New Mexico Mathematical Association of Two-Year Colleges

NMMATYC News
New Mexico Mathematical Association of Two-Year Colleges

Spring 2017
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PRESIDENT'S MESSAGE

Greetings!!

Spring is here!! The weather is starting to warm up and it's a great time to get outside and enjoy the outdoors. Spring is also an exciting and busy time for NMMATYC.

The preparations for Our Joint NMMATYC/MAA-Southwest Bi-Annual Conference are well underway. As you probably know, the conference will be April 7 and 8 at the DACC East Mesa Campus in Las Cruces. Please mark your calendars!! Hope to see you there. If you have not done so, don't wait too long to register. The conference registration form and the conference presenter's form are available on our website. Please visit our conference link and consider presenting at this conference. The deadline to submit a proposal to present at the conference has been extended until March 29, so please plan to present! We all have different areas of expertise and have had different math teaching experiences. Share with other fellow instructors you expertise and experience. This will not only be a great professional growing opportunity for you, but also for others. You can also present a poster during our Poster Presentation Session. Additionally, we will be hosting special presentation sessions of students' talks. If you have a student that might be interested, please encourage them to participate and present. If you have questions about the conference, please feel free to contact our conference chair, Adrian Delgado at conference@nmmatyc.com. Registration and online proposal forms are available at https://sites.google.com/site/nmmatyc2017/home.
This year keynote speakers are Dr. Jason Aubrey and Dr. Stephen Kennedy. Dr. Jason Aubrey is an Assistant Professor of Mathematics and Director of the Math Center at the University of Arizona in Tucson, and will be talking to us about his work with the Math Teachers' Circle in Arizona. Dr. Stephen Kennedy, a Professor of Mathematics at Carleton College in Northfield, MN, will speak at our Friday evening banquet on the topic "Two Heads are Better than None." Every question in probability has seventeen plausible answers. I am very excited to hear these presentations and hope to see you there enjoying them as well.
If you are a member of NMMATYC… Thank You!! We are glad you are part of this organization. Please invite your colleagues who are not members to join. If you are not a member of NMMATYC, I encourage you to be part of this organization. Membership dues help support many worthwhile activities and initiatives throughout the region, such as the Student Math League, the Michelle Jimenez Memorial Scholarship, Vicki Froehlich Scholarship and the David Lovelock Teaching Excellence Award. Want to know more about NMMATYC? Visit our website at http:// nm.matyc.org. Please provide

us with your input, comments and suggestions for improvement. If you have materials, topics or photos that you would like to share with NMMATYC members, please email them to our Webmaster Philip Kaatz at webmaster@nmmatyc.com.

I know there are plenty of qualified students in the NMMATYC region who could benefit from this scholarship, so help spread the news. Please make sure to tell your students about these scholarships. The deadline to apply for the scholarship was March 17, but keep this scholarship in mind for next year. NMMATYC's David Lovelock Teaching Excellence Award is an excellent opportunity to recognize an outstanding teacher, so please consider nominating one of your colleagues (you may even self-nominate) next year. If you have any questions, please don't hesitate to contact our Nominating Chair, Elizabeth Gamboa at nominating@nmmatyc.com.

NMMATYC is an affiliate organization of the American Mathematical Association of Two-Year Colleges (AMATYC). AMATYC is a great organization that offers us many opportunities for professional development and networking. I invite you to contribute to AMATYC by being a member and by attending AMATYC conferences. This year's AMATYC Conference will be November 9 - 12 in San Diego. If you have not had an opportunity to attend an AMATYC conference in the past and you would like to attend, I would encourage you to go. It is a great conference in which you learn a lot and have an opportunity to network with other faculty from around the country. If you are a new full time faculty member (1-3 years), I invite you to participate with AMATYC Project ACCCESS. 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. If selected, you will attend special sessions at the annual AMATYC conference each fall and will network through the AMATYC Project. Deadline to apply is May 15. For further information, please visit the AMATYC website http://www.acccess.amatyc.org/. Additionally, The Innovative Teaching and Learning committee (ITLC) of AMATYC offers an interesting webinar series. The next webinar will be held on April 19 about "Incorporating Discovery into Developmental Mathematics" and is open to all AMATYC members. If you are an AMATYC member, I invite you to participate in these online workshops. Information is available at http://www.amatyc.org.

As always, thank you and hope to see you next year at our 28th Annual NMMATYC Conference. If you have any questions or ideas, please do not hesitate to contact me or any of the board members.

See you in Las Cruces!

