



NEMATYC NEWS

Available online – www.NEMATYC.org



Vol. 21, No. 2

Newsletter of the New England Mathematical Association of Two-Year Colleges

Spring, 2013

Community Colleges: Beacons for Success

NEMATYC 2013
39th Annual Meeting
North Shore Community College
1 Ferncroft Road
Danvers, MA 01923
Friday and Saturday
April 5-6, 2013

Anne O'Shea, Marsha Pease, Co-Chairs



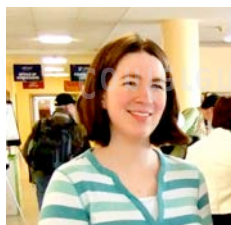
President's Message Meredith Watts

Welcome back! It is time to start another semester and another year. I hope everyone was able to keep warm during the chillier days that have faced us so far.

I bet you are looking forward to this Spring's **Annual NEMATYC Conference**, our 39th! Chairs **Anne O'Shea** and **Marsha Pease** are arranging a great program and events. Time to refresh your teaching, say hello to long-time colleagues, and meet new ones. Details are elsewhere in this newsletter.

Also take note that NEMATYC will have its **5th Fall Dinner & Speaker Event** Friday September 20, 2013. **Tom Tucker of Colgate University** is a renowned mathematician and mathematics educator, with significant experience in the teaching of calculus at all levels. His ideas are sure to interest anyone teaching calculus. See the details elsewhere in this newsletter.

It's also time to learn the names of a new batch of students and torture them with a semester's worth of math



Conference Proposal Deadline Extended to Feb 20 <http://nematyc.info/PROPOSAL/>

facts. **Math anxiety** is not new, but a study by psychologists Ian Lyon and Sian Beilock (<http://www.plosone.org>, *When Math Hurts: Math Anxiety Predicts Pain Network Activation in Anticipation of Doing Math*) has shown that, for some people, math hurts.

Psychologists have known that “physically innocuous situations might elicit a neural response reflective of actual physical pain,” and Lyon and Beilock have shown that for individuals that are considered high math-anxious, math is pain-inducing. They report:

“On the surface, one might assume that any pain experiences associated with math anxiety would occur during math performance itself: If someone is made anxious by something (in this case, math), then doing that thing may feel painful. However, as mentioned previously, mathematics is a recent cultural invention, so it seems unlikely that pain responses specific to math have been evolutionarily selected for. This means that any observed relation between math anxiety and pain would likely be more dependent upon one's feelings and worries about

continued on page 7

NOMINATING COMMITTEE REPORT

The NEMATYC Nominating Committee is pleased to present the following slate of officers for the elections to be held at the business meeting, Saturday, April 6, at the annual conference.

VICE PRESIDENT

One-Year Term

DAVID HENRY

Dave is in his fifth year as a member of the Bristol Community College Mathematics Department. He received his B.A. in English from the University of Michigan, his M.P.A. from Framingham State University and his M.S. in Mathematics from Salem State University. Prior to his current position, David was an adjunct professor at Bristol and Massasoit Community Colleges. He is the course coordinator for Bristol's Math for Elementary Educators sequence and was a member of the Course Redesign team for BCC's developmental math sequence.

David has been an active member of both AMATYC and NEMATYC. He is currently the Vice President and Student Math League Coordinator of NEMATYC. Previously, David served as a Member-at-Large (2008-10) and participated in AMATYC's Project ACCESS Cohort 6. He presented at the 2011 & 2012 NEMATYC Conferences on Course Redesign with members from Middlesex, North Shore and Quinsigamond Community Colleges.

TREASURER

Three-Year Term

DAVID COX

David has taught mathematics at Southern New Hampshire University since 1990, after working as an actuary for an insurance company. He has co-chaired two NEMATYC conferences, and has been a presenter as well. David has served as NEMATYC treasurer since 2010. He received his Bachelor of Arts in Mathematics and Business Administration from Southwest Baptist University and his Master of Science in Mathematics from The University of Oklahoma. David received the SNHU Advisor of the Year award in 2011 for Radio SNHU.

MEMBER-AT-LARGE (two to be elected)

Two-Year Term

DENISE ROBICHAUD

Denise is a Professor of Mathematics at Quinsigamond Community College. Previously, she was an adjunct instructor at Middlesex, MassBay, and North Shore Community Colleges. She has co-authored numerous instructor resource manuals for developmental math textbooks, is the co-author of an Introductory Algebra textbook and has presented at AMATYC, NEMATYC, and several ICTCM conferences. Denise has served on the NEMATYC Executive Committee since 2011 and coordinated local arrangements for the 2012 NEMATYC Fall Dinner Meeting.

KENNETH TAKVORIAN

Ken has been a professor of mathematics and electronics for 43 years at Mount Wachusett CC and an adjunct professor at Fitchburg State University for 12 years. He was a co-instructor in Electronics for a two-year electronics technician program with Tyco Corporation for 6 years. He has presented at local and national conferences. Ken has served as a Member-at-Large for two years.

