NORTHEASTERN SECTION

NEWSLETTER

FALL 2001

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NORTHEASTERN SECTION MATHEMATICAL ASSOCIATION OF AMERICA

FUTURE SECTION MEETINGS

November 16-17, 2001 (see page 19)
Bridgewater State College, Bridgewater, MA

Program Committee:	Karen Schroeder, Bentley College
Local Arrangements:	Tom Moore, Bridgewater State College

June 21-22, 2002 (see page 12)
Williams College, Williamstown, MA (joint with Seaway Section)

Program Committee:	Frank Morgan, Williams College
Local Arrangements:	Frank Morgan, Williams College

November 22-23, 2002
Framingham State College, Framingham, MA

Program Committee	Sarah Mabrouk, Framingham State College
	Ed Sandifer, Western Connecticut State
Local Arrangements	Sarah Mabrouk, Framingham State College

OTHER ACTIVITIES

Short Course:	June 23 - 27, 2002 (see page 11)
Short Course Committee:	Will Stout (stout@salve.edu)
	Dennis Luciano (dluciano@wnec.edu)
	Paul Estes (ple@mail.plymouth.edu)

Dinner Meetings Coordiantor: Lucy Kimball (lkimball@LNMTA.bentley.edu)

Awards: NES/MAA Award for Distinguished Teaching(see page 27)

Web page: access it via http://www.maa.org or directly with
http://scsu.ctstateu.edu/~maa_nes/main.html
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Message from the Chair .... Ed Sandifer

On November 17, at the close of the Fall Section Meeting at Bridgewater State College, Ockle Johnson of Keene State will become the next Chair of the Section, so this is my last Message from the Chair. Like so many good things, it feels like I became Chair of the Northeastern Section just yesterday, but it feels like I've been chair forever. When I became Chair two years ago, I inherited an active section that was running smoothly, and I told people that my main goal was to avoid messing it up. As it turns out, we have a few more members now than we had two years ago, but we have a little less money. We have more Short Courses planned, but we aren't quite as far ahead on planning section meetings. We're not messed up too badly. With luck, Ockle will be able to pursue his ideas for the future of the Section without having to spend too much time and energy cleaning up the problems I'm leaving him.

The main keys to the success of the Section are the contributions of the dozens of people who give generously of their time and energy. Frank Ford and his department secretary Lynne Demasi have been particularly helpful these last two years. Frank has edited this Newsletter, hosted a section meeting, brought a Mathfest to Providence, helped bring next summer's Mathfest to Burlington, chaired the Distinguished Teaching Committee and served as Department Liaison Coordinator, among other things, while at the same time serving as Chair of his own Department. Meanwhile, Lynne has performed the almost impossible task of keeping him organized while he does all of this. Those of you who know Frank know that what he does is amazing, but what Lynne does is nearly impossible.

Laura Kelleher is a past Section Chair, former Governor, recipient of the section's Distinguished Service Award, and is an all round great person. She has served as my sage and mentor. She can remember that the Christie Lecture is in the fall and the Battles Lecture is in the spring. She remembers the details of how to arrange a Polya Lecture. She knows the deadlines on the Distinguished Teaching nominations and she knows the Section By-Laws. With luck, I know how to *find* the Section By-Laws. (Thanks to Section Webmaster Ross Gingrich, they're on the Section web page at http://www.maa.org/northeastern/). She knows the things that happen only once every five years, like the Howard Eves Award and the Distinguished

Service Award. When I have to appoint committees, she reminds me which committees need a "past award winner" or a Two-Year College representative on them. She has wonderful memory for such details. Her gentle tact in reminding me of such things has saved me from a dozen blunders.

Donna Beers is the Section Governor. For those of you unfamiliar with the structure of the MAA, the Board of Governors is responsible for the national affairs of the MAA, and each section has a representative serving on the Board of Governors. Donna is our representative. In contrast, the Chair is concerned mostly with things affecting the Section itself. An analogy to national politics would be that an MAA Governor is like a US Senator, while a Section Chair is like a state governor. It's hard to articulate exactly what Donna does to make being Chair easier, but she does it and she makes it much more pleasant to be Chair. I appreciate it a great deal.

There are lots of other people who contribute to the success of the Section. There is the quiet competence of Paul Estes, Dennis Luciano and Will Stout in organizing the Short Courses. Tommy Ratliff has been coordinating the Contributed Papers Sessions at the Section Meetings. The Section benefits from the boundless energy of Sarah Mabrouk, who must be able to juggle a dozen things at once. We have several people who have taken turns serving on nationwide committees, holding national offices, or helping to edit MAA publications. We owe debts to Tom Banchoff, Fernando Gouvea, Mary Platt, Donna Beers, Jim Tattersall, Frank Morgan and Jim Tanton, among others, for such service. Ann Kizanis, Kathy Bavelas and Ross Gingrich hold Section offices that keep the whole thing running smoothly. A special note of appreciation goes to teaching award winner Ed Burger, who serves as an ambassador of good will and good cheer for the Section and for Mathematics in general. If you want to see how exciting you can make mathematics, you should watch Ed Burger when he's talking to kids. There are dozens more. Rob Poodiack, Dick Jardine, Lucy Kimball, Larry Braden, Rick Cleary, Dick Pelosi, Phil Hotchkiss, Barry Schiller, Ann Trenk, Frank Battles, Karen Schoreder, Joe Witkowski, Terri Bennett, Tom Koshy, Tom Moore, Lisa Humphreys, Lynne Durkin, Ann Moskol, Betsey Whitman and Lynn Durkin and others whose names don't happen to come to mind just now (one of those Senior Moments) all have taken on responsibilities whenever they've been asked, and we've all enjoyed the fruits of their contributions. They are the soul of the Section.

