

NORTHEASTERN SECTION



NEWSLETTER

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

June 17-18, 2005	Bates College, Lewiston, ME.
Program Committee	Hema Gopalakrishnan, Co-Chair, Sacred Heart University Bob Dollar, Co-Chair West Rutland High School, VT Jason Molitierno, Sacred Heart University June Decker, Three Rivers Community College
Local Arrangements	Peter Wong, Bates College
Nov. 18-19, 2005 (The Northeastern Section's Semi Centennial.)	
University of New Hampshire (site of first Section Meeting)	
Program Committee	Jim Tattersall, Providence College

OTHER ACTIVITIES

June 17, 2005	Bates College, Lewiston, ME
Section Project NExT (see page)	

OTHER COMMITTEES/COORDINATORS

Short Course Committee:	Will Stout (stout@salve.edu) Dennis Luciano (dluciano@wnec.edu) Paul Estes (ple@mail.plymouth.edu)
Dinner Meetings	
Coordinator:	Lucy Kimball (lkimball@LNMTA.bentley.edu)
Awards:	NES/MAA Award for Distinguished Teaching (Nominations to Tommy Ratliff)
Web page:	access it via http://www.maa.org or directly with http://www.southernct.edu/organizations/nesmaa/
Webmaster:	Ross Gingrich, Southern Connecticut State University (gingrichr1@southernct.edu)
Section Project Next:	Next Meeting at Spring Meeting.
Coordinator:	Lisa Humphreys, Rhode Island College (lhumphreys@ric.edu)

Message from the Chair.....Sarah Mabrouk

Greetings! I hope that you are all enjoying spring – how time flies! All too soon, we will all be working on our final exams. Of course there are many nice things to which we can look forward after that – down-time for doing some reading and research as well as some great meetings to attend and programs in which to participate.

We enjoyed a nice variety of talks during the fall meeting at Worcester Polytechnic Institute (WPI) – P.K. Aravind, Arthur Benjamin, Jack Graver, Arthur Heinricher, Ileana Streinu with the Joseph McKenna giving the 2004 Distinguished Teacher Lecture, Ezra “Bud” Brown giving the Christie Lecture, and David Bressoud giving the Polya Lecture. In addition, twenty (20) students, representing College of the Holy Cross, Framingham State College, Gordon College, Norwich University, Trinity College, University of Maine, Western New England College, Wheelock College, Williams College, Worcester State College, and WPI, gave presentations during the student paper session, and twelve (12) graduate students, representing Boston University, Northeastern University, University of Connecticut, University of Rhode Island, University of Vermont, Wesleyan University, and WPI, gave presentations during our first graduate student papers session! Seven (7) new colleagues, representing Bates College, Bentley College, Central Connecticut State University, College of the Holy Cross, Framingham State College, and Worcester State College, introduced themselves to the Section through their presentations in the New Colleagues Session! While some may say that our meetings run a little long, I must say that I LOVE the variety of the programs and the GREAT participation of our members and students! It is wonderful to know that we have so many great presentations during our meetings!

After enjoying such a wonderful meeting at WPI, we must thank the folks who worked so hard to organize the program and who worked so hard on the local arrangements. So, many thanks to Suzanne Weekes, Program Chair, Brigitte Servatius, Local Arrangements Coordinator, and the Local Arrangements Committee, Peter Christopher, Colleen Lewis, Ellen Mackin, and Bogdan Vernescu! Thank you for a job well done! Many thanks to WPI and President Dennis Berkey – it was great of President Berkey to welcome the Section and to enjoy Bud Brown’s presentation with us – thank you for sharing WPI with the NES/MAA!

Lisa Humphreys and Ockle Johnson put together an enjoyable program for Section NeXT during the fall meeting at WPI. Joe McKenna, the 2004 NES/MAA Distinguished Teacher, gave a great presentation (as always!!) as he

shared how to understand and to predict eigenvalues based on the response of mechanical system, and I was very honored to have the opportunity share how MS Excel can be used to create interactive teaching tools. Many thanks to Lisa and Ockle! Ah, what do they have planned for the spring meeting – Ockle will discuss “Challenging and Fun Mathematics for the Liberal Arts”. That sounds great!

Well, with the spring, we can look forward to the spring meeting, this year to be held at Bates College! Peter Wong has been working hard on the local arrangements, and Hema Gopalakrishnan and Bob Dollar have put together a nice program to which we can look forward. So, as you will see from the meeting information and the program schedule, going to Lewiston, Maine for June 17th and June 18th will be a great value with an enjoyable program in the beauty of Maine! I hope to see you all there!

Since we had such a great turn out for the Student Paper Session and the new Graduate Student Paper Session, I hope that you will all encourage your undergraduate and/or graduate students to consider presenting a paper during the spring meeting at Bates. If you would like any additional information about the Student Paper Session, please contact Michael Cullinane or Raimundo Kovac, our Student Papers Coordinators, and if you would like any additional information about the Graduate Student Paper Session, please feel free to contact me. It would be great to have a variety of undergraduate and graduate student papers to enjoy while we visit Maine in June!

Elections for Section Officers was completed during the Business Meeting on Saturday, November 20th at the WPI. Tommy Ratliff was elected Vice-Chair, Ann Kizanis was re-elected as Secretary-Treasurer, and Lois Martin was elected as the Two-Year College Representative. My congratulations to you all and I look forward to working with you!!! In addition, I hope that you will all welcome Rob Poodiack as the new coordinator for the Contributed Papers.

The Distinguished Teaching Award Committee had the challenging task of selecting one of the great teachers from among those nominated by members of the Section as the recipient of the 2005 Distinguished Teaching Award. Having chaired that committee last year, I understand how difficult it can be to select only one from the many notable teachers that we have in the Section. I thank Ockle Johnson and his committee for the time and care that they put into making their selection. Reading Ockle’s comments as well as Lisa Humphrey’s tribute, I must say that this year’s award recipient is impressive and worthy of joining the ranks of the Sections other Distinguished Teaching Award recipients. So, please join me in congratulating David Abrahamson, Rhode Island College, as

the winner of the 2005 NES/MAA Distinguished Teacher Award! Our Section is truly filled with incredible teachers!

