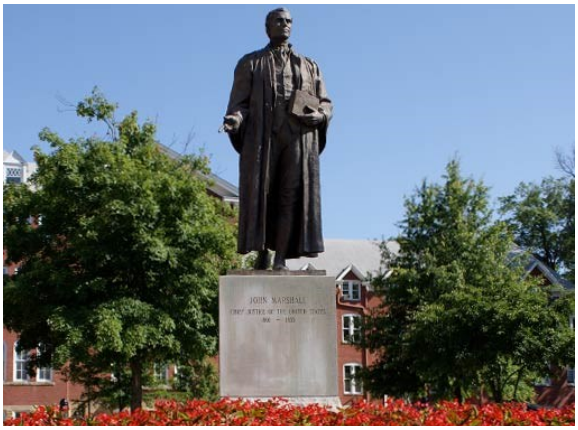
Ohio Focus

The MAA Ohio Section Newsletter

Volume 10 | Spring 2015 | Number 6

MAA Ohio Section Annual Meeting Scheduled in Huntington, West Virginia



The statue of John Marshall, erected in 1998, commemorates the 4th Supreme Court chief justice for whom Marshall University is named.

The 99th Annual Meeting of the Ohio Section of the MAA will take place March 27 - 28, 2015 at Marshall University in Huntington, West Virginia. The event starts with the Leo Schneider Student Team Competition at 12:00 p.m. and opening welcome at 1:30 p.m. Friday speakers include **Bonita Lawrence** (Marshall University), with assistance from **Alex Amorim** and **Chad Lott**, and **Carl Lee** (University of Kentucky). **Annalisa Crannell** (Franklin and Marshall University) will be providing an after dinner speech as well as a talk on Saturday. The event will close on Saturday with remarks from retiring president **John Prather** (Ohio University Eastern). 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 Information for Spring 2015 Meeting

Online registration is preferred. You may visit the Section web site at http://www.maa.org/Ohio for one-stop registration, banquet reservation, and abstract submission. The deadline for meeting pre-registration with banquet reservations is March 23. However, you may still register online until March 25 at 6:00 p.m. Abstracts for contributed papers must be submitted by March 13.

On-site meeting registration is always available, but last-minute banquet tickets cannot be guaranteed. Early registration helps with meeting arrangements and is always appreciated. On-site registration and packet pickup will begin 12:00 p.m. on Friday on Memorial Student Center 2nd floor and will continue 8:00 a.m. Saturday.

Meeting participants who cannot register online may register by mail by sending: 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), banquet fee ($25 per person)] to: Ohio Section MAA Meeting c/o Michael Schroeder

Marshall University, Department of Mathematics, College of Science
One John Marshall Drive, Science Building 270
Huntington WV 25755

Registration by mail will be pending receipt of registration fees.

Inside

Section Governor's Report

The recent Joint Mathematics Meetings in San Antonio were my last as Ohio Section Governor. My term expires at the end of June, so either Wiebke Diestelkamp or Bill Higgins will be representing the Section at the Board of Governors meeting at MathFest in Washington, D.C. this summer. You should have already received a message from the MAA with information about the election of a new Section Governor.

The MAA, like the Ohio Section, has been gearing up for the Centennial Celebration for many years. The Centennial officially began at the Joint Mathematics Meetings in January, but the major celebration will occur at MathFest this coming August. The program for MathFest will be an entire day longer than usual and includes a full slate of "Centennial Lecturers" in addition to the usual invited lectures. Some information is available at http://www.maa.org/meetings/mathfest, and more will be added as August draws nearer. Registration for MathFest 2015 will open on March 1, a whole month earlier than usual.

Here are some highlights from Board of Governors meeting in January:

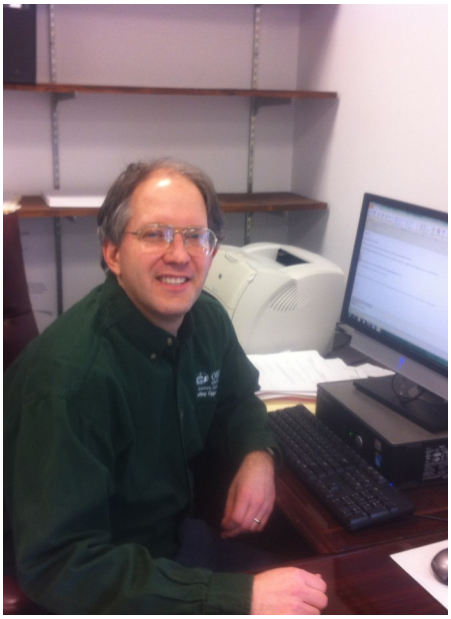
- The Second Century Campaign is well underway. If you're reading this column, then you presumably value the MAA and the work it does. If you haven't contributed to the campaign yet, I encourage you to do so. The governors were given some information about which sections were leading the way in terms of contributions. I don't remember who was first in terms of money or number of donors (honestly, I don't), but I made a note that Ohio was not in the top sections, on either count. Surely, as the first and (I think) best MAA section, we can do better. So join me in showing your Ohio MAA spirit and contribute online, at http://www.maa.org/about-maa/support-maa.
- Last summer's MathFest in Portland, Oregon, had the highest MathFest attendance to date. Abstract submissions for MathFest 2015 suggest that attendance at this summer's MathFest will be even higher.
- We approved a new structure for Departmental MAA Memberships. Currently, departmental memberships cover a print subscription to each of the MAA journals, but departments must pay an additional fee for each student member. The new structure has a differentiated membership rate determined by school size and type (Ph.D. granting or not). Each departmental membership includes full electronic membership for one designated faculty member, and unlimited student memberships at no additional charge. Departmental membership will also come with a significant discount on WebWork subscriptions. Print journals can be added for a modest fee.
- The MAA has implemented a new installment plan for annual memberships, as well as an auto-renew option. Since I seem to be perpetually late in renewing my membership, I definitely selected auto-renew this time around!
- If you want to purchase an MAA book, consider buying it directly from the MAA. Not only will you get a better discount by using your MAA member code, but the MAA will make more profit on the book. Third party sellers like Amazon and Cambridge keep up to 50% of the sale price of each MAA book.
- The Committee on the Undergraduate Program in Mathematics (CUPM) is finalizing its work on the 2015 CUPM Curriculum Guide to Majors in the Mathematical Sciences. As I'm writing this report, the final version of the Guide doesn't appear to be available on the MAA web site, although you can read a draft at http://www.maa.org/cupm. The next time you see Carol Schumacher (Kenyon College) at an Ohio Section meeting or elsewhere, be sure to thank her for her co-leadership of this impressive project!
- We continued to discuss the governance structure of the MAA.