I expect that Ockle Johnson will find, as I have, that anybody he asks is willing to help, and that the job of being Section Chair isn't so much work as it is letting other people help. It has been a great privilege to serve the Section like this, and I pass the torch with a great deal of confidence and optimism for the future of the Section. Good luck, Ockle, and I hope everybody gives you as much help as they have given me.

Thank you all.

Message from the Governor .... Donna Beers

This is by way of sharing with you news from the summer MAA Board of Governors Meeting. The August MathFest meeting in Madison was beautifully situated at the Monona Civic Center designed by Frank Lloyd Wright. Although the temperatures stayed resolutely in the 90's, attendees found relief as they checked out the book exhibit that looked out over Lake Monona. Here are some highlights from the Board of Governors' meeting on August 1, 2001.

- Some interesting statistics: The New Orleans attendance was 5134, including 4132 mathematicians; and the pre-registration for MathFest 2001 was 980 at the time of the Board of Governors' meeting.
- Schedule of next national meetings: MathFest 2002 will take place in Burlington next August. The Joint Meetings of the AMS and MAA held in January will take place as follows: 2002, San Diego; 2003, Baltimore; 2004, Phoenix; 2005, Atlanta; 2006, San Antonio; 2007, New Orleans.
- New Polya Lecturer: The NES/MAA's Edward Burger of Williams College has been appointed as Polya Lecturer for the academic years 2001-02 and 2002-03.
- Math Awareness theme for 2002: The Joint Policy Board for Mathematics has selected "Mathematics and the Genome" as the Mathematics Awareness Month topic for April, 2002.
- The American Mathematics Competition: Last year, 300,000 high school students took part in the MAA's American Mathematics Competition (AMC). On June 4, 2001 the MAA honored the 12 winners of the MAA's USA Mathematical Olympiad (USAMO) at a ceremony at the National Academy of Sciences followed by a reception and banquet at the Diplomatic Reception Rooms of the U.S. Department of State. Student participants and leaders of the fifteen other mathematical sciences organizations that help sponsor the AMC heard the Northeastern Section's Frank Morgan of Williams College give a superb address on "The Double-Bubble Conjecture." Very notable, this year the Akamai Foundation awarded $15,000, $10,000, and $5,000 scholarships to the top three students.
- MAA program initiatives: Several MAA funded programs are in progress: **Project PREP** (Professional Enhancement Program), an NSF-funded program, sponsored six faculty development workshops this past summer and will be providing new workshops on career development for department chairs and for faculty who are a few years beyond NExT, as well as enrichment workshops on current research and other workshops delivered all or in part via on-line formats; the **Mathematics Digital Library Project** (MathDL) launched the Journal of Online Mathematics last January, and the MAA has submitted a second grant proposal to the National Science Digital Library program to extend MathDL to the secondary level (curricular materials are envisioned, as well as summer camps and workshops); and, the MAA offered 19 **Grant Writing Workshops** in 2000-01, including one at the NES/MAA June meeting at Norwich University - - 6 to 8 more will be offered this fall (for copies of the transparencies on grant writing materials, go to www.maa.org/pfdev/grantwriting/index.htm). A planning proposal for the **Mathematicians Educating Future Teachers** (MEFT) project was also funded by ExxonMobil Foundation, and these funds will be combined with an NSF grant to the MAA on cooperative learning.
- Electronic Services: The MAA is converting to the new TIMSS Association Management software. This offers the potential of new

services and improved communication with the MAA. So far the conversion is on schedule and within budget.

- Development Activities: The MAA is vigorously pursuing fundraising opportunities for support of Project NExT and the MEFT program and for support of the mathematics archivist position at the University of Texas, Austin. The MAA receives corporate and federal support for the USAMO events, the Olympiad summer program, and the IMO expenses. This year the MAA inducted ExxonMobil, Professor Andrew Sterrett, Microsoft Corporation, and the Akamai Foundation into the Icosahedron Society.
- American Mathematics Competitions/USAMO programs: The MAA has signed an agreement for support with the Akamai Foundation for two years. This support funds a scholarship program each year, a central USAMO testing and event in 2002, and an expanded summer program in 2002.
- Membership: Numbers are strong and growing. Between December 1, 2000 and July 15, 2001, there were 2411 new applicants for individual members, and 15 applications for new institutional members. Introductory memberships have been very popular. The Membership Committee has reconsidered definitions of student and student chapter membership and a category for graduate students memberships. These moves should help the MAA recruit and better serve student members.
- Publications: Lots of good news here, including successful sales of Bill Dunham's *Euler, Identification Numbers and Check Digit Schemes* by Kirkland, *Teaching First* by Rishel, and many others. Right now the pipeline is full, but the MAA is always on the lookout for excellent manuscripts. You may be interested to know that the MAA is looking to secure the rights to all of Martin Gardner's "Scientific American" columns.

To sum up, the MAA is headed by energetic and talented leaders. The new academic year holds promise of many programs of interest to our

section as well as more new services. I am looking forward to seeing you at the upcoming Fall NES/MAA meeting at Bridgewater State College.

Two-year College Representative's Report .... **Kathy Bavelas**

Plans by CT Community College Mathematics Departments and CAMPY (CT Association for Mathematically Precocious Youth) are proceeding for a Middle School Math Gifted Day. On May 17, 2002 workshops in the morning and afternoon will be held for talented grade 5 through 8 math students at Gateway CC North Haven campus, Manchester CC, Naugatuck Valley CC in Waterbury, Norwalk CC, Quinnebaug CC in Danielson, and Three Rivers in Norwich. Each campus will host up to 100 students for the day. Students will be able to select two of ten offered workshops at each campus. If you are interested in presenting a two and one half hour hands-on workshop in mathematics or mathematics used in science or technology or the arts, contact Kathy Bavelas at kbavelas@snet.net or 860-512-2721 for further information.

