MATHEMATICAL ASSOCIATION OF TWO-YEAR COLLEGES OF CONNECTICUT

MATYCONN

NEWSLETTER

From the President

Dear MATYCONN Members:

Welcome to the 2021-2022 academic year at MATYCONN! It is my honor to serve you as the new President of MATYCONN. Currently, I am an Associate Professor of Mathematics at Quinebaug Valley Community College, and I am coordinating the development of math pathways in the Connecticut community colleges.

I first joined MATYCONN when I was a full-time faculty member at Goodwin College. I mention this because most members believe that MATYCONN has some sort of affiliation with the CSCU System, but in fact, it does not. Instead, we are an affiliate organization of the American Mathematical Association of Two-Year Colleges (AMATYC). This is important because it means that MATYCONN is a safe place outside of the politics of the workplace where we can meet to freely discuss best practices and current trends in the teaching of mathematics in the first two years of college.

Our parent organization, AMATYC, has much to offer in the way of professional development through webinars, forums, committees, and their annual conference. AMATYC also offers the opportunity to participate directly in creating national policies for mathematics education. Therefore, I urge all MATYCONN members also to become members of AMATYC so that you have access to all the opportunities provided by our parent organization. My goal is for MATYCONN to have representation on every one of the AMATYC committees so that we are more aware of national trends and have a role in shaping the policies that evolve from those trends. Mathematics faculty across the state are going through a tumultuous time right now, dealing with the rapid shift to online learning which was precipitated by the COVID pandemic. In addition, those in the CSCU system are working on guided pathways implementation, math pathways implementation, new placement methods, a shift from lecture-based pedagogy to active learning pedagogy, and consolidation with a priority of infusing equity throughout all these initiatives. It's a lot and it's exhausting. Just remember that you are doing very important work that will bring lasting benefits to the lives of our students. Keep up the good work and stay involved because your students need you. Thank you!

Debbie Rimkus

2021-2022 Officers and Executive Committee

Debora Rimkus, President
Quinebaug Valley Community College
(860) 932-4229
DRimkus@qvcc.edu

Beth Allen, Vice-President
Three Rivers Community College
(860) 215-9452
EAllen@trcc.commnet.edu

MaryBeth Rajczewski, Secretary
Asnuntuck Community College
mrajczewski@acc.commnet.edu

Carlos Plaza, Treasurer
Naugatuck Valley Community College
(203) 596-2152
cplaza@nvcc.commnet.edu

Jana Sime and Sarah Leone
Membership Co-Chairs
Manchester and Middlesex Community College
JSime@mcc.commnet.edu
sleone@mxcc.commnet.edu

Michelle Breaker, Newsletter Editor
Gateway Community College
(203) 285-2119
MBreaker@gatewayct.edu

Susan Spencer, Scholarship Chair
Gateway Community College
(203) 285-2452
sspencer@gwcc.commnet.edu

Kegan Samuel, Webmaster
Middlesex Community College
(860) 343-5714
KSamuel@mxcc.edu

Steve Krevisky,
Math Contest Coordinator
Middlesex Community College
(860) 343-5792
SKrevisky@mxcc.commnet.edu

Nick Stugard,
Math Contest Coordinator
Tunxis Community College
(860) 255-3620
NStugard@txcc.commnet.edu

Amanda Sweeney,
Immediate Past - President
Gateway Community College
203 285-2551
asweeney@gatewayct.edu

