THE SEAWAY CURRENT

Our Spring meeting, April 25-26, will be hosted by Buffalo State.

Buffalo State, or more formally, the State University of New York College at Buffalo, is a public college; it is distinct from the SUNY University at Buffalo, which is a public research university.   Like so many other colleges in the region, Buffalo State was initially a Normal College for the training of teachers; it was found in 1871. The college currently has about 10.000 undergraduates, and about 1,600 graduate students.

Thank you Buffalo State for hosting our meeting this Spring!

Meeting Highlights

The banquet speaker is Kelly Delp of Ithaca college. She will be talking about joint work she did with Bill Thurston; her talk is titled *Playing with Surfaces: Spheres, Monkey Pants and Zippergons.*

The first invited speaker on Saturday morning is Keary Howard, recipient of the 2012- 2013 Clarence R. Stevens distinguished teaching award of the Seaway Section.   The title of his presentation is *I See Me in You: Regarding the Self Evident Truths of Teaching and Learning Mathematics*.

Our next speaker will be Steve Dunbar, University of Nebraska at Lincoln, and Director of American Mathematics competition for high school students. The top scorers in this competition form the team that represents the U.S. at the International Mathematical Olympiad.. Dunbar's presentation will include a brief overview of the competitions, and discussion of some interesting problems from recent Mathematics Olympiad competitions.

The Gehman Lecture will be presented Maria Chudnovsky, Columbia University. Chudnovsky, Roberston, Seymour and Thomas solved an important 40-year old conjecture, the Strong

Perfect Graph Conjecture about ten years ago. This is an important problem in graph theory and combinatorial optimization. Chudnovsky will explain the problem, its significance, and some of the ideas underlying the proof. She will also talk about related problems in her more recent research. Chudnovsky is a recipient of a MacArthur Foundation Fellowship, a five-year $500,000 "genius" grant given to individuals who show exceptional creativity in their work.

There is a Seaway Section Project NExT/ PFF workshop on Friday afternoon. Lunch will be followed by Mathemagic, and by discussions on publishing and faculty development. For more information contact Matt Koetz, of Nazareth college, (mkoetz1 AT naz.edu).

On Saturday afternoon there will be a session of undergraduate student talks. Contact David Brown at Ithaca College for information about this (dabrown AT ithaca.edu). There is also a workshop "Graduate School: Who? What? When? Why? You?"

There is a workshop on history of mathematics in the classroom, a workshop on leadership in the mathematical sciences (for chairs, and others interested), and a discussion on serving the underrepresented in the STEM community. In addition, as always, there are contributed talks on a wide range of interesting topics.

More details can be found later in this newsletter (which includes abstracts of invited speakers, and, at the end, the full meeting schedule), or on meeting website.

Service to the MAA:
If you are interested in helping out on one of the committees of the Seaway Section, hosting a meeting, please contact the chair of the section, Charles Ragozzine, email ragozzc AT oneonta.edu. Also, the National MAA is always looking for nominations and volunteers for its various committees; to nominate, or self-nominate, go to http://surveymonkey.com/s/D3SZHNT.

The Speakers:
Friday Evening – The Banquet speaker

Kelly Delp, Ithaca College

Title: *Playing with Surfaces: Spheres, Monkey Pants and Zippergons.*

Abstract: I will describe a process, inspired by clothing design, of smoothing an octahedron into a round sphere. This process was adapted to build many surfaces out of paper and craft foam. The pattern pieces for the surfaces were designed using a dynamic Mathematica notebook, and cut using a digital cutter. This project was joint with Bill Thurston.

Saturday morning Invited Speakers:

Keary Howard, SUNY Fredonia

Title: *I See Me in You: Regarding the Self Evident Truths of Teaching and Learning Mathematics*

Abstract: An interactive discussion of what we believe to be a baker's dozen of axioms that constitute the art of teaching and learning mathematics. Plan to reflect on why we thoroughly enjoy the opportunity to teach and learn this beautiful discipline.

