

AMATYC NEWSSM

ISSN: 0889-3845

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45th AMATYC Annual Conference — A Great Adventure in Milwaukee

by Turi Suski, Milwaukee Local Events Coordinator



Located on the scenic shore of Lake Michigan, Milwaukee offers an exceptional blend of stunning natural beauty, big city arts and entertainment, and Midwest charm. Built at the confluence of three rivers, Milwaukee is a place where people come together. Milwaukee cherishes its varied history and diversity, and the “City of Festivals” celebrates all cultures and welcomes everyone. With its many attractions, warm hospitality, and affordability, you'll have a great time in Milwaukee.

Located downtown, the Wisconsin Center is a wonderful convention center with beautiful architecture and its own collection of commissioned and integrated art. Connected to both conference hotels by convenient skywalks, the Wisconsin Center's straightforward layout will make it easy to find your sessions. It's an excellent space in which to learn, be inspired, and make new connections. The unique Wisconsin Center's Palm Garden will host our Professional Networking and Hospitality Area. Come relax between sessions with AMATYC friends old and new. And when you're ready to head out on the town, Milwaukee offers so many options.

The charming Milwaukee RiverWalk is just blocks from the Wisconsin Center. Take a stroll through this picturesque area before choosing one of its many restaurants. Be sure to get a group picture at the Bronze Fonz, and then find the statues of Gertie the Duck and her ducklings and learn about their story of hope during World War II. Stroll along the RiverWalk to the Historic Third Ward neighborhood. This six-square block, converted warehouse district contains the city's highest concentration of art galleries, as well as many theaters, specialty stores, restaurants and nightlife, and is anchored by foodie paradise Milwaukee Public Market.

Milwaukee has many walk-around, character-filled neighborhoods. The city's German heritage is celebrated along cobblestoned Old World Third Street. The emerging Walker's Point area is nationally acclaimed for its locally made cheese, chocolate, ice cream, coffee, and craft beers. In the East Side neighborhood, old school meets new school; this creative, trend-setting area is must for ardent foodies. Riverwest is a diverse, artsy, and eclectic community that will make you feel like a local. For more information about all of Milwaukee's neighborhoods, explore www.visitmilwaukee.org/amatyc2019.



Milwaukee Art Museum/Photo courtesy of Visit Milwaukee



Aerial Skyline of Milwaukee/Photo courtesy of Visit Milwaukee and JMKE Photography

Take some time to enjoy a few of Milwaukee's many attractions. The one-of-a-kind Harley-Davidson Museum includes an Experience Gallery with motorcycles you can sit on, touch, and admire up close. The Discovery World Science and Technology Museum sparks curiosity and wonder

➤ **Continued on page 5**



by Rita Ralph, Liaison

Mu Alpha Theta is a national mathematics honor society for high school and two-year colleges. Benefits of Mu Alpha Theta include recognition for your talented math students, honor cords for graduation ceremonies, scholarships, grants, awards, free competitions, and an annual national convention. Since November 2018, the following two-year colleges have chartered new Mu Alpha Theta chapters: Southwest Tennessee CC (TN), Kilgore College (TX), El Paso CC (TX), Florida State College in Jacksonville (FL), Pearl River CC (MS), Saint Paul College (MN), and Austin CC (TX). Welcome!

From January to April, Mu Alpha Theta received five applications for four two-year scholarships of \$4,000 each. The recipients were:

- Ali Akbarian, Prince George's CC (Largo, MD)
- Harmoni L. Ashley, Copiah Lincoln CC (Wesson, MS),
- Shelby R. King, Tarrant County College – Northeast Campus (Hurst, TX)
- Brittany N. White, Tarrant County College (Hurst, TX).

Additionally, Elizabeth Sharrock, from Columbus State CC (Columbus, OH), was awarded the prestigious Andree Award. Elizabeth is pictured with Greg Goodhart, Columbus State Mathematics Department Chair. The Andree Award, named in honor of Mu Alpha Theta founders Richard and Josephine Andree, is awarded to deserving students interested in becoming mathematics teachers. One high school senior member and one former or current member now in college are selected for this award every year. Each Andree Award winner receives \$2,500 as a cash prize or college scholarship money.



➤ **Continued on page 4**



The Lesser-Known Pathway

Jim Ham

Delta College • University Center, MI

For more than a decade, mathematics departments, statewide college systems, and other advocacy groups and organizations across the country have been developing new mathematical pathways. Specifically, statistics pathways and quantitative reasoning (QR)¹ pathways have been created as alternatives to the long-standing STEM or algebra-to-calculus pathway.

A mathematical pathway can be defined as the sequence of courses, including developmental mathematics courses, that most efficiently leads to a student's final college-level mathematics course, and also links appropriately to the student's field of study.

This article is about the QR pathway and the corresponding college-level QR course students will take at the end of the pathway. I will start with a vignette.

*About 12 years ago, my college revised the general education outcomes and degree requirements for its transfer degrees. Part of this review included an investigation of the mathematics course-taking patterns of our students. Among other things, we found that students were overwhelmingly ending their mathematical study with an algebra course (elementary, intermediate, or college algebra). In other words, a version of algebra-before-calculus was the preferred capstone mathematics class for most students, regardless of major or program of study. This realization led the mathematics department to create a new course, *Mathematical Explorations*, to give students an alternative mathematics course option more useful and relevant to their future educational and career goals.*

In the first few semesters, the enrollments were lean; a single section of the course typically had fewer than ten students. Eventually the course grew in enrollment. Today the college offers about 20 sections per year to approximately 400 students. These sections are offered in two formats, a 4-credit version and an extended-hour, 6-credit alternative with corequisites included.

More recently, after additional curricular changes at the college, including the elimination of the traditional developmental math course sequence and a revision of prerequisites and initial placement criteria, mathematics students, particularly those who would have been classified as developmental, are now able to complete their college-level mathematics course in a single semester. While our corequisite model at Delta College is new, preliminary anecdotal data show, as in other studies [1], that a significantly higher proportion of students are earning credit for their college mathematics graduation requirement.

