

NORTHEASTERN SECTION



NEWSLETTER

SPRING 2003

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**NORTHEASTERN SECTION
MATHEMATICAL ASSOCIATION OF AMERICA
FUTURE SECTION MEETINGS**

June 13-14, 2003

Massachusetts College of the Liberal Arts, North Adams, MA
(Program and calls for participation in this issue)

Program Committee: Richard Pelosi, WNEC
Local Arrangements: Freda Bennett, MCLA

November 21-22, 2003

Wellesley College, Wellesley, MA

Program Committee: Frank Ford, Providence College
Local Arrangements: Ann Trenk, Wellesley College

OTHER ACTIVITIES

Short Course: **Hands-on Statistics for Teachers**

June 16, 17, and 18, 2003

St. Michael's College, Colchester, Vt.

Presenters: Rick Cleary, Bentley College
Robin Lock, St. Lawrence University

(Details in this issue)

Short Course Committee: Will Stout (stout@salve.edu)
Dennis Luciano (dluciano@wnec.edu)
Paul Estes (ple@mail.plymouth.edu)

Dinner Meetings

Coordinator: Lucy Kimball (lkimball@LNMTA.bentley.edu)

Awards: NES/MAA Award for Distinguished Teaching
(2003 Winner: Emma Previato, see page 14)

Web page: access it via <http://www.maa.org> or directly with
<http://www.southernct.edu/organizations/nesmaa/>

Webmaster: Ross Gingrich, Southern Connecticut State University
(gingrichr1@southernct.edu)

Section Project Next: Next Meeting at Spring Meeting.
Coordinator: Lisa Humphreys, Rhode Island College
(lhumphreys@ric.edu)
(See page 17 for details)

Message from the Chair.....Ockle Johnson

Greetings! Since the last Newsletter, we had a very successful meeting at Framingham State College. Thanks to Sarah Mabrouk for a very full and diverse program and to Sarah and her colleagues for a smooth meeting. At the meeting we elected Sarah our Vice-Chair/Chair-Elect and we re-elected Ann Kizanis, Treasurer and Kathy Bavelas, Two Year College representative. In addition, so many of us left with extra tokens to remember the meeting, from autographed copies of Tom Koshy's book, to computer software, to shirts and mugs.

At that meeting we also inaugurated our Section NeXT program for new and relatively new faculty members in our section. We're off to a great start with 15 members from around the section. At our first workshop we were treated to teaching tips from Chuck Vinsonhaler and Mary Sullivan. Thanks to Lisa Humphreys for all the work she did to pull this together. The Section NeXT program will continue at the spring meeting. And for all of you who have just completed successful searches, we hope that you will encourage your new colleagues to be part of our second year Section NeXT group in the fall. Information is available on the website and you will be receiving more information in the fall.

At the Executive committee meeting last fall, one of the topics of discussion was guidelines for Section meetings. Recent meetings have been operating at a bit of a loss and so we decided to raise our registration fees by \$5. It's over a decade since an increase and we needed a little more of a cushion to cover expenses. At \$25 we're still a bargain!

As always the spring is full of section activities. Our dinner meetings provide an excellent opportunity for section members to share friendship and mathematics. Lucy Kimball has been coordinating another "full plate" of dinner meetings. This year added to the menu is a Connecticut meeting hosted by Jason Moliterno at Sacred Heart University. On a more somber note, a dinner meeting in memory of Ken Preskenis, who passed away suddenly after the fall meeting, is being planned by his Framingham State colleagues. (A note on Ken

is contained in the Newsletter.)

Later in the spring we return to western Massachusetts for our spring meeting at Massachusetts's College of the Liberal Arts in North Adams where Freda Bennett will host us. In the Newsletter you will find more details on the excellent program that Dick Pelosi and his committee have planned for us. At the meeting we will recognize our Section's Distinguished Teaching Award winner for this year, Emma Previato. Congratulations to Emma. (You can read more about her in the Newsletter.) I hope that many of you will be able to join us for the meeting.

