The Electric Current

NEWSLETTER OF THE SEAWAY SECTION
MATHEMATICAL ASSOCIATION OF AMERICA

Volume 26, Number 2 **Spring 2003**

ALFRED UNIVERSITY, ALFRED, NY, APRIL 4 – 5

Spring Meeting in the Southern Tier

Alfred University will host this spring's meeting on Friday, April 4 and Saturday, April 5. The Section has not met at Alfred since the 12th meeting was held there in April, 1956.

Alfred University is a private, nonsectarian university. It was one of the first coeducational institutions in the United States. Its mostly residential campus sits on 232 acres in the village of Alfred, located in Allegheny County along New York State's "Southern Tier."

Alfred's 2400 students come from 31 states and 20 countries. There are more than 160 full-time faculty members, 88 percent of whom hold the highest degree in their field. AU students enjoy a student-faculty ratio of 12 to 1, teaching is a faculty priority, and doing research with faculty is the hallmark of an undergraduate education at Alfred.

Jack Graver, Gehman Lecturer

AU offers more than 60 majors at the undergraduate level and a variety of programs at the graduate level. Its academic units are partitioned into the College of Liberal Arts and Sciences, the College of Business, the College of Engineering and Professional Studies, and the College of Ceramics. The latter, which is a statutory college of the State University of New York, has an international reputation, and offers a number of top nationally ranked programs, including an MFA in Ceramics, and Ph.D. programs in Ceramics, Glass Sciences, and Materials Science and Engineering.

Both the Friday evening and Saturday programs will take place on campus. Friday's activities begin at noon in the Powell Campus Center, with a luncheon and meeting of Seaway NExT. The "NExTers" will hear **Carl Cowen** of Purdue University talk on "Challenging Your Students to Do Their Best." This will be followed by parallel sessions, with **Olympia Nicodemi** and **Melissa Sutherland** of SUNY Geneseo leading a discussion on "Teaching the 'Proofs' Course," and **Michael Gage** of the University of Rochester and **Dawn Jones** of SUNY Brockport leading a session on "WebWork, Angel, and Using Technology to Teach Mathematics."

Friday evening's activities will also take place in the Powell Campus Center. The ever-popular social hour begins at 6:00, followed by the banquet. After dinner, the 2003 Distinguished Teaching Award will be presented, and **Mike Breen** from the American Mathematical Society will give the after-dinner talk on "The Public's Perception of Mathematics."

Dr. Breen works for the AMS at its headquarters in Providence, R.I., in the Office of Public Awareness. Previously, he taught at Tennessee Tech and Alfred University, and earned his Ph.D. from the University of Arkansas. He will talk about the general public's perception of mathematics and mathematicians, and some of the AMS's activities in this regard.

The meeting returns to Alfred University on Saturday, with the morning session in Nevins Theatre in the Powell Campus Center, and the afternoon sessions taking place in Olin Hall.

The program on Saturday morning features the annual Harry M. Gehman Lecture, to be given this year by **Jack Graver** of Syracuse University. The title of his address is, *The Graphite Boundary Sequence Problem*.

Dr. Graver grew up in Cincinnati and earned his bachelors degree from Miami University of Ohio. He went on to receive his doctorate from Indiana University. After two years at Dartmouth College as a John Wesley Research Instructor, he came to Syracuse University, where he has been for 35 years.

See **Meeting Highlights** *Page 14*

SEAWAY SECTION MATHEMATICAL ASSOCIATION OF AMERICA

2003 SPRING MEETING

April 4 – 5
Alfred University
Alfred, New York

PROGRAM

Friday Afternoon, Powell Campus Center, Alumni Lounge

12:00 – 5:30 Seaway NExT Lunch and Meeting

Friday Afternoon, Powell Campus Center, Board Room

3:00 – 6:00 Meeting of the Executive Committee

Friday Evening, Howell Hall

6:00 – 7:00 Social Hour (cash bar)
7:00 – 8:30 Dinner

8:30 – 8:45 *Presentation of the Seaway Section Distinguished Teaching Award*

8:45 – 9:30 *The Public's Perception of Mathematics*
Mike Breen,
American Mathematical Society

Saturday Morning, Powell Campus Center

7:30 – 8:30 Breakfast for Department Liaisons and MAA Student Chapter Coordinators

Saturday Morning, Powell Campus Center

08:00 – 11:00 Registration

Saturday Morning, Powell Campus Ctr., Nevins Theatre

08:40 – 08:45 *Welcome*
Dr. Charles M. Edmondson, President,
Alfred University

08:45 – 09:35 *Rearranging the Alternating Harmonic Series*
Carl Cowan, Purdue University

09:45 – 10:35 *Pricing Financial Derivatives: How Mathematics Gave Us Modern Finance*
Norman Rice, Queen's University

10:35 – 11:00 Business Meeting

11:10 – 12:00 **Harry M. Gehman Lecture**
The Graphite Boundary Sequence Problem
Jack Graver, Syracuse University

Saturday Afternoon, Powell Campus Center, Knight Club

12:00 – 1:30 Lunch

Saturday Afternoon, 207 Olin Hall

1:30 – 1:55 *The Joys and Benefits of AP Grading*
Doug Cashing,
Saint Bonaventure University

2:00 – 2:25 *The Design and Results of a Geometry Intervention in a Calculus II Class*
Christina Bacuta,
SUNY Cortland

2:30 – 3:25 *Making Calculus Come Alive Using Dynamic Graphics in Microsoft Excel and Visual Basic*
Paul Seeburger,
Monroe Community College

Saturday Afternoon, 301 Olin Hall

1:30 – 1:55 *Placing the Natural Logarithm and the Exponential Function on an Equal Footing*
Michel Helfgott,
SUNY Oswego

2:00 – 2:25 *On the Criterion for Symmetry About the Origin*
Cong Kang,
Daemen College

2:30 – 2:55 *Interesting "Projects" for Introductory Statistics Classes*
Joshua Palmatier,
SUNY Binghamton

3:00 – 3:25 *Introduction to Proofs: A Transition to Higher Mathematics*
Risto Atanasov,
SUNY Binghamton

Saturday Afternoon, 302 Olin Hall

1:30 – 1:55 *M.C. Escher's Association with Scientists*
J. Taylor Hollist,
SUNY Oneonta

2:00 – 2:25 *Easter Island: Where did all those people go and why didn't they obey a standard differential equation model?*
Bill Basener,
Rochester Institute of Technology

2:30 – 2:55 *Wald's Equation and the Random Walk*
James Marengo,
Rochester Institute of Technology

3:00 – 3:25 *Julius Petersen: The Graph and the Man Behind It*
Hossein Shahmohamad,
Rochester Institute of Technology

See **Program and Abstracts**, *Next Page*

Program and Abstracts

continued from previous page

Saturday Afternoon, 310 Olin Hall

1:30 – 1:55 *A Family of Power Series that Converge to Rational Functions*
Robert Williams,
Alfred University

2:00 – 2:25 *Green's Function of the Sturm-Liouville Operator Acting on Graphs*
Matt Coppenbarger,
Rochester Institute of Technology

2:30 – 2:55 *Impossible Constructions: Another Elementary Approach*
Christopher Baltus,
SUNY Oswego

3:00 – 3:25 *Assessing Quantitative Literacy*
Dawn Jones
SUNY Brockport

Saturday Afternoon, 214 Olin Hall

Special Session: *Recent Results from MSEd – Mathematics Capstone Projects*
Organized By: *Keary Howard, SUNY Fredonia*

1:30 – 1:55 *Proportional Reasoning Abilities in Middle School Students*
Geoff Olson, Randolph CSD
Karalea Price, Bemus Point CSD

2:00 – 2:25 *The Effect of Short Quizzes and Daily Review Writing in Integrated Algebra/Geometry Courses*
Jonathan Heyd, Fredonia CSD
Jamie Sposato, Frewsburg CSD

2:30 – 2:55 *Calculator Dependency in Tenth Grade Students*
Kelly Tippens, Forestville CSD

3:00 – 3:25 *Integrated Audience Discussion*

Saturday Afternoon: Student Program

12:00 – 1:15 **Powell Hall**
Lunch and Discussion

1:30 – 3:25 **306 and 311 Olin Hall**
Parallel Sessions of Talks

The student program is organized by Victoria Klawitter of SUNY Potsdam. A complete schedule for the student program, with titles and abstracts, will be available at the meeting.

ABSTRACTS

Mike Breen

Many people, perhaps most people, think mathematics is dead, dull, and not good for anything. We know that these descriptions are untrue, but it is hard to convince others of that. This talk will survey some resources that offer evidence that mathematics is alive and useful, which could help convince people that it is not dull.

Carl Cowen

The commutative property of addition is so familiar to all of us as school children that it comes as a shock to those studying college level mathematics that NOT all "natural extensions" of the law are true! One of the first instances that we see the failure of an extended commutative law of addition is in infinite series. Often in the introduction to infinite series in calculus, one sees:
Riemann's Theorem: A conditionally convergent series can be rearranged to sum to any number.

Unfortunately, the usual proof of this theorem does not indicate what the sum of a given rearrangement is. In this talk, we will examine the best-known conditionally convergent series, the alternating harmonic series, and show how to find the sum of any rearrangement in which the positive terms and the negative terms are each in their usual order.

Norman Rice

Thirty years ago a relatively simple mathematical formula revolutionized the world of finance (to exaggerate only slightly). This talk will describe the simple economic and mathematical principles that lead to the famous Black-Scholes formula, which laid the foundation for the billions of dollars a day in security transactions that now occur around the world.

Jack Graver

Graphite is one of the crystalline forms of carbon. The carbon atoms are aligned in sheets. The sheets consist of hexagonal rings, which one may picture as regions from the hexagonal tessellation of the plane. By a graphite fragment, we mean one of these regions. One can describe traversing the boundary of the fragment as a sequence of right and left turns. Thus, starting along any edge of the hexagonal tessellation of the plane, the sequence of Rs and Ls uniquely determines the boundary of the fragment and the fragment itself (up to a congruence of the tessellation).

See **More Abstracts** *Next Page*

More Abstracts

continued from previous page

Now think of constructing a fragment in space by gluing together hexagonal tiles. As one extends the fragment, it may turn around and build underneath itself – like a region on a Riemann surface. Such a fragment projects onto a region of the hexagonal tessellation of the plane that overlaps itself. The boundary sequence uniquely determines the boundary of this overlapping fragment (up to a congruence of the tessellation). But, does it still uniquely determine the interior of the fragment?

Doug Cashing

This talk will be an unabashed plea for college teachers of statistics to apply for the opportunity of being readers for the Advanced Placement Statistics exam. The discussion will bring out the benefits of this activity (both financial and professional) as well as the nature of the course, the exam, and the grading process. Although the presenter has no direct experience with the AP Calculus readings, indirect information suggests that there should be a high degree of transference on information to that program, so calculus teachers are also welcome.

Christina Bacuta

I will report on a study I conducted at Texas A&M University, that investigated a geometry intervention as a method for refreshing, reviewing, and learning the proper geometrical tools needed in the second-semester calculus course.

Paul Seeburger

Using EXCEL & Visual Basic, I will present a variety of animated demonstrations I have designed which bring calculus concepts to life. These concepts include graphical definitions of the derivative and the integral, implicitly-defined functions, slope fields, volumes of revolution, Taylor polynomials, graphs of functions of two variables, vectors, and more. I will discuss how I presently use these demonstrations in my teaching and why I think they help my students gain a better understanding of these concepts.

Michael Helfgott

Usually in calculus, the natural logarithm function is introduced by an integral and thereafter its derivative is found through the use of the Fundamental Theorem of Calculus (FTC). Once this is done, we can show that $\ln : (0,\infty) \to \Re$ is one-to-one and onto, and then the exponential function is defined as its inverse. Another common approach is to first define the natural exponential function as the solution on the real line of the initial value problem $y'(x) = y(x),\ y(0) = 1$, and then prove that it is one-to-one and onto. After that, the natural logarithm is defined as its inverse, and all the usual properties of both functions are proven. Yet a third approach is to follow Otto Toeplitz's genetic method, whereby the FTC is not used, but rather, its discovery is in part motivated by the quest for the derivative of the natural logarithm at $x = 1$. An interesting fact stems from these different ways of introducing the natural logarithm and exponential: it is possible to define each of them through two basic properties and then show that one has to be the inverse of the other.

Cong Kang

The notion of the graph of an equation $F(x, y) = 0$ having symmetry about the origin is a standard topic in any precalculus course. Usually, an algebraic criterion for symmetry is given, but its treatment lacks rigor in a typical text. In this talk, we look at an example illustrating the need for clarification, and prove that a class of equations satisfies a natural clarifying condition.

Joshua Palmatier

How do you keep students' minds engaged in class, especially in introductory statistics, where they will mainly be dealing with dry data sets? I will present two or three small projects and in-class exercises that not only force the student to think about statistics in a different way, but also capture their attention. "Mystery Bag," a first-day in-class exercise, introduces them to the essential idea behind statistics while demonstrating sampling and its pros and cons. After discussing means and weighted means, I present them with a "Balancing Act" to push the concept into the real world – and into higher dimensions. Then I emphasize distributions with the "Portable Bookstore," which can be used later to test distributions on an exam. In the end, each project enlivens the class, and helps the students remember abstract statistical concepts in a concrete way.

Risto Atanasov

We will discuss how important it is for undergraduate students to have a course that bridges the gap between computational courses, such as calculus, and more theoretical, proof-oriented upper-level courses, such as abstract algebra, real analysis, and topology.

J. Taylor Hollist

I will discuss the results of my research at the National Gallery of Art into M.C. Escher's original correspondence, which suggests where he got some of the ideas for his graphic art and symmetrical drawings. The talk will include slides showing some of Escher's prints and letters.

See **Additional Abstracts** *Next Page*

Additional Abstracts

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Bill Basener

The inhabitants of Easter Island were at one time a prosperous people, capable of building and transporting the mysterious enormous statues for which the island is famous. The population began with around 100 people, peaked at around 10,000, and then mysteriously suddenly declined almost to extinction. This violates the predictions of standard logistic and predator-prey differential equation models. We present a new model for an isolated population with resources. The numerical simulations of our model closely match archeological data from Easter Island. We provide a detailed analysis of the model and explain which values of the constants are "safe" for a population and which values guarantee an eventual "doomsday."

James Marengo

Students are taught in elementary probability courses that the expected value of a sum of random variables is the sum of their expected values, assuming these expected values exist. Is this statement still true if the number of summands is a random variable? Wald's equation says that the answer is yes under certain conditions. This talk will discuss Wald's equation and apply it to the one-dimensional random walk. An interesting fact that will be demonstrated is that the symmetric random walk must reach state one but, on the average, this takes an infinite amount of time to occur.

Hossein Shahmohamad

This talk is based on the life and accomplishments of the Danish mathematician, Julius Petersen, and the graph that was named in his honor. The Petersen graph is by far the most famous graph and is often used as an example or counterexample. Its structure and properties, as well as some recent chromatic and flow equivalences of it, will be presented.

Robert Williams

Most of the prominent power series studied in the calculus sequence are Maclauren series for transcendental functions such as $e^x, \sin x, \cos x, \ln(x-1)$. An important exception is the geometric series $1+x+x^2+x^3+\cdots$, which (for x between -1 and 1) equals $\frac{1}{1-x}$, an algebraic function. We prove a strong generalization of this last result:

Theorem: For any polynomial $P(k)$, the power series $P(1)+P(2)x+P(3)x^2+P(4)x^3+\cdots$ converges (for x between -1 and 1) to a rational function of x.

Moreover, the proof yields powerful summation formulas; for instance, we can easily derive that

$$1+\frac{8}{2}+\frac{27}{4}+\frac{64}{8}+\cdots=\sum_{k=1}^{\infty}\frac{k^3}{2^{k-1}}=52$$

Matt Coppenbargar

Given the Green's function of a Sturm-Liouville operator defined on a graph, form a new graph by identifying vertices. The Green's function of the Sturm-Liouville operator defined on the new graph is derived. A few basic examples are constructed.

Christopher Baltus

From the first – Gauss's *Disquisitiones Arithmeticae* (1801) – the ability to construct a number has turned on a corresponding irreducible polynomial. Although a proof of the theorem waited for P.L. Wantzel in 1837, Gauss based one side of his discussion on the following:

Theorem: A number is not constructible if it is a root of an irreducible (minimal) polynomial with rational coefficients whose degree has an odd prime factor.

In the elementary approach of Wantzel (and Felix Klein), the polynomial is built to have as its roots the constructible number and its conjugates. However, I have found that the direct and naïve process of repeated squaring actually produces the minimal polynomial. Examination of the process, invoking some fundamental results from the theory of equations, leads to a proof of the theorem.

Dawn Jones

Recently, SUNY Brockport has implemented a new general education quantitative literacy course. In this talk, I will discuss the course itself and some assessments that have been carried out. In particular, I will discuss our use of a Quantitative Literacy Competency Exam as a means of assessment.

Special Session

This session is highlighted by the presentation of research results from middle and high school mathematics teachers completing their capstone Master's projects. Tentative topics include:

- A discussion of proportional reasoning abilities in middle school students as observed via in-class projects and competitions.
- The effect of short daily quizzes in an integrated algebra/geometry course.
- The effect of daily review writing in an integrated algebra/geometry course.
- Calculator dependency in tenth grade students.
- Reverse gender bias in the acceleration of middle school math students.

Panel members will briefly present their primary results followed by a short discussion. Individual posters/papers will be available for review following the session.

CONFERENCE ANNOUNCEMENTS

Hudson River Undergraduate Mathematics Conference

Union College, Schenectady, NY, April 12

The tenth annual HRUMC will be held on Saturday, April 12, at Union College. As usual, the conference will include presentations by both faculty and students, who participate as equals. The sessions are designed so that some of the talks are accessible to undergraduates in their first two years of study, while others are aimed at junior and senior mathematics majors. This year's conference has an interdisciplinary theme, yet talks from any area of mathematics are welcome. The invited address, *Current and Future Challenges in Mathematical and Computational Biology*, will be given by **Louis Gross** of the Institute of Environmental Modeling at the University of Tennessee.

For more information, or to submit an abstract, please visit the HRUMC homepage at

www.skidmore.edu/academics/mcs/hrumc.htm

Faculty members on the local organizing committee are Paul Friedman, Brenda Johnson, and William Zwicker; student members are Sara Packman and Jackson Reed. The organizers wish to thank the Andrew W. Mellon Foundation for its support.

Canadian Math Education Study Group

Acadia University, Wolfville, NS, May 30 – June 3

CMESG 2003 will meet at Acadia University from Friday, May 30 to Tuesday, June 3. The program will follow the usual format of working groups, topic groups, and plenary talks. Plenary speakers will be **Anna Sierpinska** and **Tom Archibald**. Their titles are *Mathematics Education: Teleological* Considerations and *Using the History of Mathematics in the Classroom: Prospects and Problems*, respectively. Working groups will focus on: The History of Mathematics as a Pedagogical Tool; Intuition and Decision-Making in Mathematics Classrooms; Teacher Research: An Empowering Practice; and Issues in Teaching Undergraduate Mathematics.

For information, follow the link from the CMESG website at cmesg.math.ca.

2003 Fall Meeting
November 7 – 8
Rochester Institute of Technology

The Fall 2003 meeting of the Seaway Section will be hosted by Rochester Institute of Technology and will take place on Friday and Saturday, November 7 and 8. The meeting will include the annual John F. Randolph Lecture on mathematics education. Titles and abstracts for contributed talks should be sent to Gary Towsley (towsleyg@geneseo.edu) by September 8, 2003.

Math Matters in the North Country
2003 AMTNYS Summer Workshop

SUNY Potsdam, August 3 – 6

The 2003 Summer Workshop of the Association of Mathematics Teachers of New York State will be held at SUNY Potsdam from Sunday, August 3 through Wednesday, August 6. Various "strands" will focus on: Quilting Across the Curriculum; Math Their Way: Thinking Math; WebQuest; Appropriate Calculator Use in Middle School; Increasing Math A Scores Using the TI-83; Calculators and the Math B Exam; Cooperate to Educate; and Geometer's Sketchpad.

A new feature this year is the offering of a special discount package to full-time undergraduates. Up to forty students will be awarded the package, which will grant them a complete registration for only $60 ($75 for nonmembers)! This includes lodging on campus and all workshop meals. Interested students must apply for the discount, and the application form is available at the workshop website at

www.potsdam.edu/amtnys

PMET: Preparing Mathematicians to Educate Teachers

SUNY Potsdam, June 8 – 20

A growing set of national reports calls for better preparation of the nation's mathematics teachers, and mathematics faculty have an important role to play. To help meet this need, the Mathematical Association of America has initiated the multifaceted PMET program. The program has three major components:

1. Professional enhancement for mathematicians teaching mathematics courses to future and current teachers, including workshops and minicourses.
2. Information and resources, including articles in professional journals, panels at meetings, multi-media websites, and other material for dissemination to support faculty instruction for teachers.
3. Mini-grants and regional networks, to nurture and support grassroots innovation in teacher education on individual campuses. The initial regional networks will be in California, New York, North Carolina, Nebraska, and Ohio.

One PMET workshop, focusing on faculty who help prepare secondary mathematics teachers, will be led by Ed Dubinsky and will be held at SUNY Potsdam from Sunday, June 8 through Friday, June 20. A follow-up session will be held in Summer, 2004. For full information and application forms, see

www.maa.org/pmet

Meeting Highlights

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Dr. Graver has published research in design theory, integer and linear programming, and in several different areas of graph theory. He is the author or coauthor of four books, most notably *Counting on Frameworks*, which was published by the MAA in 2000.

Jack has been an MAA member since 1958, and is well know to the Seaway Section, having held many offices, including chair and governor. In 1993, he was awarded the Certificate of Meritorious Service by the MAA. He is also a long-time member of the AMS, SIAM, NCTM, and AMTNYS, the Association of Mathematics Teachers of New York State. In fact, working with high school teachers of mathematics in a variety of professional development activities is a continuing interest.

For its MAA speaker this year, the section is pleased to welcome **Carl Cowan**, First Vice President. He will present *Rearranging the Alternating Harmonic Series*.

Dr. Cowen received his Ph.D. from the University of California at Berkeley, and has been at Purdue University since 1978. He directed Purdue's actuarial science program from 1992 to 1997, and was department head from 1997 to 2002.

For the past few years, Dr. Cowan's research interests have been in operator theory and complex analysis. His primary pedogogical interest has been teaching linear algebra, both to math majors and to engineering students. At present, he is on sabbatical at the Mathematical Biosciences Institute at Ohio State University. There, he is focusing his attention on the mathematics of neuroscience, and hopes to begin working with biologists at Purdue to develop a mathematical model of parts of the sensory system of the medicinal leech.

Completing the Saturday morning program is **Norman Rice** of Queen's University. He will talk on *Pricing Financial Derivatives: How Mathematics Gave Us Modern Finance*.

Dr. Rice received his B.Sc. from Queen's and his Ph.D. from the California Institute of Technology. His distinguished 36-year career in undergraduate teaching at Queen's was recognized last spring when Professor Rice received the 2002 Seaway Section Award for Distinguished College or University Teaching of Mathematics.

In nominating Professor Rice for the award, his colleagues wanted to recognize his many significant contributiuons to the department's undergraduate program. His influence has been profound, extending well beyond his own classroom. He helped to shape the mathematics and statistics curricula, and create a welcoming and supportive environment for a diverse array of students.

His courses are known for being mathematically challenging and rich intellectually. They are the courses student's remember long after they leave the university. To quote one of his colleagues, "His courses are interesting and useful in themselves and they help to knit together our offerings so that students can leave with a degree that is more than the sum of its parts." A former student adds, "Overall, Dr. Rice is one of the best teachers I have had. He can make difficult and challenging concepts easy to understand, and he has given me so much confidence in myself."

The program on Saturday afternoon features a special session of talks by high school and middle school teachers on their MSEd – Mathematics capstone projects, as well as several interesting parallel sessions. There will also be a special program for undergraduates, organized by **Victoria Klawitter** of SUNY Potsdam. Watch the official meeting website at cs.alfred.edu/~casparcr/conference/index.php for details!

Saturday Breakfast to Honor Department Liaisons and Student Chapter Advisors

Section departmental liaisons and student chapter advisors are invited to gather for breakfast and conversation on Saturday morning, April 5, at 7:30 in the Powell Campus Center.

The breakfast is free, and is intended to thank the liaisons and student chapter advisors for the valuable work they do on behalf of the section. In addition to "official" MAA student chapter advisors, we welcome anyone who works with a math club or Pi Mu Epsilon chapter. Come and share your ideas!

Mike Breen, Friday Banquet Speaker

Alfred University to Host Spring Meeting

The Division of Mathematics and Computer Science at Alfred University will host the Spring 2003 meeting of the Seaway Section. Chairing the local arrangements committee is Debra Waugh, Assistant Professor of Mathematics.

The Division offers BA degrees in both mathematics and computer science as well as minors in both subjects. The mathematics major requires 40 credit hours, 30 in specifically required courses and 10 in upper level electives.

Currently, the division has eight full-time faculty, six in mathematics and two in computer science. On average, there are about eight mathematics majors and twelve minors per year. The program includes an active AU Math Club, Pi Mu Epsilon honor society, an annual SIAM lecture, and a Putnam Exam team. In addition, the Division has hosted the Nevins High School Mathematics Competition each November since 1968; this event typically brings 300 or more high school students to campus.

For the latest program information or to register online, access the meeting webpage at

cs.alfred.edu/~casparcr/conference/index.php.

Registration, Lunch, and Refreshments

Registration will take place in Howell Hall on Friday evening during the social hour, and also on Saturday morning from 8:00 until 11:00 in Powell Campus Center. Refreshments will be available in the registration area on Saturday morning, and following the sessions in Olin Hall on Saturday afternoon. The Saturday Lunch will be served from noon to 1:30 in the Knight Club in Powell Campus Center. The lunch will be buffet-style. *There will be a free breakfast honoring MAA Student Chapter coordinators and department liaisons on Saturday morning from 7:30 to 8:30 in the Powell Campus Center. There will also be a free Saturday lunch for pre-registered students*.

Directions to AU and Parking

Follow the directions to Alfred given on page 16. When Route 244 branches off to the right, go straight. Turn left at the light, and look for signs for MAA Parking.

Pre-registration Form

Name: _____

Institution: _____

MAA Member: Yes _____ No _____

Check here if attending the Saturday breakfast for student chapter coordinators and department liaisons: _____

Registration Fee: _____ @ $15 $ _____

Friday Dinner: _____ @ $25 $ _____

Entrée Choice: _____ Prime Rib
_____ Lemon Chicken
_____ Black Bean Stew

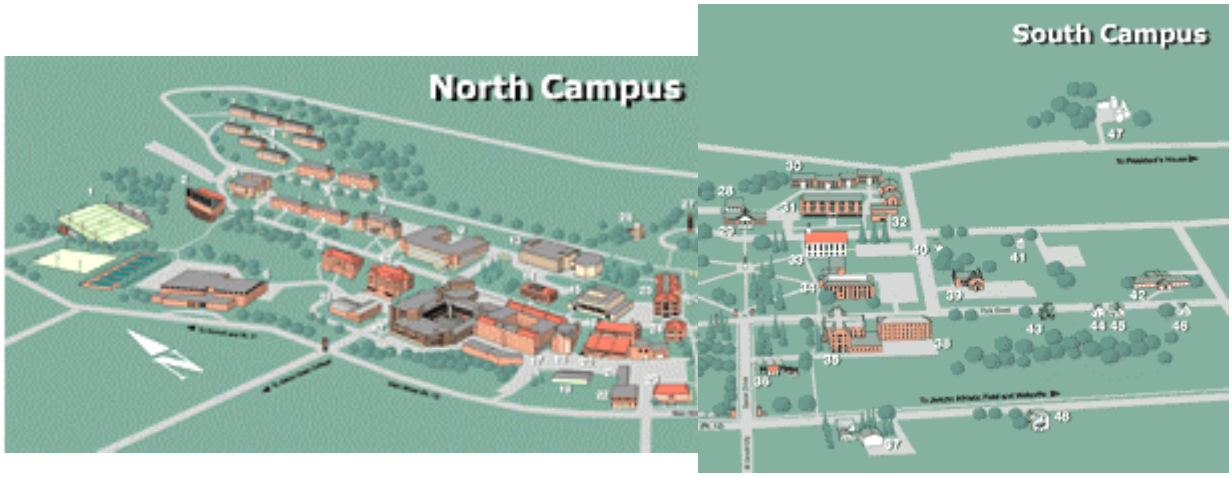
Saturday Lunch: _____ @ $10 $ _____

Total: $ _____

Please pay in U.S. funds and make checks payable to **Seaway Section, MAA**. **Lunch and dinner reservations, with payment, should be received by Friday, March 28**. Note that there is no registration fee for students, and students who pre-register qualify for a free lunch on Saturday.

Mail to: Debbie Waugh
1 Saxon Drive
Alfred University
Alfred, NY 14802
Telephone: 607–871–2258 Fax: 607–871–2831
E-mail: waugh@alfred.edu

MAP KEY: C = Powell Campus Center
E = Main Entrance
H = Howell Hall O = Olin Hall
P = Parking S = Saxon Inn



Accommodations

Blocks of rooms have been reserved at: the Saxon Inn on campus, 1 Park Street, 607-871-2600, $69 single and $79 double, mention the MAA meeting and reserve by 3/3; the Economy Inn (5 min from campus) on Route 244, 607-587-8107, $40 for a single and $50 for a double; and the Comfort Inn (20 min. from campus), 1 Canisteo Square in Hornell, 607-324-4300, $56 single, $61 double, $5 additional, reserve by 3/14.

Directions to the Hotels

Comfort Inn: Take Exit 34S from I-86 (aka Rt. 17). Go about 4 miles on 36S; the inn is on the right.

Saxon Inn or Economy Inn: From points east or west, take I-86 (Rt. 17) to Exit 33, and follow Route 21 south to Route 244 west. The Economy Inn is on the right. For the Saxon Inn, when Route 244 branches off to the right, go straight. Go through the light, then take the next left and then the first right, and the Saxon Inn will be on the left.

From the north, follow I-390 south to Exit 4, take Route 36 south to I-86 (Rt. 17) east and see above.