QR courses vary across the country since there are so many excellent mathematical topics and applications available. For example, students could use the mathematics of finance to determine whether or not to refinance a loan, use the Huntington Hill apportionment method to estimate the electoral college counts of each state after the next census, or use modeling and expected value to estimate the average 2018 federal tax cut, to name a few sample activities. There are numerous quality textbooks and instructional resources available for QR courses. From a review of available textbooks and course

syllabi, some of the topics that appear in these resources include the following: Finance, Logic, Probability, Combinatorics, Statistics, Linear Programming, Voting, Apportionment, Game Theory, Geometry, Mathematical Modeling, Mathematical Problem Solving, Mathematics of Economics, History of Mathematics, Set Theory, Graph Theory, Algebra, Number Theory, Measurement, Ratios and Proportions, Tilings and Polyhedra, Planning and Scheduling, Coding Theory, Symmetry and Patterns. In our course, we give faculty some flexibility in the topics selected for inclusion in the course.

Nationally, work continues on mathematical pathways and the creation of new QR courses. In the recent Conference Board of the Mathematical Sciences (CBMS) survey, about 59% of two-year college departments developed a QR pathway over the period from 2010-2015 [2]. In some cases, entire state systems have developed, or are developing, this new pathway [3]. However, there are still many two-year colleges that have neither a QR pathway nor a QR course.

AMATYC continues to offer support and professional development for colleagues interested in creating a QR course or developing a QR pathway. The AMATYC Pathways Joint Subcommittee and the AMATYC Mathematics for Liberal Arts ANet, free for all to join, offer forums for discussions, conference sessions and webinars related to QR. AMATYC traveling workshops are available to assist departments in developing the QR course or pathway. *IMPACT Live!*, the companion website to AMATYC's recent *IMPACT* publication, is collecting resources relevant to pathways and QR courses.²

AMATYC, along with several other national organizations, advocates for the new QR pathway [4]. A new position statement on QR courses is being created and will, most likely, be considered for approval this fall [5].³ This position statement will give national support to colleagues who are interested in making a case for a new QR course and/or pathway at their college. Components of the position statement under consideration include the following:

- Every student should have access to a QR course and pathway.
- QR courses, like other mathematics courses, should require a high level of student interaction and engagement and enhance the quantitative reasoning skills of students.
- While specific topics of the course may vary, problem solving and modeling will be two main focus areas of the course.
- QR courses should serve a dual role as capstone course of the QR pathway and as a course to motivate interest in taking additional mathematics classes.
- Students pursuing the other pathways can benefit from the interesting mathematical applications in QR courses.
- Because QR courses may vary widely in mathematical topics and outcomes, attention to course articulation is important.

The QR course is fun to teach, introduces faculty and students to new topics in mathematics, and offers an excellent alternative mathematics course option for many students. AMATYC continues to support its members in developing mathematical pathways in general and the QR course in particular.

²Share your resources at the *IMPACT Live!* website: <http://amatyc.org/IMPACTLive>.

³Send your suggested edits on the current draft to Fary Sami at fsami@harford.edu.

¹Quantitative Reasoning is used consistently in this article. Other course titles include *Quantitative Literacy* and *Mathematics for Liberal Arts*.

➤ **Continued on page 11**

AMATYC Elections for the 2020-2021 Executive Board

by Jane Tanner, Nominating Committee Chair

The election for the 2020-2021 AMATYC Executive Board is coming up soon. Regular members as of June 30, 2019, will be sent an email on September 15 with the link to “register” to vote in this year’s election. Eligible voters who do not receive an email with the link to vote on September 15 should contact the AMATYC office at amatyc@amatyc.org.

Electronic ballots for each AMATYC region will ask you to vote for one of the candidates for each office: President-Elect, Secretary, Treasurer, and Regional Vice President. Electronic ballots must be cast between September 15 and September 30, 2019. Members may request a paper ballot by contacting Jane Tanner (tannerj@sunyocc.edu) before September 1, 2019. All paper ballots must be postmarked no later than September 30 to be valid.

AMATYC is counting on you to cast your vote. Please take time to vote for those who will lead AMATYC for the next two years. Officers will be announced by an email to all AMATYC members, and also at the 2019 AMATYC Annual Conference in Milwaukee. The new members of the Executive Board take office January 1, 2020.

Information on all candidates can be found on the AMATYC website (www.amatyc.org) and the election website (<http://amatycvote.org/2019>) after September 15, 2019.

2020-2021 AMATYC Board Slate of Candidates

President-Elect:

Daniel P. Fahringer, Harrisburg Area CC

Laura L. Watkins, Glendale CC

Secretary:

Dona V. Boccio, Queensborough CC

Nancy J. Rivers, Wake Technical CC

Treasurer:

James N. Adair, Dyersburg State CC

Barbra D. Steinhurst, Portland CC

Northeast VP:

Sophia Georgiakaki, Tompkins Cortland CC

Mid-Atlantic VP:

Dennis C. Ebersole, Northampton CC

Mike Long, Howard CC

Southeast VP:

Alvina J. Atkinson, Georgia Gwinnett College

Behnaz Rouhani, Perimeter College at Georgia State University

Midwest VP:

Jonathan J. Oaks, Macomb CC

Central VP:

Rochelle V. Beatty, Kansas City KS CC

Southwest VP:

April D. Ström, Chandler-Gilbert CC

Northwest VP:

Sarah L. Pauley, Western Wyoming CC

West VP:

Edouard A. Tchertchian, Los Angeles Pierce College

AMATYC Opportunity: Professional Development Coordinator

by Jon Oaks, Search Committee Chair

Fostering professional development is one of AMATYC’s primary goals. With the addition of the AMATYC Webinar Series and the increase in traveling workshops, AMATYC’s professional development programs have grown significantly over the past decade.

To manage, promote, and continue growing these professional development opportunities, AMATYC is seeking a new Professional Development Coordinator.

General qualifications:

- Proficient written and verbal communication skills.
- Proficient technology skills and access to fast and reliable Internet service.
- Experience in leading professional development activities.
- Well organized and able to work on a regular schedule and plan for future events.
- Ability to respond to requests promptly.
- Ability to work with colleagues and to provide leadership and vision.
- Ability to take direction from and work with others cooperatively.
- Experience in promoting and marketing educational programs and activities.
- Experience collaborating with educational organizations and corporate entities.

The length of the first term of the Professional Development Coordinator is through the end of 2019, with eligibility for reappointment to additional three-year terms. The position includes financial support for attending the AMATYC Annual Conference.