It is not too early to begin considering making a nomination for the 2006 Distinguished Teaching Award. If you have made a nomination in the past, please feel free to update the nomination information and the recommendations if you would like to renew the nomination for consideration for the 2006 award. If you would like to initiate a nomination, this is a great time to begin to create the nomination packet. The nomination packet consists of the typed completed Haimo nomination form that can be downloaded from the NES/MAA or MAA web site, a narrative of no more than five (5) typed double-spaced pages describing the nominee's background, experience, teaching style, special contributions, other teaching awards, and evidence of unusual/extraordinary achievement/success in teaching, five (5) one-page letters of recommendation (two (2) from present or former students, two (2) from colleagues, one of whom could be the department chair, and one (1) additional letter from anyone qualified to comment on extraordinary teaching success), and, if desired, no more than three (3) additional pages that document the nominee's teaching success. Completed nomination packets should be sent to Tommy Ratliff, Department of Mathematics and Computer Science, Wheaton College, Norton, MA 02766; Tommy will chair the 2006 Distinguished Teaching Award Committee. Information about the 2006 NES/MAA Award for Distinguished College or University Teaching of Mathematics and about making a nomination will be posted on the Section website. Completed nomination packets must be received by January 15, 2006.

The Section has four (4) regional dinner meetings in April: Frank Morgan will discuss "Soap Bubble Geometry, 200 BC – 2005 AD" at College of the Holy Cross; David Mazur will present "A User's Guide to the P vs. NP Problem" at Simmons College; James Tattersall will present "Nyctaginaceous Mathematics, Pontifical Geometry, and Barbeau Triangles" at Providence College; and Robert Devaney will discuss "Chaos Games and Fractal Images" at Framingham State College. Hmm, now many of you can say "Nyctaginaceous" correctly every time? Hosting a regional dinner meeting is great fun, and I hope that some of you will consider hosting a dinner meeting at your institution. If you are interested in hosting a dinner meeting, please contact Lucy Kimball, the regional dinner meeting coordinator. Lucy or any of the organizers for past dinner meetings would be glad to answer any questions that you may have about organizing and hosting a dinner meeting. Hosting a regional dinner meeting is a great opportunity for your students to meet and interact with mathematicians as well as hear a great talk!

You may be relieved to know that I have resisted the great temptation to contact additional institutions regarding hosting future meetings. I suppose that having arranged the meetings through fall 2010 will do for now. However, if your institution would be interested in hosting either a fall or spring meeting, I would love to discuss this with you! For the fall 2005 meeting at University of New Hampshire, Jim Tattersall is the Program Chair and Eric Grinberg is the Local Arrangements Coordinator. Please remember that the fall 2005 meeting is the semi-centennial for the Section – definitely a meeting not to be missed! Robert Devaney will serve as the Program Chair, Paul Blanchard will serve as Local Arrangements Coordinator, and Robert Devaney, Emma Previato, and Gene Wayne will serve on the Local Arrangements Committee for the spring 2006 meeting at Boston University. For the fall 2006 meeting at Sacred Heart University, Jason Moliterno will serve as the Local Arrangements Coordinator. Joe Witkowski and Ockle Johnson will serve at the Local Arrangements Coordinators for the spring 2007 meeting at Keene State College. It will be my pleasure to serve as Local Arrangements Coordinator and Program Chair for the fall 2007 meeting at Framingham State College. Jim Hefferon is working on St. Michael's College's hosting the Spring 2007 meeting – this too looks promising. Rick Cleary will serve as the Local Arrangements Coordinator for the fall 2008 meeting at Bentley College. Bill Peterson is working hard to negotiate and coordinate Middlebury College's hosting the spring 2009 meeting. Dennis Luciano will serve as Local Arrangements Coordinator for the fall 2009 Meeting at Western New England College. Finally, meetings at Fairfield University and the College of the Holy Cross look promising for spring and fall, respectively, for 2010 – I hope that these meetings will come to fruition. With the locations of these meetings have been, for the most part, set, I am now seeking interested folks to participate on program committees and to act as Program Chairs for the meetings. If you are interested in serving on a program committee, please let me know. Serving on a program committee is great fun, a great way in which to meet new people, and it is a wonderful way in which to serve the Section.

Since you are probably starting to think about the meetings and programs that you might like to attend during the summer, this is a good time to remind you about the Professional Enhancement Programs (PREP) of the MAA. PREP includes workshop topics such as revitalizing a developmental math course, undergraduate topology, interactive internet-based multivariable calculus, computational and mathematical biology, post-calculus statistics, and using Maple to explore linear algebra. The workshop information and application deadlines can be found at <http://www.maa.org/prep/2005/>. Having participated in PREP workshops in 2003 and 2004, I can tell you that they are a great opportunity. If you are interested in doing some traveling, the MAA has a study tour of Mexico, May 23rd – June 22nd; you can access the pricing and itinerary

information at <http://www.maa.org/mexico/Mmain.html>. In addition, there is the Preparing Mathematicians to Educate Teachers (PMET) workshops. If you teach prospective teachers at any level, these workshops will be great opportunities to share ideas and to discuss and to learn more about appropriate content and ways in which to teach future teachers; you can access information about PMET at <http://www.maa.org/pmet/workshops/workshops2005.html>.

Finally, Mathfest will be held August 4 – 6, 2005 in Albuquerque, New Mexico. You can access registration, housing, and program information at <http://www.maa.org/mathfest/>. If you are considering submitting a proposal for a contributed paper, you will want to check out the Call for Contributed Papers at <http://www.maa.org/meetings/cfp05.html>; the submission deadline for contributed papers is June 7th. There are six minicourses that include topics such as history of mathematics, mathematical finance, and the mathematics of elections as well as topics that will be of interest to anyone involved with teaching future teachers; minicourse information can be accessed at http://www.maa.org/mathfest/mf05_mc.html. The early registration deadline (for the lower registration fee) is June 20, 2005. The general registration information can be accessed at http://www.maa.org/mathfest/mf05_reginfo.html, housing information can be accessed at http://www.maa.org/mathfest/mf05_hotelinfo.html, travel information can be accessed at http://www.maa.org/mathfest/mf05_travelinfo.html, and information about social events, including the Los Amigos Roundup, can be accessed at http://www.maa.org/mathfest/mf05_se.html. I hope to see you in Albuquerque!

Message from the Governor Laura Kelleher

At the Board of Governors Meeting in Atlanta a motion was passed that the MAA form a joint committee with the National Council of Teachers of Mathematics (NCTM) to identify and articulate items of mutual concern. In addition, a new SIGMAA was approved on Teaching Advanced High School Mathematics.