The MAA has committee positions to suit the skills and interests of just about everyone. Many committees do their work by e-mail and don't require members to travel to meetings. If you would like to see how you can serve the Association, check out the "Committees" information at http://www.maa.org/community. If you find a committee that looks like a good fit for you, you can use the link to the committee nomination form to nominate yourself, or you can let me know and I'll nominate you.

It has been my pleasure to serve the Ohio Section for the last three years as Governor, and in various capacities before that. I hope to see you at many future Ohio Section meetings!

Barbara D'Ambrosia
John Carroll University
Ohio Section Governor

President's Message



It's amazing how quickly it seems that my time as President has gone. I guess that is why the By-law Review Committee is recommending two-year terms in the future. This Spring I hope I will see all of you at Marshall University.

Last Fall at Wittenberg University, we had our usual slate of excellent speakers. Lew Ludwig gave us some thought-provoking ideas in his Distinguished Teaching Award Presentation. Adam Parker discussed some lost techniques in ODE's. Bob Devaney gave two talks, speaking about chaos games and fractal images, and about the fractal geometry of the Mandelbrot set." Bill Dunham closed the conference discussing two morsels from Euler. In addition to the invited speakers, we had 16 contributed talks. Particular thanks to Matt Menzel who chaired the Program Committee, and to our local arrangements coordinator, Brian Shelburne.

This Spring I expect to have an equally productive meeting at Marshall University. First, Bonita Lawrence, Alex Amorim and Chad Lott, will be talking about "The Marshall Differential Analyzer Project" and Annalisa Crannell will give an after dinner talk along with her invited address. In addition, Carl Lee will be speaking about "The Many Facets of Polyhedra." I am particularly looking forward to this talk as Carl Lee was the Professor of my first graduate class at the University of Kentucky. So please blame him if you don't enjoy the final talk of the meeting which will be my outgoing President's address. Of course the Spring meeting will have a number of contributed papers along with our student activities.

At the Fall meeting, we also had two sessions on meeting attendance. These sessions produced a number of good ideas to increase membership, and the Executive Committee is actively working to implement many of them. Along these lines, there are many ways to participate in the activities of the section. For new faculty in the section (in their first five years of teaching), Ohio NExT provides an excellent opportunity. As a former participant and Co-coordinator of Ohio NExT, I am a strong believer that bringing new members into the Section is essential, and helps them build connections as they begin their academic careers. If you have newer members of your department, please encourage them to attend these activities which precede each Section meeting. Questions should be directed to one of the co-coordinators, Chris Swanson, Katie Cerrone, or Chandra Dinavahi.

For more senior (or junior) faculty who want to get involved and meet more people in the Section, I would encourage you to volunteer to serve on one of our standing committees. These committees do the vast majority of their work at meetings an hour or so before our Section meetings, and by email. They are not huge time commitments. These committees include the Committee on Student Members which directs and coordinates all activities of the section which are specifically for student members; the Committee on Section Activities which organizes the workshop that takes place immediately after fall section meetings; the Committee on Teacher and Education and Licensure which keeps the Section aware of significant changes to K-12 education and licensure requirements; and, finally, the Committee on Curriculum which looks at curricular issues in mathematics, especially college-level mathematics. If you would like to serve on any of these committees, or have questions, please contact me at prather@ohio.edu.

This year and next will also be quite exciting for members of the Ohio Section. Not only will the MAA celebrate its one hundredth year at MathFest this year, locally we are planning the Section's Centennial Celebration for our 2016 Spring meeting at Ohio Northern University. The Centennial Committee has been working hard, and it should be a terrific event. If you want to read more about our history, go to our website which contains a plethora of information. I want to thank David Kullman, who chairs the Centennial Committee, and his entire committee for their tireless efforts to preserve and celebrate our Section's history.

One other item of interest: This year we conducted our decennial by-laws review. I want to thank Barbara D'Ambrosia for spearheading this effort, along with the other members of the By-law Review Committee: Wiebke Diestelkamp, Danny Otero, Bill Higgins and David Kullman. I know they have spent a significant amount of time working on this review. More information is provided on page 4.

