VOLUME 29 ISSUE I

NMMATYC News

New Mexico Mathematical Association of Two-Year Colleges

Spring 2016

Attend Our Spring Conference May 20th & 21st at UNM-Valencia

Keynote Speaker:

Dr. Jonathan Wolfe

New Mexico Mathematical Association of Two-Year Colleges

A Message from the President

Mathematics is the door and key to the sciences.
– Roger Bacon

Hello all,

Spring is here and with it comes the beautiful flowers, and the colors of New Mexico. Hope you are having a great semester.

First of all, I would like to introduce the NMMATYC board members. NMMATYC I am, Dr. Eva L. Rivera Lebrón from UNM-Valencia Campus, president-elect. I am currently acting president for NMMATYC, since our Affiliate President, Diana Orrantia from EPCC, is presently on medical leave. Our past president and webmaster is Philip Kaatz from Tucumcari, and our treasurer is Elaine Clark from UNM-Valencia Campus. Secretary is Melinda Camarillo from EPCC and newsletter editor is Adrian Delgado from DACC. Our AMATYC delegate is Dr. Joanne Peeples from EPCC, Elizabeth Gamboa from DACC is responsible of nomination and Alyne Fulte manages Articulation and Annette Hatch from UNM-Valencia, who is the 2016 NMMATYC Conference chair. Finally yet importantly, I would like to introduce and welcome our Board's newest member Arturo Dominguez from DACC who is in charge of Membership.

NMMATYC Conference

As you get ready to conclude this semester, I would like to invite you to this year's NMMATYC annual conference. It will be held at UNM-Valencia in Los Lunas May 20 and May 21, 2016.

This event will be a great opportunity to network with other mathematics faculty, go to great presentation and why not…do something different to celebrate the end of the semester. This year during the articulation meeting we will be having a representative from the Department of Higher Education to talk to us about the changes that are coming up for us in the next months.

Also, we will have great keynote speakers. The dinner speaker will be Dr. Jonathan Wolfe of the Fractal Foundation and at lunch, we will have James Taylor of Santa Fe speaking about Math Circles. James will also lead some math circle activities during one of the sessions and a movie showing a Navajo Math Circle in action will be shown.

If you haven't register yet, consider attending and even presenting at this year's conference. The last day to submit a presentation proposal is Saturday April 30, 2016. Aditionally, encourage your students to attend and participate.

Conference details, online registration and presentation forms can be found at https://sites.google.com/site/nmmatyc2016/

The last day to register without a $20 late fee is Saturday April 30, 2016. Registration is not considered complete until payment is received. Note that the registration fee includes the membership in NMMATYC for 2016-2017.

More conference talk…This year's AMATYC conference will be held in Denver, Colorado from November 17th to November 20th. It is an amazing experience where you can meet new people and share thoughts about different topics in mathematics education in 2-years and community colleges.

Elections

This year is Election Year not only but the country, but also for NMMATYC. We will be holding elections during this year's conference. If you know someone that would like to be part of this great board of members, please nominate them. They can also self-nominate themselves. Just make sure you send a small blurb, as well as a picture of you so we can put it in the ballot. We are looking for candidates for every position, especially president-elect.

Membership

If you are not a member of NMMATYC, I personally invite you to become one and enjoy the professional development opportunities, scholarships and networking that we can offer. Please visit our website (http://www.nm.matyc.org) for more information. Also, if you are not an AMATYC member yet, please consider it as well. You can visit their website at www.amatyc.org for further information.

Scholarships

Please spread the word about our scholarship opportunities, the Michelle Jimenez Scholarship and the Vicki Froehlich Scholarship. Also, remember to encourage your students to participate at the college Math League Competition. For more information, please visit our webpage (http://www.nm.matyc.org).

If you have any questions or concern, please feel free to contact me at eriveral@unm.edu. I am always at your service.

See you in May,

Eva Rivera

A picture of me, 8 years ago!! ☺

EVA
RIVERA
NMMATYC
PRESIDENT

A Message from the Southwest Vice President

News from AMATYC

By Kathryn Kozak, Southwest VP

During the first weekend of April, the AMATC board met to discuss many topics. One of the major topic discussed was the adoption of a new mission and vision statement for AMATYC. The new mission statement for AMATYC is

> To provide high quality professional development, to advocate and collaborate at all levels, and to build communities of learners for all involved in mathematics education in the first two years of college.