MATYCONN will hold its fall dinner meeting at Middlesex CC in Middletown, CT on Friday Nov. 2 from 2 - 8 PM. Michael Frame from Yale University will be the featured dinner speaker as well as one of the workshop presenters on the topic of chaos and fractals. Additional information is on the MATYCONN web site most easily accessed by going to Yahoo and typing in the search box-- MATYCONN.

The annual AMATYC conference will be held in Toronto, Ontario this year form Nov. 15 - 18. Full details of a very exciting conference are available on the AMATYC web site.

From the Newsletter Editor .... **Frank Ford**

Those of us who go to national meetings of the MAA know that the Northeastern Section is a section that shines nationally. Of course, I'm biased. Not only are we the home of the Associate Secretary who plans the events (Jim Tattersall) and the past President (Tom Banchoff), but we are also the home of the retiring Polya Lecturer (Colin Adams) and the new Polya Lecturer (Ed Berger). As I sat through the awards ceremony, I was amazed by the number of

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honorees with connections to our Section.

Nearer to home, we are blessed with a series of mathematical events that any section would be proud to have. In November, we have our annual Fall meeting. This issue of the newsletter has all the details of the event that Karen Schroeder and Tom Moore have been preparing for a long time. Please join us at the meeting. This issue also has the preliminary report on the Spring meeting at Williams. Frank Morgan is planning the meeting and that should be reason enough for you to plan to be there. Right after the meeting, our short course will be at Plymouth State College in New Hampshire. Will Stout and Paul Estes have been keeping me informed so I can pass the news onto you. And finally, our Section again hosts the Mathfest in August. The host city will be Burlington, Vermont.

Before I give you the recap of the student papers and contributed papers at the Spring meeting at Norwich University last June, I want to make another pitch for you to get involved. My Department sent a student to present at the last meeting and will have at least one at this coming meeting. Is your Department sending a student? My Department had a contributed paper presentation last time. Will your Department have a contributed paper this time? My Department had a new faculty presentation last Fall. Do you have a new faculty member who can present this year? I hope to hear lots of good talks at the meeting this year. Please participate.

Student Papers Presented at the Spring 2001 MAA/NES Section Meeting:

Dual-Eulerian Graphs by Irma Servatius, Worcester Polytechnic Institute

Pattern Formation in reaction-Diffusion Models by Yakov Kronrod, Worcester Polytechnic Institute

The Super Integer by Chlean Saur and Matthew Jarvis, Providence College

Conjectures on the Collatz Algorithm by Brian Bayerle, Providence College

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Contributed Papers Presented at the Spring 2001 Meeting

Activitiy-based Interdisciplinary Learning of College Mathematics by Will Stout, Salve Regina University

Using Computers to Teach the Mathematics of Investing by Andrew Perry, Springfield College

Using Multivariate Calculus to Provide an Introduction to Filtering by Sarah L. Mabrouk, Framingham State College

Euler: Mathematician and Diligent Bureaucrat: The Great Balancing Act by John Glaus, Euler2007.com

A Mathematics Teacher reads the Headlines by Barry Schiller, Rhode Island College

The New Kid on the Block by Tomas Kalmar, Goddard College

Fibonacci Groups by Vince Ferlini, Keene State College

Periodicity and Boundedness Nature of Positive Solutions of a Max-type Difference Equation by Michael radin, Mercy College

Some Examples of Nontrivial Homotopy Groups of Modules by C. Joanna Su, Providence College

Paul Blanchard of Boston University Responds to Being Named the Northeastern Section Distinguished Teacher Award for 2001

(I asked Paul Blanchard to respond to his selection as the 2001 Distinguished Teacher for our Section. Despite a looming deadline from his publisher, he sent me this comment. -- The Editor)

I am extremely pleased to receive this year's Award for Distinguished Teaching from our section. For me the MAA has always stood for teaching of the highest quality, so being recognized by our section means a great deal. I would like to thank my colleagues at Boston University for nominating me and, more

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importantly, for providing an environment in which good teaching is encouraged and appreciated.

One of the honors associated with this award is the opportunity to give a presentation at our November meeting at Bridgewater State College. In my talk I intend to illustrate how I have been using computer animations, some that I have developed and some that I found on the web, to illustrate concepts in multivariate calculus and differential equations. This is just one small aspect of an extremely complicated question we all face: How do we best use technology to help our students learn mathematics and the related quantitative skills that will be critical to them as educated members of our society? It is a topic that intrigues and confounds me, and I hope that we can discuss various aspects of this question both formally and informally in November.

Another honor is that I get to serve on the committee that picks the next recipient of this award. There are many exceptional teachers in our section whose hard work and dedication should be recognized, and I encourage you to nominate someone from your department.

Short Course: Integrating the Web Into Mathematics Instruction
June 23 - 27, 2002
Plymouth State College, Plymouth, New Hampshire
Cathy M. Frey, Associate Professor, Primary Presenter
Gerard LaVarnway, Professor
Robert Poodiack, Assistant Professor
Department of Mathematics
Norwich University

The World Wide Web has significantly changed the landscape of graduate and undergraduate education. Student access to the Internet makes distance-learning modules a preferred method of instruction for some students and faculty. Mathematics is one discipline that has lagged behind this trend in education. The development of meaningful mathematical modules is critical to distributing mathematics education over the Web.