Finally, I want to express my gratitude to all of you for allowing me to serve as President this year, and I look forward to seeing many of you in the Spring.

John Prather
Ohio University's Eastern Campus
Ohio Section President

The Ohio Section at War
Centennial Note #11

When the Ohio Section (along with the MAA itself) was founded in the closing days of 1915, World War I had been raging in Europe for nearly a year and a half, although the United States remained neutral. The Second Annual Meeting of the Ohio Section was held on April 6, 1917 – the very day that the United States declared war on Germany. The Secretary's report for the following year notes that an evening round table discussion on standardized testing "continued with interest until adjournment was necessitated by the closing of [the Ohio Union] under the war department regime."

Group photo from the 2nd Ohio Section MAA meeting, April 6, 1917 at Chemistry Hall, Ohio Sate University

The overall theme of the 1919 Annual Meeting was "Mathematics and Warfare." In his Chairman's Address, C. N. Moore (Cincinnati) called attention to "the great importance of mathematics in various war activities, due to its extreme usefulness in many technical and scientific labors." Contributed papers on navigation, ballistics, and aviation were also read. The Friday evening round table centered upon war activities and lessons learned from the S.A.T.C. (Student Army Training Corps – a forerunner of ROTC). Harris Hancock reported on "extensive mathematics tests given to S.A.T.C. applicants at the University of Cincinnati, which indicated very inadequate preparation on the part of the men."

Another paper on ballistic tables, presented at the 1921 meeting by A. A. Bennett of the University of Texas, appears to have been the last one with direct military applications to appear at an Ohio Section meeting until R. S. Burington (Case) spoke on "use of conformal mapping in shaping wing profiles" in 1939.

The 26th Annual Meeting, in April 1941, featured contributed papers on "aerial photogrammetry" by J. R. Musselman (Western Reserve), "aerodynamics and airplane performance" by Major Bradley Jones (Cincinnati), "stress analysis in airplanes" by H. W. Sibert (Cincinnati), and "ciphering systems and deciphering methods" by R. F. Rinehart (Case). These topics suggest that mathematicians were anticipating our fast-approaching involvement in WW II. It is also worth noting that C. C. Morris (Ohio State), a charter member of the MAA, spoke at that meeting on "The first twenty-five years of the Mathematical Association."

In 1943 C. T. Bumer (Kenyon), in a talk about "pre-meteorological training," emphasized the need to quickly train meteorologists to meet the needs of the armed forces and the importance of differential equations in that training. There was also discussion of a committee report on "effects of the war upon mathematics in Ohio." The following year C. O. Williamson (Wooster) demonstrated a "new navy plotting board" to solve vector triangles in navigation. There was no Ohio Section meeting in 1945 due to wartime restrictions on non-essential travel.

In the decade immediately following WW II several papers dealt with problems of interest to the military – especially the Air Force. R. F. Rinehart (Case) presented a mathematical solution to a "problem of rapid scanning radar antenna" in 1948. Research and development work at the Air Force Institute of Technology (WPAFB) became the subject of several talks. Brig. Gen. L. I. Davis shared examples requiring differential equations, vector analysis, and probability and described an "electronic war game" in 1952. The following year attendees learned about the Air Force's "newest large scale computer," capable of 5000 operations per minute and having about 100K of RAM. A sequel to the 1941 paper on photogrammetry was presented at the 39th Annual Meeting in 1955.

(Continued on page 5)

Call For Contributed Papers

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 annual 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 March 13, 2015.

Online submission with your meeting registration (at http://sections.maa.org/ohio/) is strongly preferred, but if necessary, you may submit your title and abstract to the chair of the Program Committee, Matt Menzel, by e-mail at Matt.Menzel@marietta.edu, or by U.S. mail at Marietta College, 215 Fifth Street, Marietta OH 45750.

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. Document cameras (Elmo's) are available, but please indicate a need for one when you register. Internet access will be provided. Speakers with specific questions about technology availability should contact local arrangements director Michael Schroeder at schroederm@marshall.edu.

Bylaws Committee Update

The Bylaws Committee received feedback from the MAA Committee on Sections regarding our proposed bylaws changes. As a result of that feedback,the Bylaws Committee has made some minor changes to the earlier draft. The final draft of the new bylaws is on the Section website at http://sections.maa.org/ohio/governance.html. The Section will discuss the new bylaws at the business meeting at Marshall University, and the MAA will conduct a vote of the entire Section membership following the Spring section meeting.

submitted by Barbara D'Ambrosia

Notes From Across the Section

There are two highlights from **Baldwin Wallace University**: Dr. **Brent Strunk** is joining the Mathematics program in Fall 2015, serving as Mathematics Coordinator for BWU during his first year. Also, Dr. **Aaron Montgomery** is a Project NExT Fellow for 2014-15 .

At **Sinclair Community College**, **Kay Cornelius** was a recipient of the 2014 John and Suanne Roueche League of Innovation Excellence Award. Also, **Roger Abernathy** was recognized with the Distinguished Faculty Award by Arkansas State University.

Joshua Francis has recently resigned from **Defiance College** to take a post as Director of Teacher Education at Indiana Institute of Technology.

