



Mathematical Association of America Southwestern Section

Newsletter

Volume 27 Issue 1 | Fall 2013

Section News

Michelle Zandieh Receives MAA Distinguished Teaching Award Nominations Wanted for Next Year's Award

Nominations are wanted for the Southwestern Section's Teaching Award to be given next April, at our section meeting, a joint meeting with ASU as the university host and Paradise Community College the ArizMATYC host. There are excellent teachers in our section who should be recognized for their work!

Last year, at NMT, Michelle Zandieh received our distinguished teaching award. Michelle was nominated by Annie Selden, NMSU. (Thank you Annie!) Michelle is both a mathematics education researcher and an exceptional teacher of mathematics.



The SW section asks that you complete the same nomination form that is used for the national Haimo award, and our section's "distinguished teacher" nomination 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 is now much easier: PDF files can be submitted (no need to use "snail mail").

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 member of the SW Section may nominate any other member (self-nomination is not permitted). The completed nomination packet must be received by Joanne Peoples

**Southwestern Section Spring Conference
April 4–5, 2014, Phoenix, Arizona**

More information is on p. 3

no later than January 31, 2014, she would appreciate it if you would let her know in December (or earlier) if you plan to nominate someone. The completed nomination packet should be mailed to Joanne at 6917 Orizaba Ave., El Paso, TX 79912, or do it the easy way, and send the packet by email. If you have questions you can email me at: joanep@epcc.edu or call 915.831.5047.

—Joanne Peeples, El Paso Community College

Excitement Builds for MAA's Centennial (2015) Celebration!

In 1915, The Mathematical Association of America came into existence and the 100th anniversary of this event will be celebrated at MathFest in Washington, August 5–8, 2015. Now would be a good time to begin thinking of how the Southwestern Section would join in these festivities and to also collect memorabilia from our Section activities. If you have any such memorabilia, please contact the Section secretary, Joanne Peeples (joanep@epcc.edu).

The first meeting of the Southwestern section was held April 27–30, 1936 in Flagstaff and Grand Canyon, AZ, and 2015 will be our 75th sectional meeting (no meetings were held in 1943–1946).

From our History of the Southwestern Section: "Speakers at this (1936) meeting were Harold Colton, Museum of Northern Arizona, president of the section, Dr. Tormey, president of Arizona State Teachers College (now NAU) and John C. Merriam (for whom Merriam Crater in northern Arizona was named), president of the Carnegie Foundation." You can read more about the section's history on the Section web site: <http://sections.maa.org/southwestern/sectionbusiness/history.html>

It has been suggested that our 2015 Section meeting have a birthday celebration, complete with a birthday cake. Also, we might want to display some of our historical documents. Our section has a small amount of funds to support some special activity at our 2015 meeting. Please make suggestions to either of us.

At the Section Officers meeting at MathFest, this past August, several ideas about how to celebrate the Centennial at MathFest were discussed. Some of the ideas will need section participation:

- The organizers of MathFest 2015 would like each section to design a T-shirt. The T-shirt could be worn at the 2015 section meeting, and then at MathFest there would be a T-shirt day, where everyone would wear their section's T-shirt. To do this, we would have to find a design, and since the MAA sections cannot sell T-shirts directly we could possibly have a student math club sell them, or we could sell them for cost only, or we could increase the registration fee to cover the cost of the T-shirt. The SW-Section MAA meeting will be held with NMMATYC at El Paso Community College. Both EPCC and UTEP have math clubs, should we want to take that route. And, do we want to have a competition to design the shirts??

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This electronic newsletter is published twice annually, usually around October 15 and February 15. Please send news items about your department and announcements to the editor:

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29 Cielo Montana
Alamogordo, NM 88310
StenBiz@gmail.com

Section web site:
<http://maa.org/Southwestern>

MAA Southwestern Section Meeting in Spring 2014

The annual meeting of the Southwest section of the MAA, held jointly with the annual meeting of the Arizona Mathematical Association of Two-Year Colleges, will be happening Saturday–Sunday, April 4–5, 2014 on the Paradise Valley Community College campus in Phoenix. PVCC and Arizona State University are the sponsoring institutions. Conference co-chairs are Scott Surgent (surgent@asu.edu) (MAA) and Stephen Nicoloff (Stephen.nicoloff@pvmail.maricopa.edu) (ArizMATYC).

