Mathematical Association of America Southwest Section – New Mexico Association of Two-Year Colleges

Joint meeting

Saturday-Sunday, 13-14 April 2013

being held at

New Mexico Tech

Socorro, New Mexico

Bob Devaney, well-known expert in chaos and fractals, will be speaking at the meeting. Professor Devaney is an excellent speaker and will be worth the trip to Socorro all by himself!

Dr. Brigette Russell, Policy Director for the New Mexico Higher Education Department will be speaking.

We are still developing plans but so far we have:

Student paper session – Graduate or Undergrad, individual or group papers. Have your students present their work in a friendly low-stress setting!

Student poster session – If students don't want to give a talk, they can make a poster. There will be a time set aside for people to talk to the poster presenters, and the posters will be up all day.

Chairs' Roundtable – A chance for past present & future Chairs to discuss the issues and challenges

Roundtable on Articulation

Other topics include

Assessment
On-line learning
Dual enrollment
New approaches in lower division mathematics

Hotel Information:

We have special conference rates at:

Best Western: 575-838-0556
50 rooms, $88.95+tax (single bed)

Super 8: 575-835-4626
30 rooms, $45+tax (single bed), $51+tax (double bed)

These rates are only good until March 31st, so book soon!

Registration:

Participant Registration
Presenter Application
Poster Session Application
Vendor Application
Session Presider Form

More information will be posted as we get it. Save the dates!

MAA-SW / NMMATYC Joint Conference Registration Form New Mexico Tech Socorro, NM April 13-14, 2013

The deadline for early registration is Friday, March 15, 2013

I. Participant Contact Information:

Name: _____

Address: _____

City/State/Zip: _____

Phone: _____

Fax: _____

Personal Email: _____

II. Participant Institution Information:

Institution Name: _____

Address: _____

City/State/Zip: _____

Phone: _____

Fax: _____

Institution Email: _____

III. Preferred address for correspondence (please check one): ☐Home ☐Institution

IV. Participant Associations (check all that apply):

☐ MAA member ☐NMMATYC member ☐AMATYC member

☐Faculty member teaching at a college or university:

Highest degree offered by this institution: ☐ Associate ☐ Bachelors ☐ Masters ☐ Ph.D.

☐High school teacher ☐Undergraduate student ☐ Graduate student ☐ Post Graduate student

☐Business, Industry, Government

☐Other *(please specify):* _____

V. Teaching Experience (if applicable)

Number of years of teaching experience: _____ years *(full-time)* _____ years *(part-time)*

VI. Is this your first NMMATYC conference? ☐Yes ☐No

VII. Is this your first MAA Southwestern Section conference? ☐ Yes ☐ No

If you belong to <u>both</u> MAA and NMMATYC, fill out <u>only one side</u> below.

Your registration includes all conference meals: Sun continental breakfast, Sat & Sun lunch, and Sat dinner banquet.

VIII. MAA Member:	IX. NMMATYC Member:
Early Registration: (before March 15) $_____ $80: NMMATYC/MAA-SW Conference ***includes NMMATYC Membership for 2013-2014*** $60: NMMATYC/MAA-SW Conference ***does* NOT *include NMMATYC Membership*** $35: students $35: retired professors	**Early Registration: (before March 15) $_____** $80: NMMATYC/MAA-SW Conference ***includes NMMATYC Membership for 2013-2014*** $60: NMMATYC/MAA-SW Conference ***for existing NMMATYC Lifetime members*** $200:NMMATYC/MAA-SW Conference ***includes NMMATYC <u>Lifetime</u> Membership*** $35: students $35: retired professors
Late Registration: (after March 15) $_____ $100: NMMATYC/MAA-SW Conference ***includes NMMATYC Membership for 2013*** $80: NMMATYC/MAA-SW Conference ***does* NOT *include NMMATYC Membership*** $35: students $35: retired professors	**Late Registration: (after March 15) $_____** $100: NMMATYC/MAA-SW Conference ***includes NMMATYC Membership for 2013*** $80: NMMATYC/MAA-SW Conference ***for existing NMMATYC Lifetime members*** $220:NMMATYC/MAA-SW Conference ***includes NMMATYC <u>Lifetime</u> Membership*** $35: students $35: retired professors

X. Guests:

Guest Ticket for Saturday Lunch: $10 per guest **$_____**

Guest Ticket for Sunday Lunch: $10 per guest **$_____**

Guest Ticket for Saturday Banquet: $20 per guest **$_____**

XI. Total Enclosed: **$_____**

PAYMENT INFORMATION

Even if your institution will be making the payment through a purchase order,

<u>please complete and submit a form</u> for each participant by the registration deadline.