Applicants must submit a letter of interest, a current résumé, and a letter of support from a supervisor. For more details, including a complete list of qualifications and duties of the position, please visit www.amatyc.org and look for ‘Get Involved.’

AMATYC Mathematics Excellence Award

by Jane Tanner, ME Award Committee Chair

Consider honoring a colleague through an AMATYC Mathematics Excellence Award nomination. The award, which is presented every two years, recognizes educators who have made outstanding contributions to mathematics or mathematics education in the first two years of college. The Mathematics Excellence (ME) Award Committee will consider the nominations in accordance with the following criteria: national reputation; leadership and activities in professional organizations; professional talks and presentations; awards and grants received; publications; professional activities on a regional, state, and national scale; and teaching expertise.

Visit www.amatyc.org/MathExcellenceAward for frequently asked questions, nomination packet requirements, and the link for submission.

Nomination packets must be received by Friday, November 1, 2019.

If you have any questions, please contact Jane Tanner, chair of the Mathematics Excellence Award Committee, at tannerj@sunyocc.edu.

Student Mathematics League

by Steve Hundert, Coordinator

Both rounds of the Student Mathematics League (SML) competition have been completed and the final results are in.

Final Team Results

1. Los Angeles City College, CA	276.5 points
2. Brookdale CC, NJ	268.0
3. East Los Angeles College, CA	232.5
4. De Anza College, CA	228.0
5. Schoolcraft College, MI	215.5
6. Pasadena City College, CA	212.5
7. City College of San Francisco, CA	202.5
8. Bellevue College, WA	197.5
9. Montgomery College, MD	189.5
10. Foothill College, CA	187.0

Final Individual Results

1. Steven Liu, Brookdale CC, NJ	77.5 points
2. Edward Jin, Los Angeles City College, CA	75.0
3. Ajay Arora, Schoolcraft College, MI	70.0
4. Isaac Helleman, Howard CC, MD	64.5
5. Dylan Hildebrand, Harper College, IL	64.0
6. Robert Shi, Pasadena City College, CA	62.5
(tie) Junyu Zhu, City College of San Francisco, CA	62.5
8. Eva Quittman, Montgomery College, MD	60.5
9. Martin Grant, Las Positas College, CA	56.0
10. Justin Wang, Brookdale CC, NJ	55.0
(tie) Freya Edholm, College of San Mateo, CA	55.0

Top Schools and Students by Region

Northeast:	LaGuardia CC, NY Tommy He, Holyoke CC, MA	Central:	Johnson County CC, KS Chi Bao Phan, Johnson County CC, KS
Mid-Atlantic:	Brookdale CC, NJ Steven Liu, Brookdale CC, NJ	Southwest:	Tarrant County College Northeast, TX Triet Do, Collin College, TX
Southeast:	Durham Technical College, NC Callie Zheng, Indian River State College, FL	Northwest:	Bellevue College, WA Pranav Mathur, Clark College, WA
Midwest:	Schoolcraft College, MI Ajay Arora, Schoolcraft College, MI	West:	Los Angeles City College, CA Edward Jin, Los Angeles City College, CA

A very grateful thank you to all of the moderators who give the exams, grade them, and post the grades on the scoreboard. Also thanks to George Hurlburt for running the website and scoreboard, TJ Duda and the test development team, Randy Schwartz for supplying the short answers posted on the website, and the AMATYC office for their extensive help in making the SML run smoothly.

If your college does not currently participate in the SML, why not? For more information about SML, visit www.amatyc.org/StudentMath-League or email stevenh@csm.edu with any questions. The early bird registration deadline for the 2019-2020 SML competition is September 30, 2019; the final registration deadline is October 31, 2019. The registration link will be available on the AMATYC SML website.

See you in Milwaukee! Time and location for the ultra-competitive Faculty Mathematics League Competition will be listed on the conference program.

Change is in the Air

by Karen Gaines, Coordinator



At the time of this publication, the 2nd Annual Student Research League (SRL) entries are being evaluated

by a dedicated group of faculty from across the country. After the top three entries from each AMATYC Region are determined, these entries will be sent to our STEM professionals for final evaluations.

Now that we have two years under our belt, the SRL competition will undergo some changes for the 2020 contest. Feedback from faculty mentors, students, and evaluators has been vital to continuous improvement for this new student competition. Changes will be carefully evaluated this summer and finalized by the time of the Milwaukee Conference.

Please stay tuned for these exciting changes. In the meantime, check out the SRL website, www.amatyc.org/StudentResLeague, and read the past competition questions to learn what the competition is all about.

If you have questions about Student Research League, contact Karen Gaines at srl@amatyc.org.

➤ Mu Alpha Theta, Cont'd from page 1

Please encourage your students to apply for scholarships, grants and awards starting December 1, 2019. Applications are available at <http://mualphatheta.org>.

Mu Alpha Theta continues to seek ways to increase the number of active two-year college Mu Alpha Theta Chapters. If you are interested in starting a math club or math honor society at your two-year college, or you have questions, contact Rita Ralph at rralph@csc.edu. Help can be provided with the application process as well as advice on how to run and maintain a chapter at your school. If your AMATYC region or state affiliate is hosting a conference, please allow Mu Alpha Theta to provide informational flyers and small giveaways for attendees. Simply email your request to info@mualphatheta.org at least two weeks before the conference. Include the organization name, conference name, date, and postal address.

Please consider presiding at the Milwaukee conference in November! To volunteer as a presider, go to <http://confreg.matyc.org/PRESIDE-2019.php>. **One randomly chosen presider will win two nights at next year's conference hotel in Spokane.**

The 45th AMATYC Annual Conference — Full of Great Ideas

by Judy Williams, Program Coordinator

Review – A good lesson begins with a review, so here are a few reminders from the April AMATYC News:

Thursday

- Start the morning with the six Themed Sessions. Use the conference app or program to move between the 15-minute talks.
- Join a walking tour of the Wisconsin Center through a new and improved AMATYC 101 format. While touring the conference venue, meet leaders of the conference and organization. Tours leave at 8:00, 8:20, 8:40, and 9:10 am.
- Mini Sessions from 11:30-11:55 am and 12:00-12:25 pm give you a chance to grab a quick lunch or just move to a different room.
- From 1:50-2:40 pm participate in the Chat & Chew Session (see page 7 for details).