Bio: *Dr. Keary Howard is a Professor of Mathematics Education in the Department of Mathematical Sciences at SUNY Fredonia. His primary responsibilities include the instruction and advising of undergraduate and graduate pre-service teachers in secondary mathematics. He earned his Bachelor's in mathematics/statistics from the University of Rochester and Master's and Doctoral degrees in mathematics education from Cornell University.*
Dr. Howard's research interests include the development of project-based school mathematics. He serves as an Associate Editor of the New York State Mathematics Teachers' Journal and is a past Vice President of the Association of Mathematics Teachers of New York State. His past honors include the 2007 SUNY Chancellor's Award for Excellence in Teaching and the 2013 President's Award for Excellence in Teaching at SUNY Fredonia.
Dr. Howard resides in Bemus Point, NY with his wife Dawn Marie and three children

Steve Dunbar, University of Nebraska at Lincoln, Director of American Mathematics competition.

Title: *Olympiad problems for Fun, Learning and Research with Dynamic software.*
Abstract: The Mathematical Association of America has continuously sponsored nationwide high-school level math contests since 1952. The sequence of contests now has 5 different contests at increasing levels of mathematical sophistication. Students who succeed at the top level on these contests become the team representing the U.S. at the annual International Mathematical Olympiad.   Problems from Mathematical Olympiads are rich starting places for mathematical investigations. I'll give a brief overview of the history and role of the American Mathematics Competitions. Then I'll present some interesting problems from recent Olympiads focusing on combinatorial geometry, illustrating and investigating them with dynamical software.

Bio: *Steve Dunbar received a bachelor's degree in mathematics at the University of Nebraska, and doctorate at the University of Minnesota in 1981, and returned to the University of Nebraska-Lincoln in 1985.*
His research interests are in nonlinear differential equations, probability, stochastic processes and applications of mathematics in all areas.   He received the MAA Distinguished Teaching Award for the

Nebraska - Southeast South Dakota Section in 1997. In 2001, he was appointed as Director of the MAA's American Mathematics Competitions program. The Competitions selects the team that represents the USA at the annual International Mathematical Olympiad

Gehman Lecture: Maria Chudnovsky, Columbia University, NY

Title: *Perfection and Beyond*

Abstract: About ten years ago the Strong Perfect Graph Conjecture, a well-known problem in both graph theory and combinatorial optimization, was proved (this result is due to the Chudnovsky, in joint work with Roberston, Seymour and Thomas). The proof used methods from structural graph theory. The original version of the proof spanned about 150 journal pages, but it has since been somewhat shortened. In this talk we will describe the problem, explain its importance, outline some of the ideas underlying the proof, and also discuss related problems that have been the subject of recent research.

Bio: *Maria Chudnovsky received her B.A. and M.Sc. from the Technion, and a PhD from Princeton University in 2003. Currently she is a professor at Columbia University. Before joining Columbia, she was a Veblen Research Instructor at Princeton University and the IAS, an assistant professor at Princeton, and a Clay Mathematics Institute research fellow. Her research interests are in graph theory and combinatorial optimization. She is an editorial board member of the Journal of Graph Theory, SIAM Journal on Discrete Mathematics, and Discrete Mathematics. Dr. Chudnovsky was a part of a team of four researchers that proved the strong perfect graph theorem, a 40-year-old conjecture that had been a well-known open problem in both graph theory and combinatorial optimization. For this work, she was awarded the Ostrowski foundation research stipend in 2003, and the prestigious Fulkerson prize in 2009. She was also named one of the "brilliant ten" young scientists by the Popular Science magazine. In 2012, Dr Chudnovsky received the MacArthur Foundation Fellowship, a five-year $500,000 "genius" grant to individuals who show exceptional creativity in their work and the prospect for still more in the future. In 2014, she will be an invited speaker at the International Congress of Mathematicians.*

The full meeting program may be found on the meeting website, http://people.rit.edu/maacway/Meetings/PDF/schedule_sp14.pdf

REPORTS

1. Treasurer's Report – Spring 2014 – Gary Towsley

1. Balance as of 9/30/2013 $15,443.92

2. Fall Meeting at SUNY Potsdam

 a) Meeting Receipts $4,327.00

 b) Meeting Expenses $3,581.00

c) Net	$746.00
3. Speakers Expenses, Honoraria	$726.06
5. MAA – Proceeds of Book Sale	$16.50
6. Facility Deposit for Buffalo State Meeting	$250.00
7. Balance as of 3/01/2014	$15,230.36

2. **Minutes of the Business Meeting, SUNY Potsdam, October 19, 2013**
- Ryan Gantner (First Vice-Chair) and
Sandeep Bhargava (Second Vice-Chair)

The meeting was called to order at 10:55 a.m. with approximately 20 members present.

