

Call for Student Papers for Spring Meeting

Students (and recent graduates) from the Northeastern Section are invited to present talks at the Fall meeting on topics in mathematics, statistics, or computer science. The presentations should be 10-15 minutes in length, on expository work, research projects, employment experiences, or problems from mathematical periodicals. The registration fee and cost of meals will be waived for one student presenter per paper. Interested students should contact Michael Cullinane, mcullina@keene.edu, or Lisa Humphreys, lhumphreys@ric.edu. The deadline for submission is May 28th.

Call for Contributed Papers

Participants at the Fall Meeting of the section are invited to submit contributed papers. We are particularly interested in papers that will appeal to a variety of participants. If you are planning to speak about results of your research, keep in mind that the audience most likely will not be familiar with your specialty, so you will want to give some motivation and context for your work. Your presentations should be approximately 15 minutes in length. Please send an abstract and your mailing address together with a list of any special equipment you may need to Tommy Ratliff at tratliff@wheatoncollege.edu. Email submissions are preferred, but you may also send a typed submission to Tommy Ratliff; Department of Mathematics; Wheaton College; Norton, MA 02766
The deadline for submission of abstracts is May 28th.

Massachusetts College of the Liberal Arts

Massachusetts College of Liberal Arts, a residential college of about 1500 students, is the public liberal arts college of Massachusetts. MCLA is located in the Berkshire County city of North Adams, near the northwest corner of Massachusetts. Founded in 1894 as North Adams Normal School, the College has undergone several transformations, most recently renamed MCLA in 1997 in recognition of its liberal arts mission. Currently, MCLA offers fourteen bachelor degree programs and a Master of Education program. The Mathematics Department includes two full-time faculty and about twenty-five majors. Many of our majors complete the Education certification program, and others pursue graduate school or careers.

Nearby attractions include Mass MOCA - the museum of contemporary art in North Adams, and the Clark Art Institute and Williams College of Art in nearby Williamstown. There is a good chance that attendees at the conference will be able to get reduced admission to MOCA.

**NORTHEASTERN SECTION OF THE MAA
SPRING MEETING: JUNE 13-14, 2003
MASSACHUSETTS COLLEGE OF THE LIBERAL ARTS
NORTH ADAMS, MASSACHUSETTS**

Friday, June 13, 2003

2:30 – 6:00 p.m. Registration in Main Lobby of Bowman Hall

2:30 – 3:30 p.m. Executive Committee Meeting

3:00 – 6:00 p.m.

The Millennium Prize Problems

Springer VideoMATH

The Math Life

Films for the Humanities and Sciences

CBS Special: IMO 2001 – Washington D.C.

3:00 – 3:50 p.m. TBA

4:00 – 4:50 p.m.

Model Railroad Train Tracks, Tangles, Dominoes, and Tetris: The Evolution of Deep Mathematical Problems from Children's Toys

Julian Fleuron, Westfield State College

5:00 – 5:50 p.m. Student Papers

6:00 – 6:30 p.m. Reception

6:40 – 8:00 p.m. Dinner

8:10 – 8:20 p.m. Opening Remarks

8:20 – 9:10 p.m.

The MAA's American Mathematics Competitions: Easy Problems, Hard Problems, History, and Outcomes

Steven Dunbar, University of Nebraska-Lincoln, MAA Director for K-12 Programs

Saturday, June 14, 2003

8:00 – Noon Registration

8:30 – 9:20 a.m.

From Chernobyl to Boston's Big Dig: Interdisciplinary Projects for Freshman Mathematics

Karen Schroeder and David Carhart,

Bentley College

9:30 – 10:00 a.m. Break

10:00 – 10:50 a.m.

Battles Lecture: Number Theory with Polynomials

Michael Rosen, Brown University,

11:00 – 11:30 a.m. Business Meeting

11:30 – 12:30 p.m. Lunch

12:40 – 1:30 p.m.

Algorithms of an African American Female Mathematician

Dawn Alisha Lott, New Jersey Institute of Technology

1:40 – 2:30 p.m.

Mathematics and Music

Lisa Hansen, Western New England College

2:40 – 3:30 p.m.