The report of the strategic planning committee headed by Joan Leitzel reaffirmed the mission of the MAA “to advance the mathematical sciences, especially at the collegiate level” and identified areas of opportunities and challenges: the growing use of mathematics in other disciplines, the impact of emerging technologies on publications, demographic changes in the mathematics community, public interest in K-12 education, opportunities for undergraduates to participate in research, and the impact of the internet on

professional communication. The committee recommended an ongoing planning process with a different focus each year.

There was discussion of a major NSF Pathways grant entitled The Math Gateway through which the MAA will create a mathematical portal for undergraduate mathematics within the National Science Digital Library (NSDL). This will allow for the revision and strengthening of the MAA Mathematics Sciences Digital Library (MathDL) and will contain online publications and a pathway to other mathematical collections.

Michael Pearson, Director of Programs and Services, requested assistance in identifying new profiles for *We Do Math!* Contact him if one or more of your students would be a good candidate this. He also shared information on a number of MAA programs such as the PREP (Professional Enhancement Program) and PMET (Preparing Mathematicians to Educate Teachers) programs. MAA programs such as these provide a range of professional development opportunities including the chance to share new vistas and views with colleagues on the annual Mathematical Study Tours. You can find information on all of the activities of the MAA on the web site at www.maa.org.

Be sure to join us at some of the upcoming NES/MAA activities such as the Spring Section Meeting at Bates College in June. Plan ahead to help us celebrate the Section's Golden Anniversary at the Fall Section Meeting at the University of New Hampshire in November. I hope you will also participate in *Mathfest* next August in Albuquerque, New Mexico. Specific topics to be addressed at this year's *Mathfest* will include History of Mathematics, Difference Equations, and Applied Mathematics. These are opportunities at both the Section and National level to meet with colleagues to discuss happenings in your classrooms and your institutions as well as in the broader world of mathematics and mathematics education.

Message from the Secretary-Treasurer Ann Kizanis

The last Treasurer's report was given at the Fall MAA meeting at Worcester Polytechnic Institute. At this time, our balance was \$15,236.43. The meeting at Worcester Polytechnic Institute was well planned and interesting. Since the last meeting, our expenses have totaled \$7,054.90 while the income made has totaled \$6,161.00. For our expenses, we spent \$5,627.00 on the fall meeting and \$1,427.90 on the printing and postage of the Fall 2004 newsletter. After the expenses were paid, we made \$534.00 from the fall meeting. Our present balance is \$14,342.53.

Our section has been saving money from the postage and printing of our newsletters, since many of our members have now adopted the newsletter "lite" format. We spent \$1,187.87 for the printing and postage of the Fall 2003 newsletter and \$1,427.90 for the Fall 2004 newsletter. We spent about \$250 more this fall, but in general, our balance has been increasing due to the money we have been saving with the new format of the newsletter. In fact, our balance this spring is \$1,612.51 more than last year at this time.

I wrote a summary of our section's 2004 financial transactions for the headquarters' finance department this winter, and at the beginning of the summer, I shall be writing our section's annual report.

That is my update for now! We are all looking forward to the Spring MAA meeting at Bates College, where I will update you further on our finances. I wish you all a very enjoyable spring!

Two-year College Representative's Report Lois Martin

MATYCONN and NEMATYC, both AMATYC affiliates in the Northeast region, will be holding spring meetings in April.

*MATYCONN's Spring Meeting and Workshop will take place on Friday, April 29, at Gateway CC, No. Haven Campus. The meeting features a workshop by Harlan Brothers entitled "Become a fractal musician!" Find further details at <http://155.43.16.5/matyconn/>

*NEMATYC's conference "Mathematics for the Real World" will be held on April 8 & 9 at Bunker Hill Community College in Charlestown, MA. A special Friday evening event is planned at the Boston Museum of Science. Conference details and registration information can be found at www.nematyc.org.

AMATYC is offering two summer institutes this year: Outer Banks Summer Institute "Developmental Algebra Using a Function Approach" (June 12-17, Duck, NC) and AMATYC Teacher Prep Summer Institute (July 7-11, Grand Rapids, MI).

The AMATYC Student Mathematics League competition, usually dominated in the Northeast Region by New York schools, has a new regional leader. Massasoit Community College (MA) won the Northeast Region competition last year, and is in the lead this year after the fall test. Other New England schools involved in the competition include Southern Maine CC, Manchester CC (CT), and Bristol CC (MA).

From the Newsletter EditorFrank Ford

Congratulations to Tommy Ratliff, our new vice-chair and chair-elect, and to Lois Martic, our new two-year college representative. Also, a special thanks to Kathy Beveles for her many years of service as two-year college representative. And I do not want to forget to congratulate Kizanis on her reelection as secretary-treasurer, an honor she deserved. I heard that the Fall meeting went well but could not be there because of a little accident I had on campus that broke my kneecap. I look forward to the meeting in Bates and I hope I will see many of you there.

The MAA is more than an organization for college Math faculty. It is concerned with Mathematics from Junior High School through Graduate School. We try to do our part in this section. Several years ago, we met at a high school. This year, one of the co-chairs of the program committee teaches at a high school. In the last few years, we have publicized the winners of the American Mathematics Competitions. This is one of the main ways the MAA works with pre-College students. Our Section congratulates the students from our Section who wrote perfect papers in the 2005 10th grade competition. They are Yifan Cao of Choate Rosemary Hall in Wallingford, CT; Daniel Fudenberg of Lexington High School in Lexington, MA; Peter Ralli of Lincoln-Sudbury Regional High School in Sudbury, MA; and Sherry Gong, Keone Han, and Howard Tong of Phillips Exeter Academy in Exeter, NH. Of 259 qualifiers nationwide for the USA Mathematical Olympiad, 8 are from Phillips Exeter Academy. No one from our section got a perfect score on the 12th grade competition.

