NORTHEASTERN SECTION

NEWSLETTER

FALL 1997

VOLUME 19 NUMBER 2

EXECUTIVE COMMITTEE

CHAIRPERSON
Richard Cleary
Department of Mathematics
St. Michael's College
Colchester VT 05439
(802) 654-2510
rcleary@smcvt.edu

VICE CHAIRPERSON
Frank Ford
Dept. of Mathematics/Comp. Sci.
Providence College
Providence RI 02918
(401) 865-2635
fpford@providence.edu

PAST CHAIRPERSON
Donna Beers
Department of Mathematics
Simmons College, 300 The Fenway
Boston MA 02115
(617) 521-2389
dbeers@vmsvax.simmons.edu

SECRETARY-TREASURER
Betsey S. Whitman
Department of Mathematics
Framingham State College
Framingham MA 01702-9001
(508) 626-4785
bwhitma@frc.mass.edu

GOVERNOR
Dennis Luciano
Mathematical Deptartment
Western New England College
Springfield MA 01119-2684
(413) 782-1275
dluciano@wnec.edu

TWO-YEAR COLLEGE REP.
Philip Mahler
Department of Mathematics
Middlesex Community College
Bedford MA 01730
(781) 280-3861
mahlerp@admin.mcc.mass.edu

NEWSLETTER EDITOR
Frank P. Battles
Department of Basic Sciences
Massachusetts Maritime Academy
Buzzards Bay MA 02532-3400
(508) 830-5000 x2262
fbattles@mma.mass.edu
FAX: (508) 830-5075

FUTURE SECTION MEETINGS

November 21-22, 1997: Western New England College
Local Arrangements: Ann Kizanis and Richard Pelosi
Program Chair: Edward Burger, Williams College

June 5-6, 1998: Keene State College
Local Arrangements: Dan Carter and Ockle Johnson
Program Chair: Ed Sandifer, Western Connecticut State University

OTHER SECTION ACTIVITIES

Regional Dinner Meetings: Spring 1998
Coordinator: Larry Braden, St. Paul's School
See Page 20

Minicourse: Spring 1998
TBA

Short Course: June, 1998
See Page 18

AWARDS/NOMINATIONS

NES/MAA Award for Distinguished College or University Teaching of Mathematics
See Pages 19-20

Access our homepage via **HTTP://WWW.MAA.ORG** or directly with **HTTP://SCSU.CTSTATEU.EDU/~MAA_NES/MAIN.HTML** for more information about Section activities between issues of the *Newsletter*.

CHAIRPERSON'S MESSAGE

One of the great things about being Section Chair is that an impressive proportion of the members working in our Section have taken the time to say "Thank You!" to me for agreeing to take this post. Some have gone so far as to say, "What can I do to help out?" One very simple and very important gesture could go a long way toward answering the second question:

COME TO THE FALL MEETING AT WESTERN NEW ENGLAND COLLEGE!
BRING A LOAD OF STUDENTS!
GET YOUR FRIENDS TO COME WITH YOU!
LET'S MAKE THIS THE BEST ATTENDED SECTION MEETING EVER!

I have learned a lot being Section Chair, and like any good learning experience it has also raised a lot of questions. One of the most important is how can we capture all of the energy that exists in our Section for mathematics and mathematics education, and use the MAA to harness it for the good of our profession and our students? This meeting, organized by the wonderfully energetic Ed Burger and his young and eager Program Committee, has the potential to see how much we can do. If the NES/MAA is going to remain a vital, and not become a static, organization then getting our members out to speak, listen and enjoy each other's company in the presence of an exciting program and good facilities is a key component.

The spring schedule of MAA events helped to put a lot of life in our mathematical calendar. Frank Ford did a great job arranging the annual minicourse at Providence, and our thanks to Mary Ann Connors for an excellent presentation. The Spring Meeting at Merrimack was well received thanks largely to the efforts of Dave Finn and his colleagues there. The short course, under the direction of Will Stout, had a good start at Salve Regina during its first year away from the University of Maine. Thank you all.

As I prepare to hand the Section reins to Frank Ford, I conclude with a thank you to all who helped me in this time consuming but rewarding job. The entire Executive Committee and the many people who worked locally and regionally to make our programs happen have bailed me out time and time again. I look forward to continuing to work for the Section. And, in case you didn't notice it the first time,

I'LL SEE YOU IN SPRINGFIELD IN NOVEMBER.

(Updated address for '97-'98: Rick Cleary, Biometrics Unit, Cornell University Ithaca, NY 14853. Phone 607-255-7826, e-mail: rick@amanita.biom.cornell.edu)

Richard Cleary
St. Michael's College
Chairperson NES/MAA

GOVERNOR'S MESSAGE

Late last fall Rick Cleary, Chair of NES-MAA, contacted me with two requests. The first was for Western New England College to host the Fall 1997 Meeting, which as you are probably aware, we accepted. In fact, we are quite excited about the approaching meeting given the excellent work that Ed Burger and his program committee have done. Details of the meeting are just pages away! The second was a request for me to run for the Governor's position. I, of course, accepted. Indeed, it was wise that I did, since in my very last message (Spring 1994) as Governor for the Northeastern Section, in the very last sentence I wrote, "...I will not hesitate to respond positively for another opportunity to represent our Section on the national level." Needless to say, I am surprised and flattered to be writing my first Governor's Message in my second term as Governor. However, along with the surprise was also a little disappointment, since I knew that I was committed to a prior family affair the week of the MAA Summer Meetings in Atlanta during early August, and consequently would not be present at the semi-annual Governors Meeting. Laura Kelleher, from Massachusetts Maritime Academy, assumed the role of Governor for a day and represented our Section in Atlanta. Her remarks about the Board of Governor's meeting will follow my message. On behalf of the NES-MAA, I thank her for taking on this additional responsibility.