•The organizers of MathFest 2015 would like SW Section members to bring something unique from our section to handout to students at MathFest. Any ideas???

• Our “Section Flag” is still missing—last seen about 24 years ago (for the 75th anniversary of MAA). It will cost the section about \$300 to have a new one made. Does anyone have an idea where the original one might be?

We’re sure there will be more ideas as we get nearer August 2015. We’re also sure there will be one big party in Washington D.C. at MathFest 2015!!!

—*Bill Vélez, UA; and Joanne Peeples, EPCC*

Have You Heard of Mu Alpha Theta?

Mu Alpha Theta is an Honor Society for high schools and two-year colleges. It provides a way to interest/inspire students in mathematics. There are over 2000 schools participating; there are national conventions; scholarships for members; and much more. Go to <http://www.mualphatheta.org> to find out more.

Why should an MAA section be interested in MA Θ ??? Well, we are recruiting math majors, and MA Θ members would be a good place to start. If there is a math club at your college/university, perhaps it could reach out to MA Θ chapters in their local high schools and two-year colleges, and have some joint meetings. If there is no math club, I’m sure

MA Θ chapters are looking for speakers. Our MA Θ chapter, at El Paso Community College, invites speakers (and we are always looking for more), and we are planning “field trips” to nearby universities (UTEP, NMSU, and NMT) – if possible.

If there are no MA Θ chapters nearby, you can sponsor a chapter for one or more of the nearby high schools. Getting nearby high school students who are interested in mathematics to visit your math department is a good way to recruit math majors.

Sponsoring partners of MA Θ are: MAA, SIAM, AMATYC and NCTM.

—*Joanne Peeples, EPCC*

Volunteer(s) needed: Section Newsletter Editor and Section Webmaster

We are seeking one or two volunteers to be the new Section Newsletter Editor and Section Webmaster. According to the section bylaws these are separate positions, but they are currently held by the same person (Allen Stenger). Because both deal with Section news and are published electronically, it may be easier to have one person do both jobs.

Section Newsletter Editor

We publish an electronic newsletter twice each academic year, around October 15 and February 15. The newsletter carries notices about the Spring Section meeting, as well as news from institutions located in

the Section and about Section business. Each issue is typically four 8-1/2" x 11" pages and published as a PDF file. The current and past issues are posted on the Section web site newsletter page. Look at them to get an idea of the nature of the newsletter. Section members have been good about sending in news, so the Editor is in fact only an editor and rarely has to write anything himself. As Editor you would have free rein over the format and the software used. The newsletter is currently laid out in Apple's Pages program and exported as PDF. An issue is published by being uploaded to the Section web site, followed by an email (sent out by MAA Headquarters) to the Section members alerting that it is available.

Depending on how fast you work, the job takes about 1-2 days per issue, so 2-4 days per year, most of it just before the publication date. The timing is not critical.

Section Webmaster

The Section has its own area on the MAA national web site and is responsible for its own content. The national office is responsible for keeping the web site running. Content support is bare-bones; the webmaster must prepare HTML files (either directly or as the output of a word-processing or other program), or use an authoring program such as Adobe Dreamweaver, and upload them via FTP. This is not hard, but does require some degree of comfort with these types of tools. The site is currently authored in BBEdit and uploaded by Fetch.

The web site carries primarily news about upcoming meetings, requests for nomination for Section prizes, and a lot of archival material (past newsletters and past Section meeting materials). There is

also some fun stuff such as photos from section meetings.

The webmaster job is not labor-intensive and probably takes about 2 days per year in total. Most of the activity occurs after the annual section meeting, for updating the archives and the information on the next meeting. Throughout the year people will occasionally send in news items to be posted on the web site.

Interested?

The jobs are available in June 2014, but you could take over earlier if interested. Contact Allen Stenger (current Editor and Webmaster) or Joanne Peeples (Section Secretary) if interested. Thank you!

