



OHIO FOCUS

The Ohio Section Newsletter

Volume 7

Spring 2004

Number 4

Spring Meeting at The University of Cincinnati March 26-27, 2004



The Spring meeting of the Ohio Section of the MAA will be held at the University of Cincinnati in Cincinnati OH on Friday and Saturday March 26 - 27, 2004. The meeting starts at 1:30 P.M. Friday and continues through 1:00 P.M. on Saturday.

Joe Gallian from the University of Minnesota at Duluth starts the meeting off with an invited address titled "Touring a Torus." He will be followed by Judy Holdner of Kenyon College with an invited address titled "Sagebrush, Turtles and Snowflakes."

There will also be contributed paper sessions on Friday and Saturday along with a special session on the Fibonacci Numbers on Friday.

Whether you attend the banquet or not, be sure not to miss the after-dinner talk by Joe Gallian on "Breaking Drivers' License Codes." This will be followed by a business meeting where the section will elect new officers and announce the winner of the prestigious Ohio Section Award for Distinguished College or University Teaching.

On Saturday Dale Mugler of the University of Akron will deliver the Retiring President's Address titled "Music and the Time-Frequency Analysis of Wavelets." After the Saturday morning session of contributed papers, J. Kevin Colligan from the National Security Agency will deliver the invited address "Breaking the Enigma."

Details of the invited talks and biographies of the speakers can be found on page 8.

As always, students are especially urged to attend this meeting and present talks! Other activities for students include the first annual Student Team Competition which will be held at noon on Friday and a SET card tournament following the Friday evening student pizza party. Details about these activities may be found in this newsletter.

Call for Student Talks

Undergraduate 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. It is expected that each talk will be delivered by a single speaker. Co-authors will be listed in the program. Each student speaker will receive a free one-year MAA membership.

Contributed talks by students, faculty,

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Student Activities

Undergraduate students from institutions of the Ohio Section are invited to participate in the first annual Student Team Competition. The competition will take place at the University of Cincinnati on Friday, March 26, from noon-1:30, in Braunstein Hall, Room 301. Rules and registration informa-

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Section Governor's Report

Time again to report back to the Section after the recent meetings in Phoenix and the meeting of the Board of Governors.

There were a lot of announcements and routine business in the day-long Governors meeting. I will spare you most of that detail, but I want to share some of the highlights.

First of all, new meeting dates and sites were approved: meetings will be held in San Francisco on January 6-9, 2010, and in New Orleans on January 5-8, 2011. Discussions have already begun about the meetings in 2015, the centennial of the founding of the MAA. Since the MAA began in Columbus, Ohio will no doubt play a role in those meetings.

Secondly, one of our own, Aparna Higgins, was appointed by President Graham to be the program committee chair for the January, 2005 meeting in Atlanta.

Mathfest is scheduled for Aug 12-14 2004 in Providence. The MAA will take over management of Mathfest. AMS charged \$120K and the MAA seemed not satisfied. MAA also depended on the AMS for the mathematical talks and sessions at the meetings in the past. There will be a concerted effort by the MAA itself to increase the mathematical content of its meetings and activities. I have heard some grumbling that the MAA has neglected this lately.

Membership and meeting attendance remains strong. The member count is now around 25,000, with a 90% annual retention (renewal) rate. Attendance at national joint meetings has been growing steadily: from around 2200-2500 twenty years ago at the January joint meetings to 5000 last year. If you haven't been to a meeting lately, you will be impressed. I noticed particularly in recent years a large number of young attendees--from undergrads (there were quite a few) to full time people early in their careers. I regularly see former students of ours.

Dan Teague of the North Carolina School of Science and Mathematics (a special state-wide high school), the high school representative on the Board of Governors, is organizing a SIGMAA for high school teachers to better serve that group and to give them a vehicle to be more involved in MAA. As a start he is organizing two sessions for AP teachers at Mathfest. Anyone interested may contact him at teague@ncssm.edu.

The MAA is making a concerted effort to include more graduate students in its activities and to recruit them as members. I imagine your experience is similar to mine; you didn't get involved in the MAA until after you were in a full time position, and someone dragged you to a meeting (Cliff Long in my case). However, once we were hooked, we realized that the MAA is an important tool to helping us succeed in our professions. We need to reach faculty at PhD granting departments to both join the MAA and to encourage their students to join. The MAA has begun to offer free memberships to new PhDs. Also, the Committee on Graduate Students has made available small grants for section programs for graduate students.

Undergraduate participation in MAA and mathematics also continues. Doug Faires is among those on an NSF funded MAA Undergraduate Mathematics Conferences project. More conferences can be funded.

The MAA is also trying special associate memberships for adjuncts, part time faculty, and teachers. Online renewals will be available soon.

The organization that has revitalized the MAA ensuring it a bright future, is Project NExT, New Experiences in Teaching, co-founded by our late Ohio colleague Jim Leitzel. The NExT presence was loud and clear in Phoenix, literally. One way you can support NExT is to sponsor a NExT Fellow. Over a dozen Fellows are now supported by organizations (AMS, ASA, NCTM, ASL, AMTE) and by individuals.

A NExT-like project, Project ACCESS (yes, 3 Cs) has begun with AMATYC. Besides attending national AMATYC meetings, participants will also attend section meetings and Section NExT activities.

The budget news is good. The budget is on target, so the 2004 budget does not need to be revised. The NSF is happy with a routine compliance audit for indirect costs for 2003, but now wants to see 2000-2002. A 3% dues increase is planned.

Finances have grown in complexity. A new finance director has now joined the staff to relieve the load on the acting director. A cash flow problem arises in that grants, which are an ever increasing activity of the MAA, pay in arrears, i.e., after the bills are paid. Endowments are good, but less than normal for nonprofit. 50% of the budget is common.

Substantial repairs to headquarters buildings had to be made. We are talking about \$100,000 or so. But good past management had set aside funds. These buildings are conservatively estimated in value at over \$6 million.

Don Albers reported on book publication and record sales. A number of new titles are out. Check them out at the Section meeting. You will get a discount, and the Section gets a cut too. Book sales are at an all time high, and online sales through Amazon are doing well.

Don also introduced archivist Christie Jorgenson. MAA archives are being maintained at the Center for American History at the University of Texas. We were told that they also want section records, and can advise on just what records should be kept. I am sure our archivist, John Zimmerman, will be glad to hear that, and also David Kullman, Section history editor. While cleaning out the carriage house behind the

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OHIO FOCUS

The newsletter of the Ohio Section of the Mathematical Association of America, which first appeared in 1973, is published twice yearly in time to reach members before the fall and spring meetings. Newsletters are sent using labels provided by the MAA.

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Deadline for the next newsletter is

August 30, 2004

Email copy is preferred.

Please send copy to the Editors (above) for the newsletter and to the Section Webmaster, Tom Price (teprice@uakron.edu), for the web.