It is difficult to believe that my very first Governor's Message was written six years ago, since it seems like only yesterday. Or perhaps I wish it were only yesterday. I look forward to the next three years as Governor of the Section armed with the knowledge and experience I received during my first three-year term. I hope to serve the collective and individual interests of the Section well at the national level and hope to participate in the improvement of the status of mathematics on as many fronts as possible. I also hope to write on current topics of interest to our mathematical community, noting that these comments/opinions expressed are mine and do not necessarily represent the official views of the MAA.

The other day, I was looking back to when I was finishing my Ph. D. and seeking employment during the 1973-74 academic year. I remember vividly how concerned the expected new Ph. D. recipients were with respect to the prospects of academic employment. Some of us complained how the Vietnam war interrupted our studies for periods of up to three years, knowing that our employment picture would be far better if the year was 1970-1971. I was one of the lucky ones who had an early interview (St. Joseph's University, PA) and a subsequent job offer. During the interview, I saw that the Chair had boxes of credentials from the applicants stacked in his office. I remember him commenting on how overwhelmed he was with the paper from over 250 applicants! In spite of how bad we thought the times were, almost all of us, sooner or later, obtained suitable positions and now have tenure. In retrospect, we really had it easy compared to the present conditions for new mathematics Ph. D recipients. Open positions now attract 400 to 500 applicants, and such positions may not even be tenure-track. In fact, there appears

to be an increase in the number of 1-year, 2-year, and 3-year positions advertised, and a decrease in tenure-track positions. Having been an interviewer in the AMS Employment Register a number of times during the 90's, I can attest to the fact that this phenomenon recycles young Ph. D's through the register periodically, creating what one might call a "migrant labor force."

Data from the United States Department of Education and the American Association of University Professors show that only about 25% of America's 1.2 million college teachers are tenured, a proportion that is surprisingly small and decreasing. Further, of the full-time faculty who do not have tenure, only about 40% are in tenure track positions, down from about 60% twenty years ago. Our discipline certainly appears to reflect these national trends. Tenured professors are being criticized by just about everyone outside of academia, and also from many inside. The country seems to be fixated on the image of the cloistered academic with a cushy job for life, and with almost no accountability. Bennington College made headlines in 1994 when it abolished tenure and placed its faculty on contracts. No major college or university has followed the Bennington example. However, the University of Minnesota tried and failed last year to introduce a layoff provision. Presently, in the State of Massachusetts, there have been serious discussions about the tenure system in the public sector.

There is no doubt that the tenure system has grown to be cumbersome and expensive, particularly for colleges/universities with small endowments and shrinking revenues. And we all know that the majority of institutions fall into this category. Nationally, early retirement incentives have substantially lightened college expenditures. At the same time they have lessened the number of full-time positions available, since early retirement has opened our doors to more adjunct (part-time) faculty members. Now many college instructors can look forward to adjunct work at best. Almost 50% of the undergraduate faculty are adjuncts. On the average, they earn $2,000 per course with no benefits or pension. Some adjuncts instruct 5+ courses per term spending their days driving from one campus to another. This leaves little time for scholarly readings or research, for course preparation, for student feedback, and for individual student consultation, all of which we cherish as the very important aspects of what we do. This is just another class of "migrant labor", which the Chronicle of Education refers to as "invisible faculty", who stand on the boundary of campus life and disappear on the hour. That is not to say that adjunct work is not beneficial. In fact, I believe that responsive and flexible departments must have a certain percentage of adjunct instruction, and that there are many adjuncts that will serve the institution as well as the full-time faculty. It is certainly the case at our college.

Tenure was created decades ago to help insure academic freedom, and to offer a life-long job to help compensate for the meager pay. These incentives attracted many fine scholars/teachers who would have been lost to the academic sector otherwise. Should we use the same reasoning to defend tenure in today's society?

I am finding it more and more difficult to encourage my qualified students to pursue a Ph. D. in mathematics with the expectation of a future college position. Those that do so successfully will confront an academic employment market where they may be competing with hundreds of other well-qualified applicants for 1-3 year terminal teaching positions, if tenure track positions continue to decline. If successful, the best these applicants can hope for is to be in the search process again, one to three years later. If unsuccessful, these well qualified individuals may become members of the "invisible faculty", barely earning enough to live on. Of course, the lucky ones will secure one of the few tenure-track positions available and will work hard over the six year probationary period to achieve tenure, hoping that it will still exist at the institution when the probationary period is over. On the other hand, I am just as concerned as to what may occur to our profession and to the mathematics community, if indeed we do not encourage our best and brightest mathematics students to become members of a profession that we have found to be so worthy that we have made it a life long commitment.

Dennis M. Luciano
Western New England College
Governor NES/MAA

NEWS FROM THE ATLANTA MEETING OF THE BOARD OF GOVERNORS

The meeting of the Board of Governors convened early on the morning of August 1, 1997 in Atlanta, Georgia. The weather was pleasant, the pre-registration for the 1997 Mathfest was right on target with projections and all reports from the filled-to-capacity short course on Epidemiology Modeling were very positive. As usual, there was a full agenda for the meeting. Much of the day was spent on reports from the President, Secretary, Treasurer and Executive Director of the MAA as well as from various Directors, Task Forces and Committees. These reports created an official record and brought the Board up to date on many MAA professional activities including efforts to recognize contributions to collegiate mathematics as well as to increase the involvement of underrepresented groups. I would like to pass along some items from these reports and discussions that you may find of interest.

Jim Leitzel, who was a main speaker at our Northeastern Section Meeting last June at Merrimack, reported on plans for expanding Project NExT, the very successful New Experiences in Teaching program which has assisted new faculty to become involved in professional activities. A major part of this expansion will involve the development of activities at the section level.