Inquiry Based Learning Workshop Announced

The 2015 IBL Workshop will be hosted at Cal Poly, July 7-10, 2015. If you are interested in learning about or enhancing IBL teaching skills, a 4-day workshop is one of the best ways to build up for a target course, collaborate with colleagues, and join a supportive community. Lodging and most meals are provided by the workshop. Early career faculty are eligible for travel scholarships up to $500. Registration is now opern for this popular workshop. Full details are available at www.iblworkshop.org

The workshop is funded by an NSF TUES II grant (DUE1225833 -- SPIGOT), with support from the Mathematical Association of America's PREP program, and the Academy of Inquiry Based Learning.

Centennial Note # 11

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Despite these scattered presentations on applications of mathematics to warfare, it must be observed that, even in wartime, the great majority of papers at Ohio Section meetings continued to deal with subjects for which the Association was founded. These included: exposition of topics in pure and applied mathematics, the undergraduate curriculum, student preparation (or lack thereof) in mathematics, and the preparation of K-12 mathematics teachers. These remain among the principal foci of the Ohio Section in our 100th year.

David Kullman
Miami University
Chair of Centennial Committee

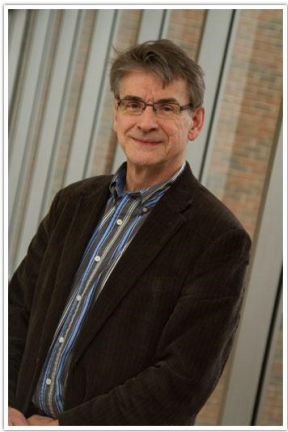
Ohio Section Nominations For Officers For 2015
President-Elect, Treasurer, and Program Committee

The Nominating Committee is pleased to nominate Christopher N. Swanson for President-Elect. Chris is a native Ohioan (but don't call him a Buckeye) who is originally from the Massillon/Canton area and received his B.S. from Denison University in 1994. He received his Ph.D. from the University of Michigan (GO BLUE!) in 1999 under the direction of Thomas F. Storer and immediately joined the faculty at Ashland University where he has also been the Director of the university-wide Honors Program for the last 8 years. At Ashland, he serves as a faculty advisor for the AU Student Chapter of the MAA, the Ohio Rho chapter of Pi Mu Epsilon and the AU Problem Solving Group. Chris's research interests are combinatorics and probability.

Chris is a national Project NExT Fellow (Brown Dot) and has served as an Ohio NExT Co-Coordinator since 2004. Chris has been active in the Ohio Section, having been an Ohio NExT Fellow, having served on CONCUR and CONSTUM, having chaired contributed paper sessions, and having given 15 presentations at Ohio Section meetings or Ohio NExT workshops. In 2006, Chris received MAA's Alder Award in recognition for distinguished teaching by a beginning mathematics faculty member and he received the Ohio Section Distinguished Teaching Award in 2014. In his spare time, Chris enjoys watching movies, playing disc golf, cycling and participating in the applied probability seminar.

Chris Swanson, nominee for President-Elect

Brian Shelburne (Wittenberg University) is the nominee for Treasurer-Elect. Brian is Professor of Mathematics and Computer Science and a past chair of the Department of Mathematics and Computer Science at Wittenberg University. He earned a B.S. from Davidson College, an M.A. and Ph.D. in Mathematics from Duke University, and an M.S. in Computer Science from UNC Chapel Hill. Thus he considers himself a "double threat" in both mathematics and computer science. He has been active in the Ohio Section since arriving at Wittenberg in 1987. He has been a member of CONSTUM, served with Bill Higgins as co-editor of Ohio Focus, the section newsletter, served as local arrangements liaison for the Fall section meetings in 2000, 2007 and 2014, was a member of the Program committee serving as chair in 2009-2010, is chair of the Ad-Hoc Committee on Local Arrangements, and is currently serving as section Treasurer. He would like to continue on as Treasurer for a third term.



Treasurer Nominee Brian Sheldon

Barbara Margolius, candidate for Program Committee

Barbara Margolius received her PhD from Case Western University in 1996 and joined the faculty at Cleveland State University later that year, where she is currently in her 19th year. She has been active in the Ohio Section since her arrival at Cleveland State, having been a section NEXTer and having served on CONSACT. She served as local arrangements chair for the fall 2013 meeting at CSU. She enjoys mathematics teaching and research. An article she wrote several years ago for Mathematics Magazine entitled the "Dinner Diner Matching Problem" was motivated by an Ohio NExT banquet. She has had an NSF grant to develop online mathematics manipulables for use in calculus instruction and has been involved in the WeBWorK open source homework project for many years. Her research interests center around queueing theory and applied probability. Current work involves fluid queues and the intersection of queueing theory and analytic combinatorics.

Activities and Opportunities of Interest to Students

Leo Schneider Student Mathematical Competition

Undergraduate students from institutions of the Ohio section are invited to participate in the fifth annual Leo Schneider Student Mathematics Competition. This year's competition will take place on Friday from noon until 1:20. Rules and registration information, as well as copies of previous years' problems and their solutions, can be found on the Ohio Section Student Member website, http://constum.ohiomaa.org/. Cash prizes ($150 for first place, $120 for second, and $90 for third) will be awarded on Saturday to the top three teams. We encourage student participation in the entire meeting, including student talks, the student pizza party, and the "awards ceremony" on Saturday. Any questions about the competition or other student activities can be addressed to Ryan Rahrig at r-rahrig@onu.edu.

Try your hand at this problem from the 2014 Leo Schneider Student Mathematics Competition. Solutions are available at the CONSTUM website, http://constum.ohiomaa.org/.

