



NEMATYC NEWS

The News is available online at www.NEMATYC.org



Vol. 25, No 1

The newsletter of the New England Mathematical Association
of Two-Year Colleges

Fall, 2016

NEMATYC 2017

43rd Annual Meeting

Mathematics & Sustainability

Friday and Saturday, April 28-29th, 2017

Bristol Community College
Fall River, MA



Co-Chairs: Everilis Santana and Alice Wilson



From the President
Bob Cantin

Welcome to Fall 2016!

In eastern Massachusetts, we've had an extraordinarily dry (and hot!) summer. I'm looking forward to the cooler – and hopefully wetter – fall days.

I'm also looking forward to serving as NEMATYC's president for the next two years. During my graduate school years (in the 1970's) I was lured away from academia and into the fledgling computer industry. I had the good fortune to ride that tidal wave for nearly 30 years, witnessing and even being part of one of the most exciting technical development eras in history. I'm both proud and humbled at what we were able to accomplish over that time.

In the early 2000's, I had another good fortune to return to academia at MassBay Community College. I'm part time now but over the nearly ten years of my fulltime role I've been part of some cool evolutionary changes in math higher education.

Continued on page 3

**From Your AMATYC
Northeast Regional
Vice President**

Ernie Danforth



NEMATYC Colleagues:

There is a nip of fall in the air on this September morning. The trees are beginning to change color and the days are definitely getting shorter.

Much of what I have to say this year is a repeat of last year. For example, if you haven't already I am hoping you have the opportunity to select a student to be nominated for the AMATYC student scholarship. The nomination must be received by the AMATYC president by October 15th. Details can be found on the AMATYC website at www.AMATYC.org.

Also Affiliate scholarships are available for one early bird registration for the Denver conference. NEMATYC is responsible for determining how the scholarship is awarded, but I hope it is used. It would be a shame to waste it.

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Annual Conference Information
NEMATYC 2017
43rd Annual Meeting
Mathematics & Sustainability
Friday and Saturday, April 28-29th, 2017
Bristol Community College
Fall River, MA



Everilis Santana

Greetings from your 2017 conference co-chairs!
 The Spring NEMATYC meeting will take place at Bristol Community College (BCC) in Fall River, MA. We hope to see you on April 28th and 29th for our annual conference.



Alice Wilson

The theme this year is Mathematics & Sustainability. Here at BCC we pride ourselves on our sustainability efforts.

Our newest addition, the John J. Sbrega Health and Science building, is the largest Zero Net Energy (ZNE) classroom and science lab building in the Northeast. A ZNE building produces enough renewable energy in a year to meet the building's energy requirements for the year. When you come to the conference you can park under our solar canopy, which is New England's largest solar canopy, covering about 800 parking spaces and capable of supplying about half the energy needs of the campus.

We are looking for people like you to come share your ideas and experiences! We hope that you will consider giving a talk this year. We welcome both veteran and new speakers. Your presentations help sustain a cycle of renewed professional growth among our members. Even if you choose not to present, we hope you will still attend. You can establish helpful relations with new colleagues and renew connections with old friends.

There is a block of rooms reserved at the Hampton Inn Fall River/Westport, 53 Old Bedford Road, Westport, Massachusetts, 02790. Call (508)-675-8500 or visit the website using the group code NEM to reserve your room at a discounted rate of \$94/night.



Health and Science ZNE Building

Your conference co-chairs,

Everilis Santana and Alice Wilson

**Call for
Presenters
Inside**

**Early Decision
Monday
January 9, 2017**

From the President- continued from page 1

I gleaned great ideas as I've been active in both AMATYC and NEMATYC. I've been most interested in developmental math education and was honored to serve on a Massachusetts Department of Higher Education task force to recommend policy changes for developmental math. At MassBay, I have been able to implement several curriculum changes and see how the students have benefited. It's a work in progress and I'm hoping to be part of that effort for a while to come.

NEMATYC's annual conference is a great way to get – and share! – ideas for improving our students' experience. Mary Moynihan, Wanda Garner and their crew hosted the last conference this past spring at Cape Cod CC. What a great venue and what a great program! Our next annual conference will be hosted at Bristol CC next April. I recall attending a past conference there and

really look forward to returning. (Don't miss the Portuguese sweet bread!)

Between now and then, I ask you to consider what your program might need to help students more. And if you've done something at your college that seems to be working, please consider sharing your experience with us by presenting at the spring conference. Details will be coming out shortly but to coin a phrase we've all heard on TV, think about "what's in your curriculum?"

Check out our NEMATYC web site (<http://www.nematyc.org/>) for updated information and feel free to connect with me with ideas or questions. I'll see you around!