Don Albers, MAA Associate Executive Director, exhibited a wide variety of impressive new MAA publications and announced that several additional new titles will be joining the list this fall. His report raised the possibility of exploring an all-electronic version of the MAA's student publication, *Math Horizons*. Meanwhile,

you and your students may enjoy exploring *Crossroads*, the all-electronic student magazine of ACM which is edited entirely by students. You can read it by going to **<http://www.acm.org>**. Click on "Student Web" and then the *Crossroads* icon. Don also serves as an advisor to an upcoming seven hour PBS series entitled *Life by the Numbers* which is scheduled to be released in Spring 1998. It is intended that this series will take viewers around the world revealing exciting, innovative careers involving everyday people using key mathematical concepts including art, nature, education, technology, sports and probability.

Among other election results, it was announced that Thomas F. Banchoff of Brown University will be the next President-Elect of the MAA. At this meeting James J. Tattersall of Providence College was elected Associate Secretary of the MAA. Both Jim and Tom have made valuable contributions to the Northeastern Section and will certainly be outstanding in their new MAA positions. Their terms of office will begin after the January 1998 Meetings.

Northeastern Section members will have an excellent opportunity to attend and participate in the January 1998 Joint Meetings of the MAA and AMS since they will be held in Baltimore. It was announced that the MAA is planning a future short course on Mathematical Imaging including discussion of medical and satellite applications. In addition, it is anticipated that the 1998 Mathfest will be held in conjunction with SIAM in Toronto next July. Watch for official announcements of these upcoming events!

I was pleased to be your representative at this Board of Governors Meeting. It was an interesting opportunity to experience another aspect of the vibrant MAA which continues to bring active, enthusiastic leadership to collegiate mathematical concerns.

Laura L. Kelleher
Massachusetts Maritime Academy

TECHNOLOGY IN STATISTICS EDUCATION

The Boston Chapter of the American Statistical Association is planning a conference on *Technology in Statistics Education* tentatively scheduled for Saturday, 28 March 1998, at Babson College. The local organizers of this conference are Robert Goldman, John D. McKenzie, Jr., and Anne Sevin, the same group who organized the March 1996 conference on *Trends in Introductory Statistics: Topics, Techniques, Technology*, and the April 1997 conference on *Assessment in Statistics Courses*.

If you would like to receive a registration packet, please contact John D. McKenzie, Jr., Mathematics and Science Division, Babson College, Babson Park, MA 02157-0310; Phone 871-239-4479; e-mail mckenzie@babson.edu.

MINUTES OF THE LAST MEETING

The Spring Meeting of the Northeastern Section was held on June 6-7, 1997 at Merrimack College. There were 87 in attendance, including 17 students.

Workshops

Math/Internet Workshop by Premjit Singh, Johnson & Wales University.

Invited Talks

Mathematics for the 21st Century by Sheldon Gordon, Suffolk Community College.

Challenges and Opportunities for a New Century by James R.C. Leitzel, University of New Hampshire.

Take a Walk on the Boardwalk by Steve Abbott, Middlebury College.

Calculus Reform: Where We've Been, Where We're Going by Steven Benson, University of New Hampshire.

Future Colleague Talks

Young Diagrams and Representation Theory by Upendra Kulkarni, Brandeis University.

Aperiodic Tilings as Windows on Higher Dimensions by Dave Molnar, University of Connecticut.

Independence and Dimension: A Harmonic Analytic Point of View by Jay Caggiano, University of Connecticut.

Mountain Passes and Water Waves by Sharon Hill, University of Connecticut.

Parallel Implementation of the Preconditioned Bi-Conjugate Gradient Method Applied to the Hermite Collocation Discretization of Partial Differential Equations by Stephen H. Brill, University of Vermont.

The Dynamics of the Difference Equation:
$x(n+1) = (ax(n) + bx(n-1)e^{x(n-1)})e^{x(n)}$.
by Soudabeh Valicenti, University of Rhode Island.

A Mathematical Stew: Linear Transformations on Vector Spaces of Analytic Functions by Neil Portnoy, University of New Hampshire.

Properties of Lyness' Equation: $x(n+1) = (x(n)+b)/x(n-1)$ **and Some Extensions** by Jeff Feuer, University of Rhode Island.

Student Paper Session

Constructing Ulam's Spiral by Matthew Carreiro, Providence College.

Borromean Rings by Erik Erhardt, Franklin Pierce College.

Height Theory and its Application to Polynomial Dynamics by Dan Golosovker, Amherst College.

Using Heights to Bound the Number of Pre-periodic Points for Cubic Polynomials by Ben Brubaker, Amherst College.

Sidney Product Sequences by Elizabeth Ramos, Providence College.

Contributed Papers

Attitudes Towards Mathematics and Predictors of College Mathematics Grades: Gender Differences in a Four-Year Business College by Patricia Odell and Phyllis Schumaker, Bryant College.

Creative Optimization Projects for General Education Calculus by Sarah L. Mabrouk, Boston University.

A Graphical Approach to the Concepts in Optimization by Sarah L. Mabrouk, Boston University.

How I (Finally) Got Students to Read Their Calculus Books by Tommy Ratliff, Wheaton College.

NCTM 2000 by John Goulet, Worcester Polytechnic Institute.

Advanced Placement Calculus and Advanced Placement Statistics Curriculum Development Updated by Po Kee Wong and Adam Wong, Systems Research Company.

At the Business Meeting the Treasurer's report was read, indicating that the Section is on a good financial basis. Numerous other items were discussed which are presented elsewhere in this *Newsletter*.