After the meeting we head up to the Burlington, Vermont area to St. Michael's College for our short course. This year Rick Cleary and Robin Lock will help us to think like statisticians for a few days and share ideas, approaches and software that are sure to enliven our statistics classes. Many of us have heard both Rick and Robin at Section and/or National meetings and so we know that not only will the short course be very educational, it will also be very entertaining and a lot of fun. So talk it up among your colleagues, your children's high school math teachers and anyone else that might benefit.

While I especially want to push our section activities, remember that the MAA has its national PREP or Professional Enhancement Programs. If you're not aware of them, take a look at the MAA website, www.maa.org. You'll find some of those opportunities are close to home.

If you haven't checked out the MAA web page in a while, check it out; it has a new look. And while you're there, check out our Section web page as well. (To link to it from the MAA web page click on Special Groups, then Sections.) On our web page you'll find the latest information on any of our section activities and it will appear there first! In addition if, over the next few years, we could migrate toward the website as our primary source of information about the Section and its activities, this printed Newsletter can become obsolete. That will save the Section thousands of dollars and relieve our treasurer, Ann Kizanis, of a little anxiety. Already the Newsletter has been posted on the website for a while. If you don't need to receive a printed copy anymore, let Frank Ford, our editor know so that we can save some money.

I hope to see many of you at the some of the Section activities this spring or at Mathfest this summer in Boulder.

Message from the Governor Donna Beers

While impressions are still fresh, I am writing to you on a snowy Monday following the January 2003 Joint Meetings of the AMS and MAA in Baltimore. The formal program offered a rich menu of talks, panels, and workshops - many by NES/MAA members - and numerous ways to connect with the profession. As important, there were many ways to associate informally, including receptions for graduate students and first-timers and members of Project NExT, formal and informal reunions, banquets, and, of course, the book exhibits. The pre-registration for the Baltimore meeting topped 4,000, making it one of the best-attended meetings ever. This is a wonderful tribute to the success of the AMS and MAA in meeting members' needs.

As a way of reporting on the MAA's latest activities and accomplishments, I want to share some highlights from the Board of Governors meeting:

- First, news of a major gift: The MAA has received the largest single donation ever: a \$3,000,000 gift from Virginia and Paul Halmos for the renovation of the carriage house, a part of the properties of the MAA in Washington, D.C. This renovation envisions creating an MAA Conference Center and so opens up new opportunities for the MAA to host mathematics activities.
- Professional development for faculty: Project PREP (Professional Enhancement Programs), which is funded by the NSF, began with six workshops in summer 2001. Plans are underway for another strong program in summer 2003. These will include a Northeast Workshop on Quantitative Literacy Across the Curriculum, offered at Kimball Union Academy in Meriden, New Hampshire, plus fifteen other workshops, e.g., Assessment at the Departmental Level, Earth Math, Creating and Teaching Courses that Integrate Biology and Mathematics, and Active Learning Approaches to Teaching Mathematics Content Courses for Elementary and Middle-School Teachers, and Topics in Applied Casualty Actuarial Science. There will

also be a professional development program for department chairs, June 19-22. For details on these and other summer 2003 programs, see <http://www.maa.org/pfdev/prep/prep.html>.