☐ **Paypal** - ***Payable to NMMATYC through the NMMATYC website: <u>http://www.nm.matyc.org/</u>***

☐ **Check** - ***Payable to NMMATYC; a $30 fee will be assessed for all returned checks.***

☐ **Money Order** - ***Payable to NMMATYC***

☐ **Purchase Order # _____** - ***POs must include the registrant's name or be accompanied by a copy of this form.***

>>>No refunds of conference registration fees will be made.<<<

XII. Special Needs: If you require a specific accommodation to fully participate in the conference, please indicate below.

☐**Vegetarian or special diet** ☐ **Wheelchair accessible desk/table** ☐ **I will need transportation from the hotel.**

☐ **Other***(Please specify)* _____

We will do our best to meet your needs but cannot make any guarantees for requests received after March 15, 2013.

Completed Forms / Payments / Questions: ***conference chair: William Stone, New Mexico Tech, Mathematics Dept***
Socorro, NM 87801 (575) 835 – 5786 <u>wdstone@nmt.edu</u>

MAA-SW / NMMATYC Joint Conference

Poster Application

New Mexico Tech
Socorro, NM
April 13-14, 2013

Please submit your application by Friday, March 15, 2013.

I. Poster Presenter Contact Information:

Name: _____

Address: _____

City/State/Zip: _____

Phone: _____

Fax: _____

Personal Email: _____

II. Poster Presenter College/University Information:

Institution Name:_____

Address: _____

City/State/Zip: _____

Phone: _____

Fax: _____

Institution Email: _____

III. Is this your first time to present a poster at a NMMATYC conference? ☐ Yes ☐ No

IV. (If applicable) Co-Presenter Contact Information:

Name: _____

Address: _____

City/State/Zip: _____

Phone: _____

Fax: _____

Personal Email: _____

V. Co-Presenter College/University Information:

Institution Name:_____

Address: _____

City/State/Zip: _____

Phone: _____

Fax: _____

Institution Email: _____

VI. Brief Resume for Poster Presenter:

VII. Brief Resume for Poster Co-Presenter(s):

IX. Title of Poster:

X. Brief abstract (No more than 150 words):

XI. Choose the strand of your poster (check all that apply):

- ☐ Foundation/Developmental
- ☐ Using Technology in Teaching
- ☐ Mathematics Undergraduate Level/Upper Division
- ☐ Other (Please specify):
- ☐ Teacher education
- ☐ Mathematics Undergraduate Level/Lower Division
- ☐ Mathematics Graduate Level

Completed Forms / Questions:

Send to: ***William Stone***
New Mexico Tech
Mathematics Dept
Socorro, NM 87801
575-835-5786
wdstone@nmt.edu

Presenters must register for the conference. Please use the Participant Registration Form.

MAA-SW / NMMATYC Joint Conference

Presenter Application

New Mexico Tech
Socorro, NM
April 13-14, 2013

Please submit your application by Friday, March 15, 2013.

I. Presenter Contact Information:

Name: _____

Address: _____

City/State/Zip: _____

Phone: _____

Fax: _____

Personal Email: _____

II. Presenter College/University Information:

Institution Name:_____

Address: _____

City/State/Zip: _____

Phone: _____

Fax: _____

Institution Email: _____

III. Is this your first time to present at a NMMATYC conference? ☐ Yes ☐ No

IV. (If applicable) Co-Presenter Contact Information:

Name: _____

Address: _____

City/State/Zip: _____

Phone: _____

Fax: _____

Personal Email: _____

V. Co-Presenter College/University Information:

Institution Name:_____

Address: _____

City/State/Zip: _____

Phone: _____

Fax: _____

Institution Email: _____

VI. Brief Resume for Presenter:

VII. Brief Resume for Co-Presenter(s):

IX. Title of presentation:

X. Brief abstract (No more than 150 words):

XI. Choose the strand of your presentation (check all that apply):

- ☐ Foundation/Developmental
- ☐ Using Technology in Teaching
- ☐ Mathematics Undergraduate Level/Upper Division
- ☐ Other (Please specify):
- ☐ Teacher education
- ☐ Mathematics Undergraduate Level/Lower Division
- ☐ Mathematics Graduate Level

XII. Preferred presentation time: ☐ Saturday a.m. ☐ Saturday p.m. ☐ Sunday a.m. ☐ Any available time is OK

XIII. Length of presentation: ☐ 25 minutes ☐ 55 minutes

XIV. Audio-Visual Equipment needed:

☐ Computer Projector ☐ Computer ☐ Overhead Projector/Document Camera ☐ Internet Access
☐ TV / DVD player ☐ Other (Please specify):

Completed Forms / Questions:

Send to:

William Stone
New Mexico Tech
Mathematics Dept
Socorro, NM 87801
575-835-5786
wdstone@nmt.edu

Presenters must register for the conference. Please use the Participant Registration Form.

MAA SW / NMMATYC Joint Conference
April 13 - 14, 2013
New Mexico Tech
Socorro, NM

Vendor Application Form

Please submit registration and payment by Friday, March 15, 2013 to allow us to best accommodate you and all our vendors.