Betsey S. Whitman
Framingham State College
Secretary-Treasurer NES/MAA

NEMATYC 1998: CALL FOR PRESENTERS

The New England Mathematics Association of Two Year Colleges (NEMATYC) will hold its annual meeting at Cape Cod Community College on Friday and Saturday of April 10-11, 1998. The theme of this meeting is *Teaching Mathematics in the New Millennium.*

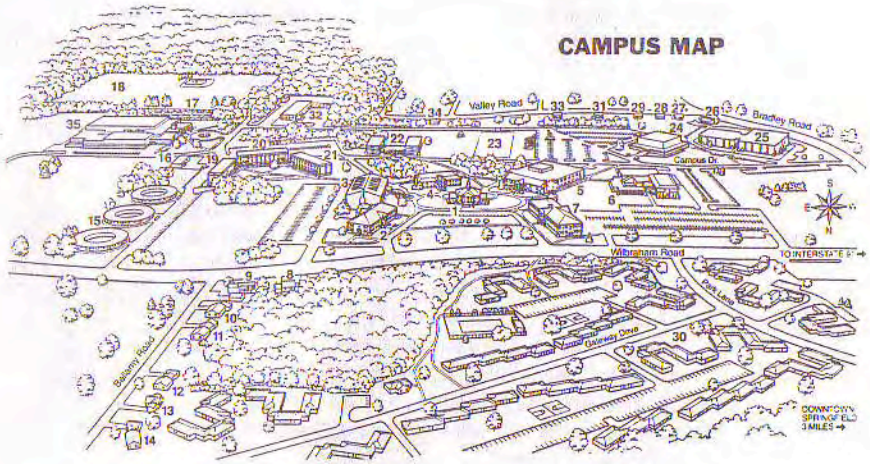
Please consider sharing your experiences with your peers by making a presentation on a topic of your choice. The following are suggested topics; feel free to run with your imagination:

* Writing Across the Curriculum
* Interactive Learning
* Assessment
* Teaching Styles
* Alternative Delivery Systems
* Interdisciplinary Approaches
* Learning Styles
* Distance Learning
* Critical Thinking
* Pedagogy
* College/HS Collaboration
* Problem Solving

Note: The Conference registration Fee is waived for presenters.

Please send a 25-50 word abstract plus a more detailed description which will help us choose presentations. Please indicate your day preference (Friday afternoon or Saturday) and length of time (45 or 90 minutes) and any equipment needed. To submit a proposal or for further information, contact Ted Panitz, NEMATYC 1998 Chairperson, Cape Cod Community College, 2240 Iyanough Rd., West Barnstable, MA 02668. Phone 508-362-2131 ext 4421 or e-mail to tpanitz@cape.edu.

CAMPUS MAP



1. **Joseph J. Deliso, Sr. Administration Building**
   Disbursements
   Purchasing
   Student Disability Services
2. **Emerson Hall**
   Classroom Laboratory Building
3. **D'Amour Library**
   Student Administrative Services
4. **John D. Churchill Hall**
   Classroom Laboratory Building
   School of Business
5. **D. J. St. Germain Campus Center**
   Bookstore
   Career and Human Resources
   Counseling
   Dean of Students
   Dining Halls
   Diversity Programs
   Freshman & Transfer Programs
   Residence Life
   Scheduling
   Snack Bar
   Student Activities
6. **William H. Sleith Hall**
   Classroom Laboratory Building
   School of Engineering
7. **Herman Hall**
   Classroom Laboratory Building
   Continuing Education
   School of Arts & Sciences
8. Extended Education Division
9. **Undergraduate Admissions**
10. Admissions Annex
11. Pharmacy Program
12. Guest House
13. Cultural Center
14. R.O.T.C.
15. **Plymouth Residence Complex**
16. Public Safety
17. Tennis Courts
18. Suprenant Fields–baseball/soccer/practice fields
19. **Berkshire Hall –** Residence Hall
20. **Hampden Hall –** Residence Hall
21. **Franklin Hall –** Residence Hall
22. **Windham Hall –** Residence Hall
23. Varsity Playing Fields
24. **Rivers Memorial Building**
25. **S. Prestley Blake Law Center Building**
26. Law Clinics
27. Marketing & Communications
28. Marketing & Communications
29. Alumni Relations
30. **Gateway Village**
    Residence Housing
    Outdoor Pool
31. Advancement Office
32. **Campus Utilities Building**
    Campus Post Office
    Facilities Management
    Buildings & Grounds
    Housekeeping
    HVAC
    Telecommunications
    Transportation Services
    Printing Services
    Receiving
    Supply Services
33. Storage
34. Guest House
35. **Alumni Healthful Living Center**
    Athletics
    Health Services
    Physical Education

Special concerns of the handicapped should be addressed to the Office of Student Disability Services.

NORTHEASTERN SECTION OF THE MAA
FALL MEETING: NOVEMBER 21-22, 1997
WESTERN NEW ENGLAND COLLEGE, SPRINGFIELD MA

THEME: Discovering Mathematics

Friday, November 20

2:00-6:00 Registration (Sleith Hall Entranceway)
2:00-3:00 Executive Committee Meeting (Campus Center Room 4)
3:00-3:50 **Finite Orbits: The Dynamics of Polynomial Maps and Undergraduate Research**
Greg Call, Amherst College
3:00-3:50 **Mathematics on the Web: Looking Back and Looking Forward**
Davide Cerone, Union College
4:00-4:50 **CHRISTIE LECTURE: Mathematics for Future Lawyers, Legislators and Business Leaders**
Michael Starbird, The University of Texas at Austin
5:00-6:00 Student Papers
6:00-6:45 Reception
6:45-7:45 Dinner
7:45-8:00 Welcome
Edward Burger, Williams College
Anthony Caprio, President, Western New England College
8:00-8:50 **A Room in Perspective: A Mathematician's Reflections from the President's Office**
Neil Grabois, President, Colgate College