Respectfully,
Dr. Eva Rivera Lebrón

MESSAGE FROM THE SOUTHWEST VP

News from AMATYC
Kathryn Kozak
Vice President of Southwest Region

The AMATYC IMPACT Project is really exciting and is in the final editing and writing stages. The final draft will be sent to the editors soon. AMATYC IMPACT will be presented to the Delegate Assembly at the AMATYC Annual Conference in San Diego, November 17-20, 2017. This document is the new standards document from AMATYC and will focus on increasing the mathematical prowess of students, faculty, and departments/institutions. Look for more information from AMATYC on this exciting document.

There are two other items that will be presented at the Delegate Assembly at the AMATYC Annual Conference in San Diego. That conference is November 9-12. There will be a position statement on the Mathematics for Students in Two-Year Terminal Programs is currently being developed you the Math and its Applications Committee. Please contact the chair of this committee to provide any input. The Delegate Assembly will decide if it will approve this position statement at the conference and there is a forum on Thursday night for additional input. In addition, the next strategic plan for AMATYC is in the final stages of development. It will be presented to the delegate assembly at the delegate assembly.

Applications for Project ACCCESS are due May 15. Project ACCCESS is a program for mathematics teachers that are now to teaching at a community college. Applicants must be in their first three years as a full-time community college teacher. Visit AMATYC.org for the application form. Please apply and encourage your colleagues to apply.

StatPREP is an NSF grant whose goal is to prepare faculty who teach statistics to teach the modern methods of statistical analysis including analyzing big data. The grant is co-sponsored by the Mathematical Association of America (MAA), AMATYC, and the American Statistical Association (ASA). There will be a series of workshops offered in major metropolitan locations for the next five summers. The concept is to offer the workshops in these locations to reduce travel costs. The workshops are free, materials for the workshops will be provide, food during the workshops will be provided by the host institution, and there is a small stipend of $100 for participants to offset their travel costs. Host institutions will be provided with funds to cover the costs of the workshops. A faculty member at the host institution will become a regional hub leader who will be the host for two workshops in consecutive summers and be a resource for participants between the workshops by maintaining an online hub. Funds will be provided to the host institution to compensate the regional hub leader. The workshops for the summer 2017 will be offered at the College of the Canyons in California, June 9-10 and St. Katherine University in Minnesota, June 23-24. If you are interested in participating in either

workshop, applications can be submitted through StatPREP.org. If your institution is interested in being a host institution for future summers please visit StatPREP.org for more information.

NMMATYC 28TH ANNUAL CONFERENCE

2017 NMMATYC/MAA Southwestern Section Conference
April 7-8th Las Cruces, NM
Doña Ana Community College

https://sites.google.com/site/nmmatyc2017/

The New Mexico Mathematical Association for Two-Year Colleges (NMMATYC) celebrates 28 years of Mathematics Education! This year we will meet in a joint meeting with the Southwestern section of the Mathematical Association of America (MAA).

Keynote Speaker: Dr. Stephen Kennedy, a Professor of Mathematics at Carleton College in Northfield, MN, will give the year's keynote address. Stephen also serves as the current Senior Acquisitions Editor of MAA Books. He will speak at our Friday evening banquet on the topic "Two Heads are Better Than None." Every question in probability has seventeen plausible answers. The sixteen incorrect answers always occur to you before the correct one. In this talk, a very simple question of probability - If I intend to flip a coin until I see two consecutive heads, when, if ever, should I expect to stop? - leads to a morass, a muddle and then one seeming miracle. We'll resolve the muddle and explain the miracle and, in true mathematical fashion, leave ourselves with a new unresolved puzzle.

Friday Luncheon Event: Jason Aubrey, an Assistant Professor of Mathematics and Director of the Math Center at the University of Arizona in Tucson, will be our Friday Luncheon speaker. Jason organizes the Tucson Math Teachers' Circle and also works with a new Math Teachers' Circle at the University of Arizona South. Jason will speak about Math Teachers' Circles developing in the Southwest and have a demo session to follow in the afternoon workshops.

Special Sessions: The New Mexico Articulation Task Force for Mathematics and Statistics will meet concurrently with the NMMATYC conference on Friday, April 7, 2017 from 10 AM -12 noon. The NMMATYC Business meeting will be on Saturday from 8-9AM; plus a Student Poster Session on Friday afternoon.

Student and Faculty Awards: Please don't forget to nominate students and faculty for our awards and scholarships. Forms are available on both the official NMMATYC web page and the conference webpage.

The deadline to submit a presentation is March 29th. For details please see the conference website **https://sites.google.com/site/nmmatyc2017/.**

If you have any questions, feel free to contact this year's conference chair, Adrian Delgado at conference@nmmatyc.com.

Register now and join us!

See you in Las Cruces this April!