Graduate Student Papers presented at the NES/MAA Fall 2004 Meeting

Ryan Sternberg, Worcester Polytechnic Institute, and Gregory Case, Worcester Polytechnic Institute

Cartesian Products of Triangles as Unit Distance Graphs

Faculty Sponsor: Brigitte Servatius, Worcester Polytechnic Institute

Richard Spindler, University of Vermont

Nonlinear Evolution of Small Disturbances from Boundary Conditions in Flat Inclined Channel Flow

Faculty Sponsor: Jun Yu, University of Vermont

Casey Richardson, Worcester Polytechnic Institute

The Vese-Chan Algorithms Revisited: A Level Set Method for Image Segmentation and Fracture

Faculty Sponsors: Christopher Larsen and Marcus Sarkis, Worcester Polytechnic Institute

Daniel M. Look, Boston University

The Escape Trichotomy for Singularly Perturbed Complex Polynomials

Faculty Sponsor: Robert Devaney, Boston University

John Gonzalez, Northeastern University

Local Isomorphisms Among Low Dimensional Lie Groups

Faculty Sponsor: Prof. Sigurdur Helgason, Massachusetts Institute of Technology

Rebecca Wasyk, Worcester Polytechnic Institute

Newton-Krylov Methods for Expensive Functions

Faculty Sponsor: Homer Walker, Worcester Polytechnic Institute

Eugene Quinn, University of Rhode Island

Period Two Solutions of a Third Order Rational Difference Equation

Faculty Sponsor: Gerasimos Ladas, University of Rhode Island

Anna Rokicki, Wesleyan University

Regular Binary Hermitian Forms

Faculty Sponsor: Prof. Wai Kiu Chan, Wesleyan University

Esha Chatterjee, University of Rhode Island

On the Trichotomy Character of $x_{n+1} = \frac{\alpha + \gamma x_{n-1}}{A + Bx_n + x_{n-2}}$ for $n = 0, 1, \dots$

Faculty Sponsor: Gerasimos Ladas, University of Rhode Island

Edward Boamah, University of Vermont

The dynamic exchange of Solutes during Hemodialysis

Faculty Sponsor: Daniel Bentil, University of Vermont

Minerva R. Catral, University of Connecticut

Proximity in Group Inverses of M-Matrices and Inverses of Diagonally

Dominant M---Matrices

Faculty Sponsor: Michael Neumann, University of Connecticut

Yevgeniy Kostrov, University of Rhode Island

On the Periodicity Character of $x_{n+1} = \frac{\alpha + \beta x_n + \gamma x_{n-1} + \delta x_{n-2}}{A + Bx_n + Cx_{n-1} + Dx_{n-2}}$ for $n = 0, 1, \dots$

Faculty Sponsor: Edward A. Grove, University of Rhode Island

Minutes of the NES/MAA Executive Committee Meeting

Worcester Polytechnic Institute

Friday, November 19, 2004, 2:00 pm

(From Sarah Mabrouk)

Attending: Frank Battles, Ross Gingrich, Lisa Humphreys, Ockle Johnson, Laura Kelleher, Sarah Mabrouk, Tommy Ratliff

1. Fall 2004 Meeting – WPI: general discussion of the WPI meeting
2. Treasurer’s Report: to be presented during Business meeting on Saturday

3. Postcards/Lists/Updates/Emails – discussed that it would be nice to have an online update option on the Section web site to allow members to update their contact information; once this is set up, a line should be added to the Lite and to the Newsletter to inform folks of these available options; the historian must save a printed copy of all materials (postcards, Lite, Newsletter); we need a communications coordinator whose responsibility it will be to send email reminders for meetings as well as to handle notices for NeXT to department chairs and to the liaisons; the communications coordinator would be responsible for maintaining the Sections contact information for members.
4. Archives – for the archives, Ockle Johnson will write the history for the Section for the early 2000's and Frank Battles will write the history for the years for which he was newsletter editor; Ockle and Frank will send these to Jim Tattersall; in regard to the printed documentation in the Section archives, Jim Tattersall will keep a copy of any important information and send the rest to MAA in Texas.
5. Student Poster Session - the Section will have its first Student Poster Session during the Fall 2005 meeting; students presenting posters will receive complimentary registration and meals (for one student for each poster presented) as well as either an MAA book or a student membership; Laura will organize this.
6. Graduate Student Paper Session – registration?/lunch? – Sarah Mabrouk reported that there were twelve (12) graduate student presentations during the WPI meeting; the graduate student reception will be attended by the graduate students and a limited number of section members (to help the graduate students not to feel intimidated); graduate student presenters (one for each presentation) can have complimentary registration and Saturday lunch.
7. New Colleagues Talks – registration? – new colleagues presenters (one for each presentation) can have complimentary Saturday lunch.
8. Spring 2005 Meeting – Bates – general discussion
9. Fall 2005 Meeting – UNH – general discussion about local arrangements and program; since Kelly Black will not longer be at UNH, Eric Grinberg will serve as the Local Arrangements Coordinator.
10. Additional Future Meetings – the local arrangements coordinator, local arrangements committee, and program chair for the 2006 spring meeting at BU were approved as well as the tentative meetings at College of Holy Cross and Fairfield University for 2010; see meetings list for details.
11. Section NeXT – Lisa Humphreys and Ockle Johnson discussed the progress of Section Next as well as some problems that they have had in disseminating regarding Section NeXT activities.

12. NES/MAA Award for Distinguished College/University Teaching of Mathematics – Ockle Johnson will chair the Distinguished Teaching Award Committee; he will inquire if those who initiated past nominations would like to update the nomination packets; the nomination deadline is January 15, 2005.
13. Inviting High School Award Winners to Attend Section Meetings – Sarah Mabrouk expressed her concern regarding contacting high school award winners to invite them to attend Section meetings.
14. Minicourse – general discussion about the minicourse; suggested topics included AP Statistics and creating interactive tools using MS Excel; timing of the minicourse was discussed including conducting the minicourse in late March and at times when high school teachers might be interested in attending; it was suggested that we get a list of high school from the college/university admissions office to solicit suggestions for topics and timing for the minicourse; also mentioned, the teachers might be more interested in attending a minicourse if there were PDE credits available.
15. Dinner Meetings – the 2004 regional dinner meetings were successful and planning is in the works for regional dinner meetings for 2005; it would be nice to have more dinner meetings, maybe one at RIC or in New Hampshire, Vermont, or Maine.
16. Howard Eves Award – a committee should be formed in the spring for the award.
17. Other Business
 - a. Student Chapters – Ross Gingrich said that he will be working more with the student chapters
 - b. Web site – Ross will make some changes to the web site to make things more readily accessible.
 - c. Time conflict of fall meeting with AMATYC – we should try to schedule the fall meeting so that it does not conflict with the AMATYC meeting; this will be beneficial for Section members and for Project ACCESS Fellows.

David Abrahamson Wins the Northeastern Section 2005 Distinguished Teacher Award

(Ockle Johnson, chair of the distinguished teacher committee, sends us this announcement of our 2005 winner.)