This information will also be posted and updated on the web page www.maa.org/Ohio.

President's Message

Did you know that Tom Hern received the Certificate of Meritorious Service from the national MAA during the AMS/MAA January meeting in Phoenix? That's probably described somewhere else in this newsletter, but it's worth repeating. His award was one of four MAA Section Service Awards at the national AMS/MAA/SIAM/AWM award ceremony. In his acceptance speech, he mentioned that he had had a lot of fun working with the people in the Ohio Section.

Tom's comments made me think about the work we do for the MAA Ohio Section, and whether I would classify it as "fun" or not. In a different session at the national meeting, there were presentations given by the three national MAA teaching award winners. One of those teaching award winners (the one from Williams College) said that mathematics is "hard"-it takes some dedication and effort. Ron Graham, current president of the MAA, was the moderator for those speeches, and he quipped that "mathematics is 95% beating your head on the wall and 5% thinking how stupid you are for not seeing the solution earlier." Ha! But I think that both the award winner and Ron Graham really think that mathematics is a lot of fun as well. The reward each of us receives for solving a problem, making a conjecture, or writing an elegant proof is such fun that it is worth all the work that is involved. I think that was what Tom had in mind when he said that working with people in the MAA Ohio Section is fun. We have so many dedicated people in our section that share the work. They are certainly fun to talk with at the Section meetings. In any case, I think that Tom Hern is right!

I'm really looking forward to the meetings this spring in Cincinnati. I've never been on the UC campus, and one of the benefits of attending Section meetings is that you get to visit many of the physical facilities of Ohio and West Virginia universities. But it's much more than that. Our Section meetings are intellectually stimulating, particularly in the spring with all the contributed papers that are presented. As is typical, we will also have a number of wonderful speakers this spring who are set to challenge and inspire us. I hope that the attendance at the spring meeting will reflect the wonderful set of activities that Carl Spitznagel and his committee have been planned.

We will have two of the national leaders of Project NExT at our Section's spring meeting: our own Aparna Higgins and Joe Gallian, one of the featured speakers. It's a privilege to host the leaders of a venture that has done so much for new faculty members across the country. This group has also drawn many young faculty into activities of the MAA, and I think we should support this continuing effort. Our own Ohio Section Project NExT group will be meeting a day prior to the beginning of our Section meeting. Those to thank should include John Holcomb, who did so much for this group before his term was up. Current leaders of the Ohio effort include Dave Sobecki and Angie Spalsbury. Look for those faculty who have a NExT identifier on their badge at the Cincinnati conference, and ask them about their experience in Project NExT!

Among the many announcements that are probably listed elsewhere in this newsletter, I'd like to draw you to the Ohio Section summer Short Course. Colin Adams is a wonderful lecturer, and his course should be really excellent. There are also "Professional Enhancement Programs" sponsored around the country during the summer by the MAA-see www.maa.org/PREP for a list of topics, places, and dates. Finally there is a summer Mathematical Study Tour of England, May 20-June 3, that sounds terrific (see www.maa.org). Consider whether any of these opportunities would fit your summer schedule!

Dale Mugler

Campus Notes

Ashland University: In the fall, Ashland welcomed two new tenure-track Assistant Professors to the Department of Mathematics and Computer Science. Dr. Yanxia Jia earned her doctorate in computer science from the University of Alberta in Edmonton, Canada. Dr. Boris Kerkez earned his doctorate in computer science from Wright State University. Boris has an additional tie to Ohio having earned a Bachelor of Science degree in Systems Analysis and a Master of Science degree in Mathematics and Statistics from Miami University in Oxford.

In January, Dr. Darren Wick received tenure and confirmation that he will be promoted to Associate Professor of Mathematics this summer.

Report of the Nominating Committee

The Nominating Committee presents the following slate of candidates: Dwight Olson (John Carroll University) for President-Elect and Barbara D'Ambrosia (John Carroll University) for a three-year term on the Program Committee. The President-Elect subsequently serves as the Section President. The senior person on the Program Committee is the chair.

Dwight Olson has been at John Carroll University since 1984 and was Department Chair from 1995 to 2003. He has been a member of the MAA for more than thirty years. Dwight has been active in the Ohio Section as editor of the section newsletter for five years, as a member of CONSACT, and as a member and chair of the Program Committee.

Barbara D'Ambrosia joined the John Carroll faculty in 1994. She is a Project NExT Fellow (1995-96) and is a consultant for the 2003-04 Project NExT Fellows. Barbara has been active in CONSTUM, serving two years as its chair. Currently she is serving as head of local arrangements for the Fall 2004 Ohio Section meeting at John Carroll University.

The election will take place at the business meeting, Friday evening, March 26, 2004 after the banquet at the University of Cincinnati. Nominations may also be made from the floor.

Tom Gantner, Chair
Aparna Higgins
Judy Palagallo

Bowling Green State University: Barbara Moses and Sergey Shpectorov have been promoted to Professor. Charles Holland and Jack Hayden have retired. Charles is living in Bowling Green, and Jack had moved to California. Alex Izzo is on leave at Brown U. Dale Winter joins the department to direct service courses. His degree from the Univ of Michigan is in general relativity. He most recently was at Harvard. The Distinguished Lukacs Professor is Leandro Pardo, Complutense University of Madrid, Spain.

Miami University Middletown campus: Dr. Amy Fisher, was appointed as the assistant coordinator for Mathematics, Science and Education Coordinator-ship.

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2003 - 2004 Ohio Section Officers and Committees

ELECTED OFFICERS

President
Dale Mugler, Akron
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Harold Putt, Ohio Northern
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Thomas Hern, Bowling Green
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Secretary-Treasurer 2006
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Technology Conference Coordinator
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astickney@wittenberg.edu

Archivist
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Jefferson College
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zim@washjeff.edu

COMMITTEES

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

Program Committee
* Carl Spitznagel, John Carroll 2004
Vickie Van Dresar, Ashland 2005
Bill Higgins, Wittenberg 2006

Committee on Curriculum (CONCUR)
* Mark deSaint-Rat, Miami Mdtwn 2004
Rajappa K. Asthagiri, Miami 2004
Jon Stadler, Capital 2004
Michelle Wiggins, Ursuline 2006
Roger Marty, CSU 2006

Committee on Section Activities (CONSACT)
*Donald Hunt, Ohio Northern 2004
Maria Raiti, Ohio Northern 2005
Lisa Rome, Coll of Mt St Joseph 2005

Committee on Student Members (CONSTUM)
*Darren Wick, Ashland 2004
Christopher Swanson, Ashland 2004
Jeffrey Adler, Akron 2005
Mihai Caragiu, Ohio Northern 2005
Judith Holdener, Kenyon 2006

Committee on Teacher Education and Certification/Licensure (CONTEAC/L)
*Cathy Stoffer, Ashland 2004
Phil Blau, Shawnee State 2004
Susan Enyart, Otterbein 2005
John Prather, OSU-Eastern 2005
Ann Ritchey, Mt Union 2005
Marsha Nichol, Capital 2006
David Kullman, Miami 2006
Irina Chernikova 2006

OTHER COMMITTEES

* denotes committee chair.

