Message from the NMMATYC President

Look out! It's springtime and another Fibonacci bunny has escaped! Seems Leonardo just can't keep up with them, but he's starting to see a pattern…

Welcome spring NMMATYC members!

Fibonacci and Srinivasa Ramanujan are my two favorite mathematicians. A few years ago, at the NMMATYC conference in Roswell, New Mexico, I did a presentation on how to introduce Fibonacci and his famous series to developmental math students. At the end of my presentation, I gave away two door prizes. They were Fibonacci books written for children. I've used them and others in my college classrooms to engage students and peak their interest. You're never too old to enjoy a good children's book, many of which are written to captivate not only children but adults as well with their subtle humor and messages. To quote C.S. Lewis, "A children's story which is enjoyed only by children is a bad children's story." In *Rabbits, Rabbits Everywhere: A Fibonacci Tale* by Ann McCallum, the locals of the mythical town of Chee pay homage to the wizard in residence by supplying him with the best yield of their harvest. A pied piper (they always cause trouble) balks at this tribute, and suddenly, two rabbits appear in a field and begin to multiply out of control eating up the crops. The heroine, Amanda, must figure out the famous pattern by which they are multiplying to save the town.

NMMATYC board member and MAA delegate, Dr. Joanne Peeples introduced me to "The Rabbit Problem" by Emily Gravett. Dr. Peeples is always on the lookout for math-related children's books her granddaughters might enjoy, and this one is a real winner. Lonely Rabbit and Chalk rabbit find themselves the parents of two adorable bunnies, and they live happily in Fibonacci's field until the field becomes over-run with rabbits! The book is written as a mock calendar, and as each month passes, the conditions in Fibonacci's Field become impossible. This book is beautifully illustrated with remarkable attention to details such as the local newsletter, "The Fibber" and a bunny baby book! It introduces the series in a fun, delightful, non-intimidating manner which both adults and children will appreciate!

Speaking of having fun with mathematics, the MAA/NMMATYC Southwestern Section conference will be held on April 12 & 13, 2019 in Silver City, New Mexico at Western New Mexico University. NMMATYC celebrates its 30th anniversary. Also, be sure to relax while listening to W.N.M.U.'s Mariachi Plata who will perform at happy hour April 12 at 5:00 pm. Join the fun and get a free T-shirt at the pi walk event on Silver City Trails on April 13. Enjoy the art display by students from the Expressive Arts Department who merged mathematics with art. The conference is a wonderful way to network and share your mathematical expertise. Please consider being a presenter. More information is available on the conference link.

Register now to attend: https://mathcs.wnmu.edu/maa-nmmatyc-conference/

The deadline to register is April 7, 2019.

Please keep in mind that NMMATYC and AMATYC are for <u>anyone</u> interested in two-year college mathematics education. Students are welcome to join and attend. At this year's conference in Silver City, students can participate by presenting a poster during the Poster Presentation Session. Faculty, please encourage your students to participate as individuals or in groups. It's an excellent opportunity for students to share and discuss their math knowledge with others. Again, please see the conference link for more details.

Another opportunity for students is available through the Vicki Froehlich Scholarship and Michelle Jimenez Scholarship. Our Nominating Chair, Sara Hanson, has been working diligently to recruit candidates. Thanks Sara for your hard work!
Please visit: https://sites.google.com/site/nmmatyc2019/scholarships for details on the scholarships and how to apply or contact Sara Hanson at nominating@nmmatyc.com if you have any questions.
Faculty, please encourage your students to apply. **The deadline is March 15, 2019.**

NMMATYC is also offering two Faculty Awards, the David Lovelock Teaching Excellence Award and the NMMATYC Professional Developmental Travel Award. NMMATYC established the David Lovelock Teaching Excellence Award to honor educators who have made outstanding contributions to mathematics education at the two-year college level. The recipient of the award will receive a one-year American Mathematical Association of Two-Year Colleges (AMATYC) membership and a plaque. The purpose of the Professional Developmental Travel Award is to provide financial support for NMMATYC members to participate in professional development activities. Please visit the NMMATYC website or contact our Nominating Chair, Sara Hanson for more information.
The deadline is March 15, 2019.