The Northeastern Section presents the NES/MAA Award for Distinguished College or University Teaching of Mathematics to David Abrahamson of Rhode Island College

What most impressed the selection committee was the strength of Dave's

classroom teaching. As one committee member remarked, “It made me want to take a course with him!” Some of the characteristics that impressed us are Dave’s ability to engage students at all different levels, his energy and enthusiasm for teaching mathematics, his humor, and his interesting use of everyday topics to teach mathematics. It was clear from the nomination packet that Dave had affected student’s lives. He has inspired some to continue to study mathematics. He has been an excellent role model for future teachers. He has led students to a more positive view and appreciation of mathematics. The nominator described Dave as a “people magnet.” Former students continue to seek Dave out for advice, to fill him in on their lives, or to play a round of golf. Teachers in the region who are former students regularly invite him to address their classes. Thus Dave’s impact moves beyond the classroom and the college through space and time!

(I asked Lisa Humphreys of Rhode Island College to tell us about Dave Abrahamson. This is what she wrote. –ed.)

Dave Abrahamson grew up in South Pasadena, CA. He attended Harvey Mudd College in Claremont, CA, arriving as a freshman with no decided major. After several chemistry labs from 8:00 to noon on Saturdays, after a handful of near-electrocutions in physics labs, and after seeing sophomore engineers coming back from the metal shop at 3:00 a.m., he decided to major in mathematics, graduating with the bicentennial class of 1976. He worked for NASA at Pasadena’s Jet Propulsion Laboratory in the summers of 1976 and 1977, and did his graduate work in the Division of Applied Mathematics at Brown University. He completed an Sc.M. in 1977 and a Ph.D. in 1981, writing the thesis “On Liapunov Functionals for Linear Volterra Integrodifferential Equations” under the guidance of E.F. Infante.

He had a two-year postdoctoral appointment on the faculty at Brown, where research was essentially 100% of the job but about 50% of his interest. In a change of direction, he took a job in secondary teaching at The Lincoln School in Providence, enjoying the teaching immensely but eventually longing to see some higher mathematics and to be able to pay his rent. After three years there, he came to Rhode Island College in 1986 and has been there ever since.

In 1985, he was among the winners of a talent search and took a job co-hosting a sports call-in show on WHJJ radio in Providence. The popular “Dick and Dave” show was a fixture with local fans for over six years, till two jobs got to be one too many for each host. His lifelong love for sports still shows itself in his classes, his articles, and his futile attempts to place in the annual Physical Sciences Department NCAA tournament contest.

Throughout his career, Dave has emphasized the applied nature of his background. He outlines the "Big Picture" in all of his classes. For example, in a liberal arts math class he poses the big questions: "How can I retire with a million dollars in my nest egg?" or "How did FedEx use the theory of graphs to minimize costs and beat the competition?". In his statistics classes he suggests the following motivating question: "Why did Channel 12 predict the 1998 RI gubernatorial election wrong?" In calculus he asks students "How much work did you do shoveling snow last winter?" and "How can the equations of projectile trajectories be used in watching a football game?"

Continuing with his love of applied mathematics, Dave enthusiastically recruits a group to work on the annual mathematics modeling competition, sponsored by The Consortium of Mathematics and its Applications. Past RIC teams have been awarded honorable mention and this past year RIC fielded two teams for the first time ever.

In 2003 Dave won the Rhode Island College Maixner Award (college wide teaching award). Last April he gave the Maixner Lecture to the Rhode Island College community. Understanding that the audience was comprised of non-mathematicians, Dave delivered a terrific and appropriate presentation. It was entitled "Why More Sharks Are Caught In Wartime - And other Things We Learn From Differential Equations." He even managed to get up to predator-prey without ever using the words "derivative", "differentiate" or "integral". People left the lecture feeling that they understood mathematics!

Dave has also played major rolls in several grants relating to technology and mathematics. He collaborated with faculty from the University of Rhode Island to write interactive worksheets using CAS in calculus and precalculus. These worksheets are available on the URI website.

Dave Abrahamson, of Rhode Island College, is a deserving recipient of the Northeast Section of The Mathematical Association of America Distinguished Teaching Award. He is a dedicated, innovative and caring instructor with high expectations for his students. Students flock to his classes, but they also stop in for advice, math help and occasionally for a dose of his famous sense of humor. Former students return for graduate school, some come by just to chat with Dave while others want to challenge Dave to a round of golf. High school teachers, educated at RIC, request that he give lectures at their schools. He is not just a student magnet but also a people magnet, and he is a person who is genuine and caring. Students recognize this early on and they reward him with loyalty, respect and terrific teaching evaluations.

A Tribute to Donald Watson BlackettThomas Koshy
 (Tom Koshy of Framingham State College, MA, sent me this tribute to a
 deceased colleague. – ed.)

Donald Watson Blackett, a long-term member of the MAA, AMS, and the Near-Ring Society, and a constant fixture at all fall meetings of the MAA/NES until recently, succumbed to a massive heart attack on November 19, 2004. Due to his failing health, the family had moved to Webster, Massachusetts, to be closer to his relatives.

The second son of Josephine P. and Dr. Charles W. Blackett was born in Boston on May 2, 1926. His father was a radiologist and his mother a German teacher. After graduating from Newton High School in 1944, Don attended Harvard University, graduating in three years. Then he entered Princeton University, receiving his M. A. in 1948 and Ph. D. three years later under the guidance of Emil Artin. His dissertation, Simple and Semisimple Near-Rings, paved the way for many algebraists. According to Dr. Gerhard Betsch of the University of Tuebingen (Germany), a near-ring theorist who has known Dr. Blackett personally, "Don Blackett was one of the pioneers of near-ring theory." After serving as an instructor (1950-1951) and then as a research associate (1951-1953) at Princeton University, Dr. Blackett joined Boston University (BU) in 1953 as an assistant professor. There he taught numerous courses at both undergraduate and graduate levels. Although his passion was classroom teaching, he was a walking encyclopedia of the various rules and regulations at BU.

His many activities at BU include being both Associate Chair and Acting Chair of the Department of Mathematics, and member of the Academic Standards Committee and the Pre-medical Advisory Committee for many years. Dr. Blackett was on the Senate Council and was chair of the Committee on Appointment, Promotions, Tenure, and Salaries during 1964-1966. An algebraist and a brilliant mind, Dr. Blackett was also interested in combinatorial topology, game theory, knot theory, and stochastic processes. In addition to journal articles, he authored a textbook, *Elementary Topology, A Combinatorial and Algebraic Approach*, published in 1967. This project, initiated by Dr. Albert Tucker whom he met at Princeton, was started as a joint venture with Dr. Tucker and Dr. E. F. Whittlesey of the University of Hartford. In addition to his interest in algebra and teaching, he served as a consultant to the Institute of Defense Analysis, and the United States Arms Control and Disarmament Agency. In 1983, he served on the MAA delegation to the People's Republic of China to confer on mathematics education.