The new vision statement for AMATYC is

> To be the leading voice and resource for excellence in mathematics education in the first two years of college.

The next step is to develop the new strategic plan. The purpose of a strategic plan is to take the organization from where it is right now (the mission) to where it wants to be (the vision). The strategic plan for 2018-2023 will be presented during a forum at the AMATYC Annual Conference in Denver. If you are attending the conference, please attend the forums to provide your input. The board will approve the final version of the strategic plan at its spring board meeting of 2017, and present the plan to the delegate assembly at the 2017 conference in San Diego.

Have you ever thought of running for an elected office on the AMATYC board? I hope that you have, but in case you haven't, I would like to tell you some reasons for running for a position. First, when you serve in a leadership position, you are able to learn from others who are serving with you. You can bring that knowledge back to your home institution, and then your institution can benefit from this information. You also meet many people throughout the nation if in an AMATYC leader or through the state if you are a NMMATYC leader. The networking opportunities are vast for anyone in a leadership position. Last but not least, you are in a position to shape the future of the organization that you serve. I have found that to be a very rewarding aspect of my position.

AMATYC's election is September of 2017. You may think that is a far time off, but the deadline for nomination material is February 1, 2017. Now is the time to think about if you are interested in running.

The positions that you can run for are president-elect, secretary, and vice-president of the southwest region. All of these positions are supported by AMATYC, which includes travel to the AMATYC annual conference (except for conference registration) and board meetings. Your college needs to be willing to give you time off for travel to the meetings and conference. So if you are interested, start talking to your college administration right now, then check on www.amatyc.org for information on how to submit a nomination.

If you are not ready for running for national office, then consider running for an office in your local affiliate, NMMATYC in the next election cycle. NMMATYC has the positions of president-elect, treasurer, and secretary that you can run for. Contact a member of the NMMATYC board for information and the nomination process. The NMMATYC website is www.nm.matyc.org. Soon there will be an election for officers, so you may consider running in the future.

I have really enjoyed serving as the vice-president of the southwest region. I am honored that this region has chosen me to serve in the position for three terms. I am excited for what lies ahead in my final term as the VP.

KATHRYN KOZAK
SOUTHWEST VP

NMATYC 27TH ANNUAL MEETING

May 20-21 Los Lunas, NM

University of New Mexico - Valencia

https://sites.google.com/site/nmmatyc2016/home

Dr. Jonathan Wolfe will give the keynote address at our Friday evening banquet.

Founder of the Fractal Foundation, Dr. Jonathan Wolfe first discovered the beauty of fractals while a student at the Albuquerque Academy in 1987 and has been eagerly teaching people about fractals ever since. After earning his Ph.D. in visual neuroscience from the University of Pennsylvania in 1996, Dr. Wolfe returned to Albuquerque to become a renowned artist best known for creating several iconic fractal-inspired flying art works, or hot air balloons, as well as the Fractal Man. Beginning in 2001, Dr. Wolfe has taught diverse audiences about the concepts of chaos theory and fractals in New Mexico and is currently the Director of Information Technology at UNM's Project Extension for Community Healthcare Outcomes, or Project ECHO, applying fractal concepts to health care across New Mexico.

PRECURSOR TO PROOFS (P^2)

When teaching a math course – no matter what level – one of the goals is to have students write clear, understandable solutions to the problems they are solving. I usually tell them that they are writing a paragraph, and that they need a "first sentence" that tells the reader what problem they are solving. Then they need to carefully list the steps (depending on what course they are taking, they should also write in words what step they have taken), and of course there should be a concluding "sentence" (containing the solution). I also tell students, it is OK to use words when working a problem, if it makes the solution clearer. If students use this model, not only can other people read and understand the problem, the students have an excellent set of examples to use when studying for an exam.

In talking with an English instructor whose office is down the hall from me (Kelli Woods), I discovered a project that she is using in her technical writing class that I could also use in my math classes to help foster understandable solutions to math problems, to help my students think in a more organized manner, AND have fun at the same time!

The basic idea of the project is that the student must find about ten objects that they can use to build and "something" – here is where creativity comes in. Then they are to write an instruction manual (using only words, no pictures), with a list of the objects and instructions on how to assemble their own special "something". They bring their objects and manual to class; give these to another student who is to put the "something" together, and make notes on the instruction manual where they had problems. The student who wrote the manual is to correct/improve the directions, and depending on class time either bring the assembled "something" and corrected manual back to class or have another round where another student tries to assemble the "something".