2021-2022 Campus Contacts

Asnuntuck
Arben Zeqiraj (860) 253-3079
azeqiraj@acc.commnet.edu

Capital
Kathleen Heron(860) 906-5219
KHerron@ccc.commnet.edu

Gateway
Teresa Cull (203)-285-2237
tcull@GatewayCt.edu

Housatonic
Mark Leach (203) 332-5230
MLeach@hcc.commnet.edu

Manchester
Jana Sime (860) 512-2732
JSime@mcc.commnet.edu

Middlesex
Pamela Frost (860) 343-5793
PFrost@mxcc.commnet.edu

Naugatuck Valley
Harry Burt (203) 596-2147
HBurt@nvcc.commnet.edu

Northwestern
Crystal Wiggins (860) 738-6310
CWiggins@nwcc.commnet.edu

Norwalk
Nancy Fleming (203) 857-3302
NFleming1@ncc.commnet.edu

Quinebaug Valley
Debora Rimkus 860-932-4229
DRimkus@qvcc.edu

Three Rivers
Beth (Elizabeth) Allen(860) 215-9452
EAllen@trcc.commnet.edu

Tunxis
Susan Lounsbury(860) 773-1652
slounsbury@txcc.commnet.edu

Report on 47th AMATYC Annual Conference - Debora Rimkus

The 47th AMATYC Annual Conference was held October 28 – 31 in Phoenix, Arizona. Three MATYCONN members were in attendance – myself, James Chadic of ACC, and Crystal Wiggins of NWCC. James attended as a fellow of Project ACCCESS which is a professional development initiative for new faculty in their first four years of teaching. Crystal, an alumna of Project ACCCESS, was one of the conference planners serving as the Advertising Chair. Attendees enjoyed the beautiful weather of Phoenix and had the opportunity to choose from more than one hundred workshops on a wide range of topics over the 3½-day conference.

Highlights of the conference were the two keynote presentations. The first presenter was Lindy Elkin-Tanton who spoke about her position as the Principal Investigator of the NASA Psyche mission which will visit a metallic asteroid orbiting the sun between Mars and Jupiter. Talithia Williams, a co-host of the PBS NOVA series *NOVA Wonders*, was the second speaker who talked about her experience as a woman of color in the field of statistics.

The other highlight for me was the Faculty Math League in which faculty from each AMATYC region compete as a team against other regions. At the last minute, my husband, Peter, who is a math adjunct, and myself were talked into competing for the first time on behalf of the Northeast Region. Did you ever have that dream where you walk into a class, and there is a test that you didn't know about, and you go into a total panic and fail miserably? That was our experience, but despite our poor showing, the Northeast Region was still victorious because of a couple of strong competitors on our team. We were both humbled by the experience and vowed to study over the next year and try again.

In my opinion, every math faculty should attend an AMATYC Conference at least once. It's the ultimate experience for every math geek where you are surrounded by hundreds of other math geeks talking about everything math-related for three straight days. Next year is a good opportunity to attend because it will be held in our own Northeast Region in Toronto on November 17 – 20. Consider making a presentation at the conference (proposals are due by February 1) or come just to listen and learn. Make sure you put it on your calendar and update your passport.

New Faculty

James Chadic

My name is James Chadic, and I am a full-time faculty Math instructor at **Asnuntuck Community College**. I am a math enthusiast, and I am passionate about teaching. Teaching mathematics is the highlight of my day. I take pleasure in helping students finding their independence through thinking, encouraging them to become independent learners, and helping them be more confident in mathematics. I like to teach pre-calculus, calculus, and other higher-level mathematics. However, I prefer teaching pre-algebra, intermediate algebra, and other developmental math courses. I am confident that I can make these students see the beauty, necessity, benefits, and usefulness of mathematics in their lives. Compared to the other students that excel in the STEM programs.

Sarah Leone

I am excited to continue my career at **Middlesex Community College**! I have been teaching at MxCC for 16 years now, in both a part-time and full-time capacity. I am very happy to be in a permanent full time role at the college. Outside of school, I enjoy spending as much time as I can with my husband and 3 boys playing games, doing puzzles and hiking. I look forward to meeting all the MATYCONN members!

Aja Shabana

I have been teaching math and statistics for 10 years across the US in public and private universities and community college. I'm excited to now have a home at **Middlesex Community College**. I love all math (of course), but I have acquired a particular appreciation for statistics over the past few years.

I have my master's degree in math from the University of Georgia. Go Dawgs! For undergrad I attended Elon University where I double majored in math and theatre arts.

I live in Farmington with my six-year-old son, Zain. I spend most of my free time building legos, digging holes in the backyard, building forts, reading books on how things work, and watching documentaries on the American Revolution and the World Wars.

Great Ideas Forum

Online Teaching   Rachael Schettenhelm - Gateway Community College

Being forced to teach online had a positive impact on my teaching. I took the online teaching course, I "stole" ideas from colleagues, attended webinars, and Googled several ideas which worked so well that I have kept them in my on-ground classes, as well.

Discussions with follow-up assignments: My favorite pairs are for the Graphing lesson and the Linear Equation Application lesson. For graphing, I give students the links to several articles containing graphs, on topics ranging from prison populations to organic gardening. I ask them to tell me about what they learned from a graph and give a follow-up assignment explaining how the format of the graph helped or hindered their understanding. For the Applications section, I ask them to tell me where they use math in their everyday lives and what skill they wish they could strengthen. I give a follow-up assignment with actual problems from my life. (consecutive integers, volume, traveling distance) They form outside groups or pairs and solve one problem together.