- SIGMAAs: There are now six Special Interest Groups of the MAA in: Philosophy of Mathematics, Environmental Mathematics, Research in Undergraduate Mathematics Education, Statistics Education, History of Mathematics, and Business, Industry, and Government. These groups give one measure of the breadth of interests in the MAA.
- Project NExT: This program, now in its ninth year, is one of the most successful programs of the MAA. A total of 626 new faculty have participated in the national program, and the Section NExTs have served 300 more. For many years Project NExT has been sponsored by the ExxonMobil Foundation. A challenge is to secure permanent funding.
- Math Awareness Month 2003: The theme for the April 2003 Math Awareness Month celebration is Mathematics and Art. A beautiful, Escher-like poster has been created to publicize this occasion and may be found at <http://mathforum.org/mam/03/>, along with several essays and articles written especially for this event.
- New guidelines for undergraduate mathematics programs: CUPM (The Committee on the Undergraduate Program in Mathematics) has been studying the undergraduate program for the first decade of the twenty-first century. A draft report, "Undergraduate Programs and Courses in the Mathematical Sciences: A CUPM Curriculum Guide," with recommendations, was unanimously approved in January 2003. Draft updates will be available at <http://www.maa.org/cupm/>. Your feedback is requested.
- Preparing Mathematicians to Educate Teachers (PMET): The MAA has just received funding from the NSF for a multifaceted PMET proposal. There will be three major areas of the program: (1) Workshops for the Professional Enhancement for Mathematicians teaching mathematics courses to future and current teachers (there will be four workshops in 2003 - see

<http://www.maa.org/pmet/workshops.html>);
 (2) information and resources (for detailed information, please refer to an article in the March 2003 Focus at <http://www.maa.org/pmet/focus.html>); and, (3) mini-grants and regional conferences to foster innovation in teacher educations at individual campuses.

- Upcoming national meetings: Please note that the summer MathFest 2003 will take place in Boulder from July 31-August 2, and the Joint Meetings of the AMS and MAA will be held in Phoenix from January 7-10, 2004.

In closing, I want to thank you for the privilege of serving for the past three years as the Governor of the NES/MAA. This experience has afforded me the opportunity of representing our section's interests to the national headquarters, participating in decisions about the future direction of the MAA, and communicating to you up-to-date information about MAA programs. Whether your focus is on curriculum development, teacher preparation, pedagogy or research, I hope you will find MAA programs that nourish your professional growth and development, and colleagues who share your interests. The leadership of the MAA is filled with creative individuals who are constantly looking for new ways to serve members. I look forward to seeing you at the spring NES/MAA meeting, June 13-14, 2003 at the Massachusetts College of the Liberal Arts in North Adams.

Message from the Secretary-TreasurerAnn Kizanis

I gave my last Treasurer's report at the Fall MAA meeting at Framingham State College. At this time, our balance was 7,039.85. The meeting at Framingham State College was well attended with great speakers. The expenses from that meeting totaled \$5,646.63 while the income made totaled \$7,392.00. Hence, there was a profit of \$1,745.37. As a result, our present balance is \$8,785.22.

I am very pleased that our section is making more progress toward distributing an electronic newsletter. We spent \$1,414.79 on both the printing and postage of our Fall 2002 newsletter and saved \$643.37 over what we spent

for postage and printing of the Spring 2002 newsletter. I am confident that we can save a substantial amount of money over time by having more of our communications with our members occur electronically. In the future, these savings shall help to offset the expenses we incur each year.

I am in the process of writing the yearly financial report of the Northeastern Section of the MAA. I will then write our section's annual report at the beginning of this summer, after gathering the statistics needed from our two yearly meetings. If there is any information that the members of our section would like me to include in this report, please let me know by May.

That's all for now. We are all looking forward to the Spring MAA meeting, where I will update you further on our financial state. Have a good semester

Two-year College Representative's Report Kathy Bavelas

The annual spring meeting of MATYCONN will be held in Hartford at Capital Community College's new campus on Main Street on April 25. The meeting will commence about 2:30 with a social hour and registration and conclude after a dinner presentation. Judy Moran of Trinity College will be the dinner speaker-- her talk-- "The Geometry of Italian Tiling." Before dinner Charles Neville of CWN Research will talk about " New Results on Primes from an Old Proof of Euclid's."

OCMA – Ontario -- is sponsoring a great mathematics teaching conference to be held at the Talisman Mountain Resort, Kimberly, Ontario from May 28 through May 30, 2003. For information view [Http://www.Mohawk College.ca/dept/math/ocma/gmts03/home.html](http://www.Mohawk College.ca/dept/math/ocma/gmts03/home.html) MATYCONN will sponsor the 13th annual student math contest will take place on Saturday, April 12, 2003, with cash prizes for the top three scorers.