Friday

- Start the morning with McGraw-Hill Education's Math Ambassador John Urschel (see page 6 for details).
- Browse the Poster Session anytime from 11:00 am to 4:00 pm, and then talk with the presenters 2:00-4:00 pm.
- At 2:00 pm attend a panel discussion by Presidential Exchange Speakers from AMTE, NOSS (formerly NADE), NCTM, and TODOS to discuss equity in mathematics education.

Lesson Focus – Here is some new and additional conference information:

Thursday

- Keynote address by Francis Su, Past President of the Mathematical Association of America.
- Grand Opening of Exhibit Hall (see page 7 for more information), and then continued Exhibit Hall hours:
 - o Thursday: 4:30 pm-7:00 pm.
 - o Friday: 8:30-11:45 am and 1:15-5:00 pm (cash bar 2:00-5:00 pm).
 - o Saturday: 9:45 am-1:00 pm.
- Research Session: Thursday 7:00-9:10 pm.

Friday

- Returning by request, Friday morning brings the statistics activities workshop from Roxy Peck, and more Apollo adventures with William "Bill" Weppner.
- Regional Luncheons and Meetings with not-to-be missed announcements and prizes.
- Committee and ANet meetings - open to all!
- Ignite Session: 6:00 pm.

Saturday

- Awards Breakfast and Keynote address by James Tanton.

Sunday

- Great Ideas continue in sessions on POGIL, productive struggle, cryptology, calculus, and social justice and equity.
- Closing Session - share your personal conference highlights.

Check the miniprogram, available online or arriving in your mailbox, for a complete list of talks and speakers, plus much more information about the conference and Milwaukee.

We've reviewed and presented new material. Now it's time for ...

Homework – Now it's your turn:

- Use the Discount Registration to register for the 45th AMATYC Annual Conference
 - o by September 30 for postmarked forms.
 - o by October 7 for online registration.
- Register for the Conference 101 Webinar
 - o Wednesday, October 23, 4:00 pm Eastern.
 - o Meet the Conference Committee and get the inside scoop on how to make the most of your conference time as well as tips on the best of everything in Milwaukee.

Call for Nominations: MAA Awards

by Margaret Robinson, Chair
MAA Prizes and Awards Council

Please consider nominating an outstanding colleague for one of the awards given by the Mathematical Association of America (MAA).

Information about MAA awards can be found at www.maa.org/programs-and-communities/member-communities/maa-awards.

Of particular interest are:

1. The Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching of Mathematics. This award honors the college or university teacher who has been widely recognized as extraordinarily successful. Nominations are due on March 1 of each year.
2. The Henry L. Alder Award for Distinguished Teaching by a Beginning College or University Mathematics Faculty Member. This award honors beginning college or university faculty whose teaching has been extraordinarily successful and whose effectiveness in teaching undergraduate mathematics is shown to have influence beyond their own classrooms. Nominations are due October 1 of each year.
3. The Yueh-Gin Gung and Charles Y. Hu Award for Distinguished Service to Mathematics. This award honors for service to mathematics that has been widely recognized as extraordinarily successful. The period of service may be long or short, and the award may be made on the basis of one or several activities. The contribution should be such as to influence the field of mathematics or mathematical education in a significant and positive way on a national scale. Nominations are due December 1 of each year.

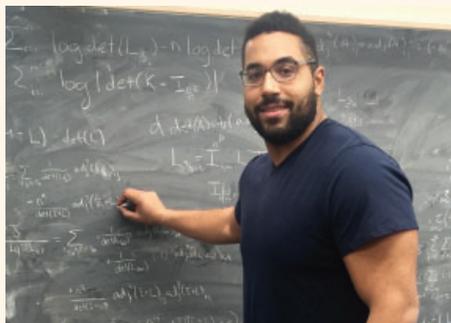
➤ *Milwaukee, Cont'd from page 1*

in visitors of all ages. The Milwaukee Art Museum has a world-class collection housed in an iconic building with "wings" that open and close to welcome all to the lakeshore. Just blocks from the Wisconsin Center, the Milwaukee Public Museum hosts an outstanding natural history collection, a dome theater and planetarium, and a live butterfly room. Milwaukee's theater district is also just blocks from the Wisconsin Center. Whether you love a Broadway show or more casual live music, there is plenty of exciting entertainment. If you want to learn about Milwaukee's brewing history, take a tour of the Lakefront Brewery.

You'll be impressed by all that Milwaukee has to offer. When you combine the excellent AMATYC Annual Conference with the city's awesome attractions, terrific entertainment, and outstanding restaurants, it all adds up to a great adventure in Milwaukee!

Meet John Urschel

by Judy Williams, Program Coordinator, and Keven Dockter, Conference Coordinator



Why would a PhD candidate from MIT say, according to a recent Washington Post article, that he is “looking forward to being considered that mathematician who used to play football” rather than “that football player who’s really smart”?

The answer is that John Urschel retired from his career as an offensive lineman for the Baltimore Ravens of the National Football League in 2017 to become a full-time graduate student in applied mathematics at the Massachusetts Institute of Technology. The Ravens drafted Urschel in 2014, after he graduated from Penn State with a bachelor’s degree in mathematics and physics. However, mathematics pulled the upset to return him to his first love.

In addition to his research and teaching, Urschel recently published his memoir, “Mind and Matter: A Life in Math and Football.” He feels very strongly about the value of a few key people in a student’s life who can be the difference between success and failure. He will share his own story and his thoughts about education equity at the 2019 AMATYC Annual Conference on Friday, November 15, 8:00–8:50 am.

John Urschel currently serves as McGraw-Hill Education’s Mathematics Ambassador. We want to thank McGraw-Hill Education, an AMATYC Corporate Partner, for bringing him to our conference. In addition to his presentation on Friday, you may also visit with him at the McGraw-Hill booths in the Exhibit area during Thursday’s Grand Opening and during regular hours on Friday. (See page 7 for exhibit hours.) Other opportunities to meet and speak with John Urschel will be announced closer to the conference dates.

The McGraw Hill Education logo, featuring the text "McGraw Hill Education" in white on a red background.