Critical thinking warm-ups: All of my tests have two parts, one part given through our online software (with work scanned and submitted via Blackboard) and the other part as a written test on Blackboard. Since our software does not prepare students for the written test, I start each class with a couple of practice questions requiring more critical thought. For example, a "Find the perimeter of the following rectangle.." question in the software test would look like "To find the amount of plastic sheeting needed to cover your rectangular flower bed, would you need to find the area or perimeter of a rectangle?" on the written test. I strive to make all of the written questions unable to be solved on Photomath, since that part is not proctored in my online classes. Giving a more thoughtful question at the start of class usually gets students' attention since they know it is direct preparation for the written test.

Assign specific problems to students: To get full participation in an on-camera class, I assign specific practice problems to students then ask the class to complete a practice page. They usually start with their own problem and "chat" with me with questions or to check their answer. After interacting with students individually on their problems I ask each student to present their solutions via the microphone or the chat.

Great Ideas Forum

Growth Mindset   Mary-Beth Rajczewski—Asnuntuck Community College

For the last several years, I have been talking a lot about Growth Mindset in my math classes. With the onset of the pandemic, and a transition to online classes, I struggled with how to continue to introduce this important concept to my students. I decided to use a Blackboard Discussion Board.

Early in the semester, I asked the students to watch a short video of a Ted Talk by Carol Dweck, author of Mindset: The New Psychology of Success, and Growth Mindset guru: (https://www.ted.com/talks/carol_dweck_the_power_of_believing_that_you_can_improve?language=en) and then respond to this question on our class Discussion Board:

What do you think about this theory of Growth Mindset? Have you heard of this before, or is this your first time learning about it? Does it relate to learning math? Name one thing from the video that you agreed with, questioned, or were intrigued by.

The initial responses and discussions between students were great. Some excerpts include:

"This TED talk could not have been given to me to listen to at a better time. This idea of "not yet," of growing and switching your mindset is something I really needed to hear."

"You can change the way you grow and learn by making a few simple changes. Have I mastered chapter 2? Not yet, but I will."

"I had a rough time in school and I may have also been a student with a fixed mindset due to things going on in my own life and also I just felt dumb at school, and did have some teachers who made me feel so embarrassed about not catching onto things so quickly. Not every learner is the same and the growth mindset reaches more to everyone."

"I agree with you that mathematics is getting more difficult as we progress. It depends on us whether we give up, or we will find strength and motivation to succeed. It's all about the mindset."

To keep the momentum, I participated in the discussion and shared books and articles on the topic, as well as this visual:
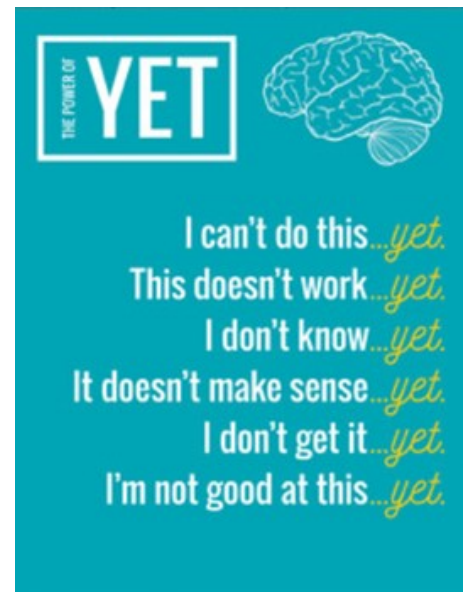
Great Ideas Forum

Growth Mindset cont.   **Mary-Beth Rajczewski—Asnuntuck Community College**

About halfway through the semester, I posted another video on the Discussion Board to remind students about Growth Mindset (https://www.youtube.com/watch?v=M1CHPnZfFmU) and asked students to share one thing in the course they hadn't mastered "yet". This turned out to be very powerful. Students were able to see that other students shared their struggles, and their responses gave me insight about what topics and concepts I needed to address.

In addition to the Discussion board, I incorporated Growth Mindset in my weekly announcements by asking students to think about whether they were approaching the class or the week's assignments with a fixed or growth mindset. The final Discussion post included a question asking students if their mindset changed at all throughout the semester.