A thank you to all NMMATYC members on behalf of myself and the NMMATYC Executive Board for your membership and support. Please continue to encourage colleagues, students, and anyone from your community who has an interest in two-year college mathematics education. Also consider joining the American Mathematical Association (AMATYC) of which NMMATYC is an affiliate.

Professional development opportunities abound through AMATYC for two-year college instructors via traveling workshops, various publications, webinars, as well as the special events at the annual conference. AMATYC's Project ACCCESS as stated in its website, 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." Project ACCCESS fellows attend two consecutive AMATYC conferences and attend sessions geared to new faculty as well as the other conference sessions and provides them with numerous networking opportunities.

Please visit this link for more information. https://amatyc.site-ym.com/page/ACCCESS

Several NMMATYC Board members and myself were privileged to have attended the recent 44th Annual AMATYC Conference. The theme was "The Main Attraction," and it was held on November 15 through November 18 in Orlando, Florida, home to Disney World. Mouse ears and mathematics mingled as members attended a myriad of activities geared towards faculty development and improving student engagement and retention. The next AMATYC conference will be held in Milwaukee, Wisconsin on November 14 – 17, 2019.

I encourage anyone with an interest in mathematics to join NMMATYC as well as AMATYC.

https://amatyc.site-ym.com/general/register_member_type.asp

http://www.nm.matyc.org/

Until we meet in April.

Pat Barrientos

Message from the AMATYC Southwest VP

Hello NMMATYC! What a wonderful time to be teaching mathematics in our community colleges – I hope you are enjoying your time with students this semester!

As you begin making plans for your summer adventures, don't forget to carve out time to attend the **AMATYC Southwest Regional Conference** on June 7-8, 2019 at Collin College (Preston Ridge campus) in Frisco, TX. Are you interested in presenting the work you are doing? We are looking for presenters! Proposals for presentations will be accepted through March 29th. Be sure to check out more details online at: http://texmatyc.org/SW_Regional/Welcome.html.

I would like to extend a warm welcome to AMATYC's new *News* Editor – Jennifer Travis from Lone Star College (North Harris) near Houston. If you have things you wish to share in the *AMATYC News*, please reach out to Jennifer (Jennifer.L.Travis@lonestar.edu).

Are you interested in getting involved in AMATYC? We need you! AMATYC is seeking volunteers for the following positions:

- **Webinar Coordinator** – This position works closely with the AMATYC Professional Development Coordinator, the Professional Development Committee, the Office, and the Executive Board to coordinate the AMATYC Webinar Series, a professional development opportunity for all AMATYC members, and serves as an ex-officio member of the Professional Development Committee. More details are available at: https://tinyurl.com/yct64hk9
- **Professional Development Coordinator** – This position serves a major role in the promotion of professional development opportunities for AMATYC members. The Professional Development Coordinator is an ex-officio member of the Professional Development Committee of the AMATYC Executive Board. The Professional Development Coordinator will work with the Executive Board, the AMATYC Office, and the AMATYC membership to coordinate professional development opportunities for mathematics educators teaching students in the first two years of college. More details are available at: https://tinyurl.com/yc8zab7v

Finally, if you or your colleagues have never been a member of AMATYC and would like to join, please reach out to me at april.strom@cgc.edu. I can provide you with a first-time member discount code for 50% off a one-year membership. A great deal for all new AMATYC members!

Join the **AMATYC Southwest Regional Group** on Facebook!

Happy spring!