Nominating Committee
*Tom Gantner, Dayton
Judith Palagallo, Akron
Aparna Higgins, Dayton

Committee on Contests
Bill Higgins, Wittenberg AMC8
David Stenson, John Carroll AMC12

ByLaws Committee
Darrell Horwath, John Carroll
J. William Friel, Dayton

Teaching Award Committee
Harold Putt, Ohio Northern (PP)
J. William Friel, Dayton (ST)
Jerry Moreno, John Carroll
Aparna Higgins, Dayton

Local arrangements for meetings:

Spring 2004 Cincinnati
Chuck Groetsch
513-556-7851; groetsch@emila.uc.edu

Fall 2004 John Carroll
Barbara D' Ambrosia
216-397-4682; bdambrosia@jcu.edu

An updated list of Ohio Section officers and committee members may be found at <http://www.maa.org/Ohio>.

Campus Notes continued from page 3

University of Dayton: Undergraduate Mathematics Day was held on Nov. 1, 2003. Invited talks by Robert Lewand of Goucher College and Chikako Mese of Connecticut College were well received. The eighty mathematics students and faculty in attendance were treated to twenty-one contributed talks (seventeen of which were by students). The conference was part of the MAA's Regional Undergraduate Mathematics Conference Program, funded by NSF Grant DMS-0241090. More information and pictures of this event can be found at <http://www.udayton.edu/~mathdept/DepartmentPage/UndergraduateConference/UnderGrad.htm>

University of Toledo: Richard W. Shoemaker, Prof. Emeritus and former chairman, died Jan 13, 2004 at age 85.

Remember to submit your campus news for the next newsletter - The Editors

Governor's Report - cont. from page 2

headquarters, the MAA staff found a box of papers from the the 1915 founding of the MAA. Talk about a lucky find. And near loss of important papers.

And finally, let me put in a plug for PMET, an MAA Project funded by NSF. The acronym stands for Preparing Mathematicians to Educate Teachers. Ohio is one of five states in the initial phase of this project. More details elsewhere in the newsletter/web. Olaf Stackelberg is regional coordinator. Workshops are planned next summer to prepare mathematics faculty to educate future teachers. Two of the eight workshops are in Ohio: at Kent for elementary programs directed by Olaf and Michael Battista; and for middle school programs at Bowling Green led by Barbara Moses and myself. Ed Dubinsky is workshop coordinator.

Thomas Hern
Section Governor
hern@wcnnet.org
February 2, 2004

*J. Kevin Colligan
- continued from page 9*

Vianney High School in St. Louis County and has taught occasional courses at the National Security Agency over the last 30 years.

Kevin was instrumental in starting NSA's education outreach programs in 1987. He spent a sabbatical year at the National Academy of Sciences' Mathematical Sciences Education Board, is a reviewer for NCTM's "Mathematics Teacher", and was a member of the Board of Governors of the Mathematical Association of America. In 1999, he received the Saint Louis University College of Arts and Sciences Alumni Merit Award. He loves to teach.

Having decided that 15 years as a manager was enough (perhaps by an order of magnitude (or two)), Kevin returned to technical pursuits seven years ago, and was accepted into the NSA Senior Technical Development Program in 1999. Since 1997 he has focused on protocols used to support cryptographic functions in products and standards. Being at heart a bit-brain, he loves this stuff.

He delights in his New Orleans-born and bred wife and their 13-year-old son. He enjoys and does not have enough time for golf, softball, Go, walks with his wife, programming, and double crostics.

Ohio Project NExT

Ohio Project NExT is a program to help young faculty members network with colleagues, to share ideas and experiences that promote professional growth, and to encourage newer faculty to become involved in the Ohio Section.

On Thursday evening, March 25th, preceding the Ohio Section Spring Meeting, members of Ohio Project NExT will gather for a banquet - an opportunity to meet new and old friends. After the banquet, the NExTers will spend an hour discussing a topic that will be advertised in advance. Then on Friday morning, March 26th, our NExT Workshop will be held. The workshop will feature two major speakers (one of whom will be Joe Gallian) along with two or three contributed talks by NExT members.

Ohio Project NExT is open to anyone who is in his/her first five years of teaching in the Ohio Section. If you're in this group, please consider joining us this spring for our NExT Banquet and Workshop, as well as the Ohio Section Meeting. For membership information and details, contact Dave Sobecki <sobeckdm@muohio.edu>.

Ohio Project NExT is co-directed by Mark Smith & Dave Sobecki (both at Miami University) and Angie Spalsbury (at Youngstown State University).

*Student Activities
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tion can be found at <http://personal.ashland.edu/~dwick/constum.html>.

A student pizza party will be held Friday evening, followed by a SET card tournament, dessert, and the after-dinner address at the general session. There is no charge but meeting registration is necessary. See the section webpage (www.maa.org/Ohio) for online registration.

A meeting of student leaders will be held Saturday morning at 8:00 a.m. This meeting is open to leaders of campus mathematical organizations (MAA, PME, KME, Math Club, etc.) and other interested persons.

Fall 2004 Meeting

Mark your calendar for the Fall 2004 Ohio Section meeting on October 22-23 at John Carroll University. The folks at JCU are anxious to show off their brand new \$66 million Dolan Center for Science and Technology.

*Call for Contributed Papers
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online submission with your meeting registration is preferred, you may also submit an abstract by mail or email to the chair of the Program Committee: Carl Spitznagel, Department of Mathematics, John Carroll University, Cleveland, OH 44118, spitz@jcu.edu. Please use only plain text in your abstract, as the abstract submittal system cannot process TeX or other graphics code.

Those interested in speaking in the Special Session on the Fibonacci Numbers should not submit their abstracts to the Program Committee. Instead, abstracts for the special session should be sent to Tom Price, teprice@akron.edu, before **March 5, 2004**.

Special Session on the Fibonacci Numbers

Tom Price is organizing a special session on the Fibonacci numbers for the Spring 2004 meeting. Anyone interested in presenting a 15-minute talk at this session should submit his or her name and abstract of the talk (as a LaTeX or Scientific Workplace document) to Tom at teprice@uakron.edu before **March 5, 2004**. Submitters must also register for the meeting using any of the available means such as online registration. Please indicate the desired method of presentation such as Power Point, pdf, or overhead slides. A computer projection system will be available at the session. Tom has reserved four slots for presentations by members of the Fibonacci Forum (an undergraduate research team at the University of Akron) so there is a possibility that time constraints may not permit the inclusion of all submitted talks at the special session. Unless otherwise indicated by submitters, abstracts of talks that cannot be included will be forwarded in a timely manner to the meeting program chair for inclusion in a regular session.

