



MATHEMATICAL ASSOCIATION OF AMERICA
SOUTHWESTERN SECTION
NEWSLETTER

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FALL 2017

MAA/ArizMATYC Southwestern Section Conference

will be hosted

by

Pima Community College

April 6 & 7, 2018



Tucson is beautiful in early April. We have clear skies and sunshine, with lots of fun activities. (The Arizona Desert Museum is unparalleled!) A visit to our community is as relaxing as visiting a spa – you will leave refreshed.



We have two keynote speakers for the conference. Our first keynote speaker is Hortensia Soto, a professor in the School of Mathematical Sciences at the University of Northern Colorado. Ms. Soto will be speaking about innovative assessment techniques.



Our second keynote speaker is Linda Braddy, Ms. Braddy is the Vice President for Academic Affairs at Tarrant County Community College in Texas. Ms. Braddy will talk about her work on the MAA IP Guide.



Registration will open soon. If you have any questions, please contact Diane Lussier. Diane is the MAA Southwestern Chair and teaches mathematics at Pima Community College. She may be reached at dlussier@pima.edu.

TRANSFORMING INSTRUCTION IN UNDERGRADUATE MATHEMATICS

Via

Primary Historical Sources

New Mexico State University is one of seven schools participating in the National Science Foundation award "Transforming Instruction in Undergraduate Mathematics via Primary Historical Sources" (TRIUMPHS), designed to reinvigorate mathematics instruction via primary source projects. The projects currently written are available at the web site <http://webpages.ursinus.edu/nscoville/TRIUMPHS.html>. All faculty all invited to use a project in their own instruction and become site testers if they wish. Site tester information is available on the web resource above.

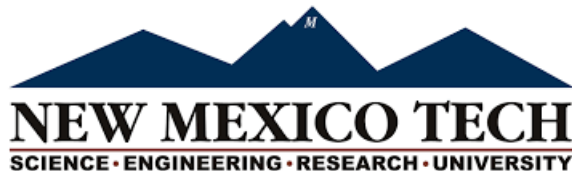
The principal investigators on this grant are Jerry Lodder, New Mexico State University; Janet Barnett, Colorado State University, Pueblo; Kathleen Clark, Florida State University; Dominic Klyve, Central Washington University; Danny Otero, Xavier University; Nicholas Scoville, Ursinus College; Diana White, University of Colorado Denver.



Several changes at New Mexico Tech recently! A couple of years ago Mingji Zhang joined us. Mingji got his PhD at the University of Kansas and works in nonlinear partial differential equations, particularly their applications in areas of physiology. Then last year Yanyan He came aboard. Yanyan got her PhD from Florida State University then post-doced at the University of Utah. Yanyan's area is uncertainty quantification and modeling, and she has recently started some joint work with our Biology department. Last year we also added Andrew Phillips as a Lecturer. Andrew got his PhD from Boston College, and is working on improving our Pre-Calc and Trig success. Finally, this year we added Gilberto Gonzalez. Originally from Venezuela, Gilberto got his PhD at the Polytechnic University of Valencia, Spain. He is interested in Applied Math & Modeling, in particular modeling of infectious diseases.

This semester we are missing Professor Brian Borchers, who is on sabbatical at the Institute for Computational and Experimental Research in Mathematics, but he'll be back next semester!

- Wm. D. Stone
Professor of Mathematics
Dean of Arts & Sciences
New Mexico Tech



A WORD FROM YOUR SECTION REPRESENTATIVE (FORMERLY-KNOWN-AS-GOVERNOR)

As your Section Representative, I attended Math Fest in Chicago this past July. It was the first full meeting of the MAA Congress since the change in the by-laws which have replaced the former Board of Governors with a 9-member Board of Trustees, and created the Congress consisting of basically the same people as the former Governors. Much of this first meeting was organizing ourselves, and working out the details of how we will continue to bring the concerns of our section members to the attention of the national organization. We elected our leadership, and representatives to the Board of Trustees, and are already working on some ideas.

One idea we have been discussing is only 15% of math majors go on to graduate school – how can MAA serve the other 85%? Yes, we are focused on college teaching, but surely there are some overlapping areas of interest. Any ideas?

MathFest in Chicago was great – lots of interesting talks, a vibrant city, colleagues from around the country. If you have never been to a MathFest, you should go! The next one will be right in our area, August 1-4 in Denver.

I will also be attending the Joint Math Meetings 10-13 January 2018 in San Diego, which is also fairly close. JMM is more research focused, but there is a huge variety of talks, including many MAA sessions on teaching. Again, come if you can!

January will be my last Congress meeting as your representative. We will be electing a new representative to start 1 July 2018, so they will take over for the Denver meeting. Let's see how many southwest section members we can get to Denver! See you there!

William Stone

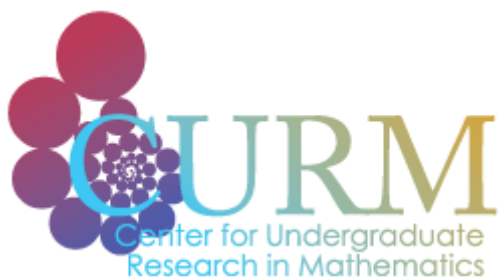
Section Representative

New Mexico Tech



MAA MATHFEST
July 26-29, 2017





Funding for Academic Year Research Groups in Mathematics through CURM

The Center for Undergraduate Research in Mathematics (CURM) calls for minigrant applications from faculty by November 15, 2017. Mini-grants provide support for pairs of research groups from two institutions in the same geographic region to mentor academic year student research. We are particularly interested in applications from a pair of faculty at institutions of different types, such as a two-year college and a 4-year college or doctoral granting institution. Each research group will consist of 3-5 undergraduate students and a faculty mentor. Each group will receive:

- a \$3000 stipend or course credit for students
- a \$5000 stipend for each faculty member
- funding for supplies
- funding provided for professors to attend a summer workshop on best practices for research mentoring
- funding for travel to a regional meeting in spring

For more information, please visit the CURM website at curm.urmath.org, or contact the local CURM Co-Director Patrick X. Rault at rault@email.arizona.edu.