Problem 8: Determine the number of three word phrases that can be formed from the letters in MATH ALL DAY. No "words" can be empty, and words do not have to make sense. For example, MAD HAT ALLY and T DMALL YAAH are valid phrases, but not HALT MALADY. You do not have to simplify your answer.

Who's NExT? Details on Spring Meeting

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, March 26th, the night preceding the Ohio Section Spring Meeting, members of Ohio NExT will gather for a banquet beginning at 7:00 p.m. at the Marshall Hall of Fame Café (857 3rd Avenue, Huntington, WV 25701). 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, March 27th, the Ohio NExT program will continue in the Shawkey Room of the Memorial Student Center on the Marshall University campus. The program will feature two workshops, as well as contributed talks by Ohio NExTers. We are pleased to announce that Annalisa Crannell of Franklin and Marshall College will lead a workshop entitled "Your Name in Space!" and Carl Lee of the University of Kentucky will lead the 2nd workshop on geometry software packages. At last fall's meeting, the NExT workshop at the Wittenberg University featured Lew Ludwig

(Continued on page 8)

Talks by Students

Undergraduates and graduate students are encouraged to submit abstracts for 15 minute talks at the Spring Meeting. Topics may be drawn from any area of mathematics or a related discipline. The presentation may be an expository talk, a recounting of a mathematical internship or a co-op experience, or the results of a research project. One speaker per session is greatly preferred, but two speakers in one session can be accommodated if necessary. Each student speaker will receive a certificate acknowledging their contribution to the meeting.

Contributed talks by students, faculty, and others will be given on Friday afternoon and Saturday morning. Talks will be scheduled primarily according to topic and audience level. Student talks are an integral part of the meeting and should be an enjoyable and rewarding experience for all who participate.

See the Call for Contributed Papers on page 5 for submission information.

Student Pizza Party

A student pizza party will be held Friday evening at 6:30. There is no charge, but meeting registration is necessary. See the Section webpage at www.maa.org/Ohio for online registration. There will be a Sudoku tournament during the pizza party for interested students.

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"The Marshall Differential Analyzer Project: Solutions of Dynamic Equations Using Mechanical Integration"

Bonita Lawrence, Marshall University

Marshall University currently houses the largest publicly accessible differential analyzer in the USA. The machine (fondly known as Art in honor of Dr. Arthur Porter, the first to build a differential analyzer in England) solves up to fourth order differential equations using mechanical integration, a physical process that was first effectively implemented in the late 1920's by Dr. Vannevar Bush at MIT. The Marshall Differential Analyzer Team is a collection of undergraduate and graduate students who have worked together in the construction, maintenance and continuing development of this machine and two smaller more portable two-integrator machines. These machines are currently being used i) as teaching tools, offering a physical interpretation of how the derivatives of a function can be used to determine the structure of the function itself, and ii) as research tools to study qualitative properties of nonlinear equations (without closed form solutions) as well as to investigate topics in dynamic equations on time scales.

Students of differential equations and calculus are given the opportunity, as part of their courses, to program the machine, run it and study the behavior of solutions. The perspective the machine offers bright mathematical minds lends credence to the idea that physical models can and do spark the imagination.

In this presentation we will give an overview of the history of the machine and the Marshall DA Project, discuss the mechanics that the machine (and the operator) use to model mathematics, and discuss future plans for the Marshall DA Project. For the big finale you will see a live feed from the Marshall Differential Analyzer Lab (just across campus from the site of this talk) where my graduate students, Ms. Alex Amorim and Mr. Chad Lott, will demonstrate how to use the machine to solve dynamic equations. Anyone who is interested in visiting DA Lab during their visit to Marshall University campus is welcome!

Inspired by her high school mathematics teacher, 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.

Ohio NExT Details

(Continued from page 7)

of Denison University and Bob Devaney of Boston University for the fifty-minute workshops. David DeSario of Shawnee State University and Maduka Rupasinghe of Ashland University 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 Chris Swanson (cswanson@ashland.edu) for membership information and details.

Ohio NExT is coordinated by Katie Cerrone, University of Akron (kc24@uakron.edu), Chandra Dinavahi of the University of Findlay (dinavahi@findlay.edu) and Chris Swanson, Ashland University (cswanson@ashland.edu).

Did you know that…
1914 was the founding of Pi Mu Epsilon?
MAA published its first book in 1925?
1925 was also the first awarding of the Chauvenet Prize for expository excellence?
Project NExT was established in 1994?

"The Many Facets of Polyhedra"

Carl Lee,
University of Kentucky

The area of polyhedral geometry has simply exploded over the last 50 years. I will offer some samplings of topics in polyhedra that lend themselves to potential early encounters and exploration by students. I will draw from such examples as: counting faces beyond Euler's relation, symmetry, using new construction and visualization tools, dealing with linear inequalities instead of linear equations, and peering into the fourth dimension.