This short course will demonstrate websites that have been successfully delivered a variety of mathematical topics from typical undergraduate

PreCalculus and Calculus courses. The course will introduce the software and techniques used to develop the demonstrated sites, such as Mathematica©, MathType©, WebEQ©, FrontPage© and JavaScript©. Several sessions will provide participants an opportunity to develop proficiency in using these tools. By the end of the four-day course participants will be able to develop Web pages for presenting mathematics over the World Wide Web. If time permits, participants will be introduced to online assessment.

To preview a site created with these methods look at
http://www2norwich/frey/TaylorPolynomiais/ .

The course is designed to accommodate participants of all skill levels. However, only familiarity with use of computers is necessary for participation. High School mathematics educators through post-graduates with an interest in mathematics education on the Web should find this course useful.

Update on the Spring Meeting at Williams College

Williams College will host a joint meeting of the Seaway and Northeastern Sections of the MAA, June 21-22, 2002. Speakers will include

Thomas Hales, University of Michigan, solver of the Kepler Conjecture, the oldest problem in discrete geometry (see http://www.math.lsa.umich.edu/~hales/countdown/)

Sean McLaughlin, who proved the Dodecahedral Conjecture.. McLaughlin was an undergraduate student of Hales at Michigan when he proved this and earned the 1999 Morgan Prize for undergraduate research. The proof involves extensive computer algebra calculations, including some 2000 possible types of arrangements, 12 or 18 of which were too difficult for the computer and had to be done by hand. (see Frank Morgan's Math Chat at http://www.maa.org/features/mathchat/mathchat_2_3_00.html)

Thomas Garrity, Williams College, whose research is in algebraic and differential geometry and in number theory
Graduate and undergraduate students are especially invited to participate. Reservations and payments will be due by April 21. Chair of the

conference is: Frank.Morgan who can be reached at Frank.Morgan@williams.edu..

Dr. Kevin Farrell of Lyndon State College Named Faculty Member of the Year by the 2001 Graduating Class

It is not often that a Mathematics professor is named the outstanding faculty member of the year in a college-wide poll but that happened this year at Lyndon State College in Vermont. Dr. Kevin Farrell, a 12-year veteran of teaching at Lyndon State, was given the title of Faculty Member of the Year by the graduating class. This is the first time that a mathematician has been so honored at Lyndon State. Dr. Farrell did his undergraduate work at Nasson College, earned his masters at the University of Vermont in 1981 and his Ph.D. in delay differential equations at the University of Rhode Island in 1988. One of Dr. Farrell's Math majors, Tracey McCormick, presented the award and gave the accompanying speech. Here is that speech.

It is with great honor that I present this year's "Faculty Member of the Year" to one of the most dedicated and enthusiastic professors here at Lyndon State College... Dr. Kevin Farrell. When he is not teaching a class, Dr. Farrell can usually be found in one of two places. Either he is in his office on forth-floor Vail ready and eager to help a student out in mathematics or offer advice concerning future career prospects, or he is down in the gym playing basketball with some of his students. Dr. Farrell has participated in many Residential Life Community Enhancements including, for instance, hiking Mount Hoar. It is this deep commitment to his students and his love of teaching that makes Dr. Farrell so popular among the student body.

I am very fortunate to have known Dr. Farrell throughout my four years here at Lyndon State College. He is currently the Sigma Zeta Honorary Society Advisor, of which I was the President this past year and, as a result, I have worked closely with Dr. Farrell throughout the year on many projects associated with this Honorary Society. Through his hard work and dedication, Dr. Farrell's innovative ideas have greatly added to the success of Sigma Zeta.

Not only is Dr. Farrell continuously searching for ways to improve Sigma Zeta, but, perhaps more importantly, he has devoted his efforts to creating new ways to reach out to students who have a tougher time with mathematics. Students who have had Dr. Farrell as a professor would say that he is a "tough but fair" professor who is more than willing to help a student

out. Students are also impressed by the fact that Dr. Farrell does not rely on his own notes when teaching a class. Dr. Farrell's classes are demanding but fun, and he often reduces the stress of the class material by joking around with his students.

Recently, Dr. Farrell agreed to teach three days worth of Dr. Bozeman's Real Analysis Mathematics Class while Dr. Bozeman was away. The section to be covered during those three days involved proving ideas and theorems about derivatives, the basics of which we had learned back in Calculus One. Dr. Farrell began the class by joking with us on how nice the weather was, and that if he had not agreed to fill in for Dr. Bozeman, he would be home working in his garden on his John Deere tractor. Although this statement has some truth to it, for those of you who know Dr. Farrell, you would know that he gets much more satisfaction in teaching and joking around with his students than working in his garden. Dr. Farrell then turned to me and said, "Tracy, four years ago in Calculus One, I taught you what a derivative was, and now here I am again, four years later, teaching you derivatives in Real Analysis." It was with this comment that I realized how quickly my undergraduate career had gone by and how much I am going to miss not only the support, guidance, and encouragement Dr. Farrell has given me here at Lyndon State, but most of all, his friendship.

On behalf of the Lyndon State College Graduating Class of 2001, I would like to thank you Dr. Farrell for being such a dedicated and caring professor and friend. Congratulations on your well-deserved award.

MathCounts- A Volunteer Opportunity

(I had a conversation with Rich Olsowy who is the Connecticut coordinator for the MathCounts program. After talking to him, I thought it might be of interest to our membership to highlight this program in the newsletter. Here is information on the program from what he sent me. -The editor)

MATHCOUNTS is a coaching and competition program that brings to math achievement the same enthusiasm and prestige now enjoyed by athletics. Students are called "Mathletes" and are rewarded for winning competitions at the school, chapter, state and national levels.
The objectives of MATHCOUNTS are:

- To elevate the prestige associated with achievement in mathematics among seventh and eight grade students,
- To increase awareness of the importance of mathematics among parents, educators and the general public; and,
- To bring about improvements in mathematics curricula and instruction.