Does this sound like buying something from Home Depot or Ikea and trying to assemble it? I think it does, and most students have had this experience.

I've had students make bows and arrows, water fountains, swings for Barbie dolls, balloon powered cars, a model of a lung, and much more. It is fun for the students, and they learn the value of putting steps in order, and writing clearly.

If you want a copy of this project, just email me at joannep@epcc.edu.

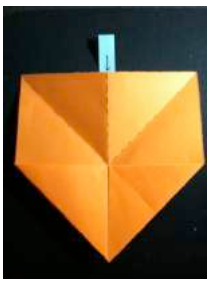
This semester in my discrete math class I had one student who did an exceptional job of writing her manual. The person putting together her "something" was able to do it with no suggested changes to her manual (and put it together in about 10 min.) The student, is Sun Hwa Hwang, who is from South Korea, so English is not her first language.

Sun prefolded the eight pieces needed for the project – just as when you buy something that needs to be assembled, often some of the parts are preassembled. I will attempt to explain how to fold these pieces, and then will let you read Sun's "manual" – I'll use photos to help me.

Carefully cut eight pieces of paper into eight 5 ½ inch squares (Sun used eight different colors, and the weight of the paper is similar to the paper used in printers or copy machines).

First make three folds in the paper (fold then unfold), two on the diagonals and one that divides the square into two rectangles.

Your next two folds will be to fold in the lower corners (you can see the folds in the above picture). Your paper should look like the one in the picture below:



I have put an arrow in the above picture, you need to "push" the top fold at the arrow; "push" it up towards you (if the folded paper is on an x-y plane, push in the z direction). You use the folds you have created – your paper should now look like this (wish I was a better photographer):

Now, folding along the middle you should have,

a parallelogram, with the "head" facing left, and the "tail" facing right.

You will need eight of these parallelograms.

Now to Sun Hwa Hwang's manual ----------

A Ninja Star

There are 8 identical units of folded paper.

A unit of paper is shaped as a parallelogram which consists of a Head and a Tail. A Head has a triangular pointy shape that will become a blade and a Tail is split into two flaps that will interlock each unit.

The unit should face the open part of the paper downward and the closed part upward.

1. Take two units and hold them in the same exact way that the head leans toward the left and the tails towards the right horizontally.
2. Twist the second unit of right side for the head to go upward and the tail downward, so it is slightly vertical to the first unit on the left.
3. Slide the second unit on the right between two tail flaps of the first unit until the tip of the Head of the second unit is placed in-between the top of the tail flaps of the first unit. Make sure the second one is all the way seated in the first unit perfectly.
4. Then there will be the little bit of excess of the first unit sticking over the second unit on the right. Fold and tuck the each excess portion into the center of the second unit's tail flaps. These two units should be able to be slid diagonally within each other.
5. Repeat the same steps from 2 to 4 up to the 7^{th} unit going in the clockwise direction. From the third unit make sure to place the tip of the next unit head in-between the folded excess portions (not underneath them), so units can be slid diagonally freely without being stuck.
6. After interlocking 7 units, grab the 8^{th} unit and slide it in-between the two tail flaps of the 7^{th} unit. In this process, open the tail flaps of the 8^{th} unit, so the head of the first unit can be placed in-between those tail flaps the 8^{th} unit.

7. The difference from the interlocking other 7 unit is that there is already the tip of the first unit head is in-between the 8th unit tail flaps. Make sure to fold the 7th unit's excess portions only over the tail flaps of 8th units, to not fold over the tip of the first unit head. Do the same to fold the 8th unit's excess (do not fold over the tip of the second unit head).
8. Now there is an octagon shape of circle after connecting all the unit pieces. Grab two opposite units in the circle and push them toward each other until the blades (head parts) have come out.
9. Rotate and do the same until all the blades come out.

Below are two pictures of the finished product; one is the Ninja Star and the other is what happens when you the shape described in step 8.