Carl Lee grew up in an extended family of academics. One of his earliest memories of his love of mathematics was in second grade when his mother taught him how to multiply with a slide rule. As he grew older he devoured his father's recreational math books, encountering flexagons, polyhedra, stitchings of conic sections, and many more lifelong friends. Gardner, Steinhaus, Ball and Coxeter, and Cundy and Rollett were his silent mentors who complemented his wonderful public school teachers in Baltimore County. He couldn't find the polyhedra in college (Yale), but learned where they were lurking in graduate school (Cornell, 1981, Applied Mathematics), and now he surrounds himself (sometimes physically) with higher dimensional ones. He was welcomed by the Department of Mathematics at the University of Kentucky in 1980, where he has found a supportive environment for his interests in discovering, teaching, learning, and playing with mathematics. He was an IBM Postdoctoral Research Fellow and an Alexander von Humboldt Fellow. He received the 2005 Mathematics Education Service and Achievement Award from the Kentucky Council of Teachers of Mathematics, the 2012 Kentucky MAA Outstanding Teaching Award, and one of the 2014 Deborah and Franklin Tepper Haimo Awards for Distinguished University Teaching from the MAA. He continues investigations into polyhedral and discrete geometry, while engaged in mathematics education and outreach projects.

Taking Other People's Ideas to Extremes

Attending conferences and talking to colleagues over the years, I have had the privilege of hearing a number of really good ideas to improve the classroom environment and student learning. Of course, not every idea can be easily implemented in my classes. There are almost always differences between my colleagues' situations and my own. We might serve different student populations, teach different classes, or have different teaching styles. While the title of this talk might be a bit extreme, I hope to discuss how I have modified a number of different ideas to suit my students' needs and my personality. Hopefully you will find an idea or two to adapt to your classes.

John Prather received his Ph.D. from the University of Kentucky in Complex Analysis in 1997. He also holds a J.D. from Vanderbilt University (1991), but he really didn't want to do that for the rest of his life. In his preferred career he is in his 18th year at Ohio University's Eastern Campus, where he is an Associate Professor of Mathematics and Faculty Chair of the campus. He was a National Project NExT fellow in 1998-1999 and an Ohio NExT fellow from 1999-2001. In the Ohio Section, John is currently section President. He also served as a member and chair of CONTEAL for many years and served as Co-Coordinator of Ohio NExT from 2007-2013.

John Prather,
Ohio University Eastern

Math and Art: The Good, the Bad, and the Pretty

How do we fit a three-dimensional world onto a two-dimensional canvas? Answering this question will change the way you look at the world, literally: we'll learn where to stand as we view a painting so it pops off that two-dimensional canvas seemingly out into our three-dimensional space. In this talk, we'll explore the mathematics behind perspective paintings, which starts with simple rules and will lead us into really lovely, really tricky puzzles. Why do artists use vanishing points? What's the difference between 1-point and 3-point perspective? Why don't your vacation pictures look as good as the mountains you photographed? Dust off those old similar triangles, and get ready to put them to new use in looking at art!

In the Shadow of Desargues

Those of us who teach projective geometry often nod to perspective art as the spark from which projective geometry caught fire and grew. This talk looks directly at projective geometry as a tool to illuminate the workings of perspective artists. We will particularly shine the light on Desargues' triangle theorem (which says that any pair of triangles that is perspective from a point is perspective from a line), together with an even simpler theorem (you have to see it to believe it!). Given any convoluted, complicated polygonal object, these theorems allow us to draw that object together with something that is related to it--- its shadow, reflection, or other rigid symmetries---and we'll show how this works. (If you enjoy doodling or sketching, bring your pencil, a good eraser, and a straightedge.)

Annalisa Crannell, Franklin and Marshall College

Annalisa Crannell is a Professor of Mathematics at Franklin & Marshall College and recipient, in 2008, of the MAA's most prestigious teaching award (the Deborah and Franklin Tepper Haimo Award). Her early research was in topological dynamical systems (also known as "Chaos Theory"), but she has become active in working with mathematicians and artists on Projective Geometry applied to Perspective Art. Together with mathematician/artist Marc Frantz, she is the author of *Viewpoints: Mathematical Perspective and Fractal Geometry in Art*. She especially enjoys talking to non-mathematicians who haven't (yet) learned where the most beautiful aspects of the subject lie.

Alternate Activities for Huntington Visitors

The resident mathematicians at Marshall University would like to invite all guests to explore and enjoy the Huntington area. They have highlighted three museums that may be of interest to MAA members and their companions.

The Huntington Museum of Art features a Glass Gallery, reflecting the importance of glass in West Virginia and the Ohio Valley. Located at 2033 McCoy Road, the route to the museum is not difficult to follow, but it does provide scenic views of the area. The museum property includes 40 acres with a nature trail with various degrees of steepness. Hours of operation over the weekend are 10 a.m. to 5 p.m. and the admission fee is $5. More complete information is available at the website http://www.hmoa.org/.

The Museum of Radio and Technology features a 20's and 30's radio shop, radio classroom, 40's and 50's showroom, and ham and short wave radios among other displays. With no admission charge, the museum is open from 10 a.m. to 4 p.m. on Saturdays. The Museum is at 1640 Florence Avenue. You can view a video and a slide show on the website at http://www.ohio.edu/people/postr/MRT/.

The J Taylor Auto Collection has a display of over 30 automobiles dating back to 1914. Highlights are a rare 1930 V-16 Cadillac Limousine and a 1936 Chrysler convertible. The museum is open on Thursday between 5 p.m. and 9 p.m. and on Saturday from 10 a.m. to 6 p.m. Admission is free and directions can be found at the website http://www.jtaylorautocollection.com/.

Spring Meeting Program

The Contributed Talks will take place in Corbly Hall; all other activities will take place in the Memorial Student Center, in the Don Morris Room (MSC 2E18), the John Marshall Room and the John Spotts Room (MSC 2E37).