Contributed Papers

Abstracts / Speakers

Model Railroad Train Tracks, Tangles, Dominoes, and Tetris: The Evolution of Deep Mathematical Problems from Children's Toys

Julian Fleuron, Westfield State College

We might think of model railroad train tracks, dominoes, the game Tetris, and the plastic Tangle toy (which has been popularized as a “cosmic guide” as well as “a folded protein model”) as little more than unrelated hobbies, games, and recreational trinkets. Yet they share critical structural connections that unite them into a close mathematical family. Exploring the relationships that bind these objects together introduces several wonderfully rich mathematical problems – easily stated problems that are simultaneously deep and complex – which bring knot theory, topology, geometry, and combinatorics together in exciting ways. Moreover, this exploration provides a compelling metaphor for mathematical discovery and the unity of mathematics.

In this introductory talk we will illustrate some of these wonderful connections, introduce some of the mathematical problems that naturally arise from the study of these connections, and (hopefully) leave the audience Tangled in the wonderful web of mathematical intrigue woven together by these remarkable “children's” “toys”.

The MAA's American Mathematics Competitions: Easy Problems, Hard Problems, History and Outcomes

Steven Dunbar, University of Nebraska-Lincoln

For over 50 years the Mathematical Association of America has sponsored the American Mathematics Competitions for high school students. It's now a sequence of competitions at several levels that lead to the selection of the team of students representing the USA at the International Mathematical Olympiads. I'll review some of the problems from the contests with an emphasis on “easy” problems, “hard” problems, and what makes the difference. In the process, I'll mention some interesting bits of history, look at some trends in the contests, note some remarkable participants, and make some comments on the nature of problem posing and solving and its connections to mathematics.

Steven is currently the MAA Director for K-12 Programs, managing the American Mathematics Competitions at the University of Nebraska-Lincoln, where he is also on the faculty in the Department of Mathematics. He is interested in nonlinear differential equations and applied dynamical systems, as well as issues of mathematical education. Steve has received several teaching awards including the Nebraska-Southeastern South Dakota Section of the MAA Award for Distinguished Teaching of Mathematics at the University or College Level, 1997; and the College of Arts and Sciences Distinguished Teaching Award, 1991.

From Chernobyl to Boston's Big Dig: Interdisciplinary Projects for Freshman Mathematics

Karen J. Schroeder and David H. Carhart, Bentley College

Over the past three years, we have been developing interdisciplinary projects for our freshman mathematics sequence in the honors program. An overview of project development from the idea to the realization will be presented along with details of three or four projects.

Karen received a BA degree in mathematics from Emmanuel College and did her graduate work at Boston College. She is currently a Senior Lecturer in the Mathematical Sciences Department at Bentley College where she is involved in developing interdisciplinary projects in mathematics for the honors program. She is a former Chair and Governor of the Northeastern Section of the MAA.

David was recently appointed as the Wilder professor of Mathematical Sciences at Bentley College, where he is also Director of the Honors Program. He received his DBA and MBA in operations research from The George Washington University and a BA in chemistry from the University of North Carolina at Chapel Hill. His current teaching and research efforts are concentrated on the application of mathematical models in the business world. Additional research deals with the use of information technology in the mathematics classroom and the role of discontinuous models in the social sciences. His recent consulting experience has been with the Commonwealth of Massachusetts and the U.S. Small Business Administration.

Algorithms of an African American Female Mathematician

Dawn Alisha Lott, New Jersey Institute of Technology

There are many challenges facing our African American female mathematicians that differ in degree and type from our colleagues who do not share the distinction of being Black and being a female. These challenges, which at times may seem insurmountable, are faced each day as African American females strive to make a name for themselves in the mathematical sciences. A brief outline will be given in the form of an algorithm which provides systematic solutions to the problems facing our next generation of female mathematicians of color.

Dawn is an Assistant Professor of Applied Mathematics at the New Jersey Institute of Technology. She graduated from Michigan State with a MS degree in Applied Mathematics in 1989. In June 1994, she earned a Ph.D. in Engineering Sciences and Applied Mathematics from Northwestern University. Her professional career began with a postdoctoral research position at the University of Maryland at College Park. Dawn is in her sixth year at NJIT and enjoys research in the area of biomathematics and biomechanics and spends a great deal of her time determining optimal patterns for suturing wounds in human skin, and modeling applications in the field of mathematical physiology.

Mathematics and Music

Lisa Hansen, Western New England College

There are many connections between mathematics and music. This survey will focus on the links between music and areas of mathematics such as rational and irrational numbers, trigonometry, geometry, permutations, and group theory. Other connections include the Fibonacci sequence, the golden mean, fractals, and continued fractions, as well as historical notes regarding famous mathematicians. The talk will feature both live and recorded music.