He enjoys downhill skiing, playing with his grandsons, experimenting with/learning new technology such as Clickers, Tablet PC, and Classroom Presenter for engaging students in the classroom. He is a MYMATHLAB advocate using coursecompass extensively in all his courses.

Prior to the election, nominations will also be welcomed and accepted from the floor.

Mary Kehoe Moynihan, Nominating Committee Chair

JANE TANNER

AMATYC NORTHEAST REGION VICE PRESIDENT

Happy New Year!

It is hard to believe that we are one month into 2013... where does the time go? I usually begin my spring newsletter article talking about the amount of snow that I can see looking out my window. Not true this year! It was 63° in central New York yesterday and most of our snow has melted. Of course, they are predicting 6-12" of snow for tonight so we are right back on track for the usual winter weather.

We didn't need to worry about the snow in November at the 38th Annual Conference in Jacksonville. Many members from NEMATYC and the Northeast braved



Hurricane Sandy's aftermath to enjoy a conference that was very informative as well as providing networking opportunities. One result was the approval by the Delegate Assembly of the position statement "Proctored Testing For Courses Taught At a Distance". Be sure to read this at www.amatyc.org/documents/PositionProctoredTesting.pdf. Many colleges have already used this to document the need for proctored testing in their online mathematics courses.

Were you unable to attend the Jacksonville conference? It isn't too late to view conference proceedings at www.amatyc.org/Events/conferences/2012Jacksonville/proceedings.html. You can view the opening session and breakfast speaker presentations as well as get handouts from the many excellent sessions. Be sure to check this often as new things get uploaded.

There was a first in Jacksonville, AMATYC's very own Ignite event. This can be seen at igniteshow.com/videos/ignite-amatyc-2012-jacksonville. There are twenty presenters showing their passion for teaching and mathematics in five minute presentations. This was well-received and will be done again in Anaheim. Take the time to look at this and be amazed at what can be done in five minutes!



I am already looking forward to this year's Anaheim conference, October 31st-November 3rd. Not only will there be the normal activities of an AMATYC conference, the conference hotel, the Anaheim Marriott, is located less than a mile from the main entrance of Disneyland. The room rate of \$143/night (including internet) is a steal and hopefully will attract AMATYC members (and their families) from near and far to attend the 39th annual conference. Your new AMATYC Executive Board will be announced and many exhibitors will be present to entice you with their wares.

So, what else does AMATYC membership get you besides the conference? There are two excellent publications, *AMATYC News* and *MathAMATYC Educator*. Past issues of *AMATYC News* can be found at [www.amatyc.org/publications/AMATYC-](http://www.amatyc.org/publications/AMATYC-News/index.htm)



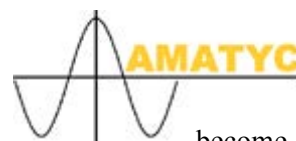
News/index.htm. You will find current information about AMATYC, as well as reports from our academic committees. *MathAMATYC Educator* is a refereed publication with a purpose to provide an avenue of communication for all mathematics educators concerned with the views, ideas, and experiences pertinent to two-year college teachers and students. Past issues can be found at www.amatyc.org/publications/mathamatyceducator/.



Have you participated in one of AMATYC's webinars? They are absolutely fantastic! I have attended them "live" and I have also viewed them at www.amatyc.org/publications/webinars/. This is one way that I can keep current in mathematical and technological trends without leaving home. I especially liked the last two that I participated in – *Resources and Strategies for Online Tools* and *Intriguing Tidbits from Probability Theory*.

How would you like to become more involved in AMATYC? There are two opportunities that the board is looking to fill.

- David Tannor, editor of the aforementioned *MathAMATYC Educator*, is looking for someone to serve as a member-at-large on the Editorial Panel. This panel works with the editor to make recommendations and suggestions concerning policy, themes, content, and format changes to the journal.
- Do you have experience or expertise in fund raising, financial, and non-profit organizational skills? The AMATYC Foundation can use you! There is an opening for a member-at-large on the Foundation board; more information can be found at www.amatyc.org/foundation/FoundationAtLarge2012.pdf.



If you are interested in either of these positions, please let me know.

Finally, if you are not a member of AMATYC, I would encourage you to become one. Read through AMATYC's mission at www.amatyc.org/documents/Mission-Statement.htm. The organization does great things to ensure that our students have the quantitative literacy that is needed for them to function in today's society. We also provide many opportunities for professional development. Please support the premier organization for two-year college mathematics by becoming a member today. If you are a member by May 31st, you will be eligible to vote in the fall elections for board members that will represent you for the next two years.

It is with pleasure that I serve you as the Northeast Vice-President. This will be my last year in this position as I am ineligible to run for a fourth term. With that being said, I have submitted my name for President-Elect of AMATYC and I hope to be slated in April to run for this position. I hope that your continued support of me will allow me to remain on the AMATYC board in a leadership position.

I hope you have a great conference in April. Unfortunately I will be unable to attend as the AMATYC board will be meeting on the same weekend. I truly will miss all my NEMATYC friends but I hope to see you all in Anaheim!