Based on the positive feedback I have received I plan to continue to utilize Discussion Boards to introduce and discuss Growth Mindset and have plans to incorporate even more of these Discussions next semester.

Liquid Syllabus   **Teresa Cull - Gateway Community College**

Help break barriers for students by creating a liquid syllabus that is easily accessible, focused, and student-centered. Bring your syllabus to life with a liquid syllabus!

Liquid Syllabus Website:

https://tcull4.wixsite.com/liquidsyllabus

Password: liquidsyllabus

Liquid Syllabus Info

Liquid Syllabus Presenation

Teresa's SAMPLE Liquid Syllabus
Password: liquidsyllabus

Liquid Syllabus Resources

Teresa deSousa Cull
Gateway Community College
tcull@gatewayct.edu

Best answers we've seen this semester…

A. Give the ordered pair coordinates of two points on the line with equation $x = 7$

B. Does this line intersect the x-axis or the y-axis? ✖ **yes**

Write a true inequality using the values of $\left|-9\right|$, $\sqrt{25}$ and the $>$ symbol .

Given
Answer: $\sqrt[-9]{25} \geq -45$

Write a <u>real-life phrase</u> using words which could be represented **H - 3**

Given
Answer: henry's popsticle sticks ?

Give 3 specific numbers that are solutions to the equation: $2x + 6 = 2(x + 3)$

Given
Answer: You

Write a <u>real-life phrase</u> using words which could be represented **H - 3**

Given
Answer: I spent less then 3 hours doing homework.

Northeastern MAA Report—June Decker

I encourage everyone to come to the MAA Northeastern Sectional spring conference to be held at Southern CT State University June 3 and 4 (price is usually very nominal for faculty and free, or almost free for students). High school teachers are also warmly welcome to come.

The Northeast Section of the MAA is very interested in having more input from Two Year Colleges. Therefore, if anyone would like to join the program committee for the Spring 2022 conference, they will be very welcomed. Mostly the committee would like your ideas for invited speakers, topics for sessions, etc. I think that we might want to invite national or regional speakers about teaching courses to students that are not yet quite prepared for the course. I know that professors at the SCSU and university professors in Massachusetts are interested in how to teach courses with embedded support for underprepared students   The Northeast sectional of the MAA is a great place to share ideas with both the two year and the university professors. Conferences traditionally draw 200 professors from all over New England.

Because I am retired as of August 1, I am looking for someone to replace me on the executive board as two year college representative. Elections for the position will occur at the spring meeting June 2-3 at SCSU. I find that this position of Two Year College Rep takes a minimum of about 8 hours per semester, and a maximum 20-30 hours depending on whether I host a meeting at my college or serve on a committee. I am happy to discuss the position with anyone interested. I have really enjoyed working with math faculty from all over New England.   Kathy Bavelis, a retiree from MCC, held this elected position for years.

The website for the North East Section of the MAA is https://nesmaa.org

Northeastern MAA – Northeastern MAA

The Mathematical Association of America is the largest professional society that focuses on mathematics accessible at the undergraduate level.
nesmaa.org

Please contact June Decker if you have any questions about the Northeast section of the MAA, if you wish to run for the executive board, or if you wish to join the program committee for the Spring Conference June 2-3 at Southern CT State U. The program committee work will take as little as a total of 6 hours, or as much as ???? depending on the work you want to put into researching and inviting speakers and creating sessions.

my cell phone is 860 377 7788
my email is jdecker@trcc.commnet.edu

MATYCONN Student Math Contest

Each spring, students from two-year colleges across the state have the opportunity to participate in MATYCONN's Annual Math Contest. The exact date for the 2022 contest has not yet been set, but it will be either in late March or early April. Each Math Department from a two-year college in Connecticut is encouraged to support this event by arranging to hold the contest on campus for their students. Campus organizers score the contest submissions from their students and then submit the top scores to the MATYCONN contest coordinators.

The mathematics content included in the contest is through the Intermediate Algebra level. Problems include applications, geometry, logic, basic statistics, quadratic equations, etc. Students need to think critically, and advanced students might not have an advantage. Students need to solve twenty questions (worth from 1 to 3 points each) in two hours, so time is a factor. All answers have to be complete, with proper units or labels (no partial credit); calculators are allowed.

Each participating campus contributes $50 towards system prizes. MATYCONN, as the sponsoring organization, also contributes. In addition, each campus is encouraged to give local prizes to their winners, including cash awards and certificates.