Each fall junior high schools receive MATHCOUNTS kits, which include program information and competition materials. Math teachers use the kit to enhance their classes and make learning math exciting and meaningful. In January teachers conduct a school MATHCOUNTS competition. Winners progress through chapter and state competitions to a national competition held this spring in Chicago, IL.

MATHCOUNTS has proven to be a successful national program that is making a major difference in young people's attitudes toward math in junior high school and beyond. It has become a popular and integral part of the American junior high mathematics experience. Articles about MATHCOUNTS have appeared in Newsweek, The New York Times, USA Today, The Boston Globe, National Geographic World and scores of local papers and news programs.

At the national level, MATHCOUNTS is sponsored by:
National Society of Professional Engineers
CNA Foundation
National Council of Teachers of Mathematics
National Aeronautics and Space Administration
General Motors Foundation
Texas Instruments Incorporated
The Dow Chemical Company Foundation
3M Foundation
Phillips Petroleum Company
Lockheed Martin
Toyota USA Foundation

Volunteers---parents, teachers and professionals from business and industry—are the key to the program's success. The MATHCOUNTS Foundation recognizes volunteers' need for both a fixed and structure and reasonable flexibility. MATHCOUNTS' volunteers appreciate its regular

annual cycle, clearly defined procedures and nationally supported activities. At the same time, they enjoy unlimited opportunities to personalize and enhance the program at every level.

Prospective volunteers should see the MATHCOUNTS' *Volunteer Network* when you visit the website at http://mathcounts.org. Program coordinators and schools can post volunteer opportunities with their program or search for interested volunteers in their community.
Call your local Society of Professional Engineers or email info@ctspe.net for further information

From the Colleges

Barry Schiller reports from **Rhode Island College** that **Helen Salzberg** is again chair of their Math/Computer Science Department. The Department welcomes new hire **Rebecca Sparks**, a University of Rhode Island PhD in optimization theory, and congratulates **Chris Teixiera**, who is now a Project NeXT fellow. The highlight of RIC's annual Math Awareness Month in April 2001 was a keynote talk by AMS Executive Director **John Ewing** on "The Math Inside Your Computer" which was combined with a MAA Dinner Meeting. Finally Barry reports he is starting RIC's on-off "phased in retirement" plan and is off travelling for the Fall 2001 semester.

Jack Lutts of **Umass-Boston** is on sabbatical this semester and is working at **Dorchester HS** with the math faculty. He tells us that his goals are as follows: 1) to administer a diagnostic mathematics exam to all incoming 9th graders; (this is to help the coordinator place students in courses in an informed way) 2) to help the faculty strengthen their mathematics (acting as a consultant, observer, etc.) 3) to run workshops for this faculty concerning using TI-83's and The Geometer's Sketch Pad in their newly established math curriculum. (The curriculum is based on the Math Connections series from the "It's About Time" publication. It is being universally used in the 9th and 10th grades and will be extended to the 11th grade next year.) 4) to organize tutoring of students either in the class room or after school (as requested by the teachers there) 5) to work on a series of sessions aimed at helping students improve their MCAS mathematics scores He notes that **Dennis Wortman**, another MAA member from this department will succeed him in this work in the spring semester. This work is part of building an on going partnership between the University of Massachusetts and the public schools in the Boston

system Any information about similar work being done elsewhere would be gratefully appreciated.

James Ward, who received his Eve's award at the Spring meeting banquet, tells us that sarah-marie belcastro (she prefers the lower case spelling of her name) joined the Bowdoin Math Department this fall as a Visiting Assistant Professor of Mathematics. She holds a Ph.D. from Michigan in algebraic geometry, and she did her undergraduate work at Haverford. He describes her as lively and energetic with wide-ranging interests, including dance.

Karen Schroeder, a former chair of the Northeastern Section, announces that the Bentley College Mathematical Sciences Department has two new full-time members. Rick Cleary, another former chair of the Northeastern Section, comes back to the Section by way of Cornell and St. Michael's and Nancy Harnden is the new Director of the Mathematics Learning Center. She was previously at Fisher College and Northern Essex Community College.

George Seligman, liason from Yale University, updates us on new appointments and honors. Fields Medalists Gregory Margulis (the new department chair) and Efim Zelmanov have been elected to the National Academy of Sciences. Michael Frame, formerly of Union College, has been appointed Adjunct Professor, responsible for organizing and further developing the role of computers in the undergraduate program. As a visitor for the past several years, he has been giving a very popular course at the introductory level, "Fractal Geometry", in consultation with Prof. Benoit Mandelbrot. Professor David Sattinger, of Utah State University, is Visiting Professor for the year 2001-2002. Professor Douglas Lind, of the University of Washington, is also Visiting Professor 2001-2002. New Junior appointments: Elena Braverman (Visiting Assistant Professor), Ivan Dimitrov (Lecturer), Greg Friedman, Aleksi Kazarnovski-Krol, Gabriel Rosenberg, and Agata Smoktunowicz (Gibbs Instructors).

Mary Platt of Salem State College tells us of their new faculty and an honor for another of their faculty. Assistant Professor Julie Belock received her Ph.D. from Lehigh University and was an Asst. Prof. at Westchester Univiversity of PA before coming to Salem State College. Assistant Professor Maura Murray received an $11,000 ExxonMobil Planning Grant to conduct a mathematics study group with elementary school teachers in Salem, MA. The group is using the "Developing Mathematical Ideas" Curriculum, a collection of print and video case studies, to study the mathematics content in the elementary school curriculum. Salem Public Schools has just adopted a new mathematics program, Everyday Mathematics, which the study group is also examining.

