Registration

G. Jay Kerns, Youngstown State University 330-941-3310; gkerns@ysu.edu (2017)

Newsletter Editor

David Stuckey, Defiance College 419-783-2464; dstuckey@defiance.edu (2018)

OhioMATYC Liaison to OhioMAA

Jim Anderson, University of Toledo 419-530-7296; jim.anderson@utoledo.edu

OCTM Liaison

Aaron Blodgett, University of Findlay 419-434-6920; Blodgett@findlay.edu (2018)

Archivist

Daniel Otero, Xavier University 513-745-2012; 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.

Ohio NExT Organizing Committee

*Katie Cerrone Arnold, University of Akron 330-927-8809; kc24@uakron.edu (2017) Chandra Dinavahi, U. of Findlay 419-434-6598; dinavahi@findlay.edu (2018) Michael Schroeder, Marshall U. 304-696-6643 schroederm@marshall.edu (2019)

CONTEAL

*Aaron Blodgett, Univ of Findlay (2017) Najat Baji, Sinclair Comm College (2017) Laurie Dunlap, University of Akron (2017) Susan Thompson, Otterbein University (2017) James Fitzsimmons, Wilmington Coll (2019) Jenna Van Sickle, Cleveland State U. (2019)

CONSTUM

*Tom Wakefield, Youngstown State U. (2019) Matthew McMullen, Otterbein Univ (2017) David Gerberry, Xavier University (2018) Melissa Dennison, Baldwin Wallace U. (2019) Matt Davis, Muskinghum University (2019)

CONSACT

*Paige Rinker, John Carroll University (2018) Kathryn Leed, Lorain Cty Comm Coll (2017) Flavia Sancier-Barbosa, Antioch Coll (2017) M B Rao, University of Cincinnati (2019) Aurel Stan, Ohio State University (2019) Yong Wang, Ohio Northern University (2019)

CONCUR

*Chandra Dinavahi, U. of Findlay (2019) Syvillia Averett, Central State Univ (2017) William Fuller, Ohio Northern Univ (2017) Mihai Caragiu, Ohio Northern Univ (2019) Glen Lobo, Sinclair Comm College (2019)

OTHER COMMITTEES Program Committee

*Laurie Dunlap, University of Akron (2017) Barbara Margolius, Cleveland State U. (2018) Michael Schroeder, Marshall Univ (2019)

Nominating Committee

* Phil Blau, Shawnee State Univ (2017) Adam Parker, Wittenberg Univ (2018) Chris Swanson, Ashland University (Pres) Pam Warton, University of Findlay (Secretary, nonvoting)

Teaching Award Committee

* Daniel Otero, Xavier University (Past President) (2017) David Meel, Bowling Green State U. (2017) Bonita Lawrence, Marshall University (2018) Pam Warton, University of Findlay (Secretary, nonvoting)

LOCAL ARRANGEMENTS FOR MEETINGS

Fall 2016: College of Wooster Drew Pasteur, rpasteur@wooster.edu

Spring 2017: Sinclair Community College Najat Baji, najat.baji@sinclair.edu

Fall 2017: Ohio University - Eastern John Prather, prather@ohio.edu

If you would like to become a part of one of these committees, or would be interested in having your institution host a meeting, please contact President Chris Swanson at cswanson@ashland.edu . There is a guide for local arrangements at <u>http://sections.maa.org/ohio/</u> <u>governance.html</u> as well as a meeting on Saturday morning. Information about the committees is in Article VI of the bylaws: <u>http://</u> <u>sections.maa.org/ohio/byLaws.pdf</u>

A Great Thanks to the many people who contributed articles and information for this newsletter, and to all those who work together in support of the section.

David Stuckey, Editor

Calendar

Ohio Section Meetings

Fall 2016 Section Meeting, October 28-29 College of Wooster, Wooster, Ohio

Spring 2017 Annual Meeting, March 31-April 1 Sinclair Community College, Dayton, Ohio

Fall 2017 Section Meeting, TBD Ohio University - Eastern, St. Clairsville, Ohio

Spring 2018 Annual Meeting, April 6-7 Miami University, Oxford, Ohio

National MAA-AMS Meetings

Annual Joint Meetings, January 4-7, 2017, Atlanta, GA

MathFest, July 26-29, 2017, Chicago, IL

Annual Joint Meetings, January 10-13, 2018, San Diego, CA

MathFest, August 1-4,2018, Denver, CO

Annual Joint Meetings, January 16-19, 2019, Baltimore, MD

MathFest, July 31 - August 3, 2019, Cincinnati, OH

Annual Joint Meetings, January 15-18, 2020, Denver, CO

MathFest, July 29 - August 1, 2020, Philadelphia, PA

OHIO FOCUS

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

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The next newsletter deadline is **January 28, 2017**. E -mail copy is preferred. Early submission is appreciated. Please send copy to the editor (see above), and also to the Section Webmaster, Darren Wick (dwick@ashland.edu), for posting on the web.

Other Meetings: Ohio and Surrounding States

Miami University 44th Annual Conference, Differential Equations and Dynamical Systems September 23-24, 2016, Oxford, OH http://miamioh.edu/cas/academics/departments/ mathematics/about/events/annual-mathematicsconference/index.html

Indiana Section MAA Section Meeting, October 8, 2016, Purdue University West Lafayette, West Lafayette, IN <u>http://sections.maa.org/indiana/</u>

OCTM Annual Meeting, October 27-28, 2016, Sandusky, OH <u>http://www.ohioctm.org/</u> <u>conferences/66th-annual-conference-kalahari</u>

University of Dayton 27th Biennial Alumni Seminar, November 12, 2016, Dayton, OH http://academic.udayton.edu/MathEvents/

Kentucky Section MAA Section Meeting, March 24 - 25, 2017, Berea College, Berea, KY <u>http://sections.maa.org/kentucky/meetings/</u> <u>kymaaAnnual2017/indexAnnual2017.shtml</u>

Allegheny Section MAA Section Meeting, April 7-8, 2017, Duquesne University, Pittsburgh, PA <u>http://sections.maa.org/allegheny/</u>

Central Section AMS, April 1-2, 2017, Indiana University, Bloomington, IN http://www.ams.org/meetings/sectional/sectional.html

Other National Meetings

AMATYC Annual Conference, Nov 17-20, 2016, Denver, CO <u>http://www.amatyc.org/</u>

International Conference on Technology in Collegiate Mathematics (ICTCM), March 9-12, 2017, Chicago, IL http://www.pearsonhighered.com/ictcm/

T³ International Conference, March 10-12, 2017, Chicago, IL <u>http://education.ti.com/en/us/pd/</u> international

NCTM National Meeting, April 5-8, 2017, San Antonio, TX <u>http://www.nctm.org/Conferences-and-Professional</u> -Development/Annual-Meeting-and-Exposition/