Robert Cantin
NEMATYC President
MassBay Community College

From the Regional VP – continued from page 1

We are in the Teaching Excellence Award cycle. This award will be given to as many as 8 AMATYC members in odd numbered years. The number given is determined by the number of applications received. Please consider nominating someone from NEMATYC or someone from each of the states represented. I would love to see multiple winners from the northeast.

Also I want to encourage you to consider attending the 42nd Annual AMATYC Conference in Denver November 17-20. If you have never attended an AMATYC Conference, you should seriously consider it. You will get to hear the leaders in mathematics education for the first two years of college and to meet colleagues from all over the country. It is a chance to learn about what is on the cutting edge and a chance to pick the brains of these leaders. One thing that I know from personal experience over my previous 27 years of attending this conference is that everyone is willing to share and everyone is willing to listen. I hope to see you all at Math at a Mile High.

The election cycle is in full swing again, and even though elections will not take place until next summer, I can tell you for sure that we will need someone to run for Northeast Region VP. I will not be seeking a third term. Serving your colleagues as a member of the AMATYC Executive Board is a very challenging yet rewarding experience. If you have any questions feel free to contact me or I am sure Phil Mahler or Jack Keating would also be willing to share with you their thoughts on serving on the Executive Board.

Finally, I want to thank so many of you for all of your support through my recent experience of losing my partner, my wife, my best friend to cancer. This fall will be my 28th consecutive AMATYC conference and my first without Kate, but one thing I know for sure is that I am not making the trip to Denver alone. I will be surrounded by a sea of friends. The only words I have to all of you is Thank you. Thank you. Thank you.

Ernie Danforth

Submit a presentation proposal for the April 2017 NEMATYC meeting at
<http://nematyc.info/PROPOSAL/> .

Do you know that the NEMATYC web site is at www.NEMATYC.org, and maintains lots of good information about your organization?

Other places you may want to visit.

AMATYC www.AMATYC.org
NEMATYC www.NEMATYC.org
NCTM www.NCTM.org
MAA www.MAA.org

NES/MAA sections.maa.org/northeastern/
ASA www.AMSTAT.org
ATMNE www.ATMNE.org
NADE www.nade.net/

Memorial

Kate Danforth



Some of you know that Kate Danforth, the wife of Ernie Danforth, our Northeast Regional Vice President, passed away on August 7 after an illness of several months. Kate and Ernie attended every AMATYC conference since 1989.

She received the AMATYC Teaching Excellence Award in 2009, among many, many professional accomplishments and awards, nationally, statewide, in NYSMATYC, and at her college, Corning Community College.

She received her college's Board's Award for Teaching in 1990, the State University of New York Chancellor's Award for Excellence in Teaching in 2004, and the SUNY Chancellor's Award for Excellence in Faculty Service in 2004.

She was a past president of NYSMATYC, and campus math contest coordinator for NYSMATYC's Math League for over 25 years. In 2004, NYSMATYC presented Kate with its Outstanding Contributions to NYSMATYC award.

On a personal note, when this editor became the AMATYC Northeast Regional Vice President in 1997 and was as nervous as can be trying to run his first regional meeting, struggling, Kate Danforth saw my nervousness and fear and stood up and offered to help me pass out my handouts. Then I knew I had friends there, and things were much easier. She always had a special place in my heart for that simple act of kindness – something most people would not think to do.

Ernie noted that in the picture here she is wearing a sweater that she knitted.

YOU are the **M** in STEM

NEMATYC HAS A FACEBOOK PAGE

Autumn Alden, NEMATYC Social Media Director maintains NEMATYC's Facebook page.

If you want to get news about NEMATYC and math and you're on Facebook, search for New England Mathematical and you'll find us.

If you "Like" the page, you'll see items of interest to NEMATYC members and friends. If you're not on Facebook, please share this information with your colleagues.



Follow NEMATYC on Twitter @NEMATYC.

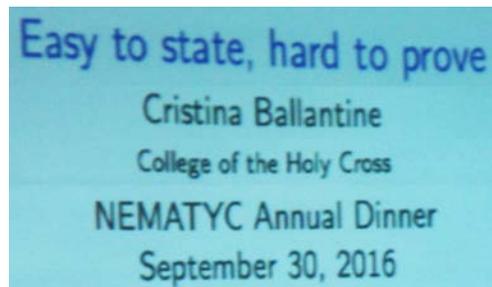


is a mentoring and professional development initiative for two-year college mathematics faculty. The project's goal is to provide experiences that will help new faculty become more effective teachers and active members of the broader mathematical community.

Fall Evening Speaker Event

The 8th Annual NEMATYC dinner meeting was held September 30, 2016 at O'Connor's Restaurant in Worcester. The featured speaker was Professor **Cristina Ballantine** of the College of the Holy Cross, who spoke on *Easy to State, Hard to Prove*. Vice president **Alex Cotter**, Massasoit CC, coordinated the event.