Registration - continued from page 9

Send with check, payable to Ohio Section MAA, for applicable fees [registration fee (\$20 full time, \$10 retired or part time, no fee for students), banquet (\$17)] to Charles Groetsch, Professor of Mathematics, P.O. Box 210025, University of Cincinnati, Cincinnati, OH 45221-0025, fax (513) 556-3417, groetsch@math.uc.edu. Fax or email registrations would be pending upon receipt of registration fees.

Ohio Section MAA Summer Short Course - 2004

Teaching and Doing Knot Theory

June 2-4, 2004

Colin Adams, Williams College

Hosted by Ohio Northern University

Abstract

Knot theory is a great topic for exciting students about mathematics. It is visual and hands on. Students can begin working on problems the first day with their shoelaces. Knot theory is also an incredibly active field. There is a tremendous amount of work going on currently, and one can easily state open problems. It also has important applications to chemistry, biochemistry and physics.

This workshop is aimed at anyone who is interested in knowing more about knot theory. There is no assumption of previous background in the field.

Participants completing the workshop will learn how they can:

- * Teach an undergraduate course in knot theory,
- * Do research in knot theory, and
- * Direct student research in knot theory.

Participants will have the opportunity to conjecture wildly, throw around ideas, and work on original research.

Colin Adams is the Francis Christopher Oakley Third Century Professor of Mathematics at Williams College. He received his Ph.D. from the University of Wisconsin-Madison in 1983. He is particularly interested in the mathematical theory of knots, their applications and their connections with hyperbolic geometry. He is

the author of "The Knot Book", an elementary introduction to the mathematical theory of knots and co-author with Joel Hass and Abigail Thompson of "How to Ace Calculus: The Streetwise Guide", and "How to Ace the Rest of Calculus: the Streetwise Guide", humorous supplements to calculus. Having authored a variety of research articles on knot theory and hyperbolic 3-manifolds, he is also known for giving mathematical lectures in the guise of Mel Slugbate, a sleazy real estate agent. A recipient of the Deborah and Franklin Tepper Haimo Distinguished Teaching Award from the Mathematical Association of America in 1998, he was a Polya Lecturer for the MAA for 1998-2000 and is a Sigma Xi Distinguished Lecturer for 2000-2002. He is also the author of mathematical humor column called "Mathematically Bent" which appears in the Mathematical Intelligencer.

Schedule: There will be morning and afternoon sessions on Wednesday and Thursday and a morning session on Friday.

Registration: Registration will begin in April and continue until all seats are filled. The registration fee is \$150.00.

For more information contact Don Hunt at d-hunt@onu.edu. Or call (419) 772-2351.

You may also visit: <http://www.onu.edu/a+s/math/NewFiles/maa/shortcourse.htm>.

Call for Student Papers continued from page 1

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. Students preparing talks are encouraged to read Joseph Gallian's article "How to Give a Good Talk" in the April 1998, *Math Horizons*. This article is available at <http://www.jcu.edu/math/constum/gallian.pdf>.

The presentation rooms will include a blackboard and an overhead projector as well as a computer projection system for those who choose to bring their own computer for their presentation. Abstracts should be between 25 and 75 words in length and should employ proper English grammar and spelling. Students are strongly encouraged to use the abstract submission form on the MAA Ohio Section webpage. Otherwise, abstracts may be submitted by U.S. mail or email to the chair of the Program Committee: Carl Spitznagel, Department of Mathematics, John Carroll University, Cleveland, OH 44118, spitz@jcu.edu. Please use only plain text in your abstract, as the abstract submission system cannot process TeX or other graphics code. If submitting an abstract by mail or e-mail, please include your name, institution, e-mail address, student status (junior, senior, etc.), name of faculty mentor for the talk, your intended audience (upper level undergraduate, lower level undergraduate, etc.), the title of the talk, and a brief description of the presentation.

Abstracts must be received by **March 12, 2004**. Due to time and space restrictions, we may not be able to accommodate all talks. Please submit your abstracts early. Students submitting abstracts should also register for the meeting.

Darren Wick
Chair, CONSTUM

Miami University Mathematics and Statistics Conference Mathematics and Symmetry

Miami University's Thirty-second Annual Mathematics and Statistics Conference will take place October 1-2, 2004, in Oxford Ohio. The theme of the conference will be "Mathematics and Symmetry," specifically as it relates to the visual arts. Professor Doris Schattschneider of Moravian College in Bethlehem, Pennsylvania, will be the keynote speaker. Professor Schattschneider is the author of *Visions of Symmetry*, a study of the periodic drawings of M. C. Escher, and she has recently edited a centennial celebration of essays on M.C. Escher's Legacy. Professor George Hart, from the Computer Science Department, SUNY at Stony Brook, is a mathematician and an artist whose work will be displayed at the conference. Dr. Hart will present two talks; one on mathematical sculpture, and one on the fourth dimension and symmetry.

Contributed paper sessions are being planned for the conference. Anyone wishing to contribute a 15-minute paper on some aspect of symmetry in mathematics should submit an abstract by August 30, 2004.

You can access information concerning pre-registration, housing, and how to submit an abstract on the department webpage (<http://www.muohio.edu/MathStat/>) under the link, "Annual Conference," or by going directly to <http://www.users.muohio.edu/randrib/fall-conference/>. The conference program will also be published on this website when available. Contact Professor Jane Keiser <keiserjm@muohio.edu> or Professor Beata Randriana <randrib@muohio.edu> for more information.

The Ohio Delta Chapter of Pi Mu Epsilon will hold its thirty-first annual student conference on the same dates. Undergraduate and graduate students are invited to contribute 15 or 30 minute papers, and should send abstract or any inquiries to Professor Milton Cox, Department of Mathematics and Statistics, Miami University, Oxford, Ohio 45056, or use e-mail; <coxmd@muohio.edu>.

Math Awareness Month April 2004

This year's theme is "The Mathematics of Networks (It's a Small World)," coordinated by the Society for Industrial and Applied Mathematics.

Tune up your mathematical network by attending the Spring Meeting in Cincinnati and bringing your students and colleagues along!

PMET

Summer workshops for faculty preparing future school teachers

A growing set of national reports calls for better preparation of the nation's mathematics teachers by mathematics faculty. To help meet this need, the MAA has developed a multifaceted program, which has been funded by NSF: Preparing Mathematicians to Educate Teachers (PMET).

As part of that project PMET will offer workshops for college and university faculty members who teach mathematics courses taken by prospective teachers. Additional funding for these has been provided by Texas Instruments. Each workshop will focus on preparing teachers for elementary, middle or secondary school mathematics. Participants will observe a demonstration class, providing an opportunity to learn about the mathematical thinking processes of students preparing for careers in teaching. Participants will also have opportunities to share ideas, discuss and learn more about appropriate content and ways of teaching prospective teachers more effectively.