Herb Gross will be retiring this year from Bunker Hill Community College. He will be finishing 50 years in the classroom at Bunker Hill Community College, Corning Community College and MIT. In his retirement he will be working with his son, Steven, on developing the "academically safe" classroom as well as developing a "math academy" in several of the Boston schools

From the Newsletter EditorFrank Ford

First, congratulations to Sarah Mabrouk, Chair-elect. She will succeed Ockle Johnson as Chair of the section at the end of our Fall meeting at Wellesley. She was everywhere at the Framingham meeting. I wondered if she was using look-alike substitutes! We can look forward to two exciting years. We should not forget the other candidate in the race for chair-elect, John Lutts. He has done much for the section and was willing to serve if elected. Also thanks to the other winners, Ann Kizanis as Secretary-Treasurer and Kathy Bavelas as Two-Year Representative. Both bring experience to their jobs. Finally, thanks to Michael Latina for running for tw-year representative. He has served the section in many capacities before and, doubtlessly, will again.

Second, congratulations to Emma Previato, the 2003 Northeastern Distinguished Teacher. We enjoyed her talk at Framingham and now we get to hear her again at Wellesley. Her talent was on display Saturday, March 22nd when she brought together undergraduate students and faculty to celebrate and encourage undergraduate research. I sat next to Sarah Mabouk on a panel and we had a great time. The joy of mathematics was in the air as well as Frank Morgan's soap bubbles. There were TEN student presenters. I asked Rebecca Kakar, a student-attendee from Framingham State College, what she thought of the day. She said "On behalf of the attendees from Framingham State College I would like to congratulate the participants and coordinators in the symposium for a job well done. Attendance at this symposium helped to open our minds to new ideas in mathematics. Everyone can say that we gained a better understanding of the current research being conducted by undergraduate students in mathematics. Their hard work and dedication to this field is inspiration for us all. It was a great honor to hear Frank Morgan's first hand experience and discussion on the Double Bubble Conjecture. Through his vivid examples and lively presentations we became more aware of the driving ideas behind this important and complex proof. Thanks to this experience, our curiosity has grown about Dr. Morgan's topic and the many others presented. "

Third, we have our Spring Meeting in North Adams at the Massachusetts College of the Liberal Arts. This issue has the program and everything else you need. Please plan to attend on the weekend of June 13th and 14th. The Short Course begins the day after the conference at St. Michaels' College in Vermont. Details are in this issue.

Student Papers Presented at the Fall 2002 MAA/NES Section Meeting:

Lisa Balducci, Framingham State College

Relating Cellular Automata to Determining Patterns in Brain Functions

George Mechael and Azmy Sukkoor, Framingham State College

Speech Recognition: Theory and Design

Amuche Onyemelukwe, Framingham State College

Neural Networks and Parallel Computing

John Meany, Framingham State College

Taylor, Maclaurin, and Polynomial Approximations

Brian Bayerle, Providence College

Maximizing Products of Partitions

Mike Lopez, Bates College

The Babylonians Had It First

Rebecca Keleher, Eastern Connecticut State University

Complex Numbers and Geometry

Jason White, Bates College

Periodic Doubling Bifurcations of a Periodically Forced Biological Oscillator

Ron Pepino, University of Connecticut

Nonlinear Problems Inspired by the Millennium Suspension Bridge

Erin LeDell, Trinity College

New Variables in the Coupon Collector's Problem

Contributed Papers Presented at the Fall 2002 MAA/NES Section Meeting:

Philip P. Amato and Eiki Satake, Emerson College

Attitudes Toward Statistics and Course Achievement Among Japanese and American College Students

Laura McSweeney, Fairfield University

Introducing Statistical Concepts Using Interactive Excel Worksheets

Ronald W. DeGray, Saint Joseph College

Interactive Course Syllabi

Janet M. Pfeiffer of Upper Arlington High School (Ohio), and

Kenneth J. Preskenis of Framingham State College

Learning Disabled Students and Math Word Problems

C. Joanna Su, Providence College

The Long Exact -Sequence in the Second Variable and the Long Exact – Sequence of a Triple

Domina Eberle Spencer, University of Connecticut, and

Uma Shama, Bridgewater State College

The Helmholtz Classification of Vector Fields and the Maxwell Equations

Bonnie Shulman, Bates College

"Mathematics and War": a First Year Seminar

Joel S Silverberg, Roger Williams University.