April Ström
AMATYC Southwest Vice President
Chandler-Gilbert Community College, AZ
april.strom@cgc.edu

Message from Western New Mexico University

The math and computer science department at Western New Mexico University is a diversely trained group of mathematicians, statistician, engineers and computer scientists. The goal of our university is to meet students where they are and take them to where they need to be. One way in which we are meeting the needs of our students is by creating our new computational mathematics undergraduate degree. Beginning Fall of 2019, our degree program will emphasize the use of computer programming in an experimental approach to learning mathematics. With experience in programming environments like Java, Matlab and RStudio, our students will study mathematics, mathematical modeling, computer science and coding to learn to use computational techniques to solve problems in our world!

Our university is designated as the state's only official liberal arts university, and our unique setting in the Gila National Forest is why we are known as the university where adventure and education intertwine! Beginning Fall of 2019, we will be debuting our Applied Liberal Arts and Sciences program as our undergraduate general education component. The program's acronym ALAS means 'wings' in Spanish, and its intent is to allow students to 'spread their wings' in learning how to apply what they learn in general education. Our department has partnered with Natural Sciences to develop the ALAS STEM course component, in which students will be exposed to A.I., computing and the scientific method as first-time freshmen!

Our department offers a close-knit, family environment in which our majors and minors can socialize with us and their cohorts in our very active Math and Computer Honors Society 'Gamma Epsilon Kappa', *a.k.a.* the GEKs. All of our undergraduates are involved with the GEK Club, and as seniors in our program, our students are required to complete a Senior Project, in which they showcase their skills by applying them to real world problems important to our environment in the Gila and our university.

We also offer a Graduate Certificate in Mathematics Program at Western New Mexico University!

To help meet the need for faculty at two-year and community colleges to become "qualified" in mathematics, Western New Mexico University (WNMU) offers a Graduate Certificate in Mathematics (GCM) program. The GCM program was developed in collaboration with colleagues at Central New Mexico College and the Taos branch of the University of New Mexico. The GCM program is designed to: (i) offer courses that give a fresh exposure to mathematics content that would be engaging to participants; (ii) offer courses that illustrate pedagogical approaches that, if enacted in the classroom, would increase student engagement and would help students learn more effectively; (iii) offer courses in a format that is attractive and accessible to faculty and that allows faculty to make connections between the mathematics taught in their courses with mathematics taught at an advanced level; and (iv) offer sufficient graduate-level credit in mathematics for faculty needing to meet the criteria for being "qualified" by the Higher Learning Commission. The program includes a sequence of six graduate-level mathematics courses (one course offered each semester and one course offered during the summer session) totaling 18 credit hours. Courses in the sequence include Linear Algebra for Teachers, Number Theory, Abstract Algebra, Pedagogical Practices for Math Teachers, History of Mathematics for Math Teachers and Further Math Topics. Each course starts with a one-day synchronous workshop (held face-to-face or via zoom) with

follow-up monthly meetings with the instructor (via zoom). Between the monthly meetings, groups of participants meet weekly to work through problems. Participants work in small groups at their institutions or zoom in together. Each course is delivered via WNMU's Canvas Learning Management System and each course includes discussions of pedagogical aspects of teaching mathematics. For more information about the program contact Tom Gruszka at 575-538-6788.

It will be an honor for our department to interact with you in this spring's joint MAA and NMMATYC conference held April 12-13. We all look forward to meeting you there!

Sincerely,

WNMU Department of Math and Computer Science

Register now to attend! https://mathcs.wnmu.edu/maa-nmmatyc-conference/

"Where Adventure and Education Intertwine"

2018 Scholarship Winner – Berenice Paz

By Berenice Paz
Winner of the Michelle Jimenez Scholarship

My experience at NMMATYC and receiving the Michelle Jimenez Scholarship was an honor and a blessing. An opportunity that shined down on me, it motivated and reassured me that it is possible to achieve one's goals in life through hard work and effort. It was a door that marked the beginning to a hopeful future of success not only at a professional level, but at a mental and personal as well.