It is not intended that the participants will be teaching methods courses, etc. Rather that they be aware of current practices in the schools, and the advice, research and current thinking from the mathematics and mathematics education communities. No prior such knowledge will be assumed. The appropriate mathematics for inclusion in courses and programs will be discussed, but the mathematics itself will not be covered.

The workshops are designed to address four major questions:

1. How is mathematical knowledge used in teaching school mathematics and what does this imply for the preparation of teachers?
2. What mathematics is crucial to teach in courses for prospective teachers? How can critical needs for both coverage and depth be managed? How can this mathematics be framed to make it most effectively usable for instruction?
3. How can prospective teachers be helped to learn mathematics effectively and how can the instructor figure out if he or she is doing is working?
4. How can prospective teachers be helped to develop mathematically sound pedagogical strategies and ways to use mathematical knowledge in the work of teaching?

Workshop activities will include:

- * Connecting college mathematics content to school mathematics
- * Demonstration college classes by master teachers
- * Discussions of school standards, both state and national
- * Course development projects by participants
- * Guest lectures by experts, including learning theory researchers
- * Discussions of curricular materials and educational reports
- * Use of technology
- * Teaching of statistics in the schools.

There are eight workshops scheduled for summer 2004 (some continue in 2005), in California, Nebraska, North Carolina, New York, and in Ohio. Each workshop is organized by a mathematician and a mathematics educator.

There will be two workshops in Ohio this summer:

1. For faculty preparing future elementary teachers: June 13-25, at Kent State University, led by Michael Battista, Michigan State University, and Olaf Stackelberg, Kent State University. Presenters will include a mathematics educator; a research mathematician who has thought about K-12 education; a practicing elementary school teacher; and a person involved in statistics education of elementary school teachers.

2. For faculty preparing future middle school teachers: June 20-27, at Bowling Green State University, led by Barbara Moses and Thomas Hern. Presenters include Ann Farrell, Wright State; Gail Burrill, Michigan State; Christine Browning, Western Michigan; Bill Speer, UNLV; Robert P. Moses, The Algebra Project; Fred Rickey, USMA; David Kullman, Miami; Aparna Higgins, Dayton; Cathy Stoffer, Ashland; Curt Bennett, Loyola Marymount; and other BGSU faculty: David Meel (also director of Intermediate Year Projects), Dale Winter, James Albert (statistics), Diem Nguyen, Dan Brahier. Statistics will be a major part of this workshop, including a 'field trip' to the Toledo Mudhens.

The Ohio workshops may be accessed at the Section web site: www.maa.org/Ohio

Costs of lodging and food while at the workshops are covered by the program. We expect home institutions to cover the travel costs for participants. In hardship cases, there may be some travel monies available.

Participants in PMET workshops will be encouraged to apply for a limited number of minigrants of \$2000-\$5000 to support continuing activities that further the program goals at their own institutions or in their local MAA section.

Check the project website for full information on the project: www.maa.org/pmet

Questions regarding the PMET Workshops and Minicourses may be addressed to Ed Dubinsky, edd@mcs.kent.edu

Application forms are available on the PMET web page or at www.maa.org/pmet/workshops/PMET2004-workshop-app.pdf

Applications are due April 9, 2004.

Olaf Stackelberg
stack@math.kent.edu

Thomas Hern
hern@wcnet.org

MAA Certificate of Meritorious Service

Thomas Hern

On January 8, 2004, Tom Hern was presented an MAA Certificate of Meritorious Service at the Joint Mathematics Meetings in Phoenix.

Citation: The Ohio Section of the MAA is pleased to recognize Professor Thomas A. Hern of the Department of Mathematics and Statistics at Bowling Green State University as its 2004 recipient of the Meritorious Service Award. Dr. Hern earned an A.B. in mathematics from the University of Cincinnati and a Ph.D. in probability theory from the Ohio State University. Tom has been a member of the Mathematical Association of America since 1970. Over the years he has compiled an impressive record of service to the organization.

From 1992 - 1995 Dr. Hern served as President-Elect then President and finally Past-President of the Ohio Section. He has also served as both a member and chair of the Section's Nominating, Teaching Award, and Program Committees. He handled local arrangements and planning at Bowling Green State University for Ohio Section meetings in May of 1975 and April of 1991 and Ohio Section Short Courses in June of 1976 and 1992. Tom founded and for many years maintained the Ohio Section web pages. He also served a five-year term as editor of the Ohio Section Newsletter and was the first to make it available via the web. Tom served as a member of the Ohio Section Committee on Cooperation Between Colleges and Universities from 1975 to 1978 and the MAA Delegation to the People's Republic of China in 1983. He began a three-year term as Governor of the Ohio Section on July 1, 2003. Finally, Tom has done an exemplary job of mentoring numerous young faculty by encouraging and supporting their participation in the Ohio Section of the MAA.

Continued above right

Spring Meeting Program

Friday, March 26

- Noon-4:30 Registration, book exhibits (Swift Hall)
 Noon-1:25 Student problem-solving team competition
 (Braunstein Hall, Rm 301)
 12:15-1:15 Committee Meetings
 1:30-1:45 Welcome & announcements
 1:45-2:45 **Invited Address:** "Touring a Torus,"
 Joe Gallian, Univ. of Minnesota Duluth
 2:45-3:10 Break & refreshments
 3:10-4:05 **Invited Address:** "Sagebrush, Turtles, and
 Snowflakes," Judy Holdener, Kenyon College
 4:15-6:30 **Contributed Paper Sessions**
Special Session on the Fibonacci Numbers
 Executive Committee Meeting
 6:30-6:45 Social Time
 6:45-7:35 Banquet
 Student pizza party and SET® tournament
 7:35-8:00 Dessert (faculty and students)
 8:00-8:45 **After-Dinner Talk:** "Breaking Drivers'
 License Codes," Joe Gallian
 8:45 Business meeting and presentation of
 teaching award

Saturday, March 27

- 8-10:30 AM Registration, book exhibits (Swift Hall)
 8:00-8:45 Coffee & donuts
 8:00-8:45 Meeting of Student Leaders
 8:50-8:55 Announcements
 8:50-9:50 **Retiring President's Address**
 "Music and the Time-Frequency Analysis
 of Wavelets,"
 Dale Mugler, University of Akron
 9:55-10:20 Break & refreshments
 10:20-11:55 **Contributed Papers**
 12:00-1:00 **Invited Address**
 "Breaking the Enigma,"
 J. Kevin Colligan,
 National Security Agency
 1:00 Closing remarks

Check the web page for updates, online registration, and paper submission (www.maa.org/Ohio).