Matt Coleman of Fairfield University informs us that the University has a new Dean of Arts and Sciences - Timothy Law Snyder, formerly Associate Professor of Computer Science and then Dean of Science at Georgetown University. Alss, Fairfield is in the second year of a two-year Davis Grant for the introduction of technology into the classroom. They have twelve sections of Applied Calculus - six sections have online quizzes and homeworks while the remaining six, the "controls," do not. Each class has taken a pre-test and each will take a post-test in order for their progress to be compared at the end of the semester.

Thurman Whitley from the University of New Haven announces that they have a new faculty member: Associate Professor Marc Mehlman. Dr. Mehlman has a Ph.D. from the University of California at Riverside. From 1990 to 2001, he was at University of Pittsburgh at Johnstown. His specialization is Probability, in particular Stochastic Processes. He is currently writing his first book, "An Introduction to Probability and Statistics." In addition to mathematics, Marc likes backpacking, cross-country skiing, travel, photography, and computers.

Northeastern Section of the MAA
Fall 2001 Meeting
November 16-17, 2001
Bridgewater State College
Bridgewater, MA

Theme: Recreational Mathematics

Program Committee:
Karen Schroeder, Bentley College
Ward Heilman, Bridgewater State College
Thomas Koshy, Framingham State College
Carlos Curley, Stonehill College
Thomas Moore, Bridgewater State College
Joseph Cleary, Massasoit Community College

Local Arrangements:
Thomas Moore

Friday, November 16, 2001

2:00-5:30....... . . . . Moakley Lobby
Registration

2:00-2:30........ . . . . M300
Executive Committee Meeting

2:30-3:30....... . . . . Moakley Lobby
Social Hour in the Moakley Lobby

3:30-4:20........ . . . . Moakley Auditorium
"Games played on Hypercubes and their relation to certain graph-theoretic parameters"
Mark Ramras , Northeastern University

4:30-5:20...... . . . . Hart Hall 117
"The French and Indian War, Nyctaginaceous Shrubs, Mathematics and other Triangular Tales"
James Tattersall, Providence College

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4:30-5:20....... . . . . Moakley Auditorium
"The Use of Animation in the Teaching of Multivariate Calculus and Differential Equations"
Paul Blanchard, Boston University (the NES/MAA Teaching Award Winner)

5:30-6:15   transit across campus to the Campus Center Ballroom to enjoy a cash bar and hors d'oeuvres. (A five minute walk but a bus will be available.)

6:15-7:15...... . . . . Campus Center Ballroom
Banquet in the Campus Center Ballroom:
Welcoming remarks by Dr. Adrian Tinsley, President, Bridgewater State College

7:30-8:30....... . . . . Campus Center Auditorium
The Class of 1942 (Durgin) Lecture: "The Ageless Fascination of Geometric Dissection"
Greg Frederickson, Purdue University

8:30-9:30........ . . . . Campus Center Ballroom
Reception for Greg Frederickson

Saturday, November 17, 2001

8:00-noon...... . . . . Moakley Lobby
Registration

8:00-4:0....... . . . . Moakley Lobby/ Hart Hall
Bookdealers et al

7:45-8:45...... . . . . Hart Hall 113, 114, and 117
Student talks in Hart Hall

9:00-9:50...... . . . . Hart Classroom
Student Session : "The Lighthouse Theorem and Morley, but not Malfatti"
Richard K. Guy, University of Calgary

9:00-9:50....... . . . . Moakley Auditorium
"Is Monopoly a Math Game? Developing Puzzles and Games that are Both Educational and Commercially Successful"
Bill Ritchie, founder and owner of Binary Arts, The Smart Toy Company .

10:00-10:25...... . . . . Moakley Lobby
Break for refreshments

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Abstracts

Mark Ramras

Title: **Games played on Hypercubes and their relation to certain graph-theoretic parameters**

Abstract: We explore the connections between certain 2-player games played on either the vertex set or the edge set of the n-dimensional hypercube, and certain graph parameters of the hypercube. Examples of these parameters: minimum size of a maximal matching, minimum size of an independent dominating set, and maximum size of a "balanced" independent set (where "balanced" in a bipartite graph means that there are equal numbers from the two parts of the bipartition).

Jim Tattersall

Title: **The French and Indian War, Nyctaginaceous Shrubs, Mathematics and other Triangular Tales**

Abstract: We begin by recounting the adventures of a mathematician, soldier, and explorer who was a student of D'Alembert and wrote an impressive sequel to L'Hôpital's "Analyse des Infiniment Petits." His exploits will lead us into the realm of number theory where we investigate the properties of some well-known and not so well known triangles.

Paul Blanchard

Title: **The Use of Animation in the Teaching of Multivariate Calculus and Differential Equations**

Abstract: We will demonstrate and discuss how we use computer animation in both multivariate calculus and ordinary differential equations. In particular, we will demonstrate how we construct animations using a combination of Mathematica, Quicktime, and Martin Kraus's LiveGraphics3D java applet.

Greg N. Frederickson

Title: **The Ageless Fascination of Geometric Dissection**

Abstract: Geometric dissection is the mathematical art of cutting figures into pieces that can be rearranged to form other figures, using as few pieces as possible. Each dissection problem can be viewed as a puzzle, and many, such as the dissection of a regular octagon to a square, have elegant solutions. I will examine a selection of remarkable dissections, employing a variety of solution methods. I will highlight the colorful history of these problems, which originated many centuries ago and have flourished since their appearance in the mathematical puzzle columns of turn-of-the-century newspapers. This talk should be accessible to anyone who has had a course in high school geometry and thought that regular hexagons were rather pretty.