When I first arrived at NMMATYC I did not know what to expect. I imagined a lot of "math geeks," like myself at an auditorium discussing math material. Yet, it was not just math geniuses congregated in a place to discuss what most of us already had a knowledge about. In actuality, this conference included dedicated individuals from different backgrounds, race, and color that were unified by the same interest in mathematics to help explore alternatives that could help those less proficient in the math language. It was a conference where ideas were shared and were I was able to observe the excitement about mathematics. It was a truly humbling and motivating experience for me.

As of right now, I am continuing my education at the University of Texas at El Paso, and I am very thankful for all the individuals that made this scholarship possible, because the scholarship was the stepping stone that helped me transition from El Paso Community College to UTEP. With this help, I was able to purchase books and school supplies for both the fall and spring semesters, and I was able to use some of the funds to cover a fraction of the tuition. In addition, I appreciate that this scholarship is available for individuals like myself since at times it seems impossible to receive some help from an organization due to highly demanding requirements. I am continuing in the mathematics field by providing tutoring and mentoring to my fellow peers as a supplemental instructor at EPCC. But once again, receiving this help was a great honor and privilege. I hope to be able to give a little back to my community from all the blessings I have received.

Solids of Revolution Project

By Dr. Joanne Peeples
El Paso Community College

I am excited to share with everyone a project that I did with my Calculus II class involving solids of revolution!
Below is a summary of the instructions given to the students.

Students were given an area found below $y = 2x^3 + 1$ above the x-axis, between $0 \leq x \leq 1$ in Quadrant
Students were given a random number from 1 to 4. That number determines the rotation.

If the number is 1, then rotate the area about the x-axis.
If the number is 2, then rotate the area about the y-axis.
If the number is 3, then rotate the area about y = 3.
If the number is 4, then rotate the area about x = 1.

Then the student must do the following steps to complete their project.

- A. Draw the graph of f(x), shade the area that is to be rotated.
- B. Draw the 3-dimensional picture of your volume (show the x, y, and z-axis, with units and describe what your solid looks like.
- C. Set up two integrals to find your volume first using i) disks and next using ii) shells; integrate one of the integrals (or both if you want to see if you get the same answer).
- D. Set up the integral to find the surface area of your solid of revolution and describe the surface area your integral will calculate.
- E. Make a model of your volume. Your model should include the x, y, and z axis, units on each axis, <u>all</u> the equations that <u>define the area</u> to be rotated, the axis of rotation, and your name.