MATH APPS

I have recently discovered three Math Apps; perhaps you know about them already, but just in case you don't …

The first is **Photomath**: If a student has this app (and several of my students have found it) that student will be able to take a picture of a math problem with his phone (as long as it is in printed form) and the app will show the student how to work the problem – including showing all the steps. I can see where a student can use the app to their advantage, when studying, but I can also see how it can be misused.

The second app is **MathFunFacts:** This app is just like its name says – FUN. It's full of ideas that you can bring into your classroom; ideas that take just a couple of minutes to show your students, but often will add laughter and (probably more important in lower level classes) lower the tension level many students feel about being in a math class. The basic app is free, if you want more you can buy a more comprehensive version. One caveat, I have been told that it takes more energy that most apps – and needs to be updated, to be more efficient.

The third app is **MathFeed**: The name is a play on "BuzzFeed". It was introduced at the January Joint Math Meetings this January, and in the December/January of MAA's Focus. It currently is available for iPhone, iPad and soon (maybe already) on other Android devices. In this app you will find math-related stories, math blog posts, and articles from several math professional societies. It is designed to show off the

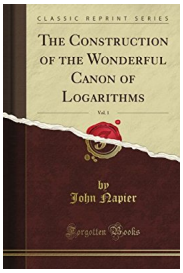
beauty, power and humanity of mathematics. It's designer is Francis Su, immediate past president of MAA. If you are an MAA member, you can also read the MAA journals and magazines. Articles can be saved and shared. This is a fun app, and helps you keep up-to-date on new ideas in mathematics, as well as math in the news.

INTRODUCTION TO LOGARITHMS

BY JOANNE PEEPLES

I often use the following worksheet to introduce logarithms in my classes:

In your Math classes you will probably study logarithms, and memorize all the rules for logarithms. Do you ever wonder where they originated??? And, why??? Around the turn of the seventeenth century, John Napier realized there was a need to be able to transform multiplication into addition and subtraction. Astronomers were working with large numbers, and needed to multiply, divide, and raise to a power with extreme accuracy. This was BC (Before Calculators) so they had to do all their calculations by hand.



Napier's logarithmic tables were first published in1614 in his book *Description of the Wonderful Canon of Logarithms.* This book had an introduction, and instructions on how to use the tables. Rather than look at how these tables were constructed, let's explore how they were used. To do this the exercises below will use logarithms base *e* or base 10 (Napier's tables were base *(1/e)*) and your "table" will be your calculator.

I) Multiply: 532 times 734 (using natural logarithms; base e)

ln 532 = _____ and ln 734 = _____ ("look up" in your calculator)

Add these two numbers together _____

Now "unlog" this sum (i.e. e^{sum}) _____

Is this the same answer you get if you multiply 532 and 734? ____

Try the multiplication of 532 and 734 without a calculator (below), how fast were you able to do it?

II) Multiply: 532 times 734 (using common logarithms; base 10)

log 532 = _____ and log 734 = _____ ("look up" in your calculator)

Add these two numbers together _____

Now "unlog" this sum (i.e. 10^{sum}) _____

Is this the same answer you get if you multiply 532 and 734 using "natural logarithms? ____

Is this the same answer you get if you multiply 532 and 734 without a calculator? ____

III. Consider the problem $\frac{725^3 \times 342}{\sqrt{147}}$

a) Using the logarithm tables you find on your calculator find:
ln (725) = _____ (i)
ln (342) = _____ (ii)
ln (147) = _____ (iii)
and multiply your answer (i) by 3, add this to your answer (ii) and subtract half of answer (iii).
_____ = _____ (iv)
"unlog" your answer (iv) (i.e. $e^{(iv)}$) . What is your answer? _____ (v)
Work the problem on your calculator; does your answer match your answer in (v)?
Could you work this problem BC??? ____
With the invention of logarithms, the Scientific Age received a big boost!!! It was almost a hundred years later that mathematicians started thinking of logarithms and exponentials as functions (which is how they are taught in textbooks, today). The logarithms were just the tables, and the user would reading them "forward" and "backward" ("unlogging' them). In 1614, there was no precalculus or calculus, but logarithms led the way to improve accuracy when calculating.

2016 – 2018 NMMATYC BOARD

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MATH JOKE

and it was delicious!

UPCOMING CONFERENCES

MAA Math Fest 2017
July 26 – 29, 2017
Chicago, IL

National Council of Teachers of Mathematics (NCTM)
April 5-8, 2017
San Antonio, TX

NMMATYC 28th Annual Conference
April 7 – 8, 2017
Las Cruces, NM

ARTICLES FOR 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 Adrian Delgado at newsletter@nmmatyc.com

Visit us at www.nm.matyc.org