Richard Guy

Title: **The Lighthouse Theorem and Morley, but not Malfatti**

Abstract: Exploration of Morley's theorem leads to the Lighthouse theorem. Attempts to apply it to the Malfatti problem have failed, but reveal a remarkable chain of ramifications of the original theorem.

Bill Ritchie

Title: **Is Monopoly a Math Game? Developing Puzzles and Games that are Both Educational and Commercially Successful**

Abstract: Mathematical games and puzzles are wonderful for stimulating the imagination and generating more serious interest in the fields of math and science. But watch out! If a game is too explicitly "educational" or doesn't look fun enough, it can bomb in the market and end up not helping anyone. In this talk, the speaker will share some serious and lighthearted observations about puzzle and game design, and strategies that a game development

company needs to consider to maximize the success of a "math" type game or puzzle.

Richard Guy
The Christie Lecture
Title: Math from Fun & Fun from Math
Abstract: An autobiographical history of combinatorial games, along the paths of Bouton, Sprague, Grundy, Smith, Berlekamp and Conway. Some simple games which turn out to be not so simple, and which lead to a lot of mathematics and a lot of fun.

Underwood Dudley
Title: Calculus Books
Abstract: Calculus books we have had with us ever since L'Hôspital published the first in 1696. Over the years they have increased in number (around 500,000 are sold every year) and weight. This talk, in preparation for which its author inspected eighty-nine separate and distinct calculus books, will examine what they have contained and now contain, especially about L'Hôspital's Rule and about applications.
Seven important conclusions will be drawn and a moral message presented.

Greg N. Frederickson
Title: Geometric Dissections Now Swing and Twist
Abstract: A geometric dissection is a cutting of a geometric figure into pieces that can be rearranged to form another figure. Some dissections can be connected with hinges so that the pieces form one figure when swung one way, and form the other figure when swung another way. These dissections have remained as mathemagical as they first seemed almost a century ago when the English puzzlist Henry Dudeney exhibited a hinged dissection of an equilateral triangle to a square. This talk explores two fundamental ways to hinge dissections of 2-dimensional figures such as regular polygons and stars. The first way uses "swing hinges", which allow rotation in the plane. The second relies on "twist hinges", which allow one piece to be turned over relative to another, using rotations by 180 degrees through the third dimension. I will introduce a number of novel techniques for designing both types of dissections.

This talk should be accessible to anyone who has had a course in high school geometry and can swing on a swing or turn a knob on a door.

Calls for Participation

Student Papers
Undergraduate students are invited to present 15-minute papers on math, statistics, or computer science. Interested students should send abstracts to ojohnson@keene.edu or by mail to Mike Cullinane; (mcullina@keene.edu) Department of Mathematics; Keene State College; Keene, NH 03435-2001, (603-358-2505), or to Lisa Humpreys humpreys@ric.edu), Department of Math and CS, Rhode Island College, Providence, Rhode Island 02908, (401-456-8038) E-mail is preferred. Abstracts should include current address, phone number, e-mail address, and name of a faculty sponsor. Those that are accepted will receive prizes and one presenter for each paper will receive free meals and registration at the meeting. Please send information by Nov. 2nd.

Contributed Papers Call
Participants are invited to submit contributed papers for the Spring Meeting. We particularly seek papers appealing to a wide variety of participants. Your presentation should be approximately 15 minutes long. Please send an abstract (indicate any special equipment needed) to Tommy Ratliff, Math/CS by e-mail to tratliff@wheatonma.edu by Nov. 2nd

New Faculty Call

New faculty are invited to present short presentations on their research or teaching interests. This introduces the local MAA to the new faculty and the new faculty to the local MAA. The coordinator is Phil Hotchkiss of Westfield State College. If you are interested in presenting, please send an email to him at photchkiss@wisdom.wsc.ma.edu or call at (413)572-5575 by Nov.2nd.

Bridgewater State College is in the geographic heart of Southeastern Massachusetts within easy access by major highways as seen in this area map.

The campus is approximately 40 minutes south of Boston, 30 minutes north of Cape Cod, and 50 minutes northeast of Providence, Rhode Island.

Directions to Bridgewater State College, MA

From the North: From Boston, take I-93 South to Route 24 South or from other points North, take I-95 South to 495 South to Exit 7A (Route 24 North). Once on Route 24, take Exit 15 to Route 104.
Take Route 104 East to STOP sign (approximately three miles). Turn left. Go halfway around the green in the center of town and bear right and at the foot of that street turn left. You then cross railroad tracks and take the next right, Burrill Ave. Parking is at the end of this street past the Moakley Center in the Moakley Lot or the Commuter Lot, as directed by the signs.

From the West: Follow the Massachusetts Turnpike (I-90) to Route 495 South to Exit 7A (Rte. 24 North). Once on Route 24 North, take Exit 15 to Route 104. Follow Route 104 East to STOP sign (approximately three miles). Turn left. Continue with directions as above.

From the East: Follow 106 West to Route 104.
For East Campus, turn left onto Hooper Street (ends as a left turn onto Burrill Avenue). Parking is at the end of this street past the Moakley Center in the Moakley Lot or the Commuter Lot as directed by the signs.

From Providence, Rhode Island and Points South: Follow I-95 North to Route 495 South to Exit 7A (Route 24 North). Once on Route 24 North, take exit 15 (first exit). Take Route 104 East to STOP sign (approximately three miles). Turn left. Go halfway around the green and turn right (on 104) then staying on 104 turn left; cross railroad tracks; take the next right to parking lots just past the Moakley Center.