By Joanne Peeples,

El Paso Community College

(joannep@epcc.edu)

THE DISCOVERY FESTIVAL AT SAN JUAN COLLEGE

San Juan College

The Discovery Festival this year was held on October 16th and 17th at the Farmington Convention Center at McGee Park and was a smashing success. Matt Bell represented the San Juan College School of Science, Math and Engineering with a booth on Golf and Mathematics. Local area students were tasked with hitting a golf ball then determining what the horizontal dis-placement (distance) of the golf ball would be based on launch conditions. They also did other fun activities such as determining the volume of a golf ball as well as estimating the number of dimples on its surface. At the end of the festival, the School of Science, Math and Engineering was awarded the Discovery Festival Math Award which was decided by an independent panel of judges from Albuquerque.

- Matt Bell

NMMATYC PRESIDENT-ELECT NOMINATIONS

Hello, my name is Pat Barrientos, and I am running for President-Elect of NMMATYC. I have been a member of NMMATYC for the past eight years and have attended every conference since becoming a member and have also presented. I am currently a member of ArizMATYC and recently attended and presented at their conference in Flagstaff, Arizona. I also served on the committee to organize the NMMATYC conference when it was hosted by EL Paso Community College. If elected, I pledge to increase membership which I feel is essential to NMMATYC's future success. I would preserve NMMATYC's noble tradition of providing promising mathematicians with scholarships. Furthermore, I would strive to increase attendance at our annual conferences. Launching a promotional campaign targeting dual credit and high school teachers, as well as college professors and instructors would be an effective impetus to increase membership and conference attendance. I am a native El Pasoan who graduated at age 19 magna cum laude from the University of Colorado with a Bachelor's Degree in Education. I have been an educator for 38 years. In 2004, I was hired as an English instructor at El Paso Community College and began taking math classes for fun. The fun increased when I was hired as a math instructor in 2008 at the same college. As a math instructor, I enjoy introducing Fibonacci, Ramanujan, Pascal, Gauss, and Napier, to name a few, to my developmental students. I was an adjunct and am currently a temporary lecturer. I have received several recognitions by EPCC: the Adjunct Faculty Achievement Award in 2009 and 2015, the Faculty of the Month Award in 2012, the Star Award in 2014, and the Diamond Award in 2016. I serve as the Faculty Senate Adjunct Representative for Transmountain Campus. I am also a member of the Adjunct Committee which meets with the Vice-President of Instruction to discuss adjunct issues. I had my own Ballet Folklorico dance group for over 20 years. I am a member of the ASPCA and El Paso's Holocaust museum. I am an animal activist, antique doll collector, an avid reader, and a so-so piano and guitar player!

Thank you for your consideration. I will do my very best to serve you well.

NMMATYC TREASURER NOMINATIONS

Sara Reyes

Dona Ana Community College

I have been a Math Instructor at Doña Ana Community College for over two years. I have an extensive experience as an educator from High School to College level. I worked at El Paso Community College as part time instructor for over two years teaching developmental math courses through Calculus. I have had the opportunity to participate in different Math initiatives such as Math Emporium and Integrated Math Courses at DACC. This experience has helped me in the implementation and participation of the Emporium program at DACC. In addition, I worked at the El Paso Independent School District for over 3 years helping students to achieve better grades and improve their knowledge in Math.

I am member of the National Association of Developmental Education NADE and New Mexico Math Association of Two Years College.

Sarah Garde

UNM-Valencia Campus

I am interested in serving as Treasurer of NMMATYC. I enjoy working with accounting and finance, and understand the importance of keeping accurate financial records. I would like to apply these financial skills for the benefit of the NMMATYC organization. I also enjoy representing UNM-Valencia and meeting colleagues within the NMMATYC region to discuss common interests. It would be my honor to serve as Treasurer for this organization.

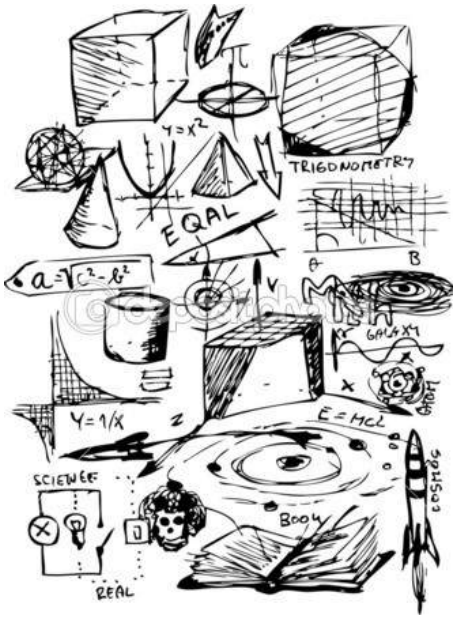
I hold a BBA in Economics (NMSU) and MA in Finance (Webster University). I worked as a Financial Analyst in private industry for 13 years. I taught math at the middle school and high school levels for 20 years. I have worked full-time at UNM-Valencia for the past three years, where I teach developmental math and dual credit economics. I serve as the Coordinator for Developmental Math and Coordinator for the Math Center. Currently, I am serving on the state-wide NMHED-sponsored Math Remediation Task Force.