Have a great semester!
Jane



Frank Morgan (left) of Williams College gave an entertaining and engaging talk entitled *Baserunner's Optimal Path* for NEMATYC's 4th Dinner/Speaker Event, at O'Connor's Restaurant in Worcester on Friday September 21, 2012. More pics at <http://history.nematyc.info/>.

Mark Your Fall Calendar!

Friday September 20, 2013
NEMATYC 5th FALL 2013
DINNER/SPEAKER EVENT

Location to be Announced

"Differentials in Exile"
Thomas Tucker, Colgate University

More details on page 15

JOIN NEMATYC

You are a member if you attended the Spring conference at NHTI, Concord's Community College, or if you mailed in your \$10 membership fee, or if you will be attending this spring's conference.

Not a member?

Join by sending the \$10.00 annual membership fee, payable to NEMATYC, to David Cox, NEMATYC Treasurer Southern New Hampshire University 2500 N. River Road Manchester, NH 03106

The NEMATYC STUDENT MATH LEAGUE RECOGNITION AWARD PROGRAM

by **Dave Henry**, NEMATYC Student Mathematics League Coordinator

The purpose of the NEMATYC Student Math League Recognition Award Program is to foster extracurricular mathematics learning opportunities for students through participation in the AMATYC Student Mathematics League (SML).

Annually, the top-placing student in the AMATYC SML Competition in each participating school in NEMATYC's service area will receive a \$100 Recognition Award. (The service area consists of those New England States that are not represented by their own AMATYC affiliate.) In order to receive the award, the student must have competed in both Rounds 1 and 2 of the competition.

The top scoring college team is awarded the Lois A. Martin Student Mathematics League Award for that year.

NEMATYC encourages you to consider joining the AMATYC SML and participating in this NEMATYC program. Your involvement can be as simple as advertising and conducting a one-hour testing session each semester. It can include pre-test study sessions, or even a campus mathematics club. It may be noted that AMATYC is a sponsor of Mu Alpha Theta, a national mathematics honor society primarily for high school students but which supports two-year college chapters as well. Information on both the SML and Mu Alpha Theta is at the AMATYC web site, www.AMATYC.org.

What Do You Do For Your Best Students?

Highlights and History

NEMATYC team participation accounted for 13 of the 23 teams in the Northeast Region last fall. NEMATYC also placed three teams in the top 100 after the first round: Springfield Tech (21st), MassBay (64), and NHTI - Concord (83rd). STCC had four of the top five scorers in NEMATYC, including Margaret Hayner, who is the highest scoring female in NEMATYC in at least five years. This is the second year in a row a team from NEMATYC was ranked No. 1 in the Northeast Region after the first round. In the fall, 197 teams competed overall with East Los Angeles College taking top honors with 175 points. Out of the total of 1,272 students taking the test, five students scored a perfect 40.

Join the Fun

Quinsigamond Community College was awarded the first **Lois A. Martin Student Mathematics League Award**, which is presented to the top scoring team in NEMATYC (picture: **Joseph Babu**, QCC, Math Professor, **Martha Upton**, QCC, Math Center Director, **Denise Robichaud**, QCC, Math Professor, **Mary Kehoe Moynihan**, NEMATYC President, **Ulises Poyser**, QCC, Math Professor). The top individual scorer from each institution is presented \$100. A special thanks goes out to school coordinators who keep Lois Martin's passion for student enrichment through this program alive. Make sure your students take the second exam (Feb. 15 - March 9) to qualify for award. If you need help getting your school involved do not hesitate to contact David Henry (david.henry@bristolcc.edu).



NEMATYC 2012-2013 Student Math League Standings After First Round

Students in Top 20 of Northeast Region

(107 total students)

<u>Rank</u>	<u>Name</u>	<u>School</u>	<u>Points</u>
2	Stephen Peloquin	Springfield Tech	26.0
2	Daniel Glassman	Springfield Tech	26.0
8	Daniel Paine	Springfield Tech	22.5
9	Timothy Thomas	MassBay	22.0
9	Margaret Hayner	Springfield Tech	22.0
11	Minh Nguyen	Southern Maine	21.0
12	Caleb Drury	NHTI - Concord	20.0
12	Christian Rainey	NHTI - Concord	20.0
12	Julian Kuk	MassBay	20.0
15	Xiaoyu Wang	Bristol	19.5
19	Christopher Hedgpeth	Southern Maine	18.0
20	Stephen Obina	MassBay	17.5

Teams in Top 20 of Northeast Region

(23 total teams)

<u>Rank</u>	<u>School</u>	<u>Points</u>
1	Springfield Tech	113.5
4	Mass Bay	85.5
7	NHTI - Concord	79.0
9	Massasoit	64.0
11	Southern Maine	60.5
12	Bristol	57.5
13	Holyoke	48.5
14	Middlesex	43.5
15	North Shore	34.0
16	Quinsigamond	33.5
17	Cape Cod	32.5
18	Roxbury	27.0

NEWS FROM THE CAMPUSES

BRISTOL COMMUNITY COLLEGE



Bristol Community College Instructor of Mathematics **Elizabeth Donovan** has been named a Fellow for the Mathematical Association of America's professional development program Project NExT. She is the only community college faculty member chosen for this opportunity. She joins 77 others selected to become Project NExT Fellows from such institutions as Duke, Smith, and Northwestern.