Are we far enough offshore to pass this headland safely?

A mathematician's look at a 'quick and dirty' navigational trick.

Christopher Aubuchon, Johnson State College

Pattern Recognition and Sequences of Natural Numbers

Vince Ferlini, Keene State College

Notes on the Structure of $P(n)$ - Part I

Erin Corman, Keene State College

Notes on the Structure of $P(n)$ - Part 2

Mike Cullinane, Keene State College

Generalized Metric Spaces via Neighborhoods

David Keil, Framingham State College and University of Connecticut, and

Dina Q Goldin of University of Connecticut

Minimization of Interactive Transition Systems

William F Heess Jr., Marlborough MA

Monte Carlo Queuing Simulation Implementation as Turing Machines and

Finite State Automata

Report on Liaison Breakfast at Joint Mathematics Meetings...Frank Ford

One benefit of being a liaison is that you get a special breakfast at the Joint Mathematics Meetings. This year, we had a full breakfast including crab. We also got several questions to discuss. I asked Gretchen Brown, Program Coordinator in the Department of Programs and Services at the MAA headquarters in Washington if I could get information to share about the responses. She graciously sent me the following summary of the responses.

“Question 1: Faculty members have heavy time demands placed on them by all of their teaching, research, and service commitments. What suggestions do you have to help faculty cope with the problem? What can the MAA do to help with this?”

What suggestions do you have to help faculty cope with the problem?

Respondents generally felt that setting priorities, effective time management, and learning that it is OK to say “no” sometimes were the best ways to cope with the problem. Specific suggestions included keeping a time log to discuss with your administrator, getting involved with existing faculty professional development programs at your institution or in your areas, and trying to repeat courses taught and maintaining committee membership, especially early in your career. One respondent replied that they are experimenting with a team teaching approach to a large section of calculus with the ultimate goal of reducing the

teaching load.

What can the MAA do to help with this?

Ten people commented that the MAA's Project NExT already works to help new faculty members address these issues through talks, workshops, mentoring, and listserv discussions. It was suggested that the NExT model be expanded or its use of forums be copied for discussion on dealing with the time demands. Several other people also suggested establishing listservs and web boards, making them content oriented or for issues specific to the distinct career levels or institutional type.

Many people suggested offering sessions, either at the meetings or in an on-line format as a way to share ideas, hear success stories and learn how to implement the same strategies, and to get advice on how to manage the competing time demands. An experienced faculty member suggested a workshop entitled "No Is Not a 4-Letter Word".

The most frequent suggestions for the MAA to help you deal with this issue focused on conducting a time-on-task survey of mathematics faculty with a follow up on expectations by department heads and other administrators. It was suggested that such a survey would help the MAA ultimately issue guidelines and recommendations (similar to the CUPM Guidelines) on teaching loads, research expectations, service commitments for the different stages of a career and at the various types of institutions. The information should then be printed and sent to all mathematics departments and be made available on the website. Any publication should include examples of departments and programs already meeting those guidelines and the strategies they use.

Other suggestions in a similar theme included providing guidance on mentoring programs, making a comprehensive list of resources addressing these concerns as well as other curricular materials, and provide reviews and commentaries. You would also like to see more information regarding grant and other funding opportunities, especially for early career level faculty. Recognition for service activities, including sending letters to administrators for faculty presenting at meetings, and for research with students was also suggested."

From the Colleges

(Will return in the Fall issue.)