Several dozen of our colleagues attended. Professor Ballantine talked about various hypotheses that have resisted proof for decades and centuries, several of which have actually been recently proved—notably Andrew Wiles' proof of Fermat's Last Theorem, that there are no positive integer solutions to $a^n + b^n = c^n$ for $n > 2$. The Pythagorean Theorem cannot be generalized.



Some of the attendees – more on the history page <http://history.nematyc.info/>



Clockwise: Vice President Alex Cotter, Speaker Cristina Ballantine, Lynne DeSantis, former NEMATYC President Dave Henry, President Bob Cantin



Foreground left, going back, Tonka Zelenkova, Joe Heise, Daniel Seltzer, Waterford H.S., On right, foreground going back, Maria Arambel, Dora Ottariano, Richard Neville, Cliff Martin

NEMATYC STUDENT MATH LEAGUE REPORT

John McColgan (Roxbury Community College), Student Math League Awards Coordinator

RECOGNITION AWARD PROGRAM

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

The top-placing student in the AMATYC SML Competition at each school in NEMATYC's region receives a \$100 award. The only criteria is the student must participate in both the Fall and Spring competitions.

The top school receives the Lois A. Martin NEMATYC Student Mathematics League Award.

Offer Your Best Students A Chance To Compete Nationally

Highlights

Middlesex Community College took top honors for the highest team score among NEMATYC participants in 2015-2016.

The top student was Zixian Qiu at Middlesex Community College.

Join the Fun

The first test of the 2016-2017 competition will be given between Friday, October 14 through Saturday, November 5. If your college does not have a team, consider joining the collegial rivalry among NEMATYC schools. Your

involvement can be as simple as just administering the tests or you might include practice sessions and even advise a campus mathematics club. Your students will thank you for giving them the opportunity to compete.

Membership in the AMATYC Student Math League is free for institutional members, or a one-time fee of \$50 after Sept. 30 for non-institutional colleges. Visit www.amatyc.org, or contact John McColgan for more information. JMcColgan@rcc.mass.edu

NEMATYC 2015-2016 Student Math League Individual and College Standings*

Rank	Student	College	Score	Rank	College	Score
2	Zixian Qiu	Middlesex CC	53.5	3	Middlesex CC	154
4	Gunnar Nichols	NHTI Concord's CC	34.5	5	NHTI Concord's CC	118.5
6	Tara Brennan	Massasoit CC	32	6	Massasoit CC	117.5
10	Arek Parsons	Holyoke CC	29.5	8	Springfield Technical CC	113
11	Christopher Wyckoff	Springfield Technical CC	28	9	Holyoke CC	112
12	Katelyn LaClaire	Greenfield CC	27.5	11	Greenfield CC	111
13	Tasaday Green	Greenfield CC	27	12	Thompson School of Applied Science	83
15 (tie)	Josiah Alexander	North Shore CC	26.5	13	Cape Cod CC	82.5
17	Jashmin Tin	North Shore CC	25.5	14	North Shore CC	78
18	Eric O'Dea	Springfield Technical CC	24	16	Bristol CC	57.5
18 (tie)	Brian Engholm	Middlesex CC	24	17	Mount Wachusett CC	53.5
20 (tie)	Li Li	Holyoke CC	23	19	Roxbury CC	25

*Rankings are for NEMATYC participants in the AMATYC Northeast Region top 20

New registrations are welcome at AMATYC anytime during the testing year. You can register online.

**Dates for the 2016-2017
Student Mathematics
League Math Competition**

Round 1: Friday, October
14 through Saturday,
November 5, 2016

Round 2: Friday, February 10
through Saturday, March 4, 2017

CALL FOR NOMINATIONS

Do you like getting together and having a good time with a great group of people? Are you a mathematics educator? If so, then NEMATYC is the group for you and the NEMATYC Executive Committee wants you to join our enthusiastic, friendly group.

Every year, during the business meeting at the annual conference, NEMATYC holds elections for open positions. At the 2017 conference, we will need to fill a number of Executive Board positions. The positions that will be available are:

Vice President, Treasurer & Two At-large Members

We are looking for you to help us fill these roles. Working with the NEMATYC Board is a rewarding and fun experience, and is a wonderful way to put your professional dedication into action! It's great for you, your department and college, and the New England mathematics community. The time commitment includes attending the annual conference (which hopefully you would attend anyway) and Board meetings that occur three times per year. These meetings are typically held in September, January, and June.

Here is a brief overview of the available positions (see the Constitution at www.NEMATYC.org for a more detailed description of each position).

Vice-President

- One-year term
- Conducts meetings and fulfills the obligations of the President if the President cannot
- Assumes Presidency if the President is unable to continue in office

Treasurer

- Three-year term.
- In charge of all the financial records and funds of the Association.