Project NExT is similar to AMATYC's Project ACCESS—indeed, Project ACCESS was developed jointly with the MAA, and modeled on Project NExT.

Beth notes that “while the focus of Project NExT is primarily on teaching, assessment and research, the program has provided each of us with an invaluable resource: a strong link to over 80 other faculty located all over the nation. The 2012-2013 program has fostered a cohort of new faculty that have already begun to collaborate in areas such as teaching techniques, assessment methods, research partnerships and general faculty support. Joining Project NExT quickly became an invaluable tool in my development as a mathematics faculty, and this project will continue to foster growth in all of us in the upcoming years.”

Editor's Note: Beth has recently accepted the position of Conference Exhibitor Chair for NEMATYC.

MIDDLESEX COMMUNITY COLLEGE, CONNECTICUT

Steve Krevisky reports that Middlesex CC in Connecticut welcomed a new hire this Fall, **Justice Taylor-Baker**. They are working on a comprehensive Math Discipline review. Steve was part of a Discussion team at the ICME in Korea on Two-Year Colleges and other tertiary institutions. He also gave a paper on using sports data in math classes.

Steve also reports on a Connecticut Senate bill 40 which will limit the ability to offer the remedial and developmental classes that we have done in the past. There is no doubt the Connecticut legislature is interested in legislatively limiting developmental education in the two-year colleges. ... As can be seen in the photo, Steve profited from his time on the Asian continent. We understand this is his answer to \$4/gal gasoline.



QUINSIGAMOND COMMUNITY COLLEGE

Denise Robichaud reports: Vision Project Update: We continue to pilot emporium style developmental math classes. Over the spring and summer, the emporium curriculum will be modularized. The modularized courses will be piloted starting next fall. Also, Math Boot Camps to accelerate students' progress into college level math continue to be offered at QCC and in the Worcester Public Schools (WPS). In addition, our developmental math courses are offered in the WPS. High School students can take these courses, and successful completion of the full sequence will allow them to enter QCC at the college math level without taking the CPT.

Establishing a Shelf-Life for CPT Scores: Last fall the QCC department discussed the possibility of making CPT scores (or prerequisite math course completions) count for a limited number of semesters. The concern was that some students wait a year or more to take a math course after completing the CPT or completing the prerequisite math course. (At Worcester State College, math CPT scores are valid for only one year.) Data was requested from Institutional Research. Our conclusion was that a large majority of students take a math course within one year, and that, for those students who wait more than one year, there was no significant pattern of lower course grades. Therefore, no “shelf-life” was imposed.

continues on next page

SOUTHERN NEW HAMPSHIRE UNIVERSITY

Megan Paddack reports that mathematics is booming at Southern New Hampshire University. Over the past few years the Mathematics Department at Southern New Hampshire University (SNHU) has created two new majors and three new minors—a Mathematics Major, a Middle School Mathematics Education Major, and minors in Applied Mathematics, Mathematics, and Middle School Mathematics Education. These programs are growing quickly and there are a large number of students involved with the programs and the new student-led Math Club.

President's Message – *continued from page 1*

math (i.e., their psychological interpretation or anticipation of the event) than something inherent in the math task itself. Given that people have a greater tendency to worry – and have more cognitive resources available to do so – when they are not engaged in a goal-directed task simply anticipating doing math may be most likely to induce a neural pain response among the highly math-anxious.”

So as we start this semester ready to teach students mathematical material--maybe at this point in the semester wondering why they don't remember what they learned in Monday's class by the time Wednesday rolls around--maybe you have noticed

that some of your students are among the math anxious. Perhaps you have some techniques that you have noticed help ease students of their anxieties. Has your college redesigned its developmental math curricula? Does that seem to have helped with students' anxiety? Any techniques you have for soothing the Calc student who can integrate complicated trig functions but is scared to add $\frac{1}{2}$ and $\frac{1}{3}$? I encourage you to share those techniques (or find an empathetic ear) at this year's Spring NEMATYC Conference at North Shore Community College. See this newsletter for more information about the conference!

Meredith

And Happy New Year to All – 2013

- The first year in a long time where all four digits are different (bedtimemath.org) [hmmm... when will the next year be with all four digits different and forming an arithmetic sequence if, if needed, reordered, like this one. This one should not give anyone a headache]
- it looks prime, but isn't [when is the next one like that?]

These from NationalPost.com

- 2013 has 3 prime factors: $2013 = 3 \times 11 \times 61$. So does 2014. So does 2015. There won't be another three consecutive years that are the products of three prime numbers until 2665 — more than half a millennium from now.
- Imagine a game whereby you make numbers by adding or subtracting squares of prime numbers. E.g., $30 = (5 \times 5) + (3 \times 3) - (2 \times 2)$. 2013 is the smallest number that needs at least six squares to make.
- A popular paradox says that if there weren't anything interesting about 2013, then it would be interesting. [Proof?]