NMMATYC SECRETARY NOMINATIONS

Fernando Falcon

El Paso Community College

Fernando Falcon currently teaches mathematics full-time for El Paso Community College. He is an El Paso native who completed both graduate and undergraduate degrees at UTEP. In 2006 he received a Bachelor's of Science in Mathematics with a minor in Economics and in 2011 a Masters of Arts in Teaching with a major in Mathematics. Prior to becoming faculty at EPCC, he was Graduate Assistant and Research Assistant at UTEP as well as Lab Assistant at EPCC. While at UTEP, Fernando participated in a grant funded program aimed at providing supplemental instruction to undergraduate students in Pre-calculus and Calculus. At EPCC he managed Pre-calculus lab sections for the Mission Del Paso Campus. Fernando wishes to further his education in mathematics in the not too distant future.



Voting for all NMMATYC Board Positions will be sent out via email. Make sure to vote!

Any questions email our Nominating Chair:

egamboa@dacc.nmsu.edu

LIMERICK AND JOKES

$$\frac{12+144+20+3\sqrt{4}}{7}+5(11)=9^2+0$$

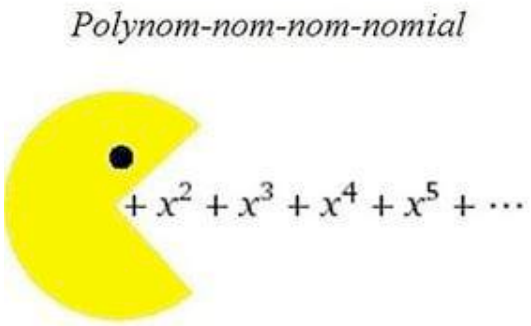
A dozen, a gross, and a score,

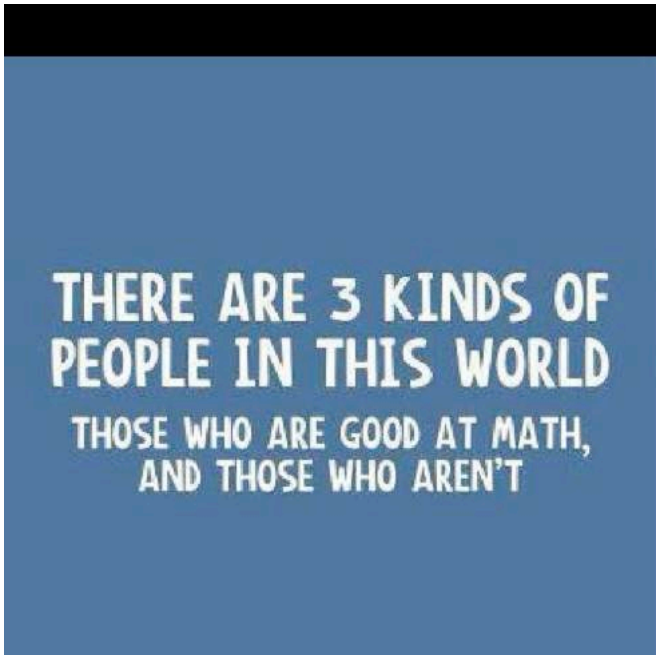
Plus three times the square root of four,

Divided by 7,

Plus five times eleven,

Equals nine squared and nothing more!





2015-2016 NMMATYC Board

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Nominating Committee Chair	Elizabeth (Liz) Gamboa (Dona Ana C.C.)	egamboa@dacc.nmsu.edu
AMATYC Delegate	Joanne Peeples (El Paso C.C.)	joannep@epcc.edu
Conference Chair 2016	Annette Hatch (UNM Valencia)	ahatch2@unm.edu
Web Master	Philip Kaatz (Mesalands C.C.)	philipk@mesalands.edu
Articulation Task-Force Liaison	Alyne Fulte (New Mexico State University)	afulte@math.nmsu.edu