At-Large Member (two to be elected)

- Two-year term
- Attend Board meetings
- *A great way to get involved with NEMATYC!!*

Constitutional Duties of the Executive Committee:

1. Certify nominees as candidates for elected positions.
2. Review and present new business items to the annual meeting.
3. Review all constitutional amendments and bring their recommendations to the annual meeting.
4. Select the site and the date(s) of the annual conference.
5. Maintain the policy manual.
6. Perform all other duties needed to maintain the well-being of the association within the limitations of the constitution.

Please contact Past President **Dave Henry** at
David.Henry@bristolcc.edu

for questions, information, or to place your name – or that of a colleague – into nomination!

Submit by:
January 9th

Call for Presenters

43rd Annual NEMATYC Meeting

Friday and Saturday, April 28-29th, 2017

Bristol Community College - Fall River, MA

Early Decision Deadline: Monday January 9th, 2017

Submit online!

Easiest and preferred method.
Save a tree - submit your proposal online at <http://nematyc.info/PROPOSAL/>

Conference Theme

Mathematics & Sustainability

Suggested themes: Open Educational Resources, STEM starter programs, Data Science in the first two years, Vision Project course revisions, boot camps, using math in other disciplines, online college math labs/math tutoring, online/blended courses, Gateway Programs, teaching techniques and learning styles, cutting edge software/technology, modeling data, service learning, flipped classrooms, emporium classroom or other accelerated classrooms, and K-12 and college collaboration, to name a few.

Presenter _____

Note: The registration fee for ONE presenter per presentation will be waived. Please specify which one if there are multiple presenters. For multiple presenters, please provide the following information for each presenter. Use additional pages as necessary.

Contact information

College or affiliation _____

Contact Address (College Home) _____

Telephone _____ Email _____

Time preference: Please indicate a first and second choice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Friday afternoon	Saturday Morning	Saturday Afternoon	No Preference
Length of presentation	<input type="checkbox"/> 45 Minutes <input type="checkbox"/> 90 Minutes	Workshops, short seminars, discussion panels, poster sessions are encouraged.		

Presentation Title: _____

Abstract*: _____

*Normally 50 to 100 words. Please attach on a separate sheet if necessary.

Biography: Please supply a 25 to 50-word biography of each speaker, on a separate sheet.

Equipment/technology needs:

If you need additional information or have any questions, please call or email Alice Wilson at (315) 212-6987 or alice.wilson@bristolcc.edu

Proposal Early Decision Deadline Monday, January 9th, 2017.

Mail to: Alice Wilson Bristol Community College 777 Elsbree Street Fall River MA 02720	Email submissions are accepted. Please include all of the above information. Email: alice.wilson@bristolcc.edu All submissions will be acknowledged by email.
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Test Your Knowledge about "Fall River"*

Turn your electronics off for this test, or you get no points at all. ☺

True or False?

1. The infamous Lizzie Borden was born in London, England.
2. The banjo was created in Fall River in the 1830's.
3. It has been shown that Lizzie Borden probably did not kill her father and mother, but it was an angry, deranged business partner of her father, who made many enemies in the business community there.
4. Rhode Island is an island. (Yes this has nothing to do with Fall River. ☺)
5. Fall River is the only city in the U.S. to have its city hall located over an interstate highway.
6. Parts of the film "Gangs of New York" were filmed in Fall River.
7. Fall River is home to the highest percent population of Portuguese Americans in the country.
8. Fall River has the world's largest collection of WW II naval vessels.
9. Fall River has a bigger UFO museum than Roswell, New Mexico.
10. Celebrity TV cook Emeril Lagasse was born and raised in Fall River, and started cooking at a vocational technical high school in Fall River.
11. Fall River was originally called Freetown.
12. Fall River is also nicknamed "The Scholarship City."
13. The name Fall River refers to the Quequechan River which flows through the city, dropping steeply into the bay.
14. Fall River was once named Troy.
15. Lizzie Borden's father was a Lutheran pastor.

*Answers on Page XII.

Miscellaneous

On the old Andy Griffith Show a person presents a bond to the town of Mayberry that pays $x\%$ annual interest. The bond is for \$100, and is being presented after 100 years (1861 - 1961). It is now worth \$349,119.27, What is x ? Not a hard problem but I found it interesting that they bothered to get the current value correct down to the penny.

One of the problems presented by Cristina Ballantine at the Fall dinner/speaker event (page 5):

The Collatz Conjecture

(or the $3n + 1$ problem) first proposed in 1937 by Lothar Collatz.

Start with a positive integer n . If n is even, divide it by 2.

If it's odd, multiply it by 3 and add 1. Repeat with the answer.

$$f(n) = \begin{cases} 3n+1 & \text{if } n \text{ odd} \\ \frac{n}{2} & \text{if } n \text{ even} \end{cases}$$

Try a few examples of starting values of n . If you can prove that the result you see must be true for all positive integers, please let me know and I will publish it here. Under my name. ☺ You can also web search "3n+1 problem".