Name _____

Company _____

Address _____

_____

Business Phone _____ Fax_____

E-mail Address_____

Registration Fees

Vendor Fee: $100 on or prior to March 15, 2013; $125 after March 15, 2013 $_____

(Vendor fee includes one booth all day Saturday & half day Sunday, one ticket to Saturday lunch, one ticket to Saturday banquet, and one ticket to the Sunday lunch.)

Commercial Presentation Fee: $100 on or prior to March 15, 2013; $125 after March 15, 2013 $_____

Guest Fee: _____ guest(s) @ $40 per guest $_____

Guest fee includes one ticket to Saturday lunch, one ticket to Saturday banquet, and one ticket to the Sunday lunch.

Form continues below:

My company would like to support the NMMATYC/MAA-SW Joint Conference by:

☐ helping to sponsor snacks and drinks during the session breaks with a $150 donation

☐ helping to sponsor the Saturday morning refreshments with a $300 donation

☐ helping to sponsor the Sunday morning continental breakfast with a $300 donation

☐ helping to sponsor the Saturday afternoon lunch with a $500 donation

☐ helping to sponsor the Saturday evening banquet with a $500 donation

☐ helping to sponsor the Sunday afternoon lunch with a $500 donation

☐ donating door prizes for the Saturday evening banquet

Please indicate the type of item(s): _____

☐ purchasing an ad in the conference program (8.5 x 7 pages) – indicate size: $30 half-page *or* $50 full-page

(Please provide ad specifications/art work with completed form and payment.)

_____ other (please specify): _____

TOTAL PAYMENT INCLUDED (make check payable to NMMATYC) **$_____**

Completed forms / Payment / Questions:

William Stone
New Mexico Tech
Mathematics Dept
Socorro, NM 87801
575-835-5786
wdstone@nmt.edu

MAA SW / NMMATYC
Joint Conference
April 13 - 14, 2013
New Mexico Tech
Socorro, NM

Presider Application Form

Please complete this form and send it to:

William Stone
New Mexico Tech
Mathematics Dept
Socorro, NM 87801
575-835-5786
wdstone@nmt.edu

Please submit form postmarked, or email by Friday, March 15, 2013

I. Presider Contact Information:

Name: _____
Address: _____
City/State/Zip: _____
Phone: _____
Fax: _____
Personal Email: _____

II. Presider College/University Information:

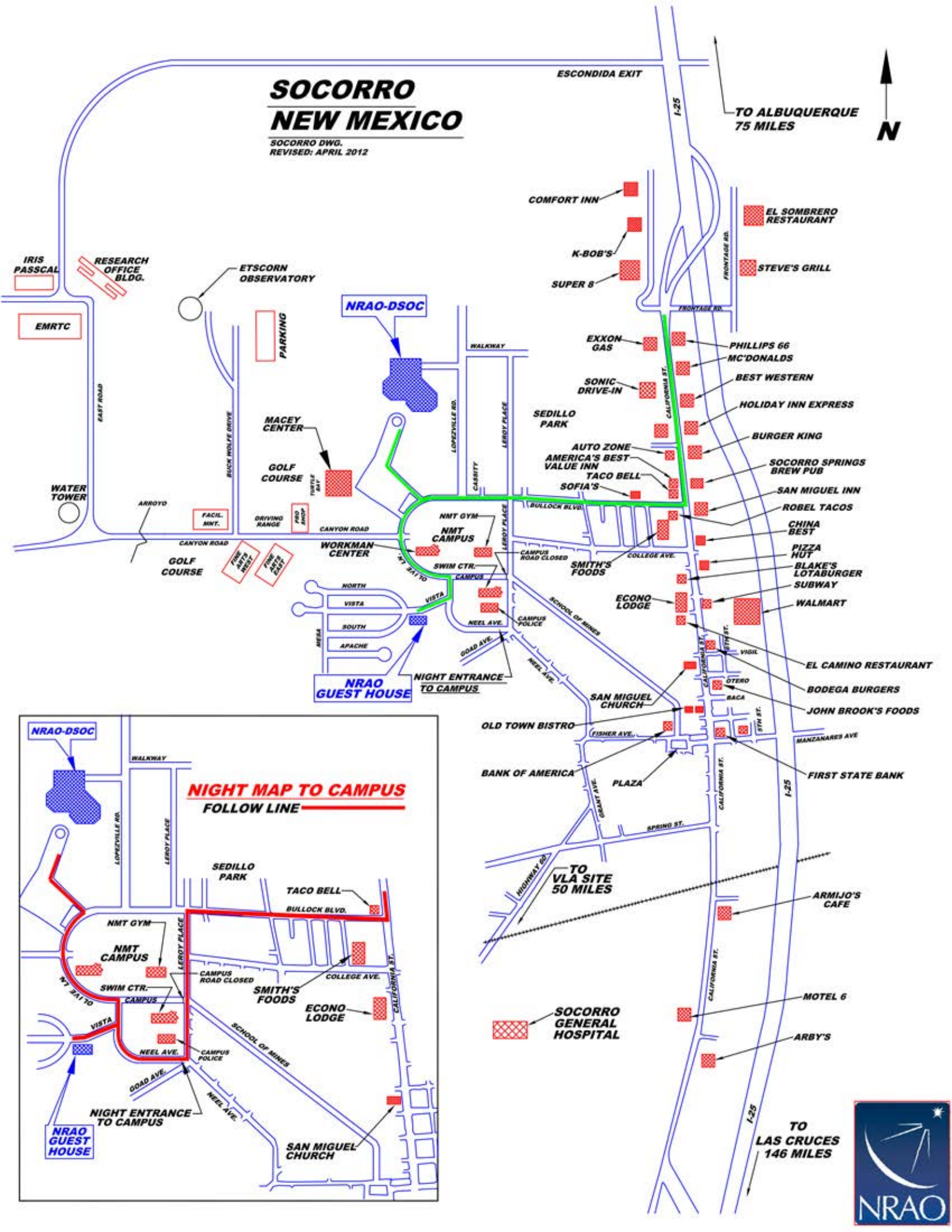
Institution Name:_____
Address: _____
City/State/Zip: _____
Phone: _____
Fax: _____
Institution Email: _____