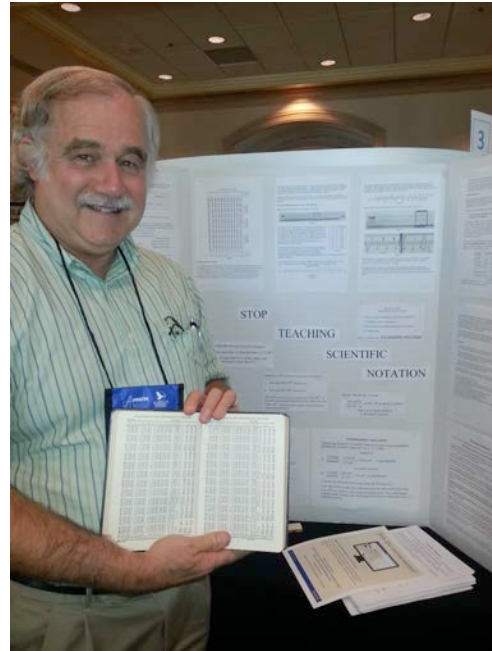
Conference Proposal Deadline Extended to Feb 20

<http://nematyc.info/PROPOSAL/>

Some of the goings on at AMATYC 2012 – Jacksonville, FL



One of the several hundred presentations at the meeting. See you in Anaheim!



Yours truly gave a poster session on teaching engineering notation instead of scientific notation.



Many of the NEMATYC members who attended AMATYC 2012.

NEMATYC 2013

39th Annual Meeting

Community Colleges: Beacons for Success

North Shore Community College

Danvers, MA

Friday and Saturday

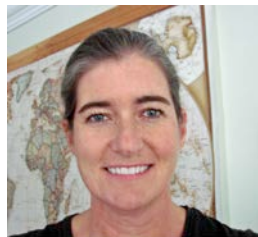
April 5th and 6th

Anne O'Shea and Marsha Pease, Co-Chairs



North Shore Community College will be hosting the spring 2013 NEMATYC Conference, at the Danvers, Massachusetts campus on April 5 & 6. The success of our conference depends heavily on a variety of presentations. You undoubtedly have successful experiences and knowledge that you can pass on to other educators – please do this! In the past few years a spotlight has been focused on developmental mathematics education. Math Redesign and other innovative curriculums have been instituted at many of our New England two-year colleges. This conference will provide an opportunity to share your experiences and to learn what has worked and what has not, as we research, pilot and tweak our developmental math curriculum. In this era of self-paced and technology- based developmental math we are confronted with many questions and concerns. Of course, you are innovating and experimenting in college-level mathematics teaching as well. Flipping the classroom is just one strategy that faculty are trying. In the spirit of the philosophy of mathematics education, and as we tell our students; “we learn by doing” so please get involved and consider submitting a proposal! We’ve extended the date for proposals to February 20.

In addition to the slate of interesting, thought provoking topics, we hope you will enjoy



Anne O'Shea

the rich local history that surrounds the very modern campus of North Shore Community College. A block of rooms has been reserved at the DoubleTree Hotel, located just down the road from the campus where a free shuttle will transport you back and forth from the hotel to the college. Stay the weekend and join us for our Friday night casual gathering with a talk by local historian, Jim McCallister. The Friday night event is sponsored by PEARSON publishing, and is included in the registration this year! While you're in town, visit some of the



Marsha Pease

local historic sites including the Rebecca Nurse House, just three miles from the campus as well as the world class Peabody Essex Museum and the McIntire District in neighboring Salem. Stay an extra night and enjoy a scenic drive up the beautiful coastal route 127 to Gloucester and Rockport. While you are on campus we hope you take the time to check out the first state-owned Zero Net Energy Building (ZNEB) and second largest (ZNE) project in the country and also visit our new computer classroom designed exclusively for our newly redesigned developmental math courses.

Rebecca Nurse Homestead
Danvers Historical Society
Danvers, MA 1678



First State-Owned Zero Net Energy Building
North Shore Community College
Danvers, MA 2011



Register Today!!

Anne and Marsha, Conference Co-Chairs

Preliminary Conference Information NEMATYC 2013

North Shore Community College
1 Ferncroft Rd.
Danvers, MA 01960

For directions to North Shore Community College's Danvers campus and Tapley Memorial Hall for the Friday night gathering go to www.NEMATYC.org

You can still submit a proposal for a presentation!

**We have extended the date to Wednesday February 20.
Use the online form at <http://nematyc.info/PROPOSAL/>**

The conference begins Friday, April 5 in the afternoon and continues through Saturday afternoon April 6. This year your registration fee includes the Friday night event!

FRIDAY EVENING EVENT: Join us Friday evening for Jim McCallister's talk on the rich local history of the North Shore and relax with your friends over a glass of cheer and dinner at the historic **Tapley Memorial Hall** in Danvers.
Sponsored by PEARSON PUBLISHING.