Saturday, November 22

7:30-10:30 Registration (Sleith Hall Entranceway)
8:30-3:00 Book Exhibits
8:00-8:50 **NES/MAA TEACHING AWARD LECTURE: Real Estate in Hyperbolic Space - Investment Opportunities for the Next Millennium.**
Mel Slugbate, Real Estate Agent
(substituting for his brother-in-law Colin Adams, Williams College)
9:00-9:50 **Discovering Minimal Surfaces**
Helen Moore, Bowdoin College
9:00-9:50 **Recent Results in the Mathematics of Political Power**
Bill Zwicker, Union College
9:50-10:15 Coffee Break and Book Exhibits

10:15-11:05 **Williams Summer Science Program - Not with a Whisper but a Bang**
Olga Beaver, Williams College
10:15-11:05 **Some New Results on p-adic Local Zeta Functions Discovered by Undergraduates**
Margaret Robinson, Mount Holyoke College
11:15-12:15 **Student Workshop: Balloons and Bagels - A Hands-on Exploration of Surfaces**
Helen Moore, Bowdoin College
11:15-12:15 **Faculty Workshop: Discovering Mathematics for the Multitudes**
Michael Starbird, University of Texas at Austin
12:15-1:15 Lunch
(New Faculty are invited to a special table for an informal lunch meeting organized by Project NExT.)
1:15-2:05 **NEW FACULTY PRESENTATIONS:**
Irrational Numbers, Continued Fractions, and Irrationality Degree
Eileen Lee, Trinity College
Groups in Geometry
Megan Kerr, Wellesley College
The Open-Box and Field-Along-a-River Problems
Jean McGivney-Burelle, Southern Connecticut State University
On Edge-Magic Labeling of Graphs
Lisa Hansen, Western New England College
2:15-3:05 **Implementing the MAA Report on Quantitative Literacy: What Works and What Doesn't**
Panel Discussion chaired by Judith Moran, Trinity College
2:15-3:05 **On a Clear Day, You Can See Forever**
David Daniels, Longmeadow High School
3:15-4:15 Contributed Papers

PROGRAM COMMITTEE:
Edward Burger, Williams College, Chair
Kathy Bavelas, Manchester Community College
Ann Kizanis, Western New England College
Dick Pelosi, Western New England College
Tommy Ratliff, Wheaton College
LOCAL ARRANGEMENTS:
Ann Kizanis and Richard Pelosi, Western New England College

TRAVEL DIRECTIONS

From the East or West via Mass. Turnpike (I-90).
Leave Mass. Pike at Exit 6. Turn left on I-291 and travel South to Exit 5, "East Springfield." Turn right off exit ramp onto Page Blvd. At first traffic light, turn left on Roosevelt Ave. Proceed 2.5 miles to traffic light at Wilbraham Rd. Turn left and travel 1.5 miles to main entrance of the campus on right. The Admissions Office is located on Wilbraham Rd. in the second house on the left after the main entrance to the College.
(Total 5.6 miles from Mass. Pike.)

From the North via Interstate 91.
Leave I-91 at Exit 8, "Ludlow, Boston - I-291." Travel to Exit 5B, "East Springfield." Turn right off exit ramp onto Page Blvd. At first traffic light, turn left on Roosevelt Ave. Proceed 2.5 miles to traffic light at Wilbraham Rd. Turn left and travel 1.5 miles to main entrance of the campus on right. The Admissions Office is located on Wilbraham Rd. in the second house on the left after the main entrance to the College.
(Total 8.6 miles from I-91.)

From the South via Interstate 91.
Leave I-91 at Exit 2, "East Longmeadow." Take exit ramp following signs (Route 83) to light at intersection of Longhill St. and Sumner Ave. Travel straight on Sumner Ave. and Allen St. to traffic light at intersection of Allen St. and Bradley Rd. (3.2 miles). Turn left on Bradley Rd. and travel 1.6 miles to Wilbraham Rd. and travel 0.2 miles to the main entrance of the campus on right. The Admissions Office is located on Wilbraham Rd. in the second house on the left after the main entrance to the College.
(Total 5.7 miles from I-91.)

WESTERN NEW ENGLAND COLLEGE

Western New England College is a private, nonprofit, coeducational institution located on 185 acres in suburban Springfield. The 4,500 students attending the college come from more than 30 states and 17 foreign countries, and they pursue degrees in Arts and Science, Business, Engineering, Pre-Pharmacy, and Law. Also, the Golden Bears compete in 19 varsity sports as members of NCAA Division III and the Eastern Collegiate Athletic Conference. The recently opened Alumni Healthful Living Center is one of the finest collegiate athletic and recreational facilities in the Northeast.

In the Mathematical Sciences program, the primary objective is to offer general training in mathematical reasoning and problem solving, nurturing such abilities as intuition, inductive and deductive thought, and model building. Throughout the undergraduate curriculum students are encouraged to formulate problems and conjectures, challenging their own ability to understand and produce new ideas. The Computer Science curriculum is similarly organized, with emphasis on the scientific, mathematical, and theoretical aspects of computer systems design and their applications. Students focus on the conceptual design and development of software and the interaction of these written instructions with computer machinery. The coursework is interdisciplinary in nature, including classes in computer science, computer engineering, and mathematics.

ACCOMMODATIONS

Holiday Inn, 711 Dwight St., Springfield, MA 413-781-0900

This hotel is in downtown Springfield. It is about 4 miles from campus and easy to get to. Forty rooms will be reserved for us at a rate of $59 (double). These rooms will be held until two weeks before the meeting, so please book early. If you make a reservation after this time, you will still get the same rate provided a room is available. A credit card number is REQUIRED for holding one of the reserved rooms.