—Allen Stenger

MAA National News

Board of Governors Report

There was some discussion of the budget at MathFest. The MAA continues to run in the red. Programs have been put in place to stem this red tide and the next few years should hopefully see a turn-around in the budget. As you have already heard, there has been a change to the dues structure. In case you have not yet read about, here is a link to the MAA dues structure:

<http://www.maa.org/membership/membership-categories>

One surprising fact that we learned at the Board meeting is the dramatic drop in membership in the MAA. This lack of membership has much to do with the declining revenues. I personally am surprised at how many of our colleagues are not members of the MAA. I have written to some of my colleagues suggesting that they become members of the MAA. I would suggest that you contact some of your colleagues. Departmental memberships are also important. I suggest

that you inquire about your own departmental membership to make sure it has not lapsed.

There was an important discussion about membership on editorial boards of journals of the MAA. It was mentioned at the Board meeting that it perfectly acceptable for a member of the MAA to contact the editor of a journal to nominate oneself to be on the editorial board of that journal. Being on the editorial board is certainly prestigious and is great experience. I am sure that your department would be pleased to know that you are on an editorial board.

Paradise Valley Community College, in the Phoenix area, will be hosting the next meeting of the Southwestern Section of the MAA. It will be held in conjunction with ArizMATYC. I would like to suggest a new activity for this meeting. At MathFest, Jim Freeman and Rachel Schwell organize a special session for graduate student called, "Great Talks". Here is their description.

Presenters in this session must be graduate students. While many graduate students will be asked to give a lecture to a general audience which includes undergraduates and non-mathematicians as part of a job interview, most students do not have experience talking to a non-research audience. This session gives graduate students the opportunity to give a 20-minute talk aimed at an undergraduate audience which has been exposed to calculus and some linear algebra. Both the talks and abstracts should be designed to excite a wide range of undergraduates about mathematics. All participants in this session will receive private feedback on their presentations from an established faculty member and an undergraduate student. Time

permitting, a discussion of effective techniques for delivering great general-audience talks will occur at the end of the session. Contact Jim Freeman or Rachel Schwell for help on writing an abstract and preparing a talk for a general audience. Graduate student participants in this session should also attend the graduate student workshop (What's the Story?) on mathematical presentations. Information on travel support will be available at <http://www.maa.org/students/grad.html> on March 1, 2012. Abstracts must be submitted by {regular abstract deadline}

I would like to suggest a similar activity for our section meeting. Would anyone be interested in organizing such an activity at sectional meeting?

Such an activity would be a great service to our graduate students and it would also increase attendance at our sectional meetings. Please contact me if you would be interested in organizing this.
—William Yslas Vélez, University of Arizona

Department News

The University of Texas at El Paso

The Department was successful in filling the statistics position mentioned in last fall's newsletter with Associate Professor Dr. Xiaogang Su, a hire which will support the Department's proposed Statistics PhD program. The Department continues to be very productive with the last five years yielding nearly 350 peer-reviewed publications, \$15 million in grants, an 83% increase in our undergraduate program enrollment, four winners of UT System-wide teaching awards, and a 39% increase in the number of undergraduate degrees awarded.

Many department faculty also continue to be active in organizing conferences, including the annual Modeling High Frequency Data in Finance Conference (to be held next week at Stevens Institute of Technology, Hoboken), the annual Texas Partial Differential Equations Conference (held at UTEP this past March, for the first time), and the biennial United States Conference on Teaching Statistics (held this past May in Cary, NC).

Dr. Ming-Ying Leung, director of the Bioinformatics program, has also been tapped to direct the Computational Sciences PhD program, a cross-departmental program whose non-interim heads have all been faculty in our Department and which has recently graduated its first cohort of doctoral students.

Dr. Helmut Knaust received a grant from the Mathematical Association of America to fund five department undergraduates to spend six weeks this past summer researching discrete wavelet transformation applications such as image compression algorithms. The Department is also pleased to report many student accomplishments, including many undergraduate and graduate research talks given at conferences and its highest undergraduate team finish ever (136th of 578) on the Putnam competition.

—Larry Lesser

Pima Community College West Campus

After many years of service to our department, Roger Werbylo has retired. Yvonne Sandoval is our new Chair.