Nature's Own
Formula *i*

Carefully extracted from the root of negative one. A complex combination of vitamins A and B: $A + Bi$

Nature's Own
Vitamin *e*

2.71828182845...
grams of goodness per tablet

You'll sleep like a log –
the natural way.

The NEMATYC Conference: 40, 30, 20, 10 years, and... 1 Year, Ago



NEMATYC 1977 Paul Drowne was coordinator for the 1977 Annual Spring Meeting. It was held at **Mount Wachusett CC** in Gardner, Mass. on Saturday, April 30 1977, and the cost was \$6.

The program had a keynote address by **Stanley Bezuska**, Boston College, followed by discussion/sharing.

SHARING by all participants

"Each of us uses various innovations to motivate students or to beautify or glamorize a particular unit. Whether these innovations are original or plagiarisms really doesn't matter. What does matter is that many of us would benefit from exposure to your "tricks of the trade." We are all anxious to see those tidbits that work and may be new to us."

NEMATYC 1987 Michael Latina of the **Community College of Rhode Island** chaired the 1987 conference on March 7, 1987, at the Flanagan Campus, in Lincoln, Rhode Island. The theme *Unsolved Problems -- In Mathematics And Education*, had the following fees: \$18 for Faculty, \$10 for students The program included the following.

Keynote

- Unsolved Problems And Insoluble Problems, J. Morton Briggs, URI

Presentations

- New Ideas For The Electronic Blackboard, Hank Harmeling, NSCC
- Strategies For Success -- Thirteen Years Of A Math Lab, Ed Madonna, CCRI

- An Experimental Gambling System, Dean S. Clark, URI
- Has The Content Of Your Algebra Syllabus Changed In 20 Years?, Mary A. Cullen, Mr. Wachusett CC
- Geometry In India, Gurchuran Bhalla, Bronx CC
- Mathematics As A Creative Means, Barry Woods, Unity College

In a letter to a few activists Bob Yawin suggested that NEMATYC needs "a treasurer to give our group stability and continuity." This instigated meetings in which it was decided to offer this suggestion to the membership, which was done the following year.

NEMATYC 1997 NEMATYC'97 was held at **Massasoit Community College**, Brockton, Massachusetts, for two days, on Friday and Saturday, April 11-12, 1997. The theme was *Surfing Towards 2000*. Vice president and program chair was **Kath Soderbom**.

The Friday evening Banquet Speaker was Dr. Robert Rose, President of Massasoit Community College.

The Saturday luncheon speaker was Philip Mahler, Middlesex CC and Regional Vice-President of AMATYC.

A sample of the 21 presentations is:

- Teaching, Learning, and Problem Solving, Paula Wolf, Suffolk University
- Collaborative Discovery Lessons for PreAlgebra, Jim Sullivan, Massachusetts Bay Community College
- Mathematics Laboratories for Engineering Technology, Gary Simundza, Charlene Solomon, Wentworth Institute of Technology
- A Quick Tour of the TI-83, Thomas Pandolfini, Joyce Oster, Johnson & Wales University
- Using Technology to Surf the Waves of Calculus Reform, Robert Kowalczyk, Adam Hausknecht, University of Massachusetts Dartmouth
- Statistics: Meaning Vs Mechanics, Gary Tataronis, Massachusetts College of Pharmacy and Allied Health Sciences
- How Graphing Calculators Change the Teaching and Learning of Trigonometry, William Boelke, Central Connecticut State University
- Alternative Delivery Systems for Introductory Algebra, Jack Keating, Lois Martin, Kath Soderbom Massasoit Community College
- Factor $x^8 - 3x^5 - 4x^4 - 5x^3 + x^2 + 2x + 2$ - An Introduction to Computer Algebra, Philip Mahler, Middlesex Community College
- Minitab, Barry Woods, Unity College
- The Project Enhanced Classroom, Peter Rosnick, Lindy Gougeon, Peter Letson, Sue MacLeod Greenfield Community College
- Effects of a Concept-Oriented Introductory Statistics Course on Attitudes towards Mathematics and Statistics, Dr. Philip Amato, Dr. Eike Satake Emerson College
- A Hot One in Seville, Steve Krevisky, Middlesex Community - Technical College

NEMATYC 2007 NEMATYC 2007 was held at **Bristol Community College** on Friday and Saturday, April 20-21, 2007. The theme was "Expand Your Horizons". The conference chair was **Elaine Previte**.

After Friday evening's dinner attendees were regaled by a half-dozen singers, notably including the conference chair and "Lyrical" - Peter Plourde - a math adjunct professor and accomplished rap artist.