FRIDAY Highlights

2:30 to 5:00 - Registration
3:30 - Presentations begin
6:00 - 9:00 Casual dinner including, beer, wine and dessert at the historic Tapley Memorial Hall in downtown Danvers.

SATURDAY Highlights

8:00 to 12:00 - Registration
8:30 - Welcome
9:00 - Presentations begin
12:00 - Lunch and speaker

Local Accommodations

The DoubleTree Hotel is just down the road from the campus at 50 Ferncroft Road, Danvers, Massachusetts, 01923, Book your room before March 6 and pay the discount room rate of \$119 per night. Please call 1-800-222-TREE (8733) to make reservations or book online at <http://www.bostonnorthshore.doubletree.com> . Group code is NSC.



Free shuttle service between the hotel and the college!

For Your GPS

North Shore Community College: 1 Ferncroft Rd Danvers, MA 01960
Tapley Memorial Hall: 13 Page St, Danvers, MA 01923
DoubleTree Hotel: 50 Ferncroft Road, Danvers, MA 01923



**Register and Pay Fees by Credit Card or PayPal at the NEMATYC web site
<http://www.NEMATYC.org/> or see registration form on p. 13**

Here is a sample of presentations:

An Introduction to R

Joseph Manthey, University of Saint Joseph

R is an extremely powerful statistical software package used at many leading research universities and the New York Times to perform data analysis and produce graphics. In this presentation, I will show that R is also suitable for use in elementary statistics courses. Since R is an exceptionally large system, the focus will be on the subset of R commands needed for an elementary statistics course such as those needed for numerical summaries, frequency tables, graphs, regression analysis, probability distributions, simulations, confidence intervals and significance testing. One of R's best features is that it is free!

Concepts of Numbers : Teaching Pre-Algebra using the Discovery Method

Annette Guertin, Berkshire Community College

Concepts of Numbers is an innovative redesign of a traditional arithmetic course emphasizing concept development and collaborative learning. This workshop will present the promising findings from Berkshire Community College's first semester of implementing Concepts of Numbers for its classroom based developmental pre-algebra students.

Differentiated Instruction via Problem Solving

Natalya Vinogradova, Plymouth State University

To differentiate instruction does not necessarily mean to offer different sets of questions to different groups of students. Rich problems naturally differentiate instruction by allowing everybody to participate, yet challenging everyone at some point. Come to experience this approach. We will solve a problem of this kind working together, and will reflect on the learning process.

From Face-to-Face to Virtual Reality

Magdalena Luca, MCPHS University

During the Spring 2013 semester, I had to develop two new Online courses: an undergraduate Algebra course and a graduate Biostatistics course. Teaching online courses was entirely novel for me, and each course presented its own challenges. This presentation will show a series of techniques used to teach the courses at the MCPHS University. I will describe effective online teaching methods, and, in contrast, I will also illustrate what does not work or is difficult to put into practice when teaching mathematics in a virtual environment. Furthermore, I will invite all participants to engage in discussing methods available to college professors that could facilitate the process of improving teaching mathematics online.

Historical Development of Modern Probability Theory: Pascal, Fermat, and Bayes

Eiki Satake, Emerson College

This research presentation illustrates the historical development, philosophical foundations, and mathematical perspectives of the modern probability theory through (1) one of the greatest correspondences in the history of mathematics between Blaise Pascal and Pierre de Fermat, and (2) how Rev. Thomas Bayes invented and established the methods in quantifying personal probability called Bayes' Theorem. The author will present a couple of pedagogically relevant yet challenging questions and explain how Pascal and Fermat approached and derived the conclusion, and discuss how Bayes would have done it using his method. In a typical classroom situation, such topics are rarely mentioned and covered.

How ARE students learning math with a web-based homework system?

Debbie Panasuk, Quincy College

Computer software programs provide students with a variety of resources to aid them in their learning. As such, students actively learn by seeking knowledge while they develop their math skills. This presentation will focus on my recent research study which investigated how developmental math students solved problems and acquired knowledge and skills while they accessed the help resources in MyMathLab. Student observations were conducted with the screen capture software, CamStudio and a Livescribe Smartpen. Follow-up interviews were also conducted to glean what, if any learning strategies were developed by the participants when they used the web-based homework system to solve problems.

Inquiry Based Learning in Mathematics (Workshop)

Christine von Renesse, Westfield State University

Our group “Discovering the Art of Mathematics” offers several free books for empowering your students in the liberal arts to explore mathematics in an inquiry-based way. We connect the beauty of mathematics and the process of discovery with the arts and the humanities throughout all our activities. We believe that this is the key in motivating and enabling liberal arts students to engage with mathematics. In this 90 minute workshop, the participants would be actively investigating mathematics and then reflect on their experience and their own teaching practice.