Friday, March 27		
12:00-4:00	Registration	Don Morris Foyer
12:00-1:20	Leo Schneider Student Team Competition	MSC BE5
12:00-1:00	Committee Meetings:	
	Centennial Committee	MSC 2W9
	CONCUR (Curriculum)	MSC 2W10
	CONSACT (Section Activities)	MSC 2E10
	CONTEAL (Teacher Education & Licensure)	John Spotts Room
1:00-4:00	Vendor & Book Exhibits	Don Morris Room
1:30-1:45	Welcome and Announcements	Don Morris Room
1:45-2:45	Invited Address: **"The Marshall Differential Analyzer Project: Solutions of Dynamic Equations Using Mechanical Integration"** Bonita Lawrence, Alex Amorim, and Chad Lott	Don Morris Room
2:45-3:05	Break	Don Morris
3:05-3:15	Centennial Minute	Don Morris Room
3:15-4:15	Invited Address: **"The Many Facets of Polyhedra"** Carl Lee	Don Morris Room
4:25-5:25	Executive Committee Meeting (Part 1)	John Spotts Room
4:30-6:25	**Contributed Paper Session**	Corbly 105, 106, 117, 236, 241, 243, 244
6:25-6:45	Social Time	John Marshall
6:30-8:00	Student Pizza Party	Marco's (MSC BE38)
6:45-8:00	Banquet	John Marshall
8:10-9:10	After dinner talk: **"Math and Art: The Good, The Bad, and the Pretty"** Annalisa Crannell	Don Morris Room
9:10	Business Meeting and Teaching Award Presentation	Don Morris Room

Saturday, March 28		
8:00-10:00	Registration	Don Morris Foyer
8:00-10:00	Book Vendors and Exhibits	Don Morris Room
8:00-9:15	Coffee and Pastries	Don Morris Room
8:00-9:00	Executive Committee Meeting (Part 2)	John Spotts Room
8:35-9:10	Committee on Local Arrangements	MSC 2E10
9:10-9:20	Welcome and Announcements; Student Competition Results	Don Morris Room
9:20-10:20	Invited Address: **"*In the Shadow of Desargues*"** Annalisa Crannell	Don Morris Room
10:20-10:35	Break	Don Morris Room
10:35-11:50	**Contributed Paper Session**	Corbly 104, 105, 117, 236, 241, 243, 244
12:00-1:00	Retiring President's Address: **"Taking Other People's Ideas to Extremes"** John Prather	Don Morris Room
1:00-1:10	Closing Remarks	Don Morris Room

Event locations are subject to change. Check the official program you receive when you register for the meeting in the East Lobby. Also, check the Section web page, www.maa.org/Ohio, for program updates, online registration, and contributed paper submissions.

Our hosts at Marshall University have put together a document with links to all manner of local and conference information. In particular there is information on hotels, travel instructions, and maps of the campus and key buildings. You can find this at http://www.marshall.edu/math/maa2015.

Hotel Information

Blocks of rooms have been reserved at the hotels described below for March 27 with an option to extend the stay at the first hotel to March 26 and/or March 28 at the same rate.

Hotel	Address	Rate	Phone	Cutoff date	Distance to conference (approx.)
Holiday Inn & Suites Downtown Huntington	800 3rd Avenue Huntington, WV 25701	$109 + tax	(304) 523-8880	March 6, 2015	0.9 mi
Pullman Plaza Hotel Downtown Huntington	1001 3rd Avenue Huntington, WV 25701	$109 + tax	(304) 525-1001	March 20, 2015	0.9 mi
Holiday Inn & Suites Barboursville Mall	3551 US Route 60 East Barboursville, WV 25504	$109 + tax	(304) 733-3338	March 6, 2015	12 mi
Hampton Inn Barboursville Mall	1 Cracker Barrel Drive Barboursville, WV 25504	$97 + tax	(304) 733-5300	March 6, 2015	12 mi

When you call to make your reservation please ask for the MAA block. Reservations must be made by the cutoff date. Any rooms not booked by that date will be released from the block. While rooms may still be available at the hotels, they may be charged at a higher rate.

Parking Information

Conference attendees may park in any Marshall surface parking lot which does not have meters. See the map of key buildings and parking lots for parking locations. The closest lots to the Memorial Student Center are:

- 6th Avenue and Elm Street surface lot (no meters)
- 5th Avenue and 18th Street surface lot (no meters)
- 3rd Avenue and 16th Street surface lot (no meters)
- Stadium parking lot, 5th Avenue and 20th Street

Participants who use the parking deck on 6th avenue, or who park in metered parking spaces, will be required to pay an hourly rate. **The parking garage on 6th Avenue will close Friday evening, and overnight parking is not permitted. We recommend parking on a surface lot.**

Driving Details

The central campus of the university is located between 16th Street and 20th Street, and between 3rd Avenue and 5th Avenue. The MAA meeting activities will be in buildings adjacent to 5th Avenue.

Arriving from the north: Huntington, WV is located on the Ohio River. The main access is by U.S. 52 from the northwest, or U.S. 7 from the northeast. There are three bridges across the Ohio River in Huntington, none of which has a toll.

Arriving from the south: Huntington, WV is adjacent to Interstate 64. The best exit is #11, Hal Greer Blvd (16th Street).