A sample of the 30 presentations:

- FluidMath: A Mathematics Sketching Tool, Donald Carney, Fluidity Software, Inc. and Joseph J. LaViola, Brown University
- Are You Considering Teaching Probability?, Roberta Kieronsky, UNH Manchester
- The Presentation of Fundamental Math Skills in an Introductory Chemistry Course, James Pelletier, Bristol Community College
- Connect Math: Facilitating Transfer in Mathematics, President Jack Sbrega, and Elaine Previte, Bristol Community College, Mary Moynihan, Cape Cod Community College, Ronald Pitt, Bridgewater State College
- Creating Multimedia Lessons and Tutorials for your Courses, Judy Carter and Beth Lucas, North Shore Community College
- Civic Engagement: What's Math Got To Do With It?, Dora Ottariano, Beth Fraser, Michael Williamson, and Linda Dart-Kathios, Middlesex Community College, and Becky Warren, Lowell National Historical Park
- An Introduction to Design Theory, Stephanie Costa, Rhode Island College
- MyMathLab: Commercial Presentation, Kevin O'Brien, Addison Wesley and Prentice-Hall
- Creating Online Math Tutorials: An Interactive Approach, Mary E. Sullivan, Cape Cod Community College
- An Assessment Procedure for a First Semester Calculus Course, Eric Johnson, United States Coast Guard Academy
- Adjunct Faculty Sharing Session, Judy King, New Hampshire



For several years John Jacobson created NEMATYC π clocks to be raffled off. To his right, Steve Krevisky; to his left Lois and Cliff Martin

NEMATYC –One Year Ago NEMATYC 2016 was held at **Cape Cod Community College**, West Barnstable, MA, on Friday and Saturday, April 29 - 30, 2016.

The theme was "Relax, Refresh, Renew".

The conference cochairs were **Wanda Garner**, Cabrillo College, CA, and **Mary Kehoe Moynihan** of CCCC.

Participants enjoyed a great program, networking Friday evening at the Commodore House, and keynote address by George Cobb, renowned and influential leader in the teaching of statistics.

A sample of the 24 sessions:

- Talking Math in a Non-Math Course, Aaron Wan, Mary Moynihan; Panelists: Scott Anderson–Art, Hemant Chikarmane–Microbiology, Trish Allen–English, Laura Seabury–Nursing – all from Cape Cod CC
- Supplemental Instruction Pilot in Applied Statistics at Fitchburg State, Lori Leonard, Mary Ann Barbato, Fitchburg State Univ
- Flipping Calculus: Classrooms Circa 2016 vs. Circa 1996, Fei Xue, Mako Harut, Univ of Hartford
- Updating the GAISE College Report, Robert Carver, Stonehill College
- The Mastery Model in Teaching Beginning Algebra, Glenn Newman, Newbury College
- Reach Every Student in Every Class Every Day: Flipping Calculus and Precalculus, Anne O'Shea, North Shore CC
- Solving Linear Programming Problems Using SIMPLEX on a TI-Calculator, Joe Heise, New Hampshire Tech Inst
- MindTap Math Foundations by Cengage Learning, Nathan Kurtz, Glendale CC
- Improving Learning for Developmental Math Students with Hidden Disabilities, Phyllis Keenan, Greenfield CC
- Addressing First-Year Students' Math Issues, Magdalena Luca, MCPHS Univ



Wanda Garner, Cabrillo C., Mary Kehoe Moynihan, Cape Cod CC, Maria Arambel, Middlesex CC, Anne O'Shea, North Shore CC, Claudia Nugent de Rago, Middlesex CC

Join NEMATYC

Not a member of NEMATYC?

Join by sending the \$10.00 annual membership fee, payable to NEMATYC, to the NEMATYC Treasurer.

David Cox, NEMATYC Treasurer
Southern New Hampshire University
2500 N. River Road
Manchester, NH 03106

Answers to the Quiz on page IX.

1. FALSE
2. That would be news to me.
3. FALSE
4. TRUE, that is why the official state name is The State Of Rhode Island And Providence Plantations
5. TRUE
6. That would be news to me, too.
7. TRUE, 40%
8. TRUE, at Battleship Cove; see the picture.
9. That would really be news to me.
10. TRUE
11. TRUE
12. TRUE, because Dr. Irving Fradkin founded Dollars for Scholars there in 1958
13. TRUE; and Quequechan is a Wampanoag word believed to mean "Falling River" or "Leaping/Falling Waters."
14. TRUE
15. FALSE, he was a penny-pinching wealthy businessman. Lizzie had a lot to inherit if he and her step-mother were dead.



Having half a page to fill, I went on the 'net to find some interesting facts. They probably are known to you, but they are still interesting—at least I think so. ☺

From www.mathpages.com:

One of the most frequently re-discovered facts about the Fibonacci numbers 0,1,1,2,3,5,8,13, 21,34,... is that if we tabulate these numbers in a column, shifting the decimal point one place to the right for each successive number, the sum equals 1/89.