This workshop will help you

- experience what mathematical inquiry can feel like,
- investigate particular content areas that might connect with your students,
- understand and practice ways for creating a classroom environment where productive, safe, and deep mathematical inquiry can take place,
- reflect on the interaction of teacher, student, investigations, mathematics, and inquiry materials in the classroom.

Mastering Math, Not the System

Anthony Belen, Hawkes Learning Systems

You know the scenario: Students seem to be doing well on homework, yet are performing poorly on exams. With Hawkes, students cannot “cheat the system” to get through assignments. Instead, they are held accountable for mastering the material without relying on learning aids. Discover how Hawkes motivates students to succeed! We will end the presentation with a little fun and raffle off a \$50 gift card.

Pre-Stats: If not Intermediate Algebra, then what?

Mary Moynihan, Cape Cod CC

Schools are looking at their Pre-Stats and Pre-nonSTEM tracks and asking themselves if it needs major revision. Many agree that there are algebraic manipulations in Intermediate Algebra that aren't essential to the nonSTEM track -- manipulations such as combining radical and rational expressions. Should we just drop Intermediate Algebra as a prerequisite? I say no and will share how I'm incorporating the rule of four in my Intensive six credit “looks a little like Intermediate Algebra”/Statistics to make the pre-nonSTEM track material more appropriate to Statistics.

Scintillating Software and Amazing Apps for Teaching Math:

James O'Keefe, Lesley University

This session will provide a brief overview of useful iPad apps for teaching mathematics at the postsecondary level. The main focus of the presentation will be FluidMath, which is a unique and innovative tool for teaching algebra, pre-calculus and calculus; it works on iPads, tablets, and SmartBoards. This software converts handwritten symbols to text, simplifies and solves equations, creates graphs and tables from equations, and allows for linked manipulation of representations. FluidMath enables the study of function families and functional behaviors in a way that is intuitive, seamless, and dynamic.

Sharing Session: Something That Works

Judy Carter, North Shore Community College

In the spirit of the Project ACCESS popular session “Something that Works”, the presenter will share quick activities that enhance student learning, icebreakers that foster a positive classroom atmosphere and group activities that encourage cooperative learning. Participants are encouraged, however, not required, to bring a simple activity that they have found useful in the classroom. Many of the activities involve few materials and minimal preparation time. Those in attendance will take home a packet of activities; some may even be used in your next class!

39TH ANNUAL CONFERENCE INFORMATION

The Anderson-Darling Normality Test Using Excel

Barry Woods, Unity College

While Minitab lists three (3) separate Tests for Normality, Excel lists none. However, Excel will be used to calculate and demonstrate the Anderson-Darling Normality Test.

The Challenges of Starting a New Life in Developmental Math

Jim Sullivan, Northern Essex Community College

A new developmental course called “Mathematical Literacy for College Students” was created at our college to give non-STEM students an efficient pathway toward transferable, college level math courses like Statistics, Quantitative Reasoning, and Liberal Arts Math. Explore the curriculum and pedagogy used during the first year of implementation and learn about the ups and downs in scaling-up this “New Life” course.

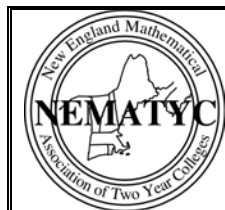
Register and Pay Fees by Credit Card or PayPal
<http://www.NEMATYC.org/>

Conference Refund Policy: A refund of 100% of your advance registration fees less the dues amount will be given upon receipt of a written request postmarked no later than two weeks prior to the conference. A 50% refund less the dues amount will be given if written request is postmarked within the two weeks prior to the conference. A refund for the Friday night dinner* will be given dependent upon restaurant policy. No refunds for non-attendance will be given for requests postmarked after the date of the conference. All requests should be sent to the NEMATYC Conference Chairperson. Refunds will be processed approximately four to six weeks after the conference.

**The Friday night event is sponsored, so a refund on this item is not applicable.*

NEMATYC EXECUTIVE COMMITTEE Spring 2012 - Spring 2013

President Meredith Watts MassBay CC MWatts.math@gmail.com 508.270.4264	Vice President David Henry Bristol CC David.Henry@bristolcc.edu 508.678.3425	Past President Mary Kehoe Moynihan Cape Cod CC MMoynihan@capecod.edu 508.362.2131 x4471	Secretary Marsha Pease North Shore CC mpease@northshore.edu 978.762.4000 x5495
Treasurer David Cox Southern New Hampshire U d.cox@snhu.edu 603.668.2211 x2223	At-Large Member Denise Robichaud Quinsigamond CC drobichaud@qcc.mass.edu 508.854.4373	At-Large Member Kenneth Takvorian Mount Wachusett CC ktakvorian@mwcc.mass.edu 978.630.9232	At-Large Member Robert Cantin MassBay CC RCantin@massbay.edu 508.270.4211
At-Large Member Anne O'Shea North Shore CC aoshea@northshore.edu 978.762.4000 x6264	Conference Chairs <ul style="list-style-type: none"> • Marsha Pease • Anne O'Shea 	Past Conference Chair Judy King NHTI, Concord's CC turkcay@comcast.net 603.224.4303	Conference Exhibitor Chair Elizabeth Donovan Bristol CC Elizabeth.Donovan@bristolcc.edu 508.678.2811 x3828
Webmaster Mary Sullivan Cape Cod CC msulli01@capecod.edu 508.362.2131	Student Math League Crdntr Dave Henry Bristol CC David.Henry@bristolcc.edu 508.678.3425	Social Media Director Susan McCourt Bristol CC susan.mccourt@bristolcc.edu 508.678.2811 x2447	Membership Chair Philip Mahler Middlesex CC mahlerp@middlesex.mass.edu 781.280.3861
Newsletter Editor Philip Mahler	Newsletter Production Editor Anne O'Shea		