Winners of the contest often come from colleges where the Math Departments organize a team that practices before the contest. Old tests along with answer keys are located on the MATYCONN website at http://matyconn.matyc.org/mathcontest

MATYCONN Content Coordinators are Steve Krevisky, skrevisky@mxcc.edu, and Nick Stugard, nstugard@txcc.edu. Contact Steve or Nick if you have questions.

If you want an idea of the types of problems given, see the next few pages for the Spring 2021 contest!

The 30th Annual Miguel Garcia Math Contest

Sponsored by MATYCONN

Spring 2021

One Point Questions:

1. What number gives the same result when it is added to ½ as when it is multiplied by ½ ?

2. Given the function $f(a, b) = \frac{a}{b} + \frac{b}{a} + \frac{1}{ab}$ find $f(2, 5)$

3. The sum of Zip's age and Dina's age is 51. The sum of Julio's age and Dina's age is 54. Zip is 7 years old. How old is Julio?

4. Joyce has two identical jars. The first jar is ¾ full of water and contains 300mL of water. The second jar is ¼ full of water. How much water, in mL, does the second jar contain? Include units.

5. David owns a parking lot for vehicles. A vehicle is either a motorcycle with two wheels or a car with four wheels. Today, there are 100 vehicles parked in his parking lot. The total number of wheels in David's parking lot is 326. If David collects $1 from each motorcycle and $2 from each car per day, how much money, in dollars, does David collect today?

6. Find a number with the following properties:
   - It is a prime number larger than 3
   - Two raised to the power equal to this number is three more than a perfect cube

Two Point Questions:

7. A circular track has a radius of 60 $meters$. Ali runs around the circular track at a constant speed of 6 m/s. A track in the shape of an equilateral triangle has a side length of x meters. Darius runs around the triangular track at a constant speed of 5 m/s. Ali and Darius each complete one lap in exactly the same amount of time. What is the value of x? Include units.

8. What integer satisfies $3 < \frac{24}{a} < 4$?

9. Find all solutions to: $\frac{1}{x^2} - \frac{1}{x} = 2$

10. If $x^2 + xy + y^2 = a$ and $x + y = b$, what is the value of xy in terms of only a and b

11. Nick and Steve collect calculators. If Steve gave Nick two calculators, they would have the same amount. If Nick gave Steve two calculators, Steve would have twice as many as Nick. How many calculators do they have together?

12. Andrea, Barbara, and Claire each own a Lamborghini and a monkey; however, they are each driving someone else's car with someone else's monkey in the passenger seat. The woman driving Barbara's car has Claire's monkey. Who is driving Andrea's car?

13. Find the y-intercept as an ordered pair of the line that passes through point $(9, 2)$ and is parallel to line $x + 3y = 7$

14. Find a four-digit number where the thousands digit is four greater than the hundreds digit, the tens digit is twice the thousands digit, and the ones digit is half of the thousands digit.

Three Point Questions:

15. Solve the problem for the real number x:
$$16^{\frac{15}{x}} = 32^{\frac{4}{3}}$$

16. Consider the following triangle with vertices at $(0,0)$, $(0,4)$, and $(6,0)$. What is the fraction of all integer ordered pairs within the triangle, including the edges, which have an x-coordinate that is less than its y-coordinate?

17. The arithmetic mean of two numbers x and y is found as $\frac{x+y}{2}$

    The geometric mean of two numbers x and y is found as $\sqrt{xy}$

    Find a pair of positive real numbers whose arithmetic mean is 13 and geometric mean is 12.

18. Find the real value for w to complete the arithmetic sequence: $\frac{1}{6}, \frac{1}{3}, \frac{1}{2}, \frac{1}{w}$

19. Michelle calculates the average of the following numbers:
$$5, 10, 15, 16, 24, 28, 33, 37$$
    Sue removes one of the numbers and calculates the average of the remaining numbers. The average Sue calculates is one less than the average Michelle calculates. Which number did Sue remove?