Emma Previato Named 2003 Northeastern Distinguished Teacher
**Frank Ford**

We are happy to announce that Professor Emma Previato of Boston University is the winner of this year's Northeastern Section Distinguished Teacher Award. Ed Sandifer, chair of the selection committee, sent the following rationale for choosing her:

“The Distinguished Teaching Award Committee selected Emma Previato from among a field of excellent candidates largely because of the extent to which her influence on students extends beyond the classroom. For example, she founded the Boston University student chapter of the MAA, and continues to be their advisor, as well as advising both the COMAP Mathematical Contest in Modeling team and the Putnam Exam team. One letter we received described it as ‘the enormous effort that she devotes to mentoring students.’ Another wrote of her as ‘an incredible role model: she is a guide, an encourager, a friend, a mentor, and a life-long learner.’”

Besides her work at Boston University, Dr. Previato is a member of the Institute for Advanced Studies and co-organizer of their Spring 2003 seminar on Aspects of Integrable Systems. She also was the driving force behind RUMBUS- the Research by Undergraduates in Mathematics Boston University Symposium 2003 held on Saturday, March 22nd.

I asked our Chair-elect, Sarah Mabrouk, for her comments on Dr. Previato since Sarah mentioned that she had been in a Previato class. This is part of what she had to say.

“Dr. Emma Previato is a phenomenal teacher, mentor, researcher, and role model. She has achieved an amazing balance among her teaching, her devotion to students, and her research. She is astonishingly productive in her research, and, as a result, is world renown and a sought after speaker; I was delighted to have her as a speaker for the Fall 2002.

I am very pleased to have had the privilege to have Dr. Previato as my professor for two courses during graduate school. I still remember the first day of class for MA 741 in Fall 1985 when I met Dr. Previato for the first time. She walked in the classroom, her eyes bright with excitement and her long braid swinging behind her, she put her books and papers on the table and greeted my classmates and me with her ever present smile, and then she began to give us an overview

of the course topics for MA 741 Algebra I and MA 742 Algebra II. From that first day, I could see the difference between her and many professors with whom I had previously studied: Dr. Previato loved every aspect of teaching the course the preparation, the lecture and discussion involved in presenting the material, and ***all of the questions that her students asked***. She was always encouraging, and she wanted to do her best to help us to understand and to appreciate all aspects of material that she presented. Her dedication became very clear to me when I asked her to help me to improve my ability to write and to do proofs she was delighted to have an opportunity to share more of the mathematics that she adores and she truly enjoyed helping me to explore the various aspects proof. Dr. Previato always made me feel comfortable and welcome to ask questions and to seek her guidance and she never minded my desire to *talk myself to the solution or through a proof* rather than having her give me the next step in the process. Dr. Previato made MA 741 and MA 742 two of my favorite courses during graduate school since in these courses I could learn and grow as a mathematician and study a true *teacher*.

When I began teaching for the Mathematics Department as a Lecturer in Fall 1988, Dr. Previato welcomed me as a colleague and she, as always, encouraged me and cheered me on as I taught three courses each semester while researching and writing my dissertation. She always understood my desire to put my students first since that is exactly what she has always done. Dr. Previato spends an incredible amount of time teaching and guiding students to be their very best. I have always been amazed at her boundless energy to coach students for the William Lowell Putnam Mathematics Competition, to guide and to mentor students as the faculty advisor for the MAA Boston University Student Chapter, to mentor students in the Radcliffe Mentor Program, and to guide and to encourage graduate students as the Director of Graduate Studies. Despite the great demands on her time, Dr. Previato has continued to encourage me in my endeavors both as my colleague and as my friend.”

PREP Workshops.....Gretchen Brown

Gretchen Brown, Program Coordinator of the MAA, asked us to publicize this information on workshops.

The Summer 2003 PREP Workshops are beginning to fill, but there is still space available. A stack of PREP brochures is being mailed to all section secretaries for distribution/display at your spring meeting (with the other section meeting materials).

Additional information is available at <http://www.maa.org/prep>.