Lisa is an Associate Professor of Mathematics and Computer Science. She received her B.S. degree

from Western Michigan University in 1990, her Masters from Michigan State University in 1992, and she returned to Western Michigan U. to complete her Ph.D. under the supervision of Gary Chartrand. Her research interests include graph theory, algorithms and computation theory, as well as connections between mathematics and music. Both she and her husband are mathematicians and musicians (otherwise known as “mathemusicians”) and they share a love for teaching mathematics, for sharing their gifts of music with their church, and for parenting their 8-year old son, Joshua.

Hotel Information

Thirty rooms are reserved at the

Holiday Inn
40 Main Street
North Adams, MA 01247
413-663-6500

Cost per night is \$79.99. Reservations must be made by Tuesday, May 13th. Mention the conference at MCLA. Please note that the meeting is the same weekend as the Williams College graduation and hotel rooms will be difficult to find.

Forty-eight rooms are available in the Berkshire Towers dormitory for \$59 per night. Reservations for these rooms must be made by May 30th. Send dormitory requests to the local arrangements chair at the address

Freda Bennett
MCLA, Box 9083
375 Church St.
North Adams, MA 01247

Questions should be directed to Freda Bennett at (413) 662-5364 or FBennett@mcla.mass.edu.

Directions to Massachusetts College of the Liberal Arts

These directions are taken from the web site at www.mcla.edu/Directions_to_MCLA/. Campus map is at www.mcla.edu/Admissions/Virtual_Tour/

From Albany, New York (1 hour) Take Route 2 East to North Adams

From Burlington, Vermont (3 hours) Take Route 7 South to Route 2 East to North Adams

From Boston (3 hours) Take Route 2 West to North Adams

From Springfield/Hartford (1.5-2 hours) Take Route 91 North to Route 2 West to North Adams

From Long Island (4 hours) Take the Whitestone Bridge to the Hutchinson Parkway North, Get off at Route 287 West. Take the Taconic State Parkway North to Route 295 East to Route 22 North to Route 43 East to Route 2 East.

From New York/New Jersey (3-4 hours) Take the New York State Thruway to Albany (Ext 23). Take Route 787 North to Route 2 East to North Adams.

From Worcester, Massachusetts (2 hours) Take Route 90 West to Route 91 North to Route 2 West to North Adams

Once in North Adams:

At the light in front of Dunkin' Donuts, turn onto Eagle Street (a right turn if heading east on Route 2, a left turn if heading west on Route 2). Turn left at the first light onto Main Street, bear right at the North Adams Library and continue down Church Street to the campus.

**Pre-Registration Information and Form
Spring 2003 NES/MAA Meeting, June 13-14, 2003**

If you have questions about registration, you can also contact Freda Bennett by phone, (413) 662-5364, or by email, FBennett@mcla.mass.edu.

Checks should be made to: NES/MAA. Mail form on next page by June 5th (May 30th if requesting dormitory housing) to :

**Freda Bennett
MCLA, Box 9083
375 Church St.
North Adams, MA 01247**

Hotel reservations must be made directly with the hotel. Please pre-register! You may register at the meeting if you wish; however, it would help to plan the meeting if you pre-register by mail and it will save you money in that on-site registration fees are five dollars more than pre-registration fees. **Meals cannot be guaranteed unless reservations are received by Thursday, June 5. Dormitory housing cannot be provided unless this form is received by Friday, May 30th** .It may not be possible to buy tickets to the banquet or lunch at the meeting. Spouses and guests are welcome at all meals. Pre-registration form is on the next page.

PRE-REGISTRATION (please type or print):

Name:

Name as you want it to appear on your name badge:

Affiliation:

Address:

Telephone:

E-mail:

Pre-registration Fee:

MAA Member (\$25.00)

Non-member (\$30.00)

Student or unemployed (\$10.00) \$ _____

Meals

Reception and Buffet Friday (\$22.00 per person)
\$ _____

Choose one: Chicken Breast Picatta
Vegetarian Lasagne

Luncheon Sandwich Buffet Saturday (\$12.00)
\$ _____

Dormitory (\$59) Number: _____ \$ _____

Total \$ _____

Are you attending Section NeXT on Friday morning?

YES _____ NO _____