After 37 years of commendable service at BU, Dr. Blackett retired in 1990. During his retirement, he volunteered for the American Cancer Society and Waltham Hospital.

On a personal note, I was privileged to be his Teaching Fellow during 1967-1970 and to be a graduate student in his algebra course (in my first semester in the United States). Dr. Edwin Weiss and Dr. Blackett were my dissertation advisors. Although my wife and I were young students from another culture, the Blacketts exhibited their impeccable hospitality and warmth by inviting us to their West Newton house for dinner. We thoroughly enjoyed the dinner and we are grateful to them for accepting our invitations. They have shared their enthusiasm and hospitality with Dr. Betsch as well.

As a token of my appreciation of his passion for algebra and as a symbol of gratitude, I had dedicated my 2003 *Elementary Number Theory with Applications* to Dr. Blackett.

Dr. Blackett is survived by Shirley, his wife of 53 years, who retired from the Department of Mathematics at Northeastern University after many years of service.

From the Colleges (will return in the Fall)

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

The Northeastern Section is continuing a Section NExT program for new and relatively new colleagues on Friday morning before the spring Section meeting at Bates College. The events will take place between noon and 2:00 p.m. before the Section meeting begins. By providing talks and workshops on issues of interest, opportunities to meet and share ideas with other new colleagues, and an introduction into Section activities, we hope to assist new faculty in their transition from graduate school to professional academic life. We welcome all untenured full time faculty, both those who have and have not been National NExT fellows. The program is below.

Friday, June 17

12:00 - 1:15 p.m.

Lunch and Registration

Lobby, Pettengill Hall

1:15 - 2:15 p.m.

Challenging and Fun Mathematics with Liberal Arts Students

Ockle Johnson, Keene State College

If you are interested, please contact Lisa Humphreys of Rhode Island College at

LHumphreys@ric.edu. You should also register for the Section meeting by completing the registration form in the Section Newsletter and check off that you will be participating in the Section NExT program. (If you did not receive a Newsletter, indicate that to Lisa.) Note that the Section NExT activities are free.

Call for Student Papers

Students (and recent graduates) from the Northeastern Section are invited to present talks at the Spring meeting on topics in mathematics, statistics, or computer science. The presentations should be 10-15 minutes in length, on expository work, research projects, employment experiences, or problems from mathematical periodicals. The registration fee and cost of meals will be waived for one student presenter per paper. Interested students should contact Michael Cullinane, mcullina@keene.edu, or Lisa Humphreys, lhumphreys@ric.edu. The deadline for submission is June 1.

Call for Contributed Papers

Participants at the Fall Meeting of the section are invited to submit contributed papers. We are particularly interested in papers that will appeal to a variety of participants. If you are planning to speak about results of your research, keep in mind that the audience most likely will not be familiar with your specialty, so you will want to give some motivation and context for your work. Your presentations should be approximately 15 minutes in length. Please send an abstract and your mailing address together with a list of any special equipment you may need to Rob Poodiac at rpoodiac@norwich.edu or (802) 485-2339. Email submissions are preferred, but you may also send a typed submission to Rob Poodiac; Department of Mathematics; Norwich University; 158 Harmon Drive; Northfield, VT 05663. The deadline for submission of abstracts is June 1.

Call for Graduate Student Papers

GRADUATE STUDENTS, full-time and part-time, are invited to present papers on topics in mathematics, statistics, or computer science. Graduate students at any stage of their graduate work are welcome to give a presentation during the session. The presentations, approximately fifteen (15) minutes in length, can be given on expository work, research projects, variations on intriguing proofs, interesting problems in mathematics, work derived from periodicals, employment experiences, summer/independent research experiences, or parts of or work related to Master's or Doctoral research projects. The registration fee and the cost for Saturday lunch will be waived for one graduate student presenter per paper. Interested graduate students should contact Sarah Mabrouk, smabrouk@frc.mass.edu, for more information. The deadline for submission is Friday, May 20, 2005.

**Northeastern Section of the MAA
Spring Meeting: June 17-18, 2005
BATES COLLEGE
LEWISTON, MAINE**

Friday, June 17, 2005

2:00 – 6:00 p.m.

Registration

2:00 – 3:00 p.m.

Executive Committee Meeting

3:00 – 3:50 p.m.

**How to Pay Your Employees Fairly Using
Notions of Weak Discrepancy**

Ann Trenk, Wellesley College

4:00 – 4:50 p.m.

**Periodic Orbits in the Logistic Differential
Equation with Periodic Harvesting**

Diego Benardete, University of Hartford

5:00 – 5:50 p.m.

Undergraduate Student Papers

6:00 – 8:00 p.m.

Dinner and Opening Remarks

8:10 – 9:00 p.m.

**Cipher Busting, Edgar Allen Poe, Jules Verne,
and William F. Friedman**

Brian Winkel, U.S. Military Academy

Saturday, June 18, 2005

8:00 – Noon

Registration

8:00 - 8:50 a.m.

Graduate Student Paper Session

9:00 – 9:50 a.m.

**Episodes in the Early History of the Lucasian
Chair**

Jim Tattersall, Providence College

10:00 – 10:20 a.m.

Break

10:30 – 11:20 a.m.

Battles Lecture: Double Bubbles and Gauss Space

Frank Morgan, Williams College

11:30 – 12:00 p.m.

Business Meeting

12:15 – 1:15 p.m.

Lunch

1:30 – 2:20 p.m.

Your Students as Consultants and Graders

Brian Winkel, U.S. Military Academy

2:30 – 3:20 p.m.

**Some Sine and Cosine Identities Obtained from
Pascal's Triangle**

Chris White, Castleton State College

3:30 – 4:20 p.m.

Contributed Papers

3:30 – 4:20 p.m.