StatPREP Summer Workshops

by Kathryn Kozak, President-Elect of AMATYC

The StatPREP program is designed to foster data-centered methods and pedagogies in introductory statistics courses. In June, StatPREP offered four workshops, at the University of Hartford, Howard CC, Tarrant County College, and Highline College. Workshop participants learned to use Little Apps and other statistics class activities to help students understand how real data can be used to make decisions. The StatPREP website contains a wealth of statistics resources, including the Little Apps and other activities created by the grant personnel and StatPREP hub leaders. These materials are free to use, and are available at <http://statprep.org> under the Resources tab. StatPREP is supported by the National Science Foundation (DUE-1626337).

A goal of the StatPREP program is to provide a support community for participants as they incorporate data-centric methods into their statistics courses. To help StatPREP participants support one another, the Mathematical Association of America (MAA) created a StatPREP Hub Community on the MAA Connect online platform. In this forum, participants can discuss successes, questions and concerns, and also post resources to a shared library. If you are a previous or current participant of StatPREP and have not joined the StatPREP Hub Community on MAA Connect, please contact Kathryn Kozak at kathryn.kozak@coconino.edu.



Participants and workshop leaders at the University of Hartford StatPREP Workshop

Collaboration Corner: National Association of Mathematicians

by Jon Oaks, Midwest Vice President

The mission of the National Association of Mathematicians (NAM) is to promote excellence in the mathematical sciences and the mathematical development of all underrepresented minorities. NAM has approximately 600 members and is celebrating its 50th anniversary this year. NAM holds many events each year that may be of interest to AMATYC members, including:

- The MAA-NAM David Blackwell Lecture at MathFest, which this year is significant as it is David Blackwell’s 100th birthday;
- A banquet at the Joint Math Meetings to bring together people as a community;
- The NAM Faculty Conference on Research and Teaching Excellence each March; and
- NAM Undergraduate MATHFest, which takes place each fall at an historically black college or university (HBCU).

For more information on how you can collaborate with NAM, please visit www.nam-math.org, where you can check out their newsletter, or contact Jamylle Carter, the Community College Member of NAM’s Board of Directors.

Everything Exhibits and Advertising

by Todd Stine, Exhibits Chair, and Crystal Wiggins, Advertising Chair

For many conference attendees, the Grand Opening of the Exhibit Hall is a highlight of the conference. Be part of the Grand Opening Thursday in Ballroom AB at the Wisconsin Center at 4:30 pm, when Exhibits Chair Todd Stine and Local Events Coordinator Turi Suski will cut the ribbon to allow entry into the Exhibit Hall.

	<u>Exhibit Hall Hours</u>	<u>Dedicated Exhibit Hall Hours</u>
Thursday	4:30 pm - 7:00 pm	4:30 pm - 7:00 pm
Friday	8:30 am - 11:45 am, 1:15 pm - 5:00 pm	11:10 am - 11:45 pm, 1:15 pm - 2:00 pm
		2:00 pm - 5:00 pm Cash Bar
Saturday	9:45 am - 1:00 pm	10:00 am - 10:45 am

A special shout out to our corporate partners for their continuing support and sponsorship!



Hawkes Learning

- Conference Bags
- Chat & Chew and Commercial Presentations



McGraw-Hill Education

- Featured Speaker: John Urschel
- Chat & Chew

Exciting things to look out for:

- The release of the Guidebook App, coming this fall! (Sponsored by Cengage.)
- Commercial Presentations by:
Hawkes Learning Cengage Knewton
Pearson Lumen Learning Derivita
- Scavenger Hunt with PRIZES! (More information about this can be found in your conference bag upon arrival.)

When you first arrive, don't forget to check in and pick up your conference bag, name badge, and ribbons!
(Thanks to Wiley/Knewton for sponsoring name badges.)

Chat & Chew: Great Idea with a Great New Time

by Tim Britt, Assistant Program Coordinator

We are excited to bring another hour of Chat & Chew to the AMATYC Annual Conference. This year we have a new time for the Chat & Chew sessions. We will be in the Wisconsin Center, Room 201 on Thursday from 1:50-2:40 pm. This is your opportunity to join many table discussions and enjoy a nice afternoon break with cookies from AMATYC Corporate Partners, Hawkes Learning and McGraw-Hill Education. Every 15 minutes, the facilitator will meet a new discussion group at each table. Included will be many exciting topics that you won't want to miss, such as "Navigating Waves of Choice - Coreq and Gateway Courses," "Why You Should Be Seen in Spokane in 2020," and *IMPACT Live!* to highlight just a few! Bring a beverage, enjoy a cookie and join us!



Project SLOPE Research Fellows Program Begins!

by Luke Walsh, Project SLOPE Fellow and Megan Breit-Goodwin, Project SLOPE PI

The AMATYC Project SLOPE Research Fellows Program (NSF DUE-1726891) is a community-building opportunity focused on the Scholarship of Teaching and Learning (SoTL). The core goals of SoTL are to improve teaching and advance student learning. The SoTL process is in many ways an extension of the teaching practices educators implement throughout the semester. Through SoTL, educators can examine questions about problems encountered in teaching, explore assumptions about student learning, and investigate what could be possible for students, courses, or institutions. Importantly, SoTL brings educators together as a community to share questions, inquiry, evidence and findings, so they can learn in partnership with each other and build upon each other's work. For more information about the SoTL process, watch the AMATYC webinar, *The Scholarship of Teaching and Learning*, available at www.amatyc.org/Webinars.

The six AMATYC Project SLOPE Research Fellows began their SoTL work by first reading and discussing the AMATYC IMPACT document (www.amatyc.org/IMPACTLive), and engaging in conversations to reflect on experiences and challenges from their teaching. Dialogue continued, resources were explored, and research articles were shared among the Fellows. As a result, Fellows have begun to develop rich questions that have motivated them to further examine access, equity and PROWESS (PRoficiency, OWnership, EngagemenT, and Student Success) within their practices of teaching and their students' learning. Next steps for the Fellows include continuing to build their community, developing their SoTL questions, and beginning to plan their inquiry projects at a two-day workshop in Portland, OR.

The Project SLOPE Research Fellows look forward to sharing their SoTL work with the entire AMATYC community and demonstrating how SoTL is feasible and time worthy for all educators. Fellows will attend the 2019 AMATYC Conference, and will also share their SoTL questions and designs in an AMATYC webinar in December 2019. Their SoTL studies will be ongoing through 2020, so please support and follow them as they make history as the very first AMATYC Project SLOPE Research Fellows.