III. Please indicate your preference for the types of sessions you would like to preside over - (check all that apply):

- ☐ **Foundation/Developmental**
- ☐ **Teacher education**
- ☐ **Using Technology in Teaching**
- ☐ **Mathematics Undergraduate Level/Lower Division**
- ☐ **Mathematics Undergraduate Level/Upper Division**
- ☐ **Mathematics Graduate Level**
- ☐ **Other (Please specify):** _____

1 Altamirano Apartments
2 Animal Care Facility
3 Array Operations Center
4 Baca Hall
5 Brown Hall
6 Children Center
7 Cramer Hall
8 Desert Willow Apartments
9 Driscoll Hall
10 Fidel Center
11 Fitch Hall
12 Gymnasium
13 Jones Annex
14 Jones Hall
15 Kelly Petroleum Building
16 Macey Center
17 Mountain Springs Apartments
18 Mineral Science and Engineering Complex
19 Presidents' Hall
20 Skeen Library
21 Speare Building
22 South Hall
23 Student Activity Center
24 Swim Center
25 Tech Athletic Field
26 Weir Hall
27 Wells Hall
28 West Campus
29 West Hall
30 Workman Center
a Main Building
b Bureau of Geology
c Gold Building

W S N E


SOCORRO
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REVISED: APRIL 2012
ESCONDIDA EXIT
I-25
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SUPER 8
EL SOMBRERO RESTAURANT
STEVE'S GRILL
FRONTAGE RD.
IRIS PASSCAL
RESEARCH OFFICE BLDG.
ETSCORN OBSERVATORY
EMRTC
NRAO-DSOC
PARKING
WALKWAY
EAST ROAD
BUCK WOLFE DRIVE
LOPEZVILLE RD.
CASSITY
LEROY PLACE
EXXON GAS
PHILLIPS 66
MC'DONALDS
SONIC DRIVE-IN
BEST WESTERN
HOLIDAY INN EXPRESS
SEDILLO PARK
CALIFORNIA ST.
MACEY CENTER
BURGER KING
AUTO ZONE
AMERICA'S BEST VALUE INN
SOCORRO SPRINGS BREW PUB
GOLF COURSE
TURTLE BAT
TACO BELL
SOFIA'S
SAN MIGUEL INN
WATER TOWER
ARROYO
FACIL. MNT.
DRIVING RANGE
PRO SHOP
BULLOCK BLVD.
ROBEL TACOS
NMT GYM
NMT CAMPUS
CHINA BEST
CANYON ROAD
WORKMAN CENTER
CAMPUS ROAD CLOSED
COLLEGE AVE.
SMITH'S FOODS
PIZZA HUT
BLAKE'S LOTABURGER
GOLF COURSE
FINE ARTS WEST
FINE ARTS EAST
SWIM CTR.
CAMPUS
SUBWAY
ECONO LODGE
WALMART
NORTH
VISTA
SOUTH
APACHE
MESA
NEEL AVE.
CAMPUS POLICE
SCHOOL OF MINES
GOAD AVE.
VIGIL
5TH ST.
EL CAMINO RESTAURANT
OTERO
BACA
BODEGA BURGERS
SAN MIGUEL CHURCH
JOHN BROOK'S FOODS
NIGHT ENTRANCE TO CAMPUS
NRAO GUEST HOUSE
OLD TOWN BISTRO
FISHER AVE.
MANZANARES AVE
BANK OF AMERICA
PLAZA
FIRST STATE BANK
GRANT AVE.
SPRING ST.
HIGHWAY 60
TO VLA SITE 50 MILES
ARMIJO'S CAFE
SOCORRO GENERAL HOSPITAL
MOTEL 6
ARBY'S
TO LAS CRUCES 146 MILES
NIGHT MAP TO CAMPUS
FOLLOW LINE
NRAO
NRAO-DSOC
WALKWAY
LOPEZVILLE RD.
LEROY PLACE
SEDILLO PARK
TACO BELL
BULLOCK BLVD.
NMT GYM
NMT CAMPUS
CAMPUS ROAD CLOSED
COLLEGE AVE.
SMITH'S FOODS
SWIM CTR.
CAMPUS
ECONO LODGE
CALIFORNIA ST.
VISTA
SCHOOL OF MINES
NEEL AVE.
CAMPUS POLICE
GOAD AVE.
NIGHT ENTRANCE TO CAMPUS
NRAO GUEST HOUSE
SAN MIGUEL CHURCH