Joe Gallian "Touring a Torus"

This talk concerns the problem of traversing an m by n directed grid embedded on a torus so that each vertex is visited exactly once before returning to the starting position. We include an application to computer graphics that became the image on the Mathematics Awareness 2003 poster.

"Breaking Drivers' License Codes"

Many states use complicated algorithms or formulas to assign drivers' license numbers but keep the method confidential. Just for the fun of it, Professor Gallian attempted to figure out how the states code their license numbers. In this talk he will discuss how he was able to break the codes for several of the states. The talk illustrates an important problem-solving technique that is not emphasized in mathematics classes. It also teaches the lesson that sometimes things done just for the sake of curiosity can have applications.

Joe Gallian received his Ph.D. from Notre Dame, and has been at the University of Minnesota Duluth since 1972. He has been the recipient of numerous honors, including the MAA's Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching, the Trevor

Evans Award for exposition, and the Carl B. Allendoerfer Award for exposition, to name just a few.

Joe has been extremely active in the MAA having served as the national coordinator for Mathematics Awareness Month in 2003 and as Associate Editor for Mathematics Magazine, the American Mathematical Monthly, and MAA OnLine. He has also served as Co-director of Project NExT since 1998, and has recently completed a term as Second Vice President of the MAA.

Professor Gallian has published 86 scholarly articles, and is also widely known for his book *Contemporary Abstract Algebra*, now in its 5th edition with Houghton Mifflin. He has run the highly successful Duluth Summer Undergraduate Research Program at UMD since 1977, and has served as supervisor of over 100 student-written papers that have been accepted for publication in mainstream journals.

Joe is one of the most popular mathematics speakers in the nation, having delivered eight invited addresses at national meetings, forty invited addresses at MAA section meetings, and over 200 minicourses.

Judy Holdener

"Sagebrush, Turtles, and Snowflakes"

In this talk I will describe a three-year period of interesting mathematical excursions involving Kenyon undergraduates, a workshop in Kansas, and ultimately the study of turtle sequences. A turtle sequence is a word constructed from an alphabet of two letters: F, which represents the forward motion of a turtle in the plane, and L, which represents a counterclockwise turn. I will investigate such sequences and establish links between the combinatoric properties of words and the geometric properties of the curves they generate. In particular, I will classify periodic turtle sequences in terms of their closure (or the lack thereof). At the end of my talk, you will see that the title I have chosen actually has some relevance.

Judy Holdener was born in Ravenna, Ohio and received her B.S. in mathematics from Kent State University in 1987. She earned both her M.S. and Ph.D. in mathematics at the University of Illinois in Urbana-Champaign. In 1994 she became the first civilian in the Department of Mathematical Sciences (DFMS) at the U.S. Air Force Academy in Colorado Springs, CO. After three years of teaching cadets Judy returned to the Buckeye State. She has been teaching at Kenyon College in Gambier since

1997. As an early member of Project NExT (a green dot!) Judy considers herself fortunate to have been surrounded by colleagues who share her interest in innovative approaches to learning. In 1995 she received the Tony M. Johnson Teaching Award at the Academy, and in 2003 she received Kenyon's Junior Trustee Teaching Excellence Award as well as the Tomsich Science Award. Judy's research interests reside in the areas of algebra and number theory, and she enjoys getting undergraduates involved in her work whenever possible. Judy also enjoys teaching her two-year old (red-headed!) son Chase.

Dale Mugler
"Music and the Time-Frequency
Analysis of Wavelets"

What makes the sound of a horn playing a middle C seem different from the sound of a flute playing the same note? Nearly everyone likes to listen to some kind of music, but rarely do we think of a piece we listen to as a time-frequency function. Fourier analysis, based on sines and cosines of different frequencies, has been used for many years to analyze the spectrum of a signal. But there is a relatively new mathematical tool that has taken over in many related areas and that involves the theory of wavelets. Wavelets provide a basis made of functions that are non-zero only on a small time interval, yet represent very general functions. This talk will introduce the theory of wavelets and many of its applications (including the new JPEG 2000 standard for image compression) but will concentrate on time-frequency plots of musical instruments.

Dale Mugler has done much of his mathematical work with people who have been active in the MAA. He did his doctoral work at Northwestern University in complex function theory under the direction of R.P. Boas, who served terms as Editor of the American Mathematical Monthly and as President of the MAA. During the fourteen years he spent at Santa Clara University he worked with G. A. Alexanderson, who is also a past president of the MAA.

Dale has been on the faculty at the University of Akron since 1989. He was awarded the Ohio Section Teaching Award in 1993 and has served as a CONSTUM member and chair. He also served on the MAA national Committee on Student Activities and on the national MAA Task

Force that updated the "Guidelines for Programs and Departments in Undergraduate Mathematical Sciences," a report that can be viewed at www.maa.org/guidelines/guidelines.html.

Professor Mugler currently serves as the Director of the University Honors Program at the University of Akron and has a joint appointment in Applied Mathematics and Biomedical Engineering. He has published twenty-three articles in established journals, and edited a book, *Lion Hunting and Other Mathematical Pursuits*, that was published by the MAA.

J. Kevin Colligan
"Breaking the Enigma"

Recent books and movies have made the public widely aware of the existence of the German Enigma cipher machine during World War II, and of the role that reading Enigma messages played in saving Allied lives and shortening the war. Most people credit an intelligent and determined band of British mathematicians who worked at Bletchley Park with this work.

Fewer people are aware, however, of the prior work by three innovative and brilliant Polish mathematicians on this same problem. In fact, this trio laid the mathematical foundation for the breaking of the Enigma, and made them the first to break the early Enigma machines. Newton's comment about standing on the shoulders of giants truly applies here, with the shoulders in this case being those of these Poles.

This talk will put this Polish effort in an historical perspective, and describe the mathematics behind the first successful attack on the Enigma.

J. Kevin Colligan holds an Honors B.S. Magna Cum Laude and Phi Beta Kappa honors from Saint Louis University and an M.A. from the University of Wisconsin, all in mathematics. He taught mathematics at

Continued on page 5

Book Exhibits

Several commercial publishers will exhibit their wares in the foyer of Swift Hall on Friday and Saturday. Please encourage any book reps you meet to contact Charles Groetsch (groetsch@math.uc.edu) to take advantage of this opportunity to display their wares this spring for a gathering of mathematics faculty from around Ohio.

There will also be MAA books on display with an opportunity to buy books at a discount. Not only would you save money, but the Section would earn some too.

Call for Contributed Papers

Fifteen-minute presentations on any topic of general interest in mathematics or related areas are solicited for the contributed paper sessions on Friday afternoon and Saturday morning at the spring Ohio Section meeting. Reports on projects or teaching innovations, research announcements, or anything you believe would be of interest to those in attendance are welcome. The presentation rooms will include a blackboard and an overhead projector, as well as a computer projection system for those who choose to bring their own computer for their presentation.