Questions about the AMATYC Project SLOPE Research Fellows Program should be directed to Megan Breit-Goodwin at Megan.Breit-Goodwin@anokaramsey.edu.



Grants Update

by Dennis Ebersole, Grants Coordinator

Did you know that AMATYC currently supports seven different grant projects?

- The *StatPREP* project aims to modernize the teaching of introductory statistics by increasing the use of data-centered methods and pedagogies (NSF DUE-1626337).
- *Project SLOPE* is a national pilot program designed to engage two-year college mathematics faculty in classroom inquiry through Scholarship of Teaching and Learning (SoTL) research (NSF DUE-1726891).
- The *Aspire Alliance* is an NSF INCLUDES Alliance intended to increase the learning, persistence, and completion of students from underrepresented groups in STEM postsecondary education (NSF HRD-1834522).
- *Collaborative Research: What Difference Does Early-Career Faculty Development Make?* will use research to understand changes in the teaching practices of faculty participating in the MAAs Project Next and AMATYC's Project ACCESS programs (NSF DUE-1821650).
- *Algebra Instruction @ Community Colleges* uses research to determine the conditions under which instruction in community college algebra courses leads to student learning gains (NSF DUE-1561436).
- *Transitioning Learners to Calculus in Community Colleges (TLC3)* involves supporting instructional improvements to increase the success of historically underserved students, particularly underrepresented racial minority students, from developmental mathematics through Calculus II (NSF DUE-162387).
- *Undergraduate Teaching in Mathematics with Open Software and Textbooks (UTMOST)* is designing, developing and studying innovative approaches to the teaching and learning of undergraduate mathematics using open software and electronic textbooks (NSF DUE-1626455).

Grant Writing Tip #11: Ask someone who is familiar with grant proposals but unfamiliar with your project to read your proposal. You are too close to the project to see places where the writing is unclear, ambiguous, or grammatically incorrect. Remember that you are competing with other quality proposals. Reviewers' time for reading proposals is limited; make sure your grant proposal is clear, concise, and compelling.

Innovative Teaching and Learning Committee

by Dan Petrak, Chair

The Innovative Teaching and Learning Committee (ITLC) recently co-sponsored an outstanding webinar by Barbara Illowsky, titled "Accessible Course Shells for OER & Other Texts – All Ready to Adapt!" You are encouraged to watch the recording of this and other great webinars at www.amatyc.org/Webinars.

In May, the position statement on Distance Education in College Mathematics Courses in the First Two Years was discussed in a public hearing via webinar. The position statement is now under final revision and will be brought before the Delegate Assembly at the 2019 AMATYC Annual Conference in Milwaukee. You can view and comment on this document at the ITLC Google Group page, <https://groups.google.com/d/forum/amatyc-itlc>. If you have questions about anything related to the ITLC, please contact Dan Petrak at dgpetrak@dmacc.edu.

Did You Know...

The National Association for Developmental Education (NADE) is now known as the National Organization for Student Success (NOSS).

AMATYC Traveling Workshops – Bringing Ideas to You!

by Mari Menard, Coordinator

Summer is the time to plan for a Fall 2019 Traveling Workshop for your institution, your region, or your AMATYC Affiliate Conference. AMATYC Traveling Workshops are cost-effective, and let you choose the content, facilitator, location, and time. You decide what works best for you and your colleagues!

If you don't know what type of workshop you would like to hold, no worries; we can help! From Developmental Mathematics to a mathematical strand of your choosing, visit www.amatyc.org/TravelingWorkshops and click Strands to learn more.

Are you interested in presenting at a Traveling Workshop? Workshop facilitators work closely with faculty on specific goals as outlined in the Traveling Workshop request. Share your content knowledge, as well as assist in planning and meeting the goals of the workshop. You can find the application form on the website under Facilitator.

If you have questions about Traveling Workshops, please contact Mari Menard at tw@amatyc.org.

AMATYC Traveling Workshop Statistics Education: Concerns of California Assembly Bill 705

by Michael Davis

In April 2019, using funds from an AMATYC Traveling Workshop Grant, Glendale CC hosted an AMATYC Traveling Workshop facilitated by Rebecca Wong from West Valley College. The purpose of this full-day workshop was to discuss how to teach a statistics course to students who have a wide variety of skill sets and backgrounds.

Over 40 statistics instructors joined Rebecca to discuss various pedagogical techniques to help meet the challenges and opportunities provided by the recent changes mandated in California Assembly Bill 705 (AB 705). AB 705 requires all California community colleges to place the vast majority of students in transfer-level mathematics and will substantially decrease the number of students enrolled in developmental mathematics courses. Rebecca shared recommendations from the Guidelines for Assessment and Instruction in Statistics Education (GAISE) published by the American Statistical Association (ASA), as well as several active learning activities from her many years of teaching statistics and leading workshops. All participants were on their feet the majority of the time and had fun meeting new people and completing each activity.

This unique professional development opportunity not only gave instructors concrete tools that are easy to implement in their classrooms, but also let instructors from many different colleges share stories, fears, and excitement for what the upcoming fall semester will bring. The changes required by AB 705 can seem overwhelming, but everyone walked away from this workshop feeling more confident and better equipped to handle the challenges of this new reality.

Statistics Committee

by Julie Hanson, Chair

The Statistics Committee would like to express our appreciation to Michael Dorff and Suzanne Weekes for presenting the webinar, "PIC Math and the Best Jobs in the 21st Century," on June 24. The PIC Math (Preparation for Industrial Careers in Mathematical Sciences) program is designed to prepare undergraduate students for mathematical careers in industry, and provide them with research experience working on real problems from business, industry, or government. Webinar participants learned about this exciting program and about how faculty can bring PIC Math to their campus. The webinar was co-sponsored by the AMATYC Statistics Committee, the Mathematical Association of America (MAA), the American Statistical Association (ASA), and Transforming Post-Secondary Education in Mathematics (TPSE Math). The recording and other materials from this webinar, as well as from previous webinars, are available on the AMATYC Webinar webpage (www.amatyc.org/Webinars) and on the AMATYC Statistics Resources webpage (www.amatyc.org/StatsResources). Support for the MAA PIC Math program is provided by the National Science Foundation (NSF grant DMS-1722275) and the National Security Agency (NSA).