Saturday				
10:00-10:30		registration		
10:30-11:00		Paper session I		
11:00-11:30		Paper session I		
11:30-12:00		Paper session I		
12:00-12:30		Paper session I		
12:30-1:00		Paper session I		
1:00-1:30		Lunch & Dr. Brigette Russell		
1:30-2:00		Lunch & Dr. Brigette Russell		
2:00-2:30		Clicker mini-course		
2:30-3:00		Clicker mini-course		
3:00-3:30		Clicker mini-course		Articulation meeting
3:30-4:00		Clicker mini-course		Articulation meeting
4:00-4:30		Student poster session		Articulation meeting
4:30-5:00		Student poster session		Articulation meeting
5:00-5:30		break		
5:30-6:00		break		
6:00-6:30		Cash bar - Macey		
6:30-7:00		Dinner & Dr. Bob Devaney		
7:00-7:30		Dinner & Dr. Bob Devaney		
7:30-8:00		Dinner & Dr. Bob Devaney		

Sunday				
8:00-8:30		Breakfast		NMMATYC business meeting
8:30-9:00		Paper session II		
9:00-9:30		Paper session II		
9:30-10:00		Paper session II		Online teaching roundtable
10:00-10:30		Paper session II		Online teaching roundtable
10:30-11:00		Paper session II		Student paper session
11:00-11:30		Paper session II		Student paper session
11:30-12:00		Chairs' roundtable		Student paper session
12:00-12:30		Chairs' roundtable		Student paper session
12:30-1:00		Lunch		MAA business meeting
1:00-1:30		Lunch		MAA business meeting
1:30-2:00		Dual enrollment roundtable		Articulation Roundtable
2:00-2:30		Dual enrollment roundtable		Articulation Roundtable

Registration Saturday April 13, 10:00-10:30 Weir 220

First paper session, Saturday April 13 10:30 am – 1:00 pm Weir 102

Presiding: Ivan Avramidi, NM Tech
Pam Peters, San Juan CC

10:30 Forrest Kaatz
Mesalands Community College
Modeling Finite Nano Systems
Modeling the nanoscale can occur by limiting the large scale nature of arrays and nano systems to a finite size, or by modeling a single nano object. We look at modeling nano systems from a theoretical graph network view, where a graph has atoms at a vertex and links represent bonds. In this way we can calculate standard statistical mechanics functions (entropy, enthalpy and free energy) and matrix indices (Weiner index) of finite nano structures such as fullerenes, carbon nanotubes and graphene nanoflakes. The Euclidean Wiener index (topographical index) is compared with its topogical (standard) counterpart. For many of these parameters, the data have power law behavior, especially when plotted versus the number of bonds or the number of atoms. Ideally, the placement of nanosized systems could be fabricated in such a way that the order and location of the objects is as desired. we consider measuring the order in finite nanoporous arrays via the pair distribution function and by reciprocal space parameters. Porous arrays have been made in triangular, hexagonal and square geometries and we compare the experimental versions with ideal models. an order parameter derived from the pair distribution function takes values from near zero to one: whereas, a reciprocal space parameter has nominal values from one to forty. we conclude with a summary and indications for future work.

10:55 Annie Selden
NM State University
The Genre of Proof
We will discuss the style in which proofs are written- one of which many university mathematics students seem unaware. We asked mathematicians at the Park city Mathematics Institute what they thought of the following seven conjectured features of proofs, and they tended to agree with us. 1. Proofs are not reports of the proving process. 2. Proofs contain little redundancy. 3. Proofs have symbols in one to one correspondence with mathematical objects. 4. Proofs contain only minimal explanations of inferences, that is, they often refer to implicit warrants. 5. Proofs contain only very short overviews or advance organizers. 6. Entire definitions are not quoted in proofs. 7. Proofs are "logically concrete" in the sense that quantifiers, especially universal quantifiers, are avoided where possible. we think that mathematicians write this way so that validation by proofs by other mathematicians is as easy as possible, that is, so that distractions are kept to a minimum.