By having the students create a model of the solid, they can get their creative juices flowing and at the same time, visualize what they are actually doing when they solve these problems.
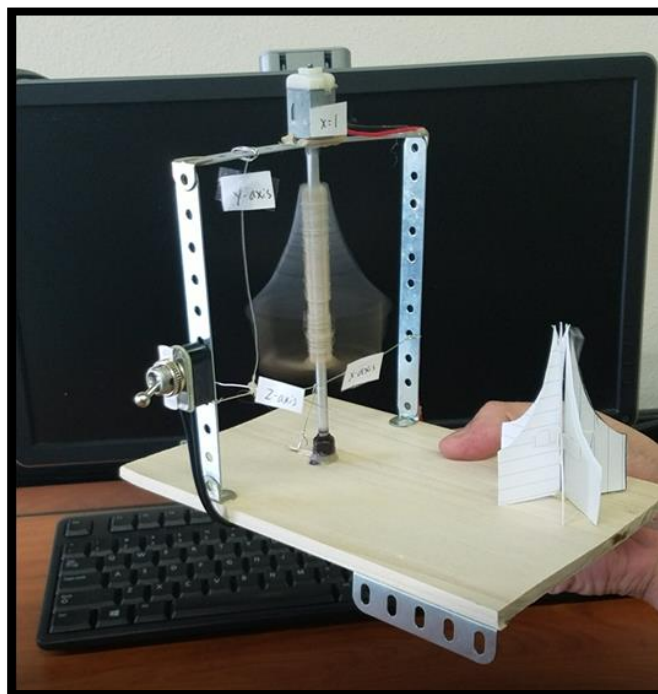
Below are some of the student's submissions.
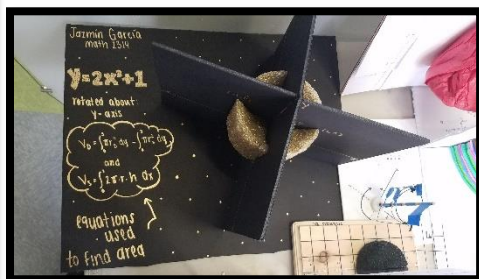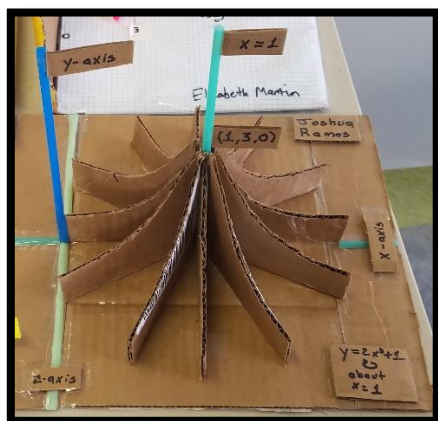
One student, named Ivan Contreras, went above and beyond and created a motorized model that will rotate the area right before your eyes!
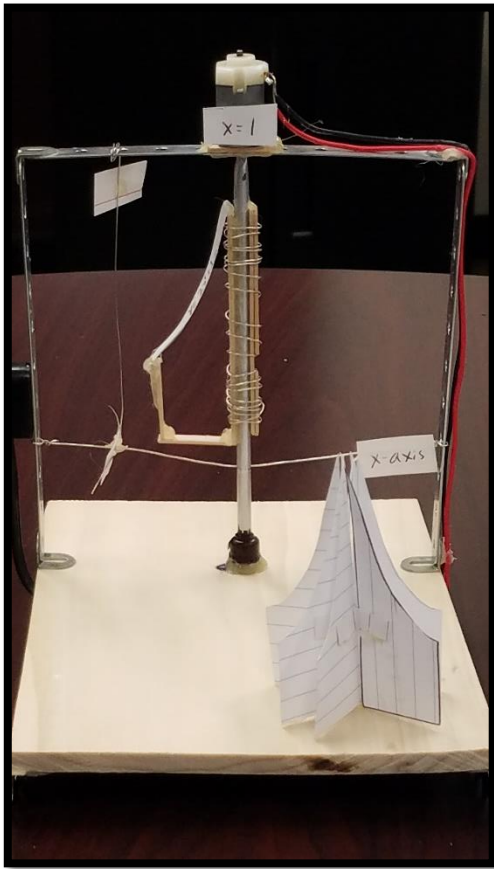
You can see his model rotating in action by clicking on the picture below!

NMMATYC Scholarships and Faculty Awards

NMMATYC SCHOLARSHIPS

If you know of a student that has completed a minimum of 12 credit hours (6 hours must be from a New Mexico or El Paso 2-year college), **maintained an overall GPA of 3.2 and a cumulative GPA of 3.5 in all MATH courses**, please refer them to the NMMATYC website at
https://sites.google.com/site/nmmatyc2019/scholarships

Two Memorial Scholarships are offered:
 "Vicki Froehlich" and "Michelle Jimenez".
 Each scholarship is in the amount of $500

FACULTY AWARDS

We also offer two faculty awards:
"David Lovelock Teaching Award "and
"NMMATYC Professional Developmental Travel Award".
Further information can be found at https://sites.google.com/site/nmmatyc2019/scholarships

The deadline to apply for the faculty and scholarship awards is March 15th, 2019.

Any questions email: *nominating@nmmatyc.com*

2018 – 2020 NMMATYC BOARD

Articles for the Next Newsletter?

If you want to share any exciting news going on in your college, interesting presentation, best practices in the classroom, or events happening in the world of mathematics, have it published in the next NMMATYC Newsletter! Submit your articles to Jeremy Ramirez at newsletter@nmmatyc.com

Visit us at www.nm.matyc.org