Chair, Charlie Ragozzine, expressed his thanks to the executive committees and the local hosts.

The Seaway Section Governor, Gary Towsley, reported that the MAA had experienced a membership decline of close to 20% over the past ten years.

Treasurer, Gary Towsley, reported that the Seaway section was in decent financial health with a current balance of approximately $15,400.

First Vice Chair, Ryan Gantner, thanked Jeff Johannes for his work in inviting and securing speakers for the present and upcoming meetings, including Steve Dunbar, Keary Howard, and Maria Chudnovsky for the Spring 2014 meeting at Buffalo State College.

Sandeep Bhargava of Humber College was elected as Second Vice-Chair.

Chair, Charlie Ragozzine, brought up a motion requesting greater consultation with the mathematics profession in regards to new transfer policies being mandated between two and four-year colleges by the SUNY administration. Several members added their voice to the discussion:

• Blair Madore suggested that the Seaway section request funding for a conference that would gather representatives from each of the mathematics departments at each of the SUNY schools to work through the proposed transfer policies.

• Two other members pointed out that transfer policies involving math credits extend to the elementary education courses and also show up through the transfer policies mandated for disciplines like the natural sciences.

• Patrick Rault pointed out that the state of Virginia had such transfer policies in effect for some time now.

• Bob Rogers noted that the mandating of transfer policies without any efforts to consult the Seaway Section or the MAA was part of a bigger trend of circumventing the expertise and judgement of professional organizations.

The motion was voted on and accepted.

Blair Madore informed the meeting of his workshop, later in the afternoon, on hosting an AMC competition.

John Maceli pointed out that the 75th anniversary of the Seaway Section would coincide with the 100th anniversary of the MAA during 2015. The first section meeting was held at Colgate University in 1940, and the section will return there to celebrate its 75th anniversary there during the Spring of 2015. Any requests for ideas regarding that meeting were asked to be submitted to the Chair.

The meeting was adjourned at 11:17 a.m.

Respectfully submitted,

Ryan Gantner (First Vice-Chair) and Sandeep Bhargava (Second Vice-Chair).

Section notes:

Ithaca College

Stan Seltzer is now the editor of the MAA Textbooks; his 3-year term started on February 1.

In recognition of overall excellence in teaching, scholarship, and service, **David Brown** has been honored as a recipient of a Faculty Excellence Award for the 2013-14 year at Ithaca College.

St. Lawrence University:

St. Lawrence University Associate Professor of Statistics **Michael E. Schuckers**, (along with colleagues from Hamilton College and Bates College) co-hosted a workshop on Directing Quantitative and Mathematics Support Centers (QMaSCs). The workshop was held in Hartford, CT on July 31, 2013. Schuckers and his colleagues are co-editing a handbook for QMaSC directors that is a result of the workshop. More information is available at: http://www.stlawu.edu/qrc/qmascworkshop/

SUNY Fredonia

Bob Rogers together with Bud Boman (Penn State, Harrisburg) have authored a Real Analysis text as part of the SUNY Open Text Program (see http://opensuny.org/omp/index.php/SUNYOpenTextbooks); texts in this program are peer reviewed, and are available free online.   The title of the text is *How we got from there to here: A story of real analysis.* The book is described as "different from typical introductory analysis books as it immerses the student in the evolution of the subject from intuitive concepts introduced in the calculus sequence to the rigorous, non-intuitive definitions and theorems of modern analysis. This approach, which follows the historical development of the subject, is designed to help students realize that these non-intuitive definitions were developed as a necessity to answer questions raised by the application of, then novel, calculus techniques."

SUNY Geneseo

We have made two new hires: **Michael Pawlikowski** in Mathematics Education and **Yusuf Bilgic** in Statistics, both at the Assistant Professor Level.
Patrick Rault has been elected to the Council on Undergraduate Research (CUR).
We hosted the UP-Stat 2014 conference on 12 April.
Pending SUNY approval we will begin offering BS in Applied Mathematics and BS in Pure Mathematics in Fall 2014.