Contributors should submit a title and a brief abstract by **March 12, 2004**. Although

Continued on page 5

Registration

Online registration is preferred; see the meeting web page at www.maa.org/Ohio. Deadline for online registration is **March 19, 2004** (March 18 if attending banquet).

On-site registration is always available, but last minute banquet tickets cannot be guaranteed. Early registration helps those making arrangements and is always appreciated. On-site registration will take place in Swift Hall on Friday afternoon and on Saturday morning.

You may also register by sending the following information: name, affiliation, address, phone, e-mail address (if any), type of position, and banquet information.

Continued on page 5

Banquet

The Friday evening banquet will be held in the Great Hall of the Tangeman University Center. Cost of the banquet is \$17 per person. The buffet consists of an entrée choice of Chicken Parmesan or Vegetable Lasagna (to be specified at time of booking) and includes a choice of two salads, vegetable lasagna, wild rice, herb marinated vegetable medley, rolls/w butter, coffee or hot/iced tea and assorted pies for dessert.

Registration deadline is **March 18, 2004**. Space is limited. There may be additional banquet tickets available on site, but this cannot be guaranteed.

* Note: Simultaneous to the Buffet Banquet, there will be a **Student Pizza Party** (at no charge) held in the Max Kade Center, room 736 of the Old Chemistry Building. The party is scheduled to allow those in attendance to join in dessert and the after dinner program in the Great Hall.

Directions to the University of Cincinnati and Parking

The Spring 2004 Ohio Section Meeting will be held on the West Campus (the campus formerly known as the "Main" campus) of the University of Cincinnati. The campus is bounded by M.L. King Dr. (North boundary of Campus), Clifton Ave. (West boundary), Calhoun St. (South boundary), and Jefferson Ave. (East boundary), and can be reached by either I-75 or I-71. A campus map may be obtained at www.uc.edu/directions/ by clicking on "West Campus Map."

All talks will take place in Braunstein Hall (sections) and Swift Hall (plenary sessions); social events will be held in the Tangeman University Center or the Max Kade Center. The Mathematics Department is located in 839 Old Chemistry Building, across the quad from Swift Hall.

From I-75 Southbound:

Exit at Exit No. 3, Hopple St. (The sign should also indicate Univ. of Cincinnati). Turn left at the signal at the end of the exit ramp, crossing over I-75 heading East. You will be heading up a steep hill on M.L. King Dr. At the top of the hill, M.L. King Dr. intersects Clifton Ave. Continue on M.L. King through Clifton Ave to the next signal at Woodside Gate. Turn right onto the campus at Woodside Gate. The CBA garage is on your left.

From I-71 Southbound:

Exit at Exit No. 3, W.H. Taft Rd. Proceed west (the only way to go) on W.H. Taft to the fourth signal, Jefferson Ave. Turn right on Jefferson proceeding along the east side of the campus to the third signal (stay in the left lane, there is a "cut-off" that allows you to make a left turn) which is M.L. King. Turn left on M.L. King and proceed to the next signal, Woodside Gate. Turn left into the campus at Woodside Gate. The CBA garage is on your left.

Parking for the meeting will be available in the CBA Garage at the intersection of Martin Luther King, Jr. Drive and Woodside Drive (see West Campus map). CBA stands for College of Business Administration. This is a pay-on-exit garage; parking passes will be supplied to registered participants at the registration desk.

Where to stay

Prices are exclusive of taxes, and in some cases, parking. All rates quoted are for doubles and are subject to change. When booking you should mention that you are a participant in the U.C.-MAA meeting.

Near U.C.:

The Vernon Manor
400 Oak St. (about 4 blocks from UC)
513-281-3300
\$79.00

Marriott Kingsgate
151 Goodman St. (one block from U.C.)
513-487-3800
\$105.00

Days Inn
3244 Central Parkway (8 blocks to U.C.)
513-559-0400
\$55.00

Downtown:

Bus service from downtown to the campus takes about 15-20 minutes. UC is about 2.5 miles north of Fountain Square (center of downtown). It can be reached by taking buses 17, 19, or 22 on Vine St., heading north.

Note: Downtown hotels charge variable rates for parking. Self-parking in a downtown garage averages \$12.00/day.

Hyatt Regency
151 W. 5th St.
513-579-1234
\$99.00

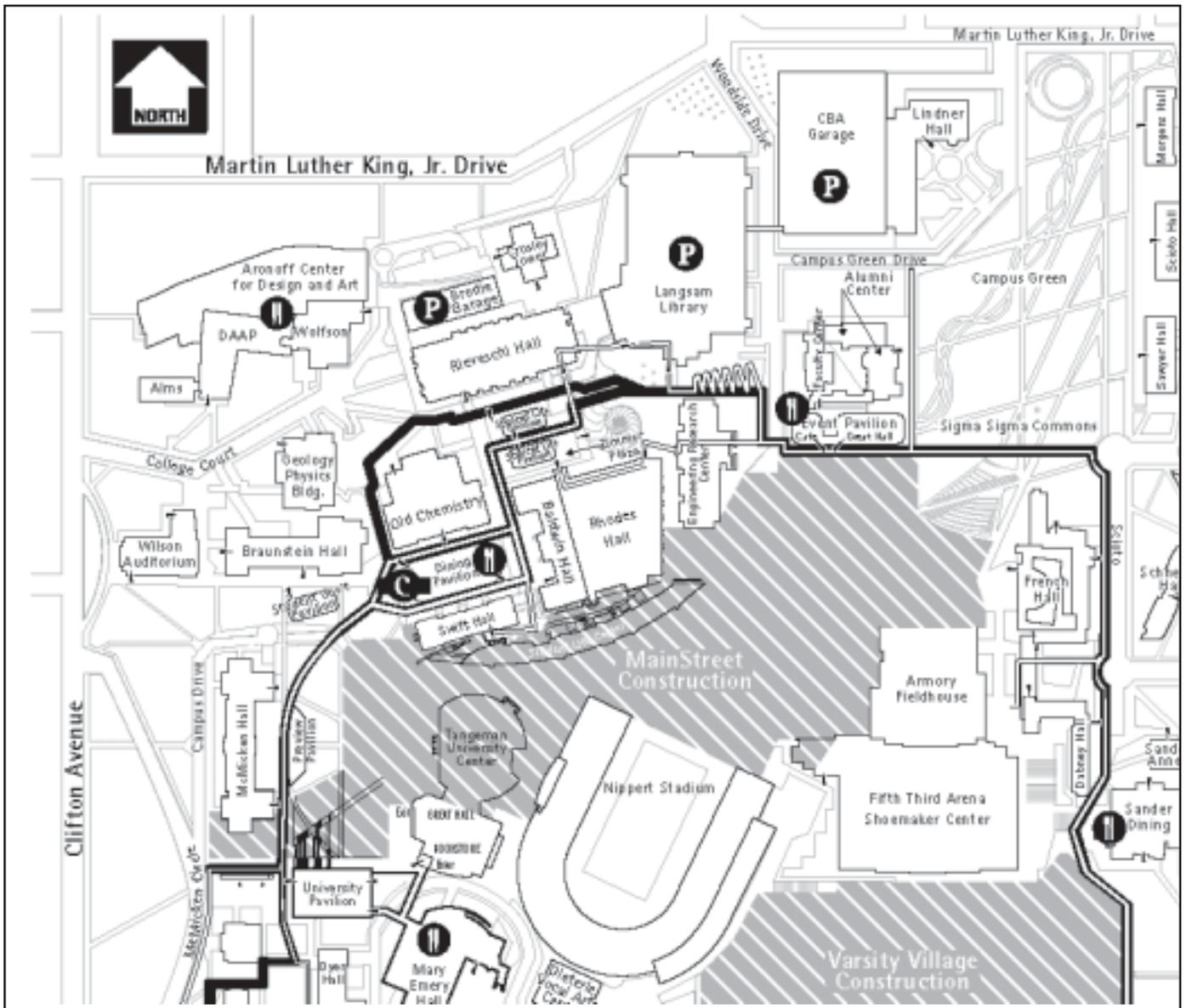
Hilton Netherland Plaza
5th and Race Sts.
513-421-9100
\$87.00