Workshop: Creating Your Own Mathlets

Robert Decker, University of Hartford

Program Committee

Hema Gopalakrishnan, Co-Chair, Sacred Heart University, CT
 Bob Dollar, Co-Chair, West Rutland High School, VT
 Jason Moliterno, Sacred Heart University, CT
 June Decker, Three rivers Community College, CT

Local Arrangements

Peter Wong, Bates College

The Conference will be held on the Central Campus of the College at Pettengill Hall no. 64, on the Central Campus Detail Map on the College's Web site (www.bates.edu/central-detail.xml). Click on the number or building for photographs of the building. The College is located about ten minutes from exit 80 (formerly exit 13) on the Maine Turnpike; the Central Campus is bounded by Russell Street, Central Avenue, Campus Avenue and College Street.

On the College's Web Site you will also find a full campus map and driving directions to the campus (www.bates.edu/bigger-directions.xml), as well as general information about the College. Or, you can take an on-line tour of the campus. The NES/MAA Conference coincides with the College's summer break, which means parking will be plentiful both in the College parking lots and on the streets around the campus.

Abstracts / Speakers

Title: How to pay your employees fairly using notions of weak discrepancy

Speaker: Ann Trenk, Wellesley College

Abstract:

In this talk we discuss both the weak discrepancy and the fractional weak discrepancy of a partially ordered set (poset). Both are a measure of how far a poset is from being a weak order. Such problems are motivated by wanting to assign ranks (salaries) to elements (employees) of a poset that respect the ordering and assign ranks that are not too far apart to incomparable pairs of elements. We give structural characterizations and show a connection to linear programming.

Biography:

Ann Trenk is Chair and Associate Professor of Mathematics at Wellesley College where she has been a member of the faculty since 1992. She received an A.B in Mathematics from Harvard University and a Ph.D. in Mathematical

Sciences from The Johns Hopkins University. She spent the 1991-1992 academic year as a Postdoctoral Fellow at Dartmouth College and has spent sabbaticals at the center for Discrete Mathematics and Computer Science (DIMACS) at Rutgers University and the School of Operations Research and Industrial Engineering at Cornell University. Professor Trenk's research specialty is Graph Theory and Partially Ordered Sets. Her book, *Tolerance Graphs*, coauthored with Professor Martin Golumbic, was published by Cambridge University Press in 2004.

Title: Periodic Orbits in the Logistic Differential Equation with Periodic Harvesting

Speaker: Diego Benardete, University of Hartford

Abstract:

The study of periodic solutions of periodically forced differential equations $y' = f(t, y)$, where f is periodic in t , arises in many applications, is included in textbooks for elementary differential equations and even calculus, and is related to questions of pure mathematics that were inspired by Hilbert's unsolved 16th problem and that are still being actively pursued. The logistic model with harvesting is a pedagogically intuitive setting for general techniques involving perturbation of hyperbolic fixed points, nullcline analysis, the Poincaré map, and symmetry. These techniques can be applied to other familiar differential equations. The connection with the Hilbert problem and with current research links our teaching to the inspiring past and beckoning future of our subject.

Biography: Diego Benardete received his doctorate in 1985 from the City University of New York Graduate Center and is currently Associate Professor at the University of Hartford. His research interests are in pure and applied aspects of dynamical systems and differential equations. A love for history, philosophy, and literature finds expression in teaching history of mathematics and is reflected in a review article in the *Mathematical Intelligencer* (volume 23).

Title and Abstract:

"Cipher Busting, Edgar Allen Poe, Jules Verne, and William F. Friedman" in which we describe some historical and literary ciphers and the mathematical analyses used in busting them.

Title and Abstract:

"Your Students as Consultants and Graders" in which we describe how we get students involved as consultants for a client and as graders of their own papers.

Speaker: Brian Winkel, U.S. Military Academy

Biography:

Dr. Brian Winkel has taught in liberal arts (Indiana University, Brown University, and Albion College), engineering (Michigan Technological

University, Rose-Hulman Institute of Technology), and military (United States Military Academy) settings and enjoys developing new approaches to teaching and new applications of mathematics for teaching. He was one of the leaders in the Integrated First-Year Curriculum in Science, Engineering, and Mathematics offered at Rose-Hulman, he edits and publishes two journals PRIMUS and Cryptologia, and he thoroughly enjoys working with the young folks at West Point - both faculty and cadets.

Title: Episodes in the Early History of the Lucasian Chair

Speaker: Jim Tattersall, Providence College

Abstract:

In 1663, Henry Lucas, the long-time secretary to the Chancellor of the University of Cambridge, made a bequest, subsequently granted by Charles II, to endow a chair in mathematics. A number of conditions were attached to the Chair. Among the more prominent Lucasian professors were Newton, Babbage, Stokes, Dirac, and Hawking. We focus attention on the early Lucasians. Many of whom were very diligent in carrying out their Lucasian responsibilities but as history has shown such was not always the case. In the process, we uncover several untold stories and some interesting mathematics.

Biography:

Jim Tattersall received his undergraduate degree in mathematics from the University of Virginia in 1963, a Master's degree in mathematics from the University of Massachusetts in 1965, and a Ph.D. degree in mathematics from the University of Oklahoma in 1971. On a number of occasions he has been a visiting scholar at the Department of Pure Mathematics and Mathematical Statistics at Cambridge University. He spent the summer of 1991 as a visiting mathematician at the American Mathematical Society. In 1995-1996, he spent eighteen months as a visiting professor at the U.S. Military Academy at West Point. He was given awards for distinguished service (1992) and distinguished college teaching (1997) from the Northeastern Section of the MAA. He is former President of Canadian Society for History and Philosophy of Mathematics, the Archivist/Historian of NES/MAA, and the Associate Secretary of the Mathematical Association of America.

Title: Double Bubbles and Gauss Space

Speaker: Frank Morgan, Williams College

Abstract:

The classical isoperimetric problem seeks the least-perimeter way to enclose a given volume. The `_double_` bubble problem seeks the least-perimeter way to enclose and separate two given volumes. Since the solution for R^3 in 2002, there have been partial results in other spaces, including spheres, tori, and

hyperbolic space. A space of particular interest to probabilists is Gauss space, \mathbb{R}^n with Gaussian density. I'll discuss results, proofs, and open questions, including work by undergraduates. No prerequisites.

Biography:

Frank Morgan works in minimal surfaces. To his texts on Geometric Measure Theory, *Riemannian Geometry*, and Calculus, and his Math Chat Book, he is adding texts on Real Analysis and Real Analysis with Applications. He has served as Second Vice-President of the MAA, and is director of the SMALL REU at Williams College.