Utica College

A new chapter of Pi Mu Epsilon has been installed at Utica College. The chapter is called New York Alpha Upsilon. Five students and two faculty members are inducted.   **Xiao Xiao** is the faculty advisor for the chapter, and **Brad Emmons** is the permanent faculty correspondent.

Upstate New York IBL Consortium (IBL: Inquiry Base Learning)

Over the past few years, several faculty members at colleges in upstate New York with a common interest in IBL have been meeting informally to support each other and share ideas on the use of IBL. Much credit is due to Patrick Rault of SUNY Geneseo for bringing together a heterogeneous collection of users of IBL. Now, with generous funding from the Educational Advancement Foundation, this informal network is being expanded to form the Upstate New York IBL Consortium, a regional network intended to provide support to IBL practitioners in a region. The co-Pi's on the grant are Patrick Rault (SUNY Geneseo), Jane Cushman (Buffalo State) , Ryan Gantner (St. John Fisher College), Yousuf George (Nazareth College), Margaret Morrow (SUNY Plattsburgh). The grant is providing support of various kinds for those interested in using IBL for the first time. It also aims to provide opportunity for discussion and support for more experienced users. The grant is providing funding for a workshop for IBL users on Friday October 10, immediately prior to the Seaway Section Fall meeting in Alfred, NY. StanYoshinobu, of California Polytechnic State University, and a national leader in the use of IBL will be at this workshop. For those interested in exploring this more fully, including funding opportunities, please refer to the consortium website at http://citadel.sjfc.edu/faculty/rgantner/ibl/ .

Pi Mu Epsilon: 100 years on.

Pi Mu Epsilon was established at Syracuse University 100 years ago, in Spring 1914. **Professor Jack Graver** of Syracuse University will be presenting the Jean Bee Chan and Peter Stanek student lecture at MathFest in Portland, Oregon in August, on the topic of the history of Pi Mu Epsilon. He will explore the purpose of the founders of Pi Mu Epsilon, using the archives of Syracuse University and detailed notes left by the founders as sources.

Sam Northshield (SUNY Plattsburgh) and SUNY Plattsburgh student Annemarie McGonagle are co-authors of a paper, *A new Parameterization of Ford Circles*, scheduled to appear in the upcoming centennial issue of the Pi Mu Epsilon Journal.

Fall Meeting:

Fall 2014: October 10-1, 2014, at Alfred University, Alfred, NY.

Some Important Links

Seaway Section Website:		http://people.rit.edu/maacway/

Governance:		http://people.rit.edu/maacway/governance.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 by e-mail. 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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SEAWAY SECTION

MATHEMATICAL ASSOCIATION

OF AMERICA

2014 SPRING MEETING

April 25-26

BUFFALO STATE COLLEGE

PROGRAM

Friday luncheon
12:00-5:00 PROJECT NEXT:
Technology Building 258

Mathemagic

Discussions on publishing

Discussion on Faculty Development

Friday afternoon: Embassy Suites

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

Friday Evening: Embassy Suites
5:30 – 6:30 Social Hour (cash bar)

6:30 – 8:00 Banquet, Clarion

8:00 – 9:00 **Kelly Delp, Ithaca College**

Playing with Surfaces: Spheres, Monkey Pants and Zippergons

9:30-10:30 **Game Show** hosted by Blair Madore, **SUNY Potsdam**

Jeopardy

Saturday morning: Bulger Communications Building North

8:40 –8:45 Welcome address by **Interim President Howard Cohen, Buffalo State College**

8:45 –9:35 **Keary Howard, SUNY Fredonia**

I see Me in you: Regarding the self-evident truths of teaching and learning mathematics

9:45 – 10:35 **Steve Dunbar, University of Nebraska at Lincoln**

Olympiad problems for Fun, Learning and Research with Dynamic software.