By MBTA: Bridgewater State College is on the Middleborough/Lakeville line. The Bridgewater Commuter Station is on campus, at the Great Hill Parking Lot. A walk of about 500 yards brings you to the Moakley Center for registration and the talks.

Hotel Information

Days Inn, (Route 495, exit 4, Middleboro, 508.946.4400):
Fifty (50) rooms blocked with reservations required by September 15 at rate of $64.00 for a single/$74.00 (plus taxes) for a double, mention BSC to get discount. After Sept. 15, rooms will be available at this discount rate by mentioning BSC on a first-come, first-served basis.

**Couryard by Marriott (37 Paramount Drive, Route 24, exit 13A, Raynham, 508.822.8383):**
Ten (10) rooms blocked, at a time, with reservations required by October 31 at the rate of $74.00 (plus taxes) by mentioning BSC.

Fairfield Inn (at Interchange of I-495 and Rte 44 West, exit 6, 508.946.4000):
$59 (plus tax); no cut off date.

Distinguished Teaching Award Nominations Due

Ockle Johnson (ojohnson@keene.edu), chair of the committee to choose the Section's award winner, asks that nominations be sent to him by November 2,2001. Nominators will receive a packet and be asked for additional information.. Candidates should be known as outstanding teachers on their own campuses and their influence should extend to the broader mathematical community.

CAMPUS MAP
BRIDGEWATER STATE COLLEGE
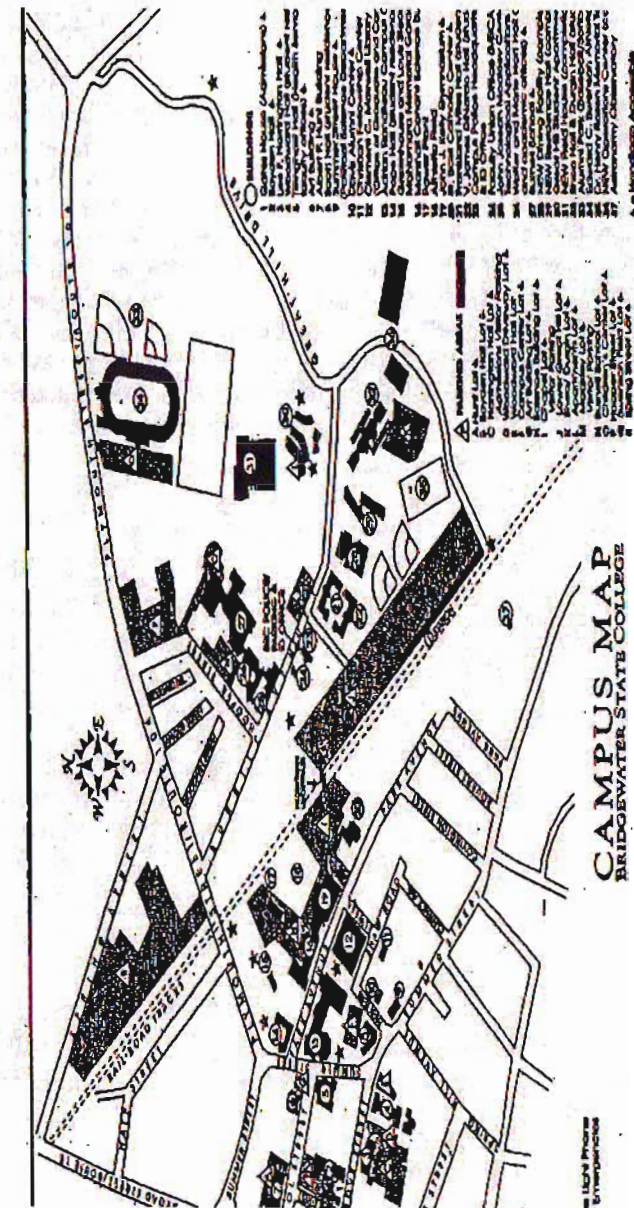
About Bridgewater State College

Bridgewater State College is one of the oldest public colleges in America, founded in 1840 as Bridgewater Normal School. The renowned statesman Daniel Webster, former U.S. President John Quincy Adams and the great educator Horace Mann were among the early supporters of the school. The first class, consisting of seven men and twenty-one women, met in the old town hall in Bridgewater with a single instructor, Nicholas Tillinghast. Today Bridgewater State College is a multi-purpose liberal arts institution which enrolls more than 9000 students (full- and part-time) and has more than 100 undergraduate, graduate and certificate programs. The college has 240 acres and 30 buildings all of them wired for high-speed voice, video and data transmission.

Pre-Registration Form Fall Meeting of the Northeastern Section- MAA
November 16-17, 2001   Bridgewater State College
Mail this form to :   Tom Moore
                        Department of Math; Bridgewater State College
                        Bridgewater, MA 02325
                        e-mail: MOORE@bridgew.edu

Check should be made to: **NES/MAA**

Please Pre-register! You may register at the meeting; however, it would help to plan the meeting if you pre-register by mail and it will save you money since the on site registration fees are five dollars more than pre-registration fees. Also, meals cannot be guaranteed unless reservations are received by Monday, November 5, 2001. **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 (please type or print):

Name:_____

Institution:_____

Address:_____

_____

Telephone ( )_____

E-mail_____

Pre-registration Fee:

MAA Member ($20.00) ;Non-member ($25.00)

Student or unemployed($5.00) $_____

Meals

Reception and Banquet Friday ($20.00) $_____

(Choose one: Beef_____,Chicken_____, Vegetarian_____)

Luncheon Saturday ($12.00) $_____

TOTAL: $_____

Frank Ford, Editor
Department of Math/CS
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