20. If $a_n = \frac{1}{n} - \frac{1}{n+1}$, Find the sum: $a_1 + a_2 + a_3 + a_4 + a_5$

Four Point Questions:

21. Michelle, Paul, and Harry play three different instruments and play shows in three different cities.
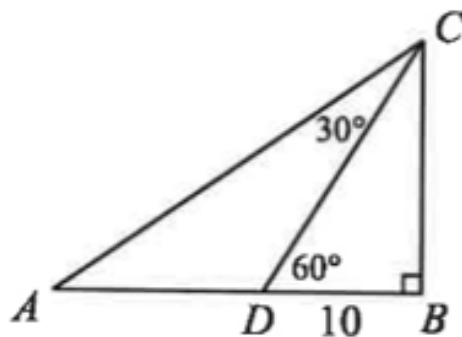   - a. Paul watched the drummer in Orlando.
    - b. Michelle watched the pianist in Milwaukee.
    - c. Harry watched the guitarist in Phoenix.
    - d. Paul doesn't play the piano.

    What city does Harry perform in?

22. Find the ratio of the circumference of a circle to the perimeter of a square inscribed in the circle.

23. If $f(x - 1) = x^2 - 3x + 5$ what does $f(x + 1) =$?

24. Find the length of AD for the following triangle:

25. In the 2009 World Series between the Yankees and the Phillies a total of 59 runs were scored over 6 games. In the first game, the Phillies won by 5 runs. In the second game the Yankees won by 2 runs. In the third and fourth games, the Yankees won by 3 runs each time. In the fifth game, the Phillies won by 2 runs. In the sixth game, the Yankees won by 4 runs. How many total runs did the Yankees score over the 6 games?

2021 CONNECTICUT COMMUNITY COLLEGES STUDENT MATH CONTEST

ANSWER SHEET

ONE-POINT QUESTIONS

1. _____ -1 _____
2. _____ 3 _____
3. _____ 10 _____
4. _____ 100 mL _____
5. _____ $163 _____
6. _____ 7 _____

TWO POINT QUESTIONS

7. _____ $100\pi/3$ m ____
8. _____ 7 _____
9. _____ -1, 1/2 _____
10. _____ $b^2 - a$ _____
11. _____ 24 _____
12. _____ Claire _____
13. _____ (0, 5) _____
14. _____ 4082 _____

THREE POINT QUESTIONS

15. _____ 9 _____
16. _____ 6/19 _____
17. _____ 8 and 18 _____
18. _____ 3/2 _____
19. _____ 28 _____
20. _____ 5/6 _____

FOUR POINT QUESTIONS

21. _____ Milwaukee _
22. _____ $\pi/(2\sqrt{2})$ ____
23. _____ $x^2 + x + 3$ __
24. _____ 20 _____
25. _____ 32 _____

Upcoming Conferences

2022 Joint Mathematics Meetings: American Mathematical Society (AMS) and the Mathematical Association of America (MAA), Seattle, WA
January 5-8, 2022. https://www.jointmathematicsmeetings.org//jmm

26th Annual AMTE (Association of Mathematics Teacher Educators) Conference, Henderson (near Las Vegas), NV February 10-12, 2022. https://amte.net/content/2022-annual-amte-conference

46th Annual NOSS (National Organization for Student Success—formerly NADE) Atlanta, GA March 17-20, 2022 https://thenoss.org/page-18222

34TH Annual International Conference on Technology in Collegiate Mathematics (ICTCM), Orlando FL March 24-26, 2022. https://www.pearson.com/us/campaigns/ICTCM-reimagined/2022.html

NES/MAA Spring Conference, Southern CT State University, New Haven CT
June 2-3, 2022 . http://sections.maa.org/northeastern/meetings.html

2022 T^3 International Conference (Teachers Teaching with Technology International Conference), Virtual July 28-29, 2022
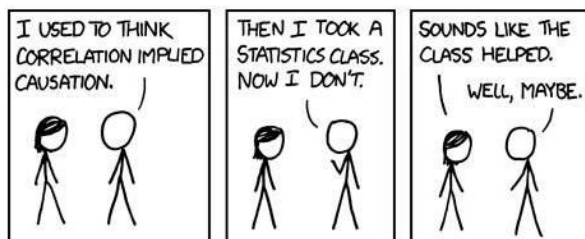https://education.ti.com/en/professional-development/t3-international-conference-2022

NCTM 2022 Annual Meeting and Exposition, Los Angeles CA
September 28– October 1, 2022 https://www.nctm.org/annualmeeting/

48th AMATYC Annual Conference, Toronto, CANADA
November 17-20 2022. https://amatyc.org/general/custom.asp?page=2022ConfHome

Newsletter Editor:
Michelle Moser Breaker
First-Year Studies Department Chair
Professor of Mathematics
Gateway Community College

On the web:

matyconn.matyc.org/