Topics for future webinars sponsored by the AMATYC/ASA Joint Committee include teaching statistics using GeoGebra, and the impact of the college introductory statistics course in the preparation of future K-12 teachers. Information and registration links for these webinars will be available on the AMATYC Webinar page in the coming months.

The 2019 AMATYC Annual Conference in Milwaukee will include several professional development opportunities for teachers of statistics. In addition to 50-minute and 25-minute sessions on statistics-related topics, the AMATYC Statistics Committee is sponsoring a themed session, "Engaging Introductory Statistics Students with Real Data." It will include six 15-minute presentations. In this themed session, presenters will share ideas for engaging students in the collection and analysis of real data from a variety of sources, including global and financial data. Participants will learn about short in-class activities, as well as semester-long projects. Ideas that can be used in face-to-face and online classes will be presented. All interested AMATYC members are also invited to the AMATYC Statistics Committee meeting at 4:15 pm on Friday, November 15, and the Data Science Subcommittee meeting at 12:40 pm on Thursday, November 14. If you teach statistics, please consider joining the AMATYC Statistics Committee. To join or to learn more about the committee, contact Julie Hanson at julie.hanson@clinton.edu.

Future AMATYC Conferences

2019	Milwaukee, WI	November 14-17
2020	Spokane, WA	November 12-15
2021	Phoenix, AZ	October 28-31
2022	Toronto, Canada	November 17-20
2023	Omaha, NE	November 9-12

For additional information, contact the AMATYC Office at amatyc@amatyc.org or 901.333.5643.

New AMATYC Foundation 2020-2025 Strategic Plan Unveiled!

by Jane Tanner, AMATYC Past President and Foundation Chair

The AMATYC Foundation Board has recently completed a year-long process of updating the Foundation's vision, mission, and strategic plan. Input was provided by various groups of AMATYC members, including AMATYC past presidents and current AMATYC Board members.

- Vision: The AMATYC Foundation will provide financial resources to support the mission and vision of AMATYC.
- Mission: The AMATYC Foundation provides financial resources to ensure the success of current and future AMATYC initiatives and innovation, to support AMATYC members in their quest for lifelong professional development, and to recognize the exemplary work of all involved in mathematics education in the first two years of college.
- 2020-2025 Strategic Plan: View this at www.amatyc.org/amatycfoundation.

Have you made your contribution to the AMATYC Foundation this year? As noted in our vision and mission, each year the AMATYC Foundation supports the work of AMATYC in various ways. The Foundation has contributed money toward the standards project, *AMATYC IMPACT*, and also provides funding to help two cohorts of ACCESS fellows attend the AMATYC Annual Conference. Consider making a contribution now in order to provide continuing support for AMATYC's initiatives.

It is easy! Members can contribute at www.amatyc.org/donations. Support your profession by making a contribution to the AMATYC Foundation today! Remember that you can also support the Foundation by shopping at Amazon Smile.

RMETYC Committee: An Evening of Research

by Ann Sitomer, Chair

Join RMETYC at the Thursday evening Research Session to learn about recent and ongoing research studies conducted by your AMATYC colleagues. RMETYC is the Research in Mathematics Education for Two-Year Colleges Committee, a group of AMATYC members who ask questions about teaching and learning mathematics in the first two years of college.

The Research Session Keynote will feature Faculty Research Associates, two-year college mathematics instructors who are collaborating with the research team on the Algebra Instruction @ Community Colleges (AI@CC) project (NSF DUE-1561436). The AI@CC study examines the relationships between instruction and student success in Intermediate and College Algebra in community colleges. Not all Faculty Research Associates were researchers at the beginning of the project, but they are now! Four of these researchers will share their experience at the Keynote Panel, *Algebra Instruction @ Community Colleges: Research Faculty Perspectives*.

The Keynote is followed by two concurrent sessions of research presentations. One concurrent session features research on the role of co-curricular structures supporting equitable outcomes for students in pre-calculus, and a conceptual framework for examining structures that support students' transition to calculus in minority-serving institutions. Topics for the other concurrent session are the operationalizing of numeracy for the health professions, and a theory that explains how students' selections of answer choices may reflect different types of algebraic conceptual understanding.

Whether you are a researcher or just interested in learning about current research, please join members of AMATYC's Research Committee at this year's Research Session Thursday evening in Milwaukee!

New Webinar Coordinator Appointed



AMATYC is pleased to introduce Pat Riley, the new Webinar Coordinator. Pat is a Professor of Mathematics and Statistics at Hopkinsville CC (HCC) in Hopkinsville, KY. He earned his B.S. in Mathematics from the University of Tennessee-Martin and his M.A. in Mathematics from the University of Missouri in Columbia, MO. Pat is a Past President of KYMATYC and current Math Discipline Coordinator at HCC.

Helping students connect mathematics to the world outside the classroom is a high priority in Pat's teaching. He enjoys teaching all classes with an application format, and routinely looks for examples from current events and pop culture, so his students can see the relevance of topics they are learning.

Pat has attended nine AMATYC conferences and has given several presentations both individually and as part of a group. He enjoys participating in the Ignite Sessions and looks forward to more participation in the future. Pat has been a youth soccer coach for many years. He is also a member of SABR, the Society for American Baseball Research, which brings together his enthusiasm for both math and baseball.

Pat is ready to begin the challenge of coordinating the webinars and is looking forward to learning about new topics while working with a wide variety of mathematics educators. He is excited to take on a more active role in AMATYC.

The **AMATYC News** is the official newsletter of the American Mathematical Association of Two-Year Colleges and is published four times per year in January, April, August, and October. Your articles, announcements, comments, and letters to the Editor are welcome. Submit all materials by November 25, February 25, June 1, and August 15 for the respective issues.

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Traveling Workshop at Brookdale CC

by Sally Mulvey and Gabriela Sprague

How do educators engage students, particularly in basic skills courses, when they already do everything short of standing on their heads to generate interest in the classroom? The answer: Games!

The “Game Up Your Math” Traveling Workshop was hosted on March 16, 2019, by Brookdale CC in Lincroft, NJ. The workshop was facilitated by Kathleen Offenholley and attended by thirty faculty from New Jersey two-year colleges, as well as local public school educators. The presentation was chock full of fun and educational games, complete with free downloads of activities that all educators can use in class to motivate students.