Title: Some Sine and Cosine Identities Obtained from Pascal's Triangle

Speaker: Chris White, Castleton College

Abstract:

We use the rows of Pascal's Triangle to construct four infinite triangular arrays which embody certain trigonometric identities. We call these arrays ODDCOSINE, ODDSINE, EVENCOSINE, and EVENSINE. Each row of each array embodies a trigonometric identity involving a positive integral power of either $\sin(x)$ or $\cosine(x)$.

Biography:

Chris is professor of mathematics at Castleton State College. In addition to his interests in elementary discrete dynamical systems, he has been a long time reviewer for Mathematics Review. He is past president of the Vermont Poetry Society and recording secretary for Vermont Common Cause.

Title of Workshop: Creating Your Own Mathlets

(Limited to 20 participants)

Speaker: Robert Decker, University of Hartford

Abstract:

In this workshop the participants will learn how to create small interactive graphing programs targeted at the investigation of a particular mathematical concept. Mathlets that graph functions, parametric functions, data, first order differential equations, and systems of two first order differential equations can be created. Each type of graph can be controlled by up to four parameters, each of which can be interactively adjusted using a slider. Any number of graphing windows can be simultaneously displayed, and zooming and tracing can be performed.

Examples of mathlets from various mathematical levels (intermediate algebra through differential equations) will be demonstrated, and workshop participants will create at least one mathlet appropriate for a course that they teach. The mathlets are created using a platform independent language (not java), via commands created by the workshop presenter. No previous programming experience is required.

Biography:

Dr. Decker has been active in calculus reform and the use of technology in the teaching of mathematics for a number of years. He has led several NSF funded workshops for high school and college teachers in the use of calculator and computer technology, has coauthored a calculus text which incorporates technology, and presents regularly at national and international conferences on mathematics education. He is an Associate Professor of Mathematics at the University of Hartford in West Hartford, Connecticut.

Hotel Information

You may reserve a room on campus in the college dormitories. Please note college dorms are not air conditioned and do not have private baths. If you prefer off campus housing you may reserve a room with a special rate at the following hotels. Both hotels are located right off Exit 80 (formerly 13) Lewiston:

Ramada Inn located at intersection of Alfred Plourde and Pleasant St. Please call the Ramada Inn directly at (207)784-2331 and let reservations know you are with the NES/MAA Conference at Bates College. There are 4 rooms blocked for Thursday night and 10 rooms on Friday and Saturday until June 1st, at the rate of \$74.90 per room/per night.

Motel 6 located at 516 Pleasant Street, Lewiston, please call number directly and indicates you are with the NES/MAA Conference at Bates College. There are 12 rooms on hold until May 15, 2005 at the rate of \$43.99 for Thursday and Friday and \$53.99 for Saturday. Telephone (207) 782-6558 and press 2 for reservations.

Please remember to identify yourself as a participant in the NES/MAA Conference at Bates College. Rooms will be held until May 15th, after which time requests will be honored on a space-available basis only.

-6400.

Directions from Bates Web Site

The College is located approximately three miles from Maine Turnpike Exit 80(Lewiston Exit).

Northbound travelers: take Exit 80 and turn left onto Alfred A. Plourde Parkway at the stop sign at the end of the off ramp.

Southbound travelers: take Exit 80 and bear right onto Plourde Parkway.

Directions from off-ramp to the campus: Continue on Plourde straight to stoplight at intersection of Plourde and Pleasant; continue on Plourde .6 miles to stoplight at Webster Street. Turn left onto Webster and travel 1 mile to stoplight at Farwell Street. Turn right onto Farwell and follow .6 miles to stoplight. Continue straight across intersection onto Russell Street and follow for .9 miles to the third stoplight. Turn left onto College Street and follow to second blinking stoplight; turn left onto Campus Avenue. Take your first right onto Wood Street and turn right into the Admissions parking lot. The Admissions Office (Lindholm House) is at 23 Campus Avenue. If attending a conference or summer program, follow directional signs to your conference site.

A campus map of Bates is available at <http://www.bates.edu/map.xml>.

About bates College

Bates College and the College's Mathematics Department are pleased to be hosting this year's NES / MAA Spring Conference. Bates founded in 1855 by Maine abolitionists, and Bates graduates have always included men and women from diverse racial, ethnic and religious backgrounds. Bates is widely regarded as one of the finest liberal arts colleges in the nation, is dedicated to the principle of active engagement. A 10-1 student-faculty ratio makes possible close collaborations in classroom and laboratory, and the Bates learning experience is honed through seminars, research, service-learning, and the capstone of senior thesis. Typically, two-thirds of Bates' 1,700 students study abroad. Co-curricular life is rich: most students participate in club and varsity sports; many participate in performing arts; and almost all students participate in one of more than 90 student-run clubs or organizations.

REGISTRATION FORM

Please make check payable to: NES/MAA and mail this form to:

Bates College ~ Attn: Brenda Pelletier

163 Wood Street

Lewiston, ME 04240

Note: Form needs to be received in office by May 27th. If you have any questions, please email bpelleti@bates.edu or call (207)786-6400

Last Name _____ First Name _____ MI _

If you prefer other name on badge please indicate here: _____

Institutional Affiliation _____

Mailing Address _____

City _____ State _____ ZIP _____ Country _____

Daytime Phone Number _____ FAX number _____

Email Address _____

REGISTRATION FEES: Please make checks payable to NES/MAA ****

MAA Member	\$25.00	\$
Non Member	\$30.00	\$
Student or unemployed	\$10.00	\$
Campus Accommodations () Thurs () Fri. () Sat. (\$21.00 p/night)	\$ 21.00	\$
Electronic Access Cards (only applies to those staying on campus)	\$ 4.00	\$
Friday: Are you attending Section NeXT Friday () Yes () No	\$ 0.00	\$
Friday : Are you attending the Lunch for Section NeXT () Yes () No	\$ 6.00	\$
Friday lunch:	\$ 6.00	\$
Friday Reception/Banquet: Please indicate special meal needs/allergies _____	\$ 21.00	\$
Are you are under 21 & attending reception on Friday () Yes () No		
Saturday breakfast	\$ 4.00	\$
Saturday Lunch	\$ 6.00	
Please check box that applies to you: <input type="checkbox"/> Two-year college faculty, <input type="checkbox"/> Four year college faculty, <input type="checkbox"/> University faculty, <input type="checkbox"/> High School teacher, <input type="checkbox"/> Business/industry,/government, <input type="checkbox"/> Undergraduate student, <input type="checkbox"/> Graduate student		
TOTAL PAYMENT		\$

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