Marriott, 1500 Main St., Springfield, MA 413-781-7111

This hotel is also in downtown Springfield and about 4 easy miles to campus.

Quality Inn, 1150 Riverdale Road, West Springfield 413-739-7261

This hotel is across the Connecticut River from the downtown Springfield area and is about 7 miles from campus. It is clearly visible from Route 91 (exit 13). The rate for a double is $70 and this includes a continental breakfast. Also, a AAA discount brings the rate down to $63.

Ramada Inn, 357 Burnett Road, Chicopee, MA, 413-592-9101

This hotel is located at exit 6 off the Massachusetts Turnpike, and is about 5.5 miles from the campus. The rate for a double is $56.

ABSTRACTS

Finite Orbits: The Dynamics of Polynomial Maps and Undergraduate Research

Greg Call, Amherst College

One of my long-term research goals has been to involve students in my work. This talk will focus on a continuing research project which has proven to be especially attractive to my undergraduate collaborators and has produced a number of tantalizing theorems and conjectures. In particular, I'll describe some results obtained by my students over the past two summers.

Mathematics on the Web: Looking Back and Looking Forward

Davide Cervone, Union College

Over the past several years, The World-Wide Web has become enormously popular, even with those who do not traditionally use computers. Web addresses are now commonly seen on TV commercials, news programs, product packaging, even advertising on the sides of buses. What does this medium offer mathematicians? This talk will focus on a web-based research paper that gives one approach to how hypertext and hypermedia can substantially improve the presentation of research-level and educational materials. We will discuss some of the issues involved in writing such a document, what this means for traditional publications, and some current directions being developed for presenting mathematics on the Internet.

CHRISTIE LECTURE:
Mathematics for Future Lawyers, Legislators, and Business Leaders

Michael Starbird, The University of Texas at Austin

Mathematics is artistic, creative, and just plain fun. It can provide a powerful and penetrating way of thought and a lifetime of pleasure. Mathematics can shock non-technical students out of their narrow rut of reality and open their minds to wonders beyond their wildest imagination. The best parts of mathematics are in its depths. Infinity, fractals, and the fourth dimension; topology, cryptography, and duality-these ideas are fascinating for anyone. Let's avoid having students struggle up the first two steps of a hundred step ladder that they will never climb. Instead let's allow them to discover for themselves the joy of thought. Our challenge is to follow the 20 year rule: What from their mathematics course will be of real value to them in 20 years?

A Room in Perspective: A Mathematician's Reflections from the President's Office

Neil Grabois, President, Colgate University

We are delighted to welcome President Grabois who is both a mathematician and the President of Colgate University. He will provide a unique perspective of mathematics from a college-wide vantage point.

NES/MAA TEACHING AWARD LECTURE: Real Estate In Hyperbolic Space: Investment Opportunities for the Next Millennium

Mel Slugbate, Real Estate Agent (substituting for his brother-in-law Colin Adams, Williams College)

Discovering Minimal Surfaces

Helen Moore, Bowdoin College

What is a minimal surface? How were minimal surfaces discovered? If you were holding a live minimal surface in your hand, what kinds of things should you look for and why? I will give a brief history of minimal surface theory, including some exciting problems solved in the 1980's and the latest progress on a related problem. My aim is to give you a sense of the beauty of minimal surfaces and some of the questions that have been asked about them.

Recent Results in the Mathematics of Political Power

Bill Zwicker, Union College

In democracies, elected representatives typically vote "yes" or "no" on proposed legislation, constitutional change, etc. The voting systems range from simple majority rule, to weighted versions in which legislators from more populous districts cast more votes, to complex bicameral systems with presidential vetoes and veto overrides, such as the US federal system. Designers of such a system must be able to test whether the actual difference in influence among the legislators came out the way they intended. The traditional approach is to use a mathematical "voting power index," but the known indices differ sharply from each other. Can the issue be resolved? Some recent results indicate promising lines of research for the future.

Williams Summer Science Program - Not With a Whisper But a Bang

Olga Beaver, Williams College

Since its inception in 1987, Williams Summer Science Program has delivered a challenging wallop of college mathematics and science to participating pre-freshman students of color. These 12-14 students have indicated a strong interest in mathematics or science, and the Summer Science Program is designed to reinforce that interest. In no way the euphemistic "bridge" between high school and college, the Program takes participants through five tough, unrelenting summer weeks of mathematics, chemistry, and literature, together with some biology and

geology. The Summer Science Program works: retention of SSP alumni in mathematics and science fields is high and overall retention to graduation is noteworthy.

Some New Results on p-adic Local Zeta Functions Discovered by Undergraduates
Margaret Robinson, Mount Holyoke College

This talk will describe the Summer Research Experiences for Undergraduates (REU) program at Mount Holyoke College and explain and discuss some of the results obtained by three different groups working on problems in p-adic analysis.

Student Workshop: Balloons and Bagels: A Hands-on Exploration of Surfaces
Helen Moore, Bowdoin College

Students will work in small groups and perform experiments using balloons and bagels. This will be a guided discovery of some of the fundamental relationships between the shape of a surface and the directions it faces. It is intended to give students an enticing glimpse of the beautiful and deep connections between geometry and topology. The last part of the workshop will be spent relating the workshop discoveries to the morning talk. The workshop will be appropriate for all levels of college students.

Faculty Workshop: Discovering Mathematics for the Multitudes
Michael Starbird, University of Texas at Austin

How can we engage non-technical students in mathematical inquiry? This workshop will feature some samples of activities to involve students in thinking about intriguing, but abstract mathematics. This entertaining workshop will feature hand's on methods for making the underlying ideas of abstract mathematics accessible and enjoyable to students.