Preparing Mathematicians to Educate Teachers (PMET) has 4 workshops scheduled this summer. Your section secretary will have PMET flyers available for distribution/display at the meeting.

This summer's workshops include three on preparing future elementary teachers at Arcata, CA, Boone, NC and Lincoln, NE along with one workshop on preparing secondary teachers at Potsdam, NY. The PMET grant will cover room, board and tuition for participants. Workshop participants will also be eligible to apply for mini-grants of \$2000-\$5000 to implement reform of teacher education activities at their home institution. Application deadline is May 1st for Arcata, Lincoln and Potsdam. For the Boone workshop, the application deadline is May 15. For more information about this summer's workshops, or other aspects of the PMET initiative, see the program website, www.maa.org/pmet.

Northeastern Section NExT at Spring Meeting.....Lisa Humphreys

The Northeastern Section is continuing with its Section NExT activities for new and relatively new colleagues at this year's spring Section meeting. By providing talks and workshops on issues of interest, opportunities to meet and share ideas with other new colleagues, and an introduction into Section activities, we hope to assist new faculty in their transition from graduate school to professional academic life. We welcome all untenured full time faculty, both those who have and have not been National NExT fellows. We also welcome all newly hired faculty (those of whom will begin their appointment in the summer or fall of 2003).

The program will begin at 10:00 am on Friday June 13, 2003 and will consist of two presentations related to the teaching of undergraduate mathematics. One of these will be at a more general education level and the other will concentrate on higher level mathematics. In addition, there will be an organized panel discussion on preparing for tenure. Lunch and refreshments will be provided. A detailed program will be distributed soon via our Section listserve.

If you are interested, please contact Lisa Humphreys of Rhode Island College at lhumphreys@ric.edu. You should also register for the Section meeting by

completing the registration form in the Section Newsletter and check off that you will be participating in the Section NExT program. (If you did not receive a Newsletter, indicate that to Lisa.) Note: the Section NExT activities are free.

Summer Short Course: Hands-on Statistics for Teachers

Rick Cleary, Bentley College

Robin Lock, St. Lawrence University

June 16, 17, and 18, 2003

St. Michael's College, Colchester, Vermont

This is a chance to see how two statisticians and acclaimed teachers handle a first course. Each day will focus on hands-on activities emphasizing real data and practical software (such as Excel, Minitab, and Fathom). There will be group projects on interesting data sets and tips for using these techniques in the classroom. The sessions will be thought-provoking and fun!

Schedule:

Sunday, June 15

Afternoon arrival on campus

Monday, June 16

Morning Part one: the nature of statistics. Part two: data...the essence of statistics

Afternoon Classic statistical techniques: estimation, confidence intervals, and hypothesis testing

Tuesday, June 17

Morning Part one : relationships between pairs of variables. Part two: hands-on demonstration of all the material covered so far

Afternoon Statistical computing packages and Internet sources for statistics teachers

Wednesday, June 18

Morning Part One: questions and additional topics as requested. Part two: group work on data presentations

Afternoon Project presentations

Accommodations: The registration fee includes lodging (single-occupant rooms), breakfast and lunch and coffee at break times. There will be a barbecue on Sunday night, hosted by the St. Michaels's College Math Department. On Monday night, there will be a dinner trip to local restaurants. On Tuesday night, you are free to eat on your own. There will also be a hike at a nearby park on Monday after the sessions.

Registration: The cost of the course, including room, breakfast, and lunch is \$260. Hotel suggestions for those who prefer a hotel will be sent on request. Information is available from Jim Hefferon at jhefferon@smcvt.edu or at Box 369, Saint Michael's College, One Winooski Park, Colchester, VT 05439 or at (802) 654-2677. Enrollment is limited to 30. Please make check to NES/MAA and send to Jim Hefferon at the above address by Monday, June 5th. Include name as desired on badge, address, email address, and day phone. Indicate any special needs. Notification of acceptance will be sent by email.

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 _____

Frank Ford
Newsletter Editor
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Providence, RI 02918

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