The HSI STEM grant has enabled our department to obtain more technology in the way of computers, smart boards, and clickers.

Roberta Casper has been teaching a new class, MAT 145, Mathematics for Game Design.

The Edwards and Penney ODE text has been introduced to replace the Zill book.

All of us are currently recruiting students to participate in the upcoming AMATYC contest. —Paul Flasch

Arizona Western College

We have added three new faculty this semester. They are Heidi Lindsey (Parker Campus), Ila Peterson (Main Campus) and Victoria Martinez Bellow (Math/Engineering on Main Campus). Also this semester, a brand new state-of-the-art Engineering Technology building has opened on Main Campus. —Dan Russow

Northern Arizona University

Northern Arizona University continues a pattern of steady growth. This fall, enrollment on the Flagstaff campus exceeded 19,000 for the first time. The Department of Mathematics and Statistics has also experienced rapid enrollment growth at all levels. There are currently more than 30 graduate assistants in our MS programs, an all time high. The Lumberjack Mathematics Center which hosts an emporium-style program added a fourth course to those taught in the center this fall, bringing enrollment at the center to more than 3000 students. Now in its second year of operation, the center is still undergoing growth and development as we adjust strategies intended to improve student success in entry level courses.

In July, we hired a new lecturer, Art DeGraw, PhD from SUNY Albany, who has several actuarial exams to his credit. He has assumed the responsibility of coordinating our actuarial course offerings and other resources for majors interested in the actuarial profession. We continue to

offer four specialized courses related to SOA/CAS exams as well as other more standard courses in probability, mathematical statistics, and applied statistics that provide components of the education for prospective actuaries.

—*John Hagood*

University of New Mexico

Several mathematical events will be held in April 2014.

13th New Mexico Analysis Seminar - Albuquerque, NM April 3-4, 2014

The New Mexico Analysis Seminar is organized by analysts at New Mexico State University and The University of New Mexico. The goal of the conference is to provide an opportunity for scientific exchange and cooperation among broadly defined analysts. This year the centerpiece of the seminar is a mini-course given by the keynote speaker Sasha Volberg from Michigan State University on “Harmonic Analysis and Spectral Theory”.

An Afternoon in Honor to Cora Sadosky - Albuquerque, NM April 4, 2014

Cora Sadosky (1940–2010) was an expert in harmonic analysis and operator theory, a student of Alberto Calderón and Antoni Zygmund. She was a strong advocate for women in mathematics as well as active in promoting the greater participation of African-Americans in mathematics. She was President of the Association for Women in Mathematics (AWM) from 1993 to 1995, among other public offices she held during her life.

This afternoon will be devoted to current results in Harmonic Analysis, Operator Theory and PDEs related to the mathematics of Cora Sadosky. Invited speakers: Svitlana Mayboroda (University of Minnesota and first recipient of the AWM-Sadosky Award), Jill Pipher (Brown University), Sergei Treil (Brown

University), Sasha Volberg (Michigan State University).

AMS Western Spring Sectional Meeting - Albuquerque, NM April 5-6, 2014

There is also time allocated for shorter contributed talks, most of them will be presented in special sessions during the AMS meeting. If you would like to attend and give a talk, please contact one of the organizers:

Matthew Blair (blair@math.unm.edu)

Joseph Lakey (jlakey@nmsu.edu)

Nicholas Michalowski

(nmichalo@uchicago.edu)

Cristina Pereyra (crisp@math.unm.edu)

Anna Skripka (skripka@unm.edu)

Maxim Zinchenko

(maxim@math.unm.edu)

by January 28, 2014. Doctoral students and recent Ph.D.s are specially encouraged to apply. Information about the conferences including registration forms can be found at <http://www.math.unm.edu/conferences/13thAnalysis/index.html>

Pending NSF approval we are expecting to have some funds to support junior participants, females, and minorities. We intend to pay, at least partially, shared accommodations, and if there are funds left, we will reimburse some travel expenses to those participants who have no other sources of funding (priority given to speakers and junior participants).