Offenholley skillfully demonstrated team-building activities in a manner that emulated the classroom environment. Participants had fun while engaging in games involving algebra, pattern recognition, verbal math skills, and applications of exponential functions through “spreading a rumor,” various computer games, among many other topics. The facilitator also explored the underlying game mechanics, such as the use of randomization, rapid completion, competition, reward, and role-playing before encouraging all faculty to use their creativity constructing games of their own to share.

This Traveling Workshop provided faculty with practical online engagement tools to help promote student success and demonstrated how faculty could be creative in game-making. Ultimately, the day was a success and a great way to “spread the rumor” to create awareness amongst two-year college faculty of one of the many opportunities AMATYC generously provides to its members and affiliates!

A copy of Offenholley’s presentation was uploaded for shared access at: <https://mathgamesforstem.wordpress.com/2019/03/17/brookdale-community-college-march-16th>.

Highlights of the 2019 AMATYC Spring Board Meeting

by Behnaz Rouhani, AMATYC Board Secretary

The AMATYC Executive Board met at Southwest Tennessee CC in Memphis on April 12-15, 2019. Highlights of the meeting included:

- The spirit of a position statement on “Distance Education in College Mathematics in the First Two Years” was endorsed.
- The revised goals of the Mathematics and its Application for Careers Committee were approved.
- A new proposal submission process involving Google Forms and a review process involving Smartsheet for the AMATYC Annual Conference were adopted.
- Effective July 1, 2020, the annual membership dues for a regular individual AMATYC member will be \$95.
- Institutional member dues were set at \$530, effective July 1, 2020, through June 30, 2021.
- The temporary adjunct and retiree rate exceptions for member conference registration will be extended from 2019 through 2022.
- Effective with the 2020 annual conference, the full conference discount registration rate will be set at \$375.
- The 2019 Teaching Excellence Award winners were announced.
- The slate of candidates for the 2020-2021 AMATYC Executive Board was set.
- Many appointments and reappointments were approved. A complete list along with the full minutes of the meeting may be found on the AMATYC website at www.amatyc.org/BoardMinutesMotions.

AMATYC CALENDAR OF EVENTS

Check the AMATYC website, www.amatyc.org, for information on conferences and meetings from other organizations.

September 20, 2019: InMATYC Fall Meeting, Ivy Tech CC, Columbus, IN. Website: <http://inmatyc.matyc.org/>

September 28, 2019: LaMsMATYC Conference, Copiah-Lincoln CC, Natchez, MS. Website: <https://lamsmatyc.wixsite.com/home/2019-at-colin>

September 28, 2019: WisMATYC Conference, Northcentral Technical College, Wausau, WI. Website: <http://wis.matyc.org>

October 4-5, 2019: FTYCMA Fall Retreat, Polk State College-Lakeland Campus, Lakeland, FL. Website: <http://scf1.scf.edu/ftycma/html/events.html>

October 11, 2019: ArizMATYC Fall Conference, Northern Arizona Univ, Flagstaff, AZ. Website: <http://arizmatyc.org/wp/fall-2019-arizmatyc/>

October 11-12, 2019: MichMATYC Conference, Henry Ford College, Dearborn, MI. Website: www.michmatyc.org

November 1-2, 2019: VMATYC Conference, John Tyler CC-Midlothian Campus, Midlothian, VA. Website: www.vmatyc.org

November 14-17, 2019: 45th Annual AMATYC Conference, Milwaukee, WI. Contact: AMATYC Office, amatyc@amatyc.org

December 6-7, 2019: CMC³ Fall Conference, Hyatt Regency Monterey Hotel and Spa, Monterey, CA. Website: www.cmc3.org/conferences/fall/

A form is available at www.amatyc.org/AffiliateConferences to update or add affiliate conference information.

➤ The Lesser-Known Pathway, Cont'd from page 2

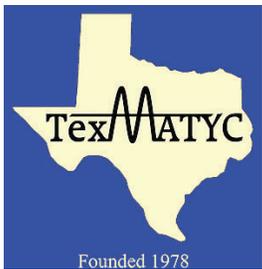
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Focus on Affiliates: TexMATYC

by April Ström, AMATYC Southwest Vice President



The Texas Mathematical Association of Two-Year Colleges (TexMATYC) was founded in 1978. The mission of TexMATYC is to:

- Encourage the development of effective mathematics programs,
- Afford a state forum for the interchange of ideas,
- Further develop and improve the mathematics education and mathematics-related experiences of students in two-year colleges,

- Promote the professional welfare and development of its members,
- Provide the opportunity to study and keep abreast of new trends in mathematics,
- Promote professional cooperation and communication between teachers and administrators for the realization of sound educational achievements, and
- Promote support for and involvement in AMATYC.

As an organization, TexMATYC meets each spring in conjunction with the Texas Community College Teachers Association (TCCTA). Presentations by TexMATYC speakers are included in the overall TCCTA conference program.

The benefits of joining an AMATYC affiliate are numerous. One of the most important benefits is networking with colleagues from other institutions. Membership to TexMATYC is extremely affordable, just \$10 per year and \$150 for lifetime membership. Visit www.texmatyc.org for more information.

On June 7-8, 2019, TexMATYC and the AMATYC Southwest Region hosted the AMATYC Southwest Regional Conference at Collin College in Frisco, TX. This conference involved the five states of the Southwest region in AMATYC: Arizona, Arkansas, New Mexico, Oklahoma, and Texas. All five affiliates from these states were represented at this conference: ArizMATYC, ArkMATYC, NMMATYC, OkMATYC, and TexMATYC. Linda Braddy, Vice President of Academic Affairs at Tarrant County College, provided the keynote presentation, titled “Critical Mass.” Topics for breakout presentations included creating an online escape room experience for students, integrating equity and social justice contexts into the classroom, and using Excel to create individualized projects. Thank you to Cynthia Martinez, TexMATYC Past-President, and the TexMATYC Executive Board for planning and implementing the AMATYC Southwest Regional Conference. We are looking forward to the next regional conference in a few years!



Volume 34 Number 3 August 2019

AMATYC
NEWS™

ISSN: 0889-3845