Nominations Wanted!!!

For the Southwestern Section's Distinguished Teaching Award.

Nominations are wanted for the Southwestern Section's Teaching Award to be given next April, at our section meeting, a joint meeting with ArizMATYC in Tucson. There are excellent teachers in our section that should be recognized for their work!

Last year our nominee was Donna Krawczyk, from the University of Arizona. She was nominated by Deborah Hughes-Hallett (also from the University of Arizona and a national winner of MAA's Haimo Award)

Debra Hughes-Hallett wrote in the nomination form: "Through her extraordinary ability to get into her student's heads and gently turn on their understanding and confidence, Donna has changed the lives of many students at Arizona. Through the example she sets for our graduate students and faculty who go on to other places, she has changed the lives of students at other institutions. Through her videos and her online teaching, she has affected students and faculty that she has never met.

"Donna is a master of the art and craft of teaching."

The SW section asks that you complete the same nomination form that is used for the national Haimo award; our section's "distinguished teacher" will be forwarded to the MAA for consideration for the Haimo award. A committee from our section will look at all nominations submitted for the SW Section award, and determine our section's nominee for the Haimo Award. Completing the forms and submitting the necessary documentation are all submitted electronically.

With the permission of the person making the nomination, the nominated people who were not selected will again be considered for this honor next year (with the opportunity to update their nomination, if so desired).

Our section has had two of our nominees for the Haimo Award win this award: Deborah Hughes-Hallett, University of Arizona, won in 2004 and David Pengelley, New Mexico State University, won in 2008. It's time for another winner!!!

You can go to <http://www.maa.org/Awards/haimo.html> to find out more about the award, the eligibility requirements, and the materials that need to be submitted with the nomination. Any person may nominate a member of the SW Section (self-nomination is not permitted). The completed nomination packet must be received by Joanne Peeples no later than January 31, 2018, it would be appreciated if you would let her know in December (or earlier) if you plan to nominate someone. The completed nomination packet should be emailed to

Joanne at joannep@epcc.edu. If you have questions you can email me or call my office at 915.831.5047. —*Joanne Peeples, El Paso*



A Corequisite Math Pathway for Liberal Arts Mathematics

In response to the national trend of reducing the number of developmental math classes students may be required to take, San Juan College took a serious look at the math sequence leading to the Conceptual Mathematics Course. This course is similar to a Quantitative Literacy or a Math for Liberal Arts class at other post-secondary institutions. It is the required math course for the liberal arts degree.

Previously, the math sequence was PreAlgebra (Math 095 - 4 credits), Beginning Algebra (Math 096 - 4 credits), then Conceptual Math (Math 130 - 3 credits). This required many students to take 11 credit hours of math over 3 semesters. During the 2016-2017 academic year, a group of San Juan College faculty mapped the objectives of Math 096 with the math skills necessary to have a solid foundation for Math 130, and discovered there were several concepts that were not essential. It was felt a course could be created that would encompass the required curriculum from Math 130 as well as the basic math skills.

Looking ahead to creating the Fall 2017 schedule, a pilot course was added, Math 101/130. This is designed as a 5-credit hour class, offering the content of Conceptual Math with the necessary foundational math skills from Beginning Algebra. The syllabi and curriculum were developed throughout the spring and summer, incorporating a project-based approach. As part of the pilot, the students are accessing four different textbooks available free of charge on-line through OpenStax. Working with the Advising and Counseling Center and word of mouth via instructors teaching PreAlgebra, the class has 15 students enrolled. It is being team taught by Alicia O'Brien and LuAnn Walton.

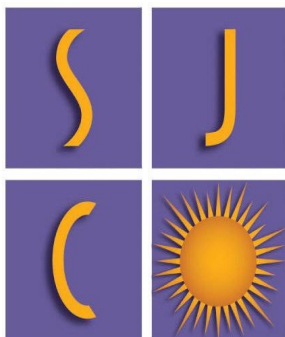
Since it is a pilot class, there are many questions and challenges that are arising and will be addressed prior to the course being offered again in the spring semester. In recent years several studies have indicated that allowing students that have tested into developmental mathematics along with their gateway mathematics course increases student success and shortens the time to graduation. Logue, Watanabe-Rose, and Douglas, (2015) found that students are more likely to earn a passing grade if allowed to take the college level math course required for their degree without a precollege prerequisite requirement. Bailey et al. (2017) found that participation in compressed developmental education courses and corequisites can minimize student attrition and maximize the number of degree earners.

In addition to student gains in course success, we are also hoping to contribute to similar results found by Belfield, Jenkins, and Lahr (2016). This study found that in addition to the benefits to students these corequisite options also increase the cost-effectiveness to both the institutions they are offered at and overall student tuition. Finally, Vandal (2014) found that corequisite models gave remedial students two to three times the success of their developmental only counterparts. We hope to see success rates for gateway mathematics course completion in line with these findings.

Contributed by, Dr. Alicia O'brien and LuAnn Walton, San Juan College

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Article contributed to Intersection by Elizabeth Mayfield