. 0	$\frac{1}{89}$
. 01	
. 001	
. 0002	
. 00003	
. 000005	
. 0000008	
. 00000013	
. 000000021	
. 0000000034	
etc.	

. 01123595505618... = 1/89	

If you shuffle a standard deck of 52 playing cards well – i.e. truly randomize it—it is all but certain that that order of cards has never occurred before.

http://www.matthewweathers.com/year2006/shuffling_cards.htm

$$e^{i\pi} + 1 = 0$$

The equation above is “Euler’s Identity”. Stanford mathematician Keith Devlin called it “The Most Beautiful Equation”, and others have been equally enthusiastic. <http://www.livescience.com>

I have always agreed since I first saw it. Why should $\sqrt{-1}$, e , and π be related like this? Bizarre, since none of these three interesting numbers would seem to have anything in common.

The Birthday Problem

This is a well-known fact but just in case you never saw it. If you have 23 people in a room the chance of two of them having the same birthday is over 50%. ... not intuitive, since the chance that your birthday is the same as mine is one in 365.

If there are 45 people in the room the probability is above 0.9.

News from our Campuses and Colleagues

Bristol Community College

Alice Wilson reports that **Gabriel José Porrata Vallejo** has joined the full-time mathematics faculty at Bristol. Gabriel has a Masters in Mathematics from the University of Iowa, and a Bachelor in Mathematics from the University of Puerto Rico. Gabriel has been teaching Mathematics at Kirkwood Community College (Iowa), where he was the Louis Stokes Alliance for Minority Participation (LSAMP) Advising faculty. He was also active in the STEM Club as an Advising faculty in addition to being part of the Kirkwood Community College Concert Band as a Clarinetist - 1st chair and The Quire: Iowa City's LGBT Choir as Bass!

Also see *Reflections on the Board of Higher Education 2.7 GPA Project* below, by **Autumn Alden**.

Middlesex Community College

Phil Mahler reports two new full-time faculty at Middlesex this Fall, **Aisha Arroyo** and **Robyn McDonough**, and one retirement—Phil.

Aisha transferred from Massasoit Community College, and is a Project ACCESS fellow, in the second year of her cohort. She has been featured in this newsletter several times. She is a bit of a celebrity, and accomplished at the national level. She has placed or tied for 1st or 2nd for two years at AMATYC conferences' Faculty Math League Competition.

In our past newsletters you'll find her at page 14 of the Spring 2014 edition, Page 4 of the 2015 Fall edition, and page 15 of the spring 2015 edition. She received a B.S. in Applied Mathematics from the Georgia Institute of Technology and an M.S. in Mathematics from the University of Illinois at Urbana-Champaign (UIUC). She was a Teaching Assistant at Georgia Tech for two years and at UIUC for her first year. She taught part-time and full-time temporary at Wentworth Institute of Technology and part-time at Bunker Hill Community College. She started working full-time at Massasoit Community College in Fall 2013.

Robyn was an adjunct at Middlesex for 5 years, and before that taught mathematics at Lowell High School for 7 years. Before her teaching she worked as an accountant for 2 ½ years. Robyn holds a Bachelor's degree from Boston University in Business Management, concentration Accounting, a Masters from Fitchburg State in education - curriculum and teaching, and is currently completing a Masters at Rivier University in teaching mathematics.

As noted above, **Phil Mahler** has retired from full-time teaching, and is teaching as an adjunct this semester. Phil started at Middlesex in 1982.

Peter Shea reports that *The Go Open* initiative (<http://preview.tinyurl.com/MassGoOpen>) promotes the use of open educational resources among Massachusetts community colleges in order to reduce the cost of textbooks and other educational material. Massachusetts community college faculty submit proposals to the Massachusetts Community College OER Council which, if approved, can result in stipends for faculty who adopt and/or create open educational resources.

The MCC math department has submitted a proposal to replace a pre-calculus textbook which costs \$211.75 with an open textbook. This could result in saving MCC math students several thousand dollars. Peter is Director of Professional Development at Middlesex.

Quinsigamond Community College

Denise Robichaud, long time NEMATYC contributor, among other things, reports the following.

New Faculty The QCC Math Department welcomes Professor Ibar Delacruz as a full-time member. Ibar brings a cross discipline knowledge base to the School of Math & Science by holding a B.S. and M.S. in Physics and is currently working on his Ph.D. at WPI.

Mass Transfer Pathways Professors Andreana Grimaldo and Ulises Poyser attended the MassTransfer Pathways meeting held at Fitchburg State University last spring. The purpose of this meeting was to convene representatives from all community colleges, state universities, and the different UMass institutions from our state and decide on the courses that would constitute the first two years of a math major at any of our state institutions. As a statewide group, we have agreed that the first two years of a math major's curriculum will include:

Calculus I	Differential Equations	Physics I (calc based)
Calculus II	Linear Algebra	Physics II (calc based)
Calculus III		

Academic Planning and Review During this entire academic year the Math Department will be undergoing APR. We will be reviewing, examining, and gathering data on all of our math courses and making plans for improving our curriculum to ensure we are meeting the needs of students and of the programs that our department supports at QCC.