11:20 Allen Stenger
Retired
Experimental Mathematics for Math Monthly Problems
Experimental mathematics is a newly-developed set of computer-based techniques for discovering closed-form evaluations of mathematical expressions, particularly infinite series and limits or asymptotic behavior of sequences. The primary techniques are high precision calculation of the desired quantity,

table lookups to develop candidate explicit forms, and integer relation detection algorithms such as PSLQ to investigate whether there might be an explicit form as a simple combination of likely mathematical constants. Once a candidate has been discovered, traditional hand methods are used to prove expression, although sometimes the computer also helps point the way to the proof. in this talk i will show how these techniques can be applied to several problems that have appeared in the Problems Section of the American Mathematical Monthly.

11:45 Olivia Orrantia-Kotowski
Eastwood High School
My Fascination with Pi
The history of pi is as magical as eating a good piece of pie. This session will explore the birth of pi and its close predecessors that unfortunately were not perfect. It will follow pi throughout time and discover its many uses. There are also many fun facts and tidbits of information to be learned about pi. Overall, this session will attempt to cover as much as possible about pi and as in depth as possible in 25 minutes. Along with learning applications for pi, attendees will probably learn strange facts about pi that they may never need to know but will always be stuck in the back of their minds.

12:10 Kitty Berver
El Paso Community College
Getting to know your online students
Getting to know your online students requires more effort from an online instructor than a face to face instructor, but the result is a more rewarding experience for both teacher and student. This presentation will discuss strategies for instructor presence, creating student profiles and setting up pathways of communication.

12:35 Anna Durakiewicz
UNM
Advancing towards the future of education- application of novel online technologies in online teaching of mathematics.
Online education is on the rise. Within the next 5 years, over 50% of students in post-secondary degree granting US institutions will be enrolled in at least one online course. However, many experienced educators note that online teaching methods, especially in the areas of sciences and mathematics, are inferior to live education and face to face student teacher contact in terms of outcomes. The project team proposes that the reason for this worrying state pf affairs in mathematics education is the lack of appropriate teaching methods. Novel methods rooted in proven techniques used in live education need to be created and translated into the online platform. it is proposed that the online education process in mathematics can be significantly improved by modfying selected live education techniques for the onling teaching setting. The modifications are constructed around four dominant areas: students motivation, selection and application of study strategies, self assessment and self evaluation techniques and flexible, individuallized learning experience.

Lunch 1:00-2:00 Pick up box lunches in Weir 220A
Speaker, Weir 102
Dr. Brigette Russell, Policy Director, New Mexico Higher Education Department
NMHED and Developmental Education

College graduation rates in New Mexico are far lower than they ought to be, and one of the main causes is remediation. More than half of New Mexico freshmen take developmental courses, which consume their financial aid without earning credits toward graduation. Math in particular is often an obstacle to degree completion. At some institutions, developmental math is under a different department than the math department. The traditional developmental math sequence is designed to prepare all students for calculus, but while students majoring in STEM fields require calculus, other students would be better served by taking courses in statistics or quantitative literacy. Innovative work is being done at individual institutions to make developmental education more effective, but it is only by scaling up these innovations that statewide progress will be made. It is in this area that NMHED can help, by facilitating communication among institutions and the systematic adoption of best practices.

Clicker mini-course, 2:00-4:00, Weir 202

Kelly Cline and Lahna von Epps
Project MathVote
Teaching with Classroom Voting and Clickers
This mini-course will provide participants with an overview of classroom voting pedagogy in a range of college mathematics courses. Time will be spent discussing the logistics of classroom voting using clickers as well as recent research on this type of pedagogy. Participants will play the role of students in a voting demonstration, explore an online library of over 2300 classroom voting questions, prepare a lecture with voting questions for use in one of their own courses, and try their hands at writing some questions.

Articulation meeting, 3:00-5:00, Weir 208

Student poster session, 4:00-5:00, Weir 203

Presiding: John Starrett, NMT

Andrew Krause
NMT
I am investigating the p-Laplace equation with a dissipative nonlinearity, a non-autonomous term, and a random variable term. The goal is to use uniform estimates on the tails of solutions to show the existence of the attractor, and then to use some properties of the equation to understand the structure of this attractor.

Dinner, 6:00-8:00, Macey Center

Speaker
Prof. Robert L. Devaney
Boston University
The Fractal Geometry of the Mandelbrot Set

In this lecture we describe several folk theorems concerning the Mandelbrot set. While this set is extremely complicated from a geometric point of view, we will show that, as long as you know how to add and how to count, you can understand this geometry completely. We will encounter many famous

mathematical objects in the Mandelbrot set, like the Farey tree and the Fibonacci sequence. And we will find many soon-to-be-famous objects as well, like the "Devaney" sequence. There might even be a joke or two in the talk.

Sunday

Breakfast 8:00-8:30, Weir 220

NMMATYC business meeting, 8:00-8:30, Weir 102

Paper session II, Sunday April 14. 8:30-11:30, Weir 102

Presiding:

Steve Schaffer, NMT
Annette LaRussa, NMT

8:30 Khaled Kassem
UNM- Valencia
Using Manipulatives in the mathematics classroom
An important tool that can help students to understand mathematical concepts is the use of manipulatives in the math classroom. If math students are given the opportunity to grasp the math concept before engaging them in problem solving, they will be able to demonstrate mastery of the concept and they will be able to recall it later and use it in a more applicable setting. In this presentation, I will share some strategies of using manipulatives to teach mathematics in high schools and in two-year colleges.

8:55 Shyla McGill
NM Junior College
Critical thinking through geometry and trigonometry
Participants will make a tetrahedron out of an envelope and discuss the surface area of the tetrahedron. Using geometric puzzle pieces, each participant will create a rectangle which will be used to show the Pythagorean theorem. Each participant will then make their own altitude tracker and find the angle of elevation of an object outside. when returning to the classroom participants will use their understanding of trigonometry to approximate the height of the object. if time allows we will then approximate Pi and estimate the area of the circle. All participants will be given a Pythegorean puzzle set, an altitude tracker and take their tetrahedron home with them.

9:20 John Patrick
Dona Ana Community College
Seven Ways of Monitoring and Evaluating Student Progress
Seven plus techniques will be presented and demonstrated for measuring student pprogress and teaching effectiveness. Methods of collecting and analysis data collected to give a running measure of the effectiveness of your course. This provides a correction during the course. Statistical sampling techniques will be illustrated as well as the concept of non destructive testing. there will be hands on opportunities provided as well as examples. these techniques have been shown to increase long term learning, course completion rates as well as student enthusiasm.

9:45 Elaine Clark
UNM- Valencia
Creating a Web Presence and Nurturing an Online Community
The students in every class, whether its online, hybrid, or face to face create a community of some sort. It may be dysfunctional and/or no one talks to each other in the community, but there is one. One key element of this community is the tone the instructor sets in his/her communications with and to the students. Developing an ability to imagine the student audience can be key to developing your online voice. Other key ingredients include modeling proper netiquette, providing a place for students to ven without repercussions, and simply being there. the most important thing to remember when teaching online is Communicate! Once you've established your online voice you can then set the environment in which students will build the online community for the class. i will discuss some of my ideas and observations on community building in a College Algebra online course.

10:10 Melinda Camarillo
El Paso Community College
Numbers and Life
Math and Biology are woven together like the strands of a DNA double helix, and our students are experiencing this first hand in our Mathematics/ Biology learning community this semester! We have integrated Algebra and Intro Biology to show students the relevance and connection between these two subjects in hopes of improving their attitudes towards STEM fields and their performance in each class.

10:35 William Yslas Velez
University of Arizona
In 2003 I accepted the position as Director of the Math Center in my department. The Math Center's main responsibility is to manage the math major program. At the time there were about 250 mathematics majors. My goal was to double the number of mathematics majors. We currently have over 600 mathematics majors, of whom 20% are minority students, and this academic year we will award over 130 bachelor's degrees in mathematics.
In this talk I will describe my efforts and hopefully convince some of the audience of the necessity of taking similar actions to increase the mathematical literacy of our students.

11:00 Celeste Nossiter
Pearson Education
Redesigning the Developmental Math Curriculum- ideas from schools across the country.
Every school is facing the same issues: improve pass rates, pressure to move students faster to college level courses, address wildly varying prep levels, cut down the number of credit hours, speed graduation rates. I'll discuss different options and how they were implemented at several schools across the country. Successful implementing technology in different settings will also be covered as well as the process of making changes.

Online teaching roundtable, 9:30-10:30, Weir 203

Student paper session, 10:30-12:30, Weir 208
Presiding: John Starrett, NMT

Elizabeth Finley
NM Tech
SAFE Water Strategy
The goal of our model is to create a realistic simulation of the hydrological situation of Saudi Arabia in 2025, from which we can determine the best water strategy. We created two models to examine numerous water strategies. The first model, BOD, estimates the cost of building enough desalinization facilities to fully support projected Saudi Arabian water demand in 2025, given a parameter of future agricultural use. Our SDW model simulates the movement, storage, production, and conservation of water in Saudi Arabia circa 2025. The results of both of our models suggest that it is very unlikely Saudi Arabia can sustain current levels of agricultural water usage.

Abiti Adili
NM Tech
Random Attractors for Non-Autonomous Stochastic FitzHugh-Nagumo Systems on unbounded domains
We study the asymptotic behavior of solutions of the FitzHugh-Nagumo system defined on unbounded domains with non-autonomous deterministic as well as stochastic terms. We first prove the pullback asymptotic compactness of solutions and then establish the existence of a unique pullback random attractor for the system. We further show that the random attractor is periodic when the non-autonomous deterministic terms are periodic.

Chairs' roundtable, 11:30-12:30 , Weir 203

Lunch 12:30-1:30 Pick up box lunches in Weir 220

MAA business meeting, 12:30-1:30, Weir 102

Dual enrollment roundtable, 1:30-2:30, Weir 202

Articulation roundtable, 1:30-2:30, Weir 202

Participants

Abiti, Adili	NMT
Aguilar-Morgan,Catherine	NMSU-A
Aitbayev, Rakhim	NMT
Ansari, Fariba	EPCC
Avramidi, Ivan	NMT
Bailey, Daniel	Langston University
Ballou, Lynda	NMT
Barber, Ellie	EPCC
Barrientos, Pat	EPCC
Beattie, Linda	Western NM Univ
Berver, Kitty	EPCC
Black, Rachel	CNM
Borchers, Brian	NMT
Brock, Peggy (Margaret)	CNM
Buckman, Ben	NMT
Bukowski, Arthur	NMT
Burch, Ian	NMT
Caffey, Mary	Clovis CC
Camarillo, Melinda	EPCC
Castillo, Daniel	EPCC
Cathey, Hank	Thinkwell
Chavez, Violeta	EPCC
Chung, Sung	NMT
Clark, Elaine	UNM Valencia
Coburn, Joey	NMT
Delgado, Adrian	DACC
Delgado, Janet	NMSU-A
DePree, Julie	UNM Valencia
Durakiewicz, Anna	UNM
Fierro, Jaime	EPCC
Gamboa, Elizabeth	DACC
Gonzales, Claudio	NMT
Gonzalez, Lorena	EPCC
Gonzalez, Rita	DACC
Gruszka, Tom	Western NM Univ
Hatch, Annette	UNM Valencia
Hill, Suzanne	DACC
Hossain, Anwar	NMT
Ives, John	CNM
Kaatz, Forrest	Mesalands Comm College
Kaatz, Philip	Mesalands Comm College
Kassem, Khaled	UNM Valencia
Kerr, Bert	NMT
Helmut, Knaust	UTEP
Kozak, Kathryn	Coconino CC
Krause, Andrew	NMT

LaRussa, Annette	NMT
Leguy , Gunter	NMT
Lewis, Michael Austin	NMT
Linford, Marla	CNM
Lopez, Elsa	EPCC
Macado, Alexandra	EPCC
MacKendrick, Sharon	NMSU Grants
Makhnin, Oleg	NMT
Manavi, Valiollah	Dine College
McGill, Shyla	NMJC
Mecado, Oscar	EPCC
Miller, Emily	UNM Valencia
Murray, Clifton	UNM Valencia
Napolitano, Matthew	NMT
Nguyen, Hung	NMT
Nossiter, Celeste	Pearson Education
Onimole, Anthony	CNM
Ordaz, Ruth Ann	EPCC
Orrantia, Diana	EPCC
Orrantia- Kotowski, Olivia	Eastwood High School
Patrick, John	DACC
Peeples, Joanne	EPCC
Rinker, Martha	EPCC
Rodriguez, Alfredo	EPCC
Sanders, Keith	NMT
Selden, Annie	NMSU
Selden, John	NMSU
Snell, Margaret	NMT
Stenger, Allen	Retired
Stockett, Sam	Luna CC
Stone, WD	NMT
Thomas, Rebecca	NMT
Velez, William	Univ. of Arizona
Walker, Sylvia	NMSU Alamogordo
Wallin, Bruce	NMT
Wang ,Bixiang	NMT
Watkins, Ramsi	San Juan College
Youngblood, Patricia	NM Junior College
Zeron, Luis	NMT

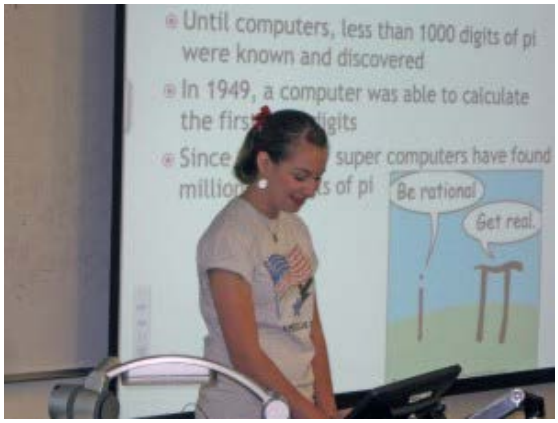
Special guests:

Russell Brigette	NMHED
Devaney, Robert	MAA & Boston Univ.

Mathematicians visit Tech

by Allen Stenger | April 18, 2013 | Filed under: News

Almost 100 mathematicians converged on New Mexico Tech last weekend for a two-day conference about college-level math. They arrived from New Mexico, Arizona and El Paso for a joint meeting of the New Mexico Mathematical Association of Two Year Colleges and the Southwestern Section of the Mathematical Association of America. The conference was co-chaired by Dr. William D. Stone and Dr. Annette LaRