MAA Seaway Meeting: Siena College – October 17-18, 2008

This Fall's meeting at Siena College features an outstanding slate of speakers, a diverse set of contributed talks, and a panel discussion on the teaching of Statistics.

The Speakers:

Friday Evening at the Banquet: **Allan Taylor, Union College** - *The Mathematics of Voting*

     We will give a quick survey illustrating the kinds of mathematical questions and answers that arise from real-world voting systems. Many of these results assert that certain election-theoretic desiderata are impossible to attain. Examples (cryptically stated) include: a "simple" description of the US federal system, an equally good alternative to majority rule, a fair method of apportionment on which to base the Electoral College, and voting systems for three or more alternatives in which honesty is the best policy. Along the way we'll see that sometimes (i) having a vote is just like not having a vote, (ii) a candidate can lose to an opponent that everyone likes less, and (iii) gaining a vote can lead to a loss.

Saturday Morning:

Richard J. Cleary, Bentley College -   *Benford's Law, Fraud Detection and Risk Measures in Auditing*

     Benford's Law proposes a distribution of first digits in measurements that span many orders of magnitude. Auditors and others with an interest in data integrity have begun using Benford's law as part of fraud detection schemes in a variety of settings. In this presentation we give an overview of Benford's law, discuss some situations in which it is

used, and present some ways to incorporate it as a teaching tool in elementary mathematics and statistics courses. We also present a more general framework for the ways in which auditors assess whether a company's financial statements contain 'material misstatements.' (This work is being done jointly with Prof. Jay Thibodeau, Bentley College Department of Accountancy.)

Darren A. Narayan, Rochester Institute of Technology - *Teaching Mathematical Concepts Using Real World Applications*

   Traditional curricula seldom offer students examples of cutting-edge applications, especially in higher mathematics. As a result students finish their undergraduate degree asking themselves, "Besides math professors, who uses this material?" This talk will focus on the STEM Real World Applications Modules Project funded by an NSF-CCLI grant. Topics include applications of graph theory to reconstruction of three-dimensional images (*Microsoft Research*), analysis of flight route maps for airlines (*JetBlue Airways*), mathematical analysis of telecommunication networks (*National LambdaRail*), and identification of WWW cyber-communities (*Google*). The goal of the STEM Real World Applications Modules Project is to show students how their lecture material can be used to solve problems in business and industry right now.

The Randolph Lecture - Jack Narayan, SUNY Oswego - *Across 50 Years in Teaching*

   In 1959, high school students in Guyana didn't need me, their teacher, to provide motivation. They didn't need laptops, email, or graphing calculators. Armed with only a slate and pencil, motivation came from the poverty surrounding them and the parents who supported them. Education was the path out, and the students were hungry for knowledge. Engaging such students was easy in a time and place where resources were meager, but respect and hard work abounded. Later I left Guyana for Canada and eventually the United States to further my own education. Teaching in North America presented new challenges. Respectful and hard-working students were there, but in many cases it was up to me to spark their interest. Mathematical pedagogy became as important as mathematical content. Cooperative learning came into play, technology advanced, and assessment of students' leaning was emphasized. Student feedback and formal evaluations became valuable in designing lessons plans. Now at the end of my career, I bring together all of these aspects of teaching in a large smart classroom where the slate and pencil have been replaced laptop computers and Personal Response Systems. But the goal is still the same—assisting students to create their own knowledge.

PROFESSOR ALAN TAYLOR is the Marie Louise Bailey Professor of Mathematics at Union College, where he has been since receiving his Ph.D. from

Dartmouth College in 1975. His research interests have included logic and set theory, finite and infinitary combinatorics, simple games, social choice theory, and coordinated inference. Publications include Mathematics and Politics (Springer-Verlag, 1995); with Steven J. Brams, Fair Division (Cambridge, 1996) and The Win-Win Solution (Norton, 1999); with William S. Zwicker, Simple Games (Princeton, 1999); and Social Choice and the Mathematics of Manipulation (Cambridge, 2005). The second edition of Mathematics and Politics (co-authored with Allison Pacelli of Williams) has just appeared.
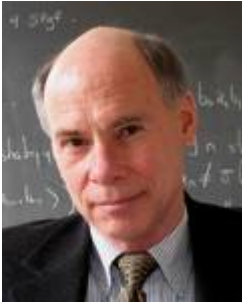
PROFESSOR RICHARD CLEARY works in statistical applications, model selection, and statistics education. Current research collaborations include considerations of statistical methods for fraud detection in accounting, with Prof. Jay Thibodeau of Bentley, and consulting work on the strength of artificial hip joints with Prof. Ken Mann of the Institute for Human Performance at Upstate Medical Center in Syracuse, NY. Prof. Cleary is Associate Editor for reviews of both *The Journal of the American Statistical Association* and *The American Statistician*. He is also active in research in the use of statistics in sports. Before coming to Bentley, Prof. Cleary taught at Saint Michael's College in Vermont (1980-1997) and Cornell University (1997-2001). At both schools he served as an Associate Dean. He is an avid runner who has finished over 70 marathons.

PROFESSOR JACK NARAYAN holds the rank of Distinguished Teacher Professor in the Department of Mathematics at SUNY Oswego. As the former Dean of Graduate Studies and Research at SUNY Oswego, he obtained national and state grants for Mathematics Reform to enhance student's learning and facilitate faculty, course and curriculum development. He served as the New York State Regional Coordinator of the NSF funded project to Prepare Mathematicians to Educate Teachers. Currently, he integrates emerging technologies and developments in Cognitive Science to teach business students enrolled in large classes of Finite Mathematics and Applied Calculus. In addition, Dr. Narayan is involved in several programs to increase student participation from underrepresented groups in mathematics and science.

PROFESSOR DARREN NARAYAN is currently an Associate Professor and Director of Undergraduate Research in Mathematics at the Rochester Institute of Technology. He received his BS in Mathematics at SUNY Binghamton and MS and PhD degrees from Lehigh University. Narayan currently holds two NSF grants focusing on education and undergraduate research. He has published 20 refereed research papers and 12 expository articles. In addition to mentoring students in his undergraduate research program, Narayan has helped secure over $12,000 for student travel. He has advised 13 undergraduate research students and one MS student, publishing papers with 9 of them. While not doing mathematics, Darren enjoys reading, playing tennis, gardening, and spending time with his wife Tamara and daughters Sedona and Micada.

Registration:

Registration will take place at Serra Hall - West Room from 6:00 - 7:00 on Friday evening and in Roger Bacon Hall Lobby on Saturday morning from 8:00 - 11:00.

The Host – Siena College

We wish to thank Siena College for hosting this fall's meeting. Anyone who undertakes this task knows just how many details these meetings entail.

From the Siena College Website:

Siena, a Catholic and Franciscan college, founded in 1937 by seven Franciscan friars, is an independent undergraduate liberal arts college located in Loudonville, New York, a suburban community just outside the state's capital.

Siena students benefit from the College's proximity to [Albany](#), a hub of political and cultural activity and the center of Tech Valley, by acquiring practical internships (and later, careers) in government, the arts, science and business. [Admission](#) to the College is competitive. Of the 788 incoming members of the Class of 2011, 76 percent graduated in the top third of their high school class and their average SAT score was 1125. All showed strength of character and a commitment to education. Evaluating applicants as whole and unique individuals helps the College find students who are likely to succeed at Siena.

Siena's freshman retention rate for the class entering in the fall of 2005 was 85 percent. Siena's 3,000 undergraduates enroll in one of three schools – [Liberal Arts](#), [Science](#), and [Business](#) – and may choose from a total of 29 degree programs, 46 minors and certificate programs, and professional curricula in Secondary Education, Pre-Medical, Pre-Law, and Social Work. Over 150 students study abroad in a given year. 96 percent of Siena students enter graduate school or find employment immediately following graduation.

The College's reputation as a student-centered community of scholars is primarily due to its accomplished and attentive faculty, who balance the demands of academic leadership, publishing, and research with the responsibility of providing undergraduates with a challenging, engaging, and inspiring education of the highest quality. 76 percent of Siena students live on campus in one of seven [residential living areas](#). Distinguished by its DORS (Diversity, Optimism, Respect, Service) philosophy, Siena's residential life program is committed to fostering a safe, respectful and meaningful learning environment for students.

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Registration will take place at Serra Hall - West Room from 6:00 - 7:00 on Friday evening and in Roger Bacon Hall Lobby on Saturday morning from 8:00 - 11:00.

Meeting Program:
Friday afternoon: Standish Library 131

3:00 – 6:00   Executive Meeting

Friday Evening: Serra Hall–West Room

6:00 – 7:00   Social Hour (cash bar)
7:00 – 8:00   Banquet
8:00 – 9:00   Alan Taylor, Union College   *"The mathematics of voting"*

Saturday Morning: Roger Bacon 202

08:00 – 08:40   Continental breakfast
08:40 – 08:45   Welcome remarks, Karen Quaal, the Dean of School
                of Science
08:45 – 09:35   Richard J. Cleary, Bentley College, *"Benford's Law, Fraud Detection and Risk*
                Measures in Auditing "
09:45 – 10:35   Darren Narayan, RIT, *"Teaching Mathematical Concepts Using Real*
                World Applications "
10:35 – 11:00   Business meeting
11:10 – 12:00   Randolph Lecture
                Jack Narayan, SUNY Oswego, *"Across 50 Years of Teaching"*

12:00 – 1:30   Lunch, SSU 240-243

Saturday Afternoon:
Saturday afternoon talks are in Roger Bacon building

1:30-4:00 contributed talks:
        RB 208, 210, 226, 328
1:30-4:00 students' talks:
        RB 202, 250, 150, 412

Abstracts of Contributed Talks

Statistics Panel: Modern Trends in Teaching Elementary Statistics

Rick Cleary, *Bentley College*

Bernadette Lanciaux , *Rochester Institute of Technology*

Robin Lock, *St. Lawrence University*

Moderated by John Maceli , Ithaca College.

This panel will discuss some of the changes that are occurring in the teaching of elementary statistics at the college level. The presenters will show some "fun" examples that can be used in class along with pointing the audience to the excellent resources (both print and web) that are available. There also will be some discussion about to bring about change in your department's basic statistics course. The panel members will speak 10 minutes each and the rest of the time will be for a group discussion.

1. **Anurag Agarwal**, Rochester Institute of Technology

    Generalizing the Chinese Remainder Theorem
    Chinese remainder theorem is one of the most well-known and useful result

    in algebra and number theory. However most versions of this theorem have few constraints, such as: modulii being coprime and being applicable to single variable situations. We will discuss results which will address these constraints and offer possible generalizations.

2. **Jon Bannon***, Siena College & **Junsheng Fang**, University of New Hampshire

    Correspondences and Haagerup's Approximation Property

    A finite von Neumann algebra M with a faithful normal trace τ ▪ has Haagerup's approximation property (relative to a von Neumann subalgebra *N*) if there exists a net $(\varphi_\alpha)_{\alpha \in \Lambda}$ ▪ ▪ ▪ ▪ of normal, completely positive (N-bimodular) maps from M to M that are subtracial (i.e. $\tau \circ \varphi_\alpha$ ▪ $\leq \tau$), the extension operators T ▪ $_{\varphi_\alpha}$ ▪ ▪ ▪ are bounded compact operators (in $\langle M, e_N \rangle$), and pointwise approximate the identity in the trace-norm, i.e., $\lim_\alpha \|\varphi_\alpha(x) - x\|_2 = 0$ for all x ∈ M. We prove that the subtraciality condition on the maps φ_α ▪ can be removed from the definition and hence provide a description of Haagerup's approximation property

in terms of Connes's theory of correspondences. We show that if N ⊆ M is an amenable inclusion of finite von Neumann algebras and N has Haagerup's approximation property, then M also has Haagerup's approximation property.

3. **Sandeep Bhargava**, University of Windsor, Canada

   Easy constructions of Lie algebras with root systems of type BC

   If we drop the axiom that the only permissible scalar multiples of a root are plus or minus itself, the resulting root system is said to be nonreduced. In this case, in addition to plus or minus itself, we can also get plus or minus half times the root, and plus or minus two times the root. Up to isomorphism, every irreducible nonreduced root system is of type BC. If we are willing to work over a more general associative algebra than the complex field (and to break the shackles of finite-dimensionality) we see that it is surprisingly easy to provide examples of Lie algebras that possess a root system of type BC.

4. **David Biddle**, State University of New York at Oneonta

   Using paradoxes to reinforce mathematical concepts
   Certain paradoxes and contradictions have arisen that have troubled mathematicians from ancient times to the present. Some are false paradoxes: they do not present actual contradictions, and are merely slick logic tricks. Many others have forced mathematicians to completely step back and rethink whole schools of thought. Many of the paradoxes and (fallacies!) can be used in algebra, geometry, and trigonometry to help students master difficult yet pivotal concepts. In this talk I will present several of these (classical) paradoxes and show how one can introduce them into the classroom with various (and surprising) effects.

5. **Daniel Birmajer**, Nazareth College
   The many faces of the zero polynomial

   A polynomial with coefficients in a field can be thought both as a purely algebraic construction and as an evaluation function, by plugging-in scalar values for the variables. This dual perspective on the polynomials allow us to ask the natural question: Is it true that two polynomials represent the same function if and only if

they are the same polynomial? In this talk we examine this question for polynomials in several variables over different fields.

6. **Ryan Gantner**, Saint John Fisher College

Mastery Learning in Calculus II

Mastery Learning is a grading style and course structure which was introduced in the 1960s. Since then it has received both praise and criticism, but the practices have fallen out of style. In this talk, we'll define what Mastery Learning is and discuss how the presenter adapted the ideas to his Calculus II class. We'll identify some benefits and drawbacks and explore why Calculus II (and math in general) makes for a good fit.

7. **Dawn M. Jones**, The College at Brockport

Faculty Learning Communities at Brockport

This year the College at Brockport has instituted a new Faculty Learning Community Program. Many people have heard of Student Learning Communities but Faculty Learning Communities are still relatively unknown or even if they are known, they do not have wide-spread implementation. I am the facilitator for one of four Faculty Learning Communities that are running on the campus and we are examining Active Learning. In this talk, I will discuss what a Faculty Learning Community is (and is not) and give an early report on what has been a transformative experience thus far.

8. **Chulmin Kim**, Rochester Institute of Technology

A modification of OPS: Widely used to measure a baseball batter's performance
Home runs (HRs), runs batted in (RBIs) and batting average (BA) are the most popular statistics to measure a baseball hitter's performance. Because each of these three statistics holds a great sense and some drawback on a batter's ability, we often see the three together in newspapers or sports journals. Slugging percentage (SLG) and on-base percentage (OBP) have been used as alternatives of the traditional three statistics. SLG measures how often a batter hits and how valuable the hits are and OBP measures how often a batter reaches bases. However SLG doesn't account for walks or hits by pitched ball which are not hits but a batter can reaches bases. A combination of these two is called OPS, the sum of OBP and SLG, which has become widely used. There have been studied by several slightly varied statistics of OPS. One example of those is called gross point average (GPA) introduced by Aaron Gleeman. GPA is obtained by the following: (the sum of SLG and 1.8 times OBP)/4. We study a variation of these statistics on a batter's performance and may use it to model a batter's salary by his contribution to generate runs for his team.

9. **Chris Leary**, SUNY Geneseo

   How Gappy is that Fractal?

   The fractal dimension of an object measures, in some sense, how much space the object occupies. In an effort to further differentiate fractal-like images, biologists have been interested in measures of the manner in which the images occupy space. We review a couple of the standard measures and introduce a not-really-all-that-new way to think about gappiness, the average distance between points. We then calculate the average distance for the Cantor set and a couple of its variants.

10. **Aaron Luttman**, Clarkson University

    Using Ideas from Linear Algebra for Astronomical Image Analysis
    In linear algebra all students learn that a system of linear equations can have a unique solution, no solution, or infinitely many solutions. The same is true for linear equations designed to process digital images. When a system has infinitely many solutions, it is often useful to choose one "best solution." One possibility is the least-squares solution, which is the solution of smallest norm. In this talk, another method will be presented for choosing one "best solution" to the problem of removing blur from images taken by ground-based telescopes, and example images will be shown to demonstrate the techniques.

11. **James Marengo**, Rochester Institute of Technology

    An Upper Bound for the Expected Range of a Random Sample Chosen from the Unit Interval
    We consider the expected range of a random sample of points chosen from the unit interval according to some probability distribution. We then use the notion of convexity to derive an upper bound for this expected range which is valid for all possible choices of this distribution. Finally, we show that there is only one distribution for which this bound is attained.

12.   **Sam Northshield**, SUNY-Plattsburgh

    On color-transitivity of graphs
    An n-coloring of a graph is the assignment to each vertex one of n colors so that any two adjacent vertices have different colors. A graph is n-color-transitive if it has an n-coloring and for any two such n-colorings, say A and B, there is a sequence of n-colorings A(0), A(1), …, A(n) so that A(0)=A, A(n)=B, and A(k) differs from A(k-1) at only a single vertex. We show: (1) any 3-color-transitive

graph is 2-colorable (i.e., bipartite) and (2) there exists a 4-color-transitive graphs that is not 3-colorable.

13. **Gabriel Prajitura**, Brockport University

Equivalent inequalities

We will show that several classical inequalities are equivalent.

14. **Patrick Rault**, SUNY Geneseo

On uniform bounds for rational points on rational curves and thin sets

We show that for any positive epsilon the number of rational points of height less than B on the image of a degree 2 map from the projective line to projective n-space, under certain conditions, is at most CB / |RD|^delta + C_epsilon |RD| ^epsilon, where the point is that the constants C and delta are independent of the choice of the map. R and D are respectively the resultant and discriminant of the map. In the special case of degree 2 plane curves we prove a bound of CB /|RD| ^delta + 4 which improves on a result of Heath-Brown and Browning Heath-Brown by establishing an inverse dependence on the resultant and discriminant. Heath-Brown proved that for any positive delta the number of rational points of height less than B on a degree d plane curve is O_{d,epsilon} (B^(2/d + epsilon)). Browning and Heath-Brown later proved that this result holds with delta = 0 for degree 2 curves. It is known that Heath-Brown's theorem is sharp apart from the epsilon, and in fact Ellenberg and Venkatesh have proven that there is some positive delta (depending only on d) such that the counting function for any plane curve of positive genus is O_d(B^{2/d-delta}). It is an open question whether Heath-Brown's Theorem is true with epsilon = 0.

15. Edwin Rogers* & Nikolai Krylov, Siena College

Dynamics of simple folds in a plane

Take a strip of paper whose two long edges are parallel, and fold in a crease intersecting these edges, creating two angles. Choose one edge and consider the angle between the crease and this edge. Now fold the opposite edge along the crease, creating a new crease that bisects the other angle. Fold again, this time using the newly created crease and the initial edge, creating a new angle along the chosen edge. It is well known that if this process is continued, the constructed angles along the chosen edge will approach a limiting value which is independent of the initial angle.

In this talk, we explain why and generalize the result to when the edges are nonlinear or the strip lies in the hyperbolic plane.

16. **Lauren Sampson**, Clarkson University

IMPETUS - For Career Success. Engaging High School Students Through Roller Coaster Creation

The IMPETUS program was created at Clarkson University for students enrolled in grades 7-12 who have an aptitude and interest in mathematics, science, and technology, and is created around the concept of creating a fun and safe roller coaster. The program consists of a summer camp and an academic year program that focuses on helping the students to become interested in higher learning by teaching them physics, mathematics, and more through the roller coaster formation process. The academic year program and summer camp use model roller coaster tracks, computer programs, and the Max Flight Virtual Roller Coaster, which allows students to design and ride their own virtual roller coasters. The overall goal of the program is to encourage the students to want to pursue careers in STEM (Science, Technology, Engineering and Mathematics) fields, and give them an opportunity to use the Clarkson University faculty, graduate and undergraduate students as a resource for guidance and mentoring throughout the process. Overall, the program has seen much success as many of the students previously enrolled in the program are currently enrolled at colleges and universities throughout the region.

17. **Mufutau Akinwande**, Clarkson University & **Abbas Alhakim**, Calrkson university

This talk is about the constructions of combinatorial objects called deBruijn cycles, which are sequences of symbols (for finite alphabets) that include every possible substring of a given length exactly once.
Lempel presents a homomorphism between two binary deBruijn digraphs of consecutive order that is then used backwards to invert one deBruijn cycle of lower order into two complementary cycles of higher order that can be further *cross-joined* into one deBruijn cycle of higher order. We describe an efficient recursive construction of deBruijn cycles in nonbinary alphabets, thus generalizing Annextein's implementation of Lempel's work. Unlike binary, there are many possible homomorphisms that allow this recursive construction and many types of cross-joins. We present a pseudo-code that yields a unique de Bruijn cycle given a few parameters. The code relies on a formula that calculates precisely the location of cross-joins for each recursive step (so no storage is needed). For an alphabet size q, the code can generate $q^n\times\phi(q)^{n+1}$, where ϕ is Euler's totient function and n is the order of the desired de Bruijn cycle.

18. A Workshop on Presenting Mathematics

Aaron Luttman, Clarkson University

Every story has a beginning, middle, and end, and the best stories tie the three cohesively together with the fewest extraneous details. A successful mathematics presentation is no different. While there are many resources out there with excellent advice on public speaking and creating slides for a presentation, one of the most difficult tasks in formulating a mathematical talk is crafting the presentation so that it is interesting for the particular audience involved. Given any research project, there are many different angles from which the topic can be approached, and thus the most important question to be answered is "What's the story?". Different stories are interesting to different audiences, and the better and more clear the story line, the more successful the presentation. In this w cally at undergraduate students, the participants will engage in hands-on activities aimed at learning to tell different mathematical stories about a single research topic and determining which story is appropriate for a given audience.

RB	208	210	226	3
1:30-2	Anurag Agarwal *Rochester Institute of Technology* Generalizing the Chinese Remainder Theorem	Ryan Gantner *St. John Fisher College* Mastery learning in calculus II	Sandeep Bhargava *University of Windsor* Easy constructions of Lie algebras with root systems of type BC	James Mare *Rochester Ins Technology* An Upper Bo Expected Ra a Random Sa chosen from
2-2:30	Chris Leary *SUNY Geneseo* How gappy is that Fractal?	David Biddle *SUNY Oneonta* Using paradoxes to reinforce mathematical concepts	Sam Northshield *SUNY Plattsburgh* On-color transitivity of graphs	Chulmin Ki *Rochester Ins Technology* A modificatio Widely used a baseball ba performance
2:30-3	Gabriel Prajitura *SUNY Brockport* Equivalent Inequalities	Dawn M. Jones *SUNY Brockport* Faculty Learning Communities at Brockport	Patrick Rault *SUNY Geneseo* On uniform bounds for rational points on	STATISTICS PANEL Rick Cleary

			rational curves and rational curves and thin sets	*Bentley Colle* Bernadette
3-3:30	Aaron Luttman *Clarkson University* Using Ideas from Linear Algebra for astronomical Image Analysis	Lauren Sampson *Clarkson University* IMPETUS-For Career Success. Engaging High school students through Roller Coaster Creation	Daniel Birmajer *Nazareth College* The many faces of the zero polynomial	*Rochester In* *Technology* Robin Lock John Maceli *Ithaca Colleg*
3:30-4	Edwin Rogers* & Nikolai Krylov *Siena College* Dynamics of simple folds in a plane	Mufutau Akinwande *Clarkson University* Recursive construction of nonbinary De Brujin sequences	Jon Bannon* & Junsheng Fang *Siena College* Correspondences and Haagerup's approximation property	Modern trend teaching eler statistics

The Student Program

Student activities this spring include student talks and a scavenger hunt! The student talks will be given by students from the Seaway section. Both graduate and undergraduate students are welcome to speak on topics ranging from investigations of mathematical topics outside of a standard course, to original research from graduate study or an REU. There is still time to register to give a talk, but time is running out! Submit a title and abstract to Derek Habermas (habermds@potsdam.edu) by Friday, October 10.

Chair's Report – Fall 2008

Greetings Seaway Section members!
In August I attended the Section Officer's meeting at the MathFest in Madison, WI. During report-backs at these meetings, one always feels a sense of pride in the Seaway Section. This is for many reasons, including its vibrant biannual section meetings, and its active Seaway NExT program (currently ably managed by Jeff Johannes of SUNY Geneseo). Add to this the undergraduate student program which, under the leadership of Dereck Habermas of SUNY Potsdam, seems to be going from strength to strength! We share with other sections the difficulties associated with transmitting expertise when new section officers are elected, and the desire to find some way to increase participation in

section meetings of *all* schools in the section – in particular some of the larger research universities. Please let me know if you have any ideas or suggestions!

Congratulations to Joe Straight of Fredonia, who was awarded a certificate of Meritorious service at MathFest. Congratulations too to David Brown of Ithaca College, who was presented with an Adler award – the award for distinguished teaching for beginning faculty. Please consider nominating faculty in your department for the Adler award (nominations are typically due at the national MAA early October), as well as for our Seaway Section Clarence Stevens distinguished teaching award! The chair of the Seaway distinguished teaching committee, Jim Conklin of Ithaca College, is currently accepting nominations for 2008 - 2009, with a deadline early in the New Year.

As you will recall, we changed the bylaws last year, in part to enable us to split the treasurer-secretary position into two separate portfolios. In the Spring we elected Gary Raduns of Roberts Wesleyan College as secretary, leaving Daniel Birmajer of Nazareth College as treasurer. This is already working extremely well. Thanks to Gary Raduns and Daniel Birmajer for keeping the section in good order!

At the business meeting in the Spring, the membership approved the purchase of a brick in the name of the Seaway section for the walkway outside the MAA Carriage House in Washington DC. The brick has been purchased. If anyone visits the Carriage House, please check in on our brick and ask how it's doing!

Our meeting for Spring 2009 is planned for April 3-4, at RIT in Rochester. Our Fall 2009 meeting will be at Fredonia, October 23-24. I am currently searching for a host in a central location for our Spring 2010 meeting. Please let me know if you have any questions about hosting a meeting, or think you just might be interested!

I most sincerely apologize that I will not be able to attend the section meeting in Siena; because of urgent family matters I will be traveling over that weekend. Thanks to Gary Towsley for graciously agreeing to run the meeting in my stead. Thanks too to local organizer Kris Farwell of Siena College for all his hard work for this meeting.

Good wishes, and I will see you at RIT in the Spring!

Margaret Morrow

Departmental News

Alfred University

Alfred University has a new tenure track hire, Xiuhong Du who earned her PhD this summer from Temple University. Her dissertation is in the general area of numerical analysis and scientific computing.

SUNY Cortland

At SUNY Cortland, Bruce Mattingly, who has been chair of the Mathematics Department is now serving as Interim Dean of the School of Arts & Sciences. George Feissner is Interim Chair of Mathematics. We also have a new faculty member this year, Claus Schubert. Claus got his Ph.D. from UCLA. His advisor was Prof. Richard Elman and his area of research is the algebraic theory of quadratic forms. Prior to coming to Cortland, Claus was the Director of Instructional Support at the University of Kentucky.

Roberts Wesleyan College

Gary Raduns has been promoted to Professor of Mathematical Sciences (July 2007) and granted tenure (July 2008).

SUNY Plattsburg

SUNY-Plattsburghhas hired Robert Reams as an assistant professor. Robert is an expert in matrix theory. His wife, Maria
Shavalier, who has a Ph.D. in Mathematics Education, currently teaches at Plattsburgh as an adjunct.

Broome Community College

We have a new tenure-track person in our department, John Urrea-Roque, who is originally from Mexico, and graduated from Binghamton University not long ago with an MA in mathematical sciences. That puts us at 16 full-time members, from five different countries (not counting the good ol' U.S.).

Clarkson University

David Powers has been elevated to Professor Emeritus by the Board of Trustees on his retirement from the department last May. David had served the department and University in many ways for 41 years, including 9 as Division Head of mathematics and Computer Science.

Chris Lynch has been appointed as Associate Chair of Mathematics and Computer Science. His new position started on July 1. He will be taking care of many day-to-day items including handling Add-Drop forms etc. Chris has been demonstrating his leadership qualities for several years and will be an asset in this position.

Peter Turner, Division Head of MCS, has been appointed as interim Dean of Arts & Sciences for 2008-09 following the departure of Dean Pratt. He will be sharing his time between the two positions this year.

Faculty Arrivals

Joachim Stahl – Asst. Prof. of Computer Science. Stahl received his B.S. in Computer Science from Augusta State University, and his M.E. and Ph.D. in Computer Science and Engineering from the University of South Carolina. His research interests include computer vision, image processing, and medical imaging. His teaching interests also include graphics and game development.

Nate Barlow – Instructor of Mathematics. Nate received his B.S. and M.E. here at Clarkson University, both in mechanical engineering. He is currently a Phd candidate in his 3rd year of researching the stability of liquid sheets. He was funded for 2 years by the GK12 grant, teaching science and engineering in middle school and high school classes here in the north country as well as the Bronx. Just prior to becoming instructor, Nate worked for the STEM grant to help create teacher workshops for both renewable energy and computer graphics. His first paper was recently accepted in Computers & Fluids for publication.

Aaron Luttman - Asst. Prof. of Mathematics. Luttman received a B.S. in mathematics from Purdue University in West Lafayette, IN, in 1998, and an M.S. in mathematics from the University of Minnesota. After working as Research Engineer doing research and development in computer vision, he spent a year in a computer vision research lab at Katholieke Universiteit Leuven in Leuven, Belgium. He earned his Ph.D. in mathematics from the University of Montana in 2006, where his dissertation work was using partial differential equations to analyze video of leaves breathing. His current research is in imaging science and in a very obscure mixture of analysis and algebra. He particularly enjoys working with students on research projects in theoretical mathematics.

Carmeliza Navasca – Asst. Prof. of Mathematics. Navasca received her B.A. in Pure Math from the University of California, Berkeley and Ph.D. in Applied Math from the University of California, Davis. Afterwards, Navasca was postdoctoral fellow at the University of Waterloo, Canada (2002-2003), UCLA (2003-2006), Centre National de la Recherche Scientifique (CNRS) in the Signal and Image Processing Lab in France (2006-2007). Her research interests are broadly in applied and computational math. Some problems she have worked on are: optimal control theory, inverse problems, optimization and multi-linear algebra. Solving these problems entails new optimization-based formulations, numerical methods for partial differential equations and novel techniques in multi-linear algebra. The problems she works on have applications to wireless communications, unmanned aircraft vehicle system formation, and more recently in radio-frequency ablation of liver tumors.

Suman Sanyal – Visiting Asst. Prof. of Mathematics. Sanyal received his B.S. in Mathematics from Presidency College and M.S . from Indian Institute of Technology

in India. He then received his Ph.D. from Missouri University of Science and Technology. His research interests are in the theory of stochastic dynamic equations and time series analysis.

SUNY Oswego

Zohra Manseur, who joined us last year as a visiting assistant professor, has accepted a tenure track position. Zohra has PhD from University of Florida, and her research is in applied mathematics, in particular computer vision and algebra for physical units. George Baloglou is retiring. We have three new faculty members in one year positions: Ilker Yuce, Adrienne Groman, and Adam Orenstein. Magdalena Mosbo was tenured.

SUNY at Buffalo

It's been an exciting year for us in the UB Math Dept.

In the Spring, we entered 2 teams of undergraduates in the 2008 Mathematical Contest in Modeling run by COMAP (http://www.comap.com/undergraduate/contests/mcm/).
1162 teams from around the world competed this year in the contest in which teams have 96 hours to solve one of two problems posted on the MCM website.

One of our teams (Quintessence Anx, Zachary Marzec, and Joseph Zenamo) tackled the discrete problem, which was to develop an algorithm to create sudoku puzzles and they received honorable mention.

Our other team, consisting of Amy Evans and Tracy Stepien, took on the other problem which was to model the effects of polar ice pack melting on the Florida coast.
This team was designated an Outstanding Winner of the contest, and won both the SIAM Prize and the Ben Fusaro Award. In July, Amy and Tracy traveled to the SIAM annual meeting
in San Diego to present their paper and receive the SIAM Prize.

A second piece of good news is we have been recommended to receive a sizable NSF CSUMS award to provide an intensive computational research
experience for an annual cohort of 12 undergraduates. The program is called "URGE to Compute" (URGE for Undergraduate Research Group Experiences).
It's a collaboration of the UB Math and Physics Departments, the Buffalo State College Math Department, the UB Center for Computational Research, and the
Hauptman-Woodward Medical Research Institute. We are currently recruiting students for the group whose efforts will span calendar
year 2009. More information at http://urgetocompute.info.

SUNY Fredonia

Joseph Straight received the Chancellor's Award for Excellence in Faculty Service.
Nancy Boynton was promoted to Professor.

Meeting Accomodations

Desmond Hotel, 660 Albany Shaker Road
Albany, NY 12211
(518) 869-8100
Three miles from campus.

Hotel Indigo, 254 Wolf Rd
Latham, NY 12110
1-888-879-9974
Four miles from campus.

Super 8, 681 Troy Schenectady Rd
Latham, NY 12110
(518) 783-8808
Three and a half miles from campus.

Some Important Links

Seaway Section Website:
http://www.math.binghamton.edu/maa_seaway/

Governance:
http://www.math.binghamton.edu/maa_seaway/Governance/index.html

Standing Committees:
http://www.math.binghamton.edu/maa_seaway/Governance/Committees/index.html

The Seaway Current

The Seaway Current is published twice per year by the Seaway Section of the
Mathematical Association of America for the benefit of its members. Its pages are open
to all members of the MAA and, by invitation to others, for the exchange of information

and opinion. Contributed announcements, articles, and editorials are welcome and should be sent to the editor.

Material may be submitted on paper, by e-mail or on CD. Presently, this newsletter is produced using Microsoft Word, which can import plain text files or files produced by most standard word-processing software.

Opinions expressed in this newsletter are those of the editor or of individual contributors and do not necessarily represent the views of the MAA or of the Seaway Section.

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