Implementing the MAA Report on Quantitative Literacy: What Works and What Doesn't
A panel discussion chaired by Judith Moran, Trinity College

In 1996 the MAA issued its report: *Quantitative Reasoning for College Graduates: A Complement to the Standards*. Last April, members of ten colleges in the New England/New York area met to share ideas and experiences implementing the report's recommendations. This panel will include members of the group formed last spring, The Northeast Consortium for Quantitative Literacy, from Trinity, Wellesley, Hamilton, Skidmore and Williams colleges, who will discuss how their institutions have responded to the report's philosophy and suggestions, with descriptions of programs that have worked and difficulties encountered.

On A Clear Day, You Can See Forever
David Daniels, Longmeadow High School

Mars success and Mir troubles have occupied the news over the past year. What are some of the mathematics of space travel? Space debris is a growing problem that threatens the safety of spacecraft and astronauts. Another question of interest is how far we can see from high above the earth and how much of the earth's surface is visible. Mathematics can help answer these questions.

CALL FOR CONTRIBUTED PAPERS

Participants are invited to submit contributed papers for either the Spring or Fall Meeting. We are particularly interested in papers which will appeal to a variety of participants. Your presentation should be approximately 15 minutes in length. Please send a typed abstract together with a list of any special equipment you may need to Ed Sandifer, Department of Mathematics and Computer Science, Western Connecticut State College, Danbury CT 061810. Phone 203-837-9351, or via Internet at Sandifer@wcsu.ctstateu.edu. The deadline for the Fall Meeting is October 27 and for the Spring Meeting is May 15.

STUDENT CHAPTER NEWS

The Northeastern Section student chapters have their own homepage at the following URL address:

HTTP://SCSU.CTSTATEU.EDU/~MAA_NES/STUDCHAP.HTML

The homepage has notes about Section activities and other information for students, including links to related websites. The site is still evolving, and suggestions about content and interesting websites are welcome. If your MAA student chapter or mathematics club has a homepage, send us the name and the URL, and we will build a link to your homepage from the Student Chapters homepage. Also, if you have student-related activities that you would like to publicize, send the notices to us and we will post them on the Student Chapters homepage. Any information to be posted should be sent to Ross Gingrich, the Northeastern Section Student Chapters Coordinator, at gingrich@scsu.ctstateu.edu, or by mail to Ross Gingrich, Mathematics Department, Southern Connecticut State University, New Haven CT 06515.

We are updating the list of e-mail addresses for MAA Student Chapter Advisors in the Northeastern Section, so that information may be sent electronically. If you are an advisor for a student chapter in our section, please send your current e-mail address, along with your name and institution, to Ross Gingrich at the e-mail address given above.

If your school does not have an MAA student chapter but you are interested in starting one, you can contact Ross Gingrich for information and help in the application process.

CALL FOR STUDENT PAPERS

Students (and recent graduates) from the Northeastern Section are invited to present papers at the Fall Meeting on topics in mathematics, statistics, or computer science. The presentations will be 15 to 20 minutes in length, on either expository work, research projects, employment experiences, or problems from mathematical periodicals. Prizes will be awarded and the registration fee and cost of meals will be waived for one student presenter per paper at the Spring Meeting.

Almost every college/university has students working on projects, problems, and mathematical research. The success of a student paper session depends primarily on faculty members identifying prospective papers, encouraging their students and arranging departmental financial support when possible. If there are no potential student papers on your campus for the Fall Meeting, we urge you to initiate student projects now for presentation at the Spring Meeting. Interested students should send an abstract and current address, with phone number, by October 31, 1997 to: Dan Carter/Ockle Johnson, Department of Mathematics and Computer Science, Keene State College, Keene NH 03431. Phone 603-358-2555. All proposals will be reviewed by department faculty members.

NES/MAA SHORT COURSE: JUNE 1997

Robert Devaney of Boston University presented his ideas about dynamical systems theory to participants at the NES/MAA short course June 15-20, 1997. Attendees included mathematics teachers from secondary schools, colleges, and universities. Participants came not only from New England, but from as far away as Ohio and California.

The four day session focused on how aspects of dynamical systems theory have been successfully incorporated into courses ranging in level from precalculus to upper level undergraduate. Bob provided an overview of dynamical systems as well as the dynamical systems approach to ODE's that he, Paul Blanchard, and Glen Hall have made the centerpiece of their textbook *Differential Equations*, published by ITP. Greg Buck of St. Anselm and Lynne Durkin of Bentley joined Bob on Monday and Tuesday, respectively, to present the features of courses they offer that incorporate aspects of dynamical systems. The participants had ample opportunity to work on computer lab and "homework" assignments.

Participants took advantage of flexible dinner hours to visit a number of Newport's mansions and enjoy views of the Atlantic Ocean from the footpath known as the Cliff Walk that borders Salve Regina. Weather was a problem only once. Our Wednesday evening cookout became a "cookin" as thunderstorms passed through the area.

The range of participants' backgrounds and schools provided a variety of reactions to the ideas of dynamical systems and their incorporation into existing courses. Attendees comments indicated enthusiasm for the course and praise for

Bob, Greg, and Lynne. And they seemed quite surprised to find their dormitory rooms were in one of the university's "summer cottages."

Salve Regina University was pleased to act as host for the short course. I offer my own thanks to Bob, Greg and Lynne for their efforts in presenting this short course.

William Stout
Short Course Coordinator
Salve Regina University

1997 NES/MAA AWARD FOR DISTINGUISHED COLLEGE OR UNIVERSITY TEACHING OF MATHEMATICS

James J. Tattersall of Providence College is the recipient of the 1997 Northeastern Section Award for Distinguished College or University Teaching of Mathematics. The award for excellence in teaching undergraduate mathematics was presented to Professor Tattersall by the NES/MAA Chairperson, Richard Cleary, at the 1997 Spring sectional meeting held at Merrimack College.