—*Cristina Pereyra*

Promoting Mathematics at El Paso Community College, Transmountain Campus

My dean has decided that the various disciplines under him would take turns displaying what students and faculty are doing in that discipline. In the mathematics display, student work was featured. Many people have stopped to look at the display; perhaps we will encourage more students to take mathematics—and even participate in our chapter of the Mu Alpha Theta Honor Society.

Mathematics is not usually considered to be a “hands-on” subject, but it is amazing what these students have done (remember they are in their first two years of mathematics).

At the 2014 JMM, Wade Ellis will have a contributed paper session (Wednesday



afternoon) about how we can do interesting things to help students understand, that don't cost a lot of money.

If you want more information on any of these projects, please email me at joannep@epcc.edu. — Joanne Peeples

The poster is about Julia Robinson, 1919 – 1985. She was instrumental in finding a solution to one of Hilbert's problems. She is also an example for students to begin to understand problems that women mathematicians have – finding jobs, and being recognized. This poster was designed by a developmental math student, and in some way Julia reminded this student of her mother (who liked fans). A description of this project is posted beside the poster, and the project could be replicated in any discipline.

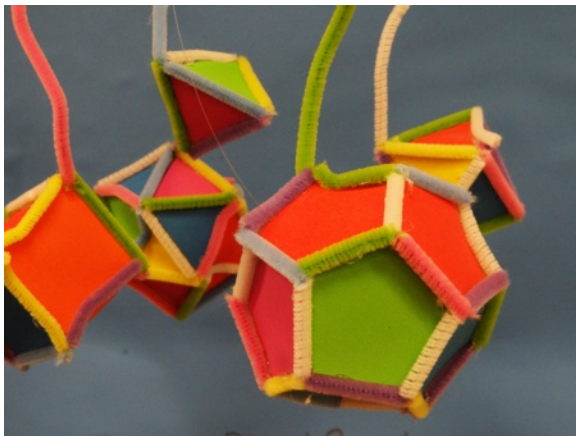




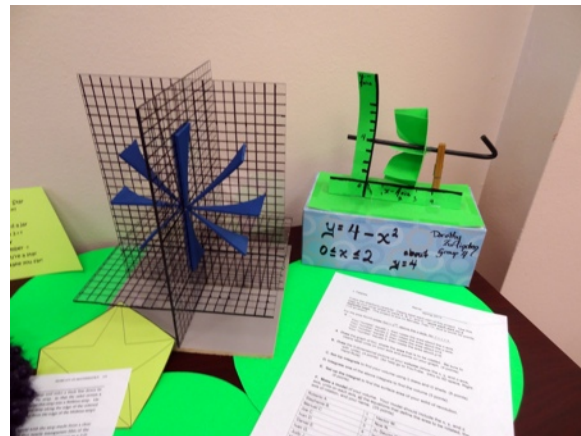
A new hands – on project which I have recently started giving to students in several of my classes (I started with my Discrete Math Class, as they need to write their first proofs) is one where the students are asked to take some objects they find at home, and assemble them to make an object. Then, they must take them apart and write precise instructions (without pictures) ; a different student in the class will be asked to “Beta Test” the



instructions and see if he can assemble the object (making suggestions as to how the instructions can be improved). The logic involved, and the necessity to be precise, is just what is needed in writing a good proof. Here is Katilyn Penrod looking at her partially completed gum ball machine, and the completed project. Yes, it really works – and her directions were easy to follow!



In Math 1333, Math in the Modern World, the students complete many projects. It's a math class with “great ideas” and very few equations. One of the projects they seem to really enjoy, and put a lot of creativity into when creating their models, is the one where they construct the five Platonic Solids. In this class, the students learn why there can be only five Platonic Solids, and why they have the shapes that they have. Platonic solids are made of all triangles (whose sides are all the same length), squares, or pentagons. Each solid is constructed with a finite number of the same size, same shape object.



In Calculus II, the students study solids of revolution. Many objects in our world today are solids of revolution – for example a Hershey Kiss. A shape (in two dimensions) is revolved about an axis, making a three dimensional object. In the case of the Hershey Kiss, the students can calculate how much chocolate is needed to make the piece of candy. Many of these calculus students plan to be engineers, and this project gives them a chance to model a solid of revolution.