Math Team After a brief hiatus, QCC will once again have a Math Team under the capable guidance of Professor Philomena D'Allesandro.

AMATYC Three members of the QCC Math Department will attend the upcoming AMATYC conference and hope to see you there!

Roxbury Community College

John McColgan reports that **Ben Anilus** started as a new full-time faculty member in Fall 2015, and **Valerie Dietel-Brenneman** started there in Spring 2016.

Clark Grain retired as of May 2016 and plans to continue teaching math as an adjunct. I (editor) have known Clark for many years through his teaching and contributions to the Mass Community College Council.

John further reports “we began implementing with co-requisite courses for our Intro to Statistics courses. Our model is very similar to what **Jim Sullivan** from Northern Essex Community College shared at a NEMATYC conference. Half the students enrolled in the Intro to Stats courses either placed there or went through our dev. ed. math sequence. The other half are at an Intro to Algebra level and in addition to the Intro to Stats class they take an additional three hours of algebra per week with the same instructor. During this pilot phase, the college is not charging the students for the algebra section. There were three sections in the Spring, one in the Summer, and three in the Fall. A look at the Spring classes showed promising data.”

Reflections on the Board of Higher Education 2.7 GPA Project

Editor’s Introduction: Most readers will know that the Massachusetts Board of Higher Education has instituted a pilot program by which a student entering a Massachusetts community college with a high school GPA of 2.7 or above qualifies to take a college level (i.e. gateway, transferable) mathematics course. The following are some reflections by Autumn Alden on the experience at Bristol.

We took applicants that were coming from nine particular high schools (mix of public, private, traditional, and vocational schools with urban and suburban representation). For students that had graduated between 2012 - 2014 their transcript was reviewed and their GPA was recalculated on 4.0 scale to include only English, math, science, social studies, and foreign language. Four units of English and fourteen units total were required, but all units of appropriate coursework were included.

Students with GPA 2.7 and above were exempt from all developmental math and allowed to take any college level math class required by their program (Statistics, Liberal Arts Math, even College Algebra). The same was true of students with a GPA 2.4 - 2.69 with four years of passed math including math in senior year. Students with GPA 2.4 - 2.69 without four years of passed math or without math in senior year, along with students with GPA below 2.4, were placed by Accuplacer.

In Fall 2014, a total of 1,005 students has their transcript evaluated. Of those, 690 did not meet the criteria because their GPA was less than 2.4 or it was between 2.4 - 2.69 but they didn’t have four years of passed math including math in senior year. Of the 315 that met the criteria, 235 actually registered for classes. Students were asked to take the Accuplacer for comparison purposes. Of the 192 students that took the Accuplacer, 118 placed into developmental math.

Again, we started with 1,005 transcripts and we were down to 118 who would have been required to take developmental math based on their Accuplacer scores, but who were allowed to skip it because of their high school GPA. Of those 118, only 34 elected to take college level math in Fall 2014. The rest either put math off or, by choice or miscommunication, took developmental math anyhow. Of the 34 students that took college level math, 29 passed their class.

My observation is that preliminary results are very promising. There was an 85% success rate for students who placed by GPA instead of Accuplacer. However, we are talking about a very small population of students. Only about 12% of students considered were affected by the new placement policies. While I think it’s a step in the right direction and was certainly helpful in saving those 29 students a semester or two of time and money, I don’t think that placement by GPA is going to be the answer to eliminating developmental math since the majority of students didn’t qualify for the exemption and a fair amount that did qualify would have tested out anyhow.

Also, I wonder how sustainable this is and if we’ll be able to bring it to scale as required for 2017. It’s my understanding that we had a dedicated 29-hour/week staff member who did all the GPA calculations and mailings related to the pilot. Though she did a tremendous job, the workload was such that at peak times she needed some help. This was for a pilot limited to nine high schools. To go full scale, what is the workload going to be? And is it going to be something that the budget can support?

Autumn Alden
Associate Professor of Mathematics
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Visit the NEMATYC Website

Webmaster **Mary Sullivan**, Cape Cod CC, maintains the NEMATYC website. Go to <http://www.nematyc.org> and browse the links: Conference, Executive Board, Membership, On-line Newsletters, Member Colleges, Mathematics Associations, History, Documents, Job Opportunities, E-mail for NEMATYC.

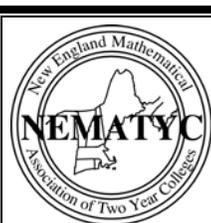


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