Crowne Plaza
15 W, 6th St.
513-381-4000
\$79.00

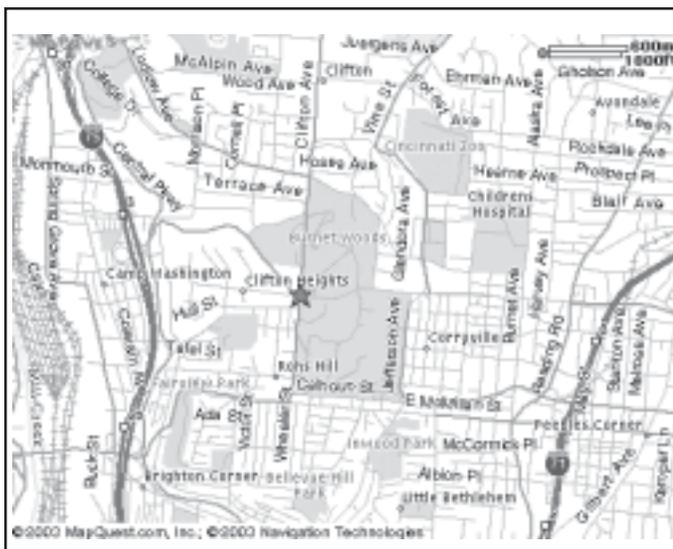
UNIVERSITY OF CINCINNATI

The University of Cincinnati, a comprehensive research university consisting of thirteen colleges, has an enrollment of more than 35,000 students in more than 200 majors and programs. In fiscal year 2003 the university earned more than \$300M in grants and contracts and ranked 26th in the nation in patent income. While the university traces its roots to downtown Cincinnati in 1819, the West Campus is located in the Clifton neighborhood on land that was donated to the city by Charles McMicken in 1869. Edward Wyllys Hyde, the first ordinary professor of mathematics in the university, was an early champion of Grassmann's space analysis and joined the editorial board of the *Annals of Mathematics* in 1896.

Harris Hancock organized the department along German academic lines in 1900 and the department granted its first Ph.D. degree in 1910. In addition to Hyde and Hancock, other prominent mathematicians who have served on the faculty include Otto Szasz, I.A. Barnett and Archibald Macintyre. The Department of Mathematical Sciences offers B.A., M.S., M.A.T. and Ph.D. degrees in all major areas of pure and applied mathematics and statistics. It has thirty-nine in the professorial ranks, enrolls 110 undergraduate majors and more than 100 graduate students and is a participating member of the Institute for Mathematics and Its Applications and the Mathematical Biosciences Institute. In addition the department shoulders a broad service role for the professional colleges. The 8th floor of the Old Chemistry building houses the department, the Mathematics Library and the Pinzka Mathematics Lounge. Participants in the Section meeting are invited to make themselves at home in these facilities. We promise to lock up all the Old Chemists in the attic.



University of Cincinnati Campus Map



Map of the Area



Local Map

Calendar

Ohio Section

Spring Section Meeting, March 26-27, 2004, University of Cincinnati, Cincinnati, OH.

Fall Section Meeting, October 22-23, 2004, John Carroll University, Cleveland, OH. (University Heights).

National MAA-AMS

MathFest, August 12-14, 2004, Providence, RI.

Annual Joint Meetings, January 5-8, 2005, Atlanta, GA.

MathFest, August 4-6, 2005, Albuquerque, NM.

Annual Joint Meetings, January 12-15, 2006, San Antonio, TX.

MathFest, August 10-12, 2006, Knoxville, TN.

Annual Joint Meetings, January 4-7, 2007, New Orleans, LA.

MathFest, August 3-5, 2007, San Jose, CA.

Annual Joint Meetings, January 6-9, 2008, San Diego, CA.

MathFest, July 31-August 2, 2008, Madison, WI.

Annual Joint Meetings, January 7-10, 2009, Washington, DC.

Annual Joint Meetings, January 6-9, 2010, San Francisco, CA.

Annual Joint Meetings, January 5-8, 2011, New Orleans LA.

Other

Allegheny Mountain Section, March 26-27, 2004, West Virginia Wesleyan College, Buckhannon, WV.

Indiana Section, April 2-3, 2004, Indiana State University, Terre Haute, IN.

Kentucky Section, April 2-3, 2004, Murray State University, Murray, KY.

NCTM Annual Meeting, April 21-24, 2004, Philadelphia PA.

Michigan Section, May 7-8, 2004, Oakland University, Rochester, MI.

State Science Day, May 8, 2004.

Ohio Section Short Course, June 2-4, 2004, Ohio Northern University, Ada, Ohio

Joint Statistical Meetings, August 8-12, 2004, Toronto, Canada.

Annual Math and Stats Conference, and Pi Mu Epsilon student conference, October 1-2, 2004, Miami U., Oxford OH

Tri-State Meeting of Indiana, Illinois and Kentucky Sections, November 5-6, 2004, University of Evansville, Evansville, IN.

AMATYC Annual Conference, November 18-21, 2004, Orlando, FL.

Indiana Section, April 1-2, 2005, Indiana-Purdue Fort Wayne.

Complimentary copies of this newsletter are being distributed to people who would be interested in Ohio Section activities. By joining the MAA, you will get your own copy of the newsletter. If you are not an MAA member, look at the web page: www.maa.org/mbsvcs/individual.html. MAA Departmental Liaisons also have membership information.



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