Since 1969 James Tattersall has been at Providence College where he has earned an unparalleled reputation as a teacher of prodigious energy who gives unstinting devotion both to his students and to mathematics. What sets him apart? Why is he so good at what does? For one thing, it becomes clear in reading the testimony of his former students that James Tattersall has been a transforming influence in their lives: *I thought I was 'simply' learning mathematics when I entered Dr. Tattersall's classroom; however, he also teaches self-confidence and the importance of using your talents and being involved... He helped me develop my analytical ability and "can do" attitude, for it is he who give me the confidence to trust my talents and who inspired me to continue thinking that the sky is the limit.* Moreover, there is unique artistry in his teaching which students find challenging and invaluable: *Lectures and homework were enjoyable but the real fun began on the tests. The test played like a musical composition. It started with elementary material to build the student's confidence and to set the stage for more advanced problems. The composition reached its crescendo on the last problem. This problem was designed to test student's ability to independently pursue new material. It introduced a new concept that built on the test material and challenged us to apply all of our mathematics background to a new situation under pressure.*

Well known to Northeastern Section members for his years of service as the Section's Historian and Archivist, for his many invited talks at sectional meetings, including the Christie Lecture, and for his service on numerous committees, James Tattersall received the MAA Northeastern Section's Meritorious Service Award in 1992. As well, Professor Tattersall is known to the wider mathematical community for his continuous service to the AMS and the MAA and for his scholarship, most recently in the area of the history of mathematics. His contributions include: membership on the AMS Short Course Committee since 1988 (he has chaired the Committee since 1993) and on the AMS Committee on Archives and Library

Committee; he was a Visiting Lecturer for the MAA for thirteen years; and he has served as the four-year college representative on a joint AMS/MAA subcommittee of the Employment and Education Policy Committee since 1985. Recently, James Tattersall was the first person from the United States to be elected Vice President of the Canadian Society for the History and Philosophy of Mathematics, in which he also serves as Editor of the Proceedings. His list of speaking engagements is lengthy and includes numerous prestigious institutions, including Columbia and Princeton.

To summarize, those same qualities which have endeared Professor Tattersall to his students - namely, his overwhelming love for both mathematics and teaching, his inspiring and vibrant manner of delivery, and his breadth of knowledge and his careful preparation - have also earned him the high respect he holds as a scholar in his chosen field. The Northeastern Section is proud to award James Tattersall the 1997 Northeastern Section Award for Distinguished College or University Teaching of Mathematics.

While the deadline for nominations for the 1998 Award is past, it is not too early to submit a one page letter of nomination for someone whom you consider to be worthy of this award for next year. The Chair of the Committee for 1999 Award will be Rick Cleary.
(Updated address for '97-'98: Rick Cleary, Biometrics Unit, Cornell University Ithaca, NY 14853. Phone 607-255-7826, e-mail: rick@amanita.biom.cornell.edu)

DINNER MEETINGS: SPRING 1998

If you are interested in hosting an NES/MAA Regional Dinner Meeting in the Spring of 1998, please contact Larry Braden of St. Paul's School, Concord NH 03301; (Phone 603-225-9104 or lbraden@sps.edu), Coordinator of the Regional Dinner Meetings. We would be especially interested in having Dinner Meetings in regions not represented this past Spring: Maine, the Canadian Provinces and Western Massachusetts.

EDITOR'S MESSAGE

March 12, 1998 is the date when all information for the *Spring Newsletter* must be received by the editor (address on inside front cover). Thanks to all for their assistance on this issue!

Please note the survey question on the bottom of the pre-registration form. There has been some discussion regarding the best time for our Spring Meeting which has traditionally been held in June. We would like your input and so we would ask that you indicate your preference. If you are not attending the Fall Meeting, mail your preference to Past Chairperson Donna Beers (address on inside front cover).

This marks the end of my tenth year as *Newsletter* Editor. Its been fun, but the time has come to step aside. If you are interested in this position starting in the fall of 1998, contact Vice Chairperson Frank Ford (address on inside front cover).

PRE-REGISTRATION FORM
FALL MEETING OF THE NORTHEASTERN SECTION-MAA
NOVEMBER 21-22, 1997 WESTERN NEW ENGLAND COLLEGE

Mail Registration Form to:
Ann Kizanis
Mathematics Department
Western New England College
1215 Wilbraham Road
Springfield MA 01119

Checks should be made out to: **NES/MAA**

PLEASE PRE-REGISTER! You may register at the meeting if you wish; however, it would facilitate the organization of 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. In any case, meals cannot be guaranteed unless reservations are received by Friday, November 7, 1997. **It may not be possible to buy tickets to the banquet or lunch at the meeting.** Spouses and guests are welcome at all meals.

REGISTRATION:

Name: _____
Institution: _____
Institution Address: _____
Correspondence Address (if different): _____
_____
Telephone: ( ) _____
E-MAIL: _____

PRE-REGISTRATION FEE:

MAA Member ($20.00)
Non-member ($25.00) $_____
Student or unemployed ($5.00)

MEALS

Reception and Banquet
Circle your choice: Chicken Fish Vegetarian
6:45 p. m. Friday: Number ( ) x $17.00 $_____

Luncheon 12:15 p. m. Saturday: Number ( ) x $13.00 $_____

TOTAL: $_____

I prefer that the Spring NES/MAA meeting be held in (check preference)
___ June ___ April ___ Other (Specify:_____)

Northeastern Section MAA
Department of Basic Science
Massachusetts Maritime Academy
101 Academy Drive, Buzzards Bay MA 02532-3400

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