10:35 – 11:00 Business Meeting

11:10 – 12:00 **Gehman Lecture: Maria Chudnovsky, Columbia University**

Perfection and Beyond

Lunch: 12-1:30: Bulger Communication Building, First floor Foyer

Saturday afternoon: Bulger Communication East

1:30-1:55 **Yozo Mikata, Bechtel NY**
Iterative Scheme for a Nonlinear Integro-Differential Equation for Field Emission with Conduction and Radiation

2:00-2:25 **James Marengo, RIT**
An Application of Sufficiency to a Problem Involving a "Die"

2:30-2:55 **Michael Barg**, Niagara University
An Advertising Model for a First ODE Class and Beyond

3:00-3:25 **Ephraim Agyingi, David Ross and Sophia Maggelakis, RIT**
Rethinking Wound Healing: A mathematical Model

Saturday afternoon: Bulger Communication East 2

1:30-1:55 **Christina Carter and Dave Wilson: Buffalo State College**
Flipped Calculus classroom

2:00-2:25 **Joseph Petrillo, Alfred University**
The Alfred University Calculus Initiative – Flipping the Calculus Classroom

2:30-2:55 **Julie Wilson, SUNY Fredonia**
A Discovery Learning Approach to Axiomatic Geometry

3:00-3:25 **Ryan Gantner (Saint John Fisher College), Yousuf George (Nazareth College), Patrick Rault (SUNY Geneseo)**, and **Jane Cushman (Buffalo State College)**
IBL in the Seaway Section (and Beyond)

3:30-3:55 **Nicole Juersivich, Nazareth College**

Trial by Fire: Undergraduate Research in Mathematics Education

Saturday afternoon: Bulger Communication West

1:30-1:55 **Hossein Behforooz, Utica College**
Celebrating Martin Gardner Centennial with Magic Squares

2:00-2:25 **Martha Kilpack, SUNY Oneonta**
Lattice, You Have Seen One and Don't Even Know It.

2:30-2:55 **Elizabeth Wilcox, SUNY Oswego**
Al-Jabar: A Colorful Intro to Abstract Algebra

3:00-3:25 **David Lantz, Colgate University**
Star CZD graphs of commutative rings

3:30-3:55 **Hossein Shahmohamad, RIT**
Burnside, Redfield & Polya – The Art of Coloring and Enumeration

Saturday afternoon: Bulger Communication West 2

1:30-2:25 Teachers' Masters Capstone Projects in Secondary and College Mathematics
Session Organizer, Keary Howard, SUNY Fredonia
Session 1: Student Misconceptions Regarding Units, Rates, and Fractions

Understanding and Misconceptions of Rates of Change and Unit Conversions, Liz Schake, SUNY Fredonia

College Students' Accuracy in Measurement Estimation: The U.S. Customary Units vs. the Metric System, Ashley Melinski, SUNY Fredonia

Procedural and Conceptual Understanding of Fraction Concepts in College Students, Shannon Tydings, SUNY Fredonia

2:30-3:25 Session 2: Student Misconceptions Regarding Order of Operations, Spatial Reasoning, and Derivatives
Pardon My Expression: A Study of College Students' Misconceptions of the Order of Operations and its Applications, Kristen Joseph, SUNY Fredonia

Spatial Ability in Adolescence and How it Varies by Age, Gender, and College Major, Sara Maiorana, SUNY Fredonia

Derivatives as a Rate of Change: A Study of College Students' Understanding of the Concept of a Derivative, Suzanne Constantinou, SUNY Fredonia

Saturday Afternoon: Bulger Communication South

History of Mathematics in the Classroom
1:30-1:55 Bhāskara II: A Remarkable Mathematician Keith Jones and Toke Knudsen, (SUNY Oswego)

2:00-3:25 History of Mathematics in the Classroom

7 speakers with 10 minutes per session. Information is found in attached document

Saturday afternoon: Caudell Hall 116

1:30-2:25 Workshop on Leadership in the Mathematical Sciences

Organizer: Dr. Mihail Barbosu, RIT

2:30-3:25 How should we serve the underserved?

Organizer: Olympia Nicodemi, SUNY Geneseo

Saturday afternoon: Bulger Communication South 2

3:30-4:30 Graduate School: Who? What When? Why? You?

Organizer: Elizabeth Wilcox, SUNY Oswego

Saturday Afternoon
Student Talks: Organizer: **David Brown, Ithaca College**

The schedule can be found on the green sheet in your folder.