2014-2015 Ohio Section Officers and Committees

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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
*Matthew Menzel, Marietta College, (2015)
Bill Fuller, Ohio Northern U. (2016)
Laurie Dunlap, University of Akron (2017)

CONTEAL
*Aaron Blodgett, Univ of Findlay (2017)
Pam Warton, University of Findlay (2015)
Jenny McKinney, Shawnee State U. (2016)
Sandy Schroeder, Ohio Northern U. (2016)
Najit Baji, Sinclair Comm College (2017)
Laurie Dunlap, University of Akron (2017)
Susan Thompson, Otterbein University (2017)

CONSTUM
*Ryan Rahrig, Ohio Northern Univ (2016)
Thomas Wakefield, Youngstown St. U. (2015)
erica Whitaker, University of Kentucky (2015)
Melissa Dennison, Baldwin Wallace U. (2016)
Mohammed Zaki, Ohio Northern Univ (2016)
Matthew McMullen, Otterbein Univ (2017)

CONSACT
*Barbara Margolius, Cleveland State U (2015)
Paige Rinker, John Carroll University (2015)
Eric Wingler, Youngstown State Univ. (2015)
Lola Thompson, Oberlin College (2016)
Kathryn Leed, Lorain Cty Comm Coll (2017)
Flavia C Sancier-Barbosa, Wittenberg (2017)

CONCUR
*Chandra Dinavahi, U. of Findlay (2016)
Anna Albert, University of Findlay (2014)
William Fuller, Ohio Northern Univ (2014)
David Cusick, Marshall University (2015)
Giorgi Shonia, Ohio Univ. Lancaster (2015)
Glen Lobo, Sinclair Comm. College (2016)
Maduka Rupasinghe, Ashland Univ (2016)

OTHER COMMITTEES

Nominating Committee
* Wiebke Diestelkamp, Univ of Dayton (2017)
Don Hunt, Ohio Northern University (2015)
Jon Stadler, Ashland University (2016)

Teaching Award Committee
* Phil Blau, Shawnee State University (Past President)
Pam Warton, University of Findlay (Secretary),
Lew Ludwig, Denison University (Past recipient 2013)
Harold Putt, Ohio Northern Univ (Past recipient 2014)

Centennial Committee
*David Kullman, Miami University
Tom Dence, Ashland University
Tom Hern, Bowling Green State University
Danny Otero, Xavier University
Al Stickney, Wittenberg University

LOCAL ARRANGEMENTS FOR MEETINGS

Spring 2015: Marshall University
Mike Schroeder, schroederm@marshall.edu

Fall 2015: Capital University
Jon Stadler, jstadler@capital.edu

Spring 2016: Ohio Northern University
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Thank You to the many people who contributed articles and information for this newsletter. And a special thanks to all listed on this page who put forth such an effort to keep our section vibrant.

David Stuckey, Editor

Calendar

Ohio Section Meetings

Spring 2015 Section Meeting, March 28 - 29
Marshall University, Huntington, WV

Fall 2015 Section Meeting, October 23 - 24
Capital University, Columbus, Ohio

Spring 2016 Section Meeting, April 8 - 9
Ohio Northern University, Ada, OH

National MAA-AMS Meetings

MathFest, August 5-8, 2015, Washington, D.C.

Annual Joint Meetings, January 6-9, 2016, Seattle, WA

MathFest, August 3-6, 2016, **Columbus, OH**

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

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 www.maa.org/Ohio. Notification postcards are sent using labels provided by the MAA.

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The deadline for the next newsletter is **August 15, 2015**. 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

Indiana Section MAA Section Meeting, March 13-14, 2015, Taylor University, Upland, IN
http://sections.maa.org/indiana/

Central Section AMS, Mar 14-15, 2015, Michigan State University, East Lansing, MI
http://www.ams.org/meetings/sectional/sectional.html

Kentucky Section MAA Section Meeting, March 27-28, 2015, Morehead University, Morehead, KY
http://sections.maa.org/kentucky/meetings/kymaaAnnual/indexAnnual.shtml

Michigan Section MAA Section Meeting, April 10-11, 2015, Hope College, Holland, MI
http://sections.maa.org/michigan/15meeting.html

Allegheny Section MAA Section Meeting, April 10-11, 2015, Washington and Jefferson College, Washington, PA http://sections.maa.org/allegheny/annual_meeting_2015/meeting2015.htm

OCTM Annual Meeting, October 15-16, 2015, Cincinnati, OH
http://www.ohioctm.org/conferences/65th-annual-conference-cincinnati

Other National Meetings

International Conference on Technology in Collegiate Mathematics (ICTCM), March 12-15, 2015, Las Vegas, NV http://www.pearsonhighered.com/ictcm/

T^3 International Conference, March 13-15, 2015, Fort Worth, TX http://education.ti.com/en/us/pd/international

NCTM National Meeting, April 15-18, 2015, Boston MA
http://www.nctm.org/Conferences-and-Professional-Development/Annual-Meeting-and-Exposition/

IBL Workshop, July 7-10, 2015, San Luis Obispo, CA
www.iblworkshop.org

Joint Statistical Meetings, August 8-13, 2015, Seattle, WA http://www.amstat.org/meetings/jsm/2015/conferenceinfo.cfm

AMATYC Annual Conference, Nov 19-22, 2015, Nashville, TN
http://www.amatyc.org/?2015ConfHome