The NEMATYC Newsletter is issued twice a year, in the Fall and in the Spring. Suggestions and submissions may be directed to the president or the editor.

NEMATYC NEWSLETTER
 Philip Mahler, Editor
 Middlesex Community College
 591 Springs Road
 Bedford, MA 01730-1197

Conference Registration Form

New England Mathematical Association of Two Year Colleges

39th Annual Meeting – Friday & Saturday, April 5 – 6, 2013

North Shore Community College

1 Ferncroft Road, Danvers, MA 01923

Early Registration Discount Date: Tuesday, March 20, 2013

You can register and pay online: <http://www.NEMATYC.org>

NAME _____

Preferred Mailing Address _____

Home __ College __ _____

Phone _____ Email _____

Institution/Affiliation _____

Do you plan to attend on Friday?	Yes	No
Would you serve as a presider?	Yes	No

CONFERENCE REGISTRATION FEE

*The registration fee covers admission to the conference, NEMATYC membership, the Friday night Evening Event***, Saturday continental breakfast and lunch.*

RATES: Full-time Educator or Professional	\$70*/\$80**
Part-time Educator, Retired, Student, Guest	\$40*/\$50**
Current Project ACCESS Fellow	\$ 0*/\$10**
Presenter (one waived registration/session)	\$ 0*/\$10**

**Early Registration Discount Rate if postmarked by Tuesday, March 20 or via online registration by Tuesday, March 20.*

***Registration at the door on the day of the event*

****Sponsored by Pearson Publishing.*

TOTAL ENCLOSED

\$ _____

(Note conference refund policy on page 13)

Please make checks payable to NEMATYC; please put the name(s) of conference attendee(s) on the check.

Questions? Anne O'Shea (aoshea@northshore.edu) or Marsha Pease (mpease@northshore.edu)

Mail registration and check to: Anne O'Shea
North Shore Community College
1 Ferncroft Road
Danvers, MA 01923

Mark Your Fall Calendar!
Friday September 20, 2013

NEMATYC 5th FALL DINNER/SPEAKER EVENT

Location to be Announced

“Differentials in Exile”
Thomas Tucker, Colgate University

Differentials have been banned from the first two semesters of calculus, mostly for foundational rather than practical reasons. In the meantime, they have thrived in exile in all the other sciences and economics. This is probably the most egregious way that mathematics instruction has failed its client disciplines. We will discuss the way they should be taught, their use in other disciplines, and some of their history, with particular attention to Lagrange's Analytical Mechanics.

Thomas Tucker is the Hetherington Chair of Mathematics at Colgate University. He is author of more than 50 papers on low-dimensional topology and combinatorics and, with Jonathan Gross, of the graduate text Topological Graph Theory. He is also a co-author of the Hughes Hallett calculus text (Wiley). He served for 11 years, 4 as chair, on the College Board's Advanced Placement Mathematics Committee, which writes the annual AP exams in calculus. He was also First Vice President of the MAA (1991-92) and chair of numerous MAA Committees, including CRAFTY and CUPM. <http://www.maa.org/cupm/>

The Chaos Game

1. Draw a triangle. Label the vertices A, B, C.
2. Pick any point inside the triangle and mark it.
3. Repeat steps A and B forever.
 - A. Roll a die (thus obtaining a random number between 1 and 6 inclusive).
 - B. If you get a 1 or 2, mark a point halfway to vertex A from the previous point.
If you get a 3 or 4, mark a point halfway to vertex B from the previous point.
If you get a 5 or 6, mark a point halfway to vertex C from the previous point.

These links play the game graphically:

<http://geostro.de/ChaosSpiel/ChaosEnglish.html>

<http://www.cut-the-knot.org/Curriculum/Geometry/SierpinskiChaosGame.shtml>

The Collatz Conjecture

- A. Pick any positive integer.
- B. If the number is even, divide it by two.
- C. If the number is odd, triple it and add one.
- D. Repeat steps B and C forever or until you reach 1.

The conjecture: You will always reach 1.

Please submit a proof to the editor for publication in the next newsletter.

http://en.wikipedia.org/wiki/Collatz_conjecture

Binomial Expansion and Plinko

http://phet.colorado.edu/sims/plinko-probability/plinko-probability_en.html

<http://www.wolframalpha.com/input/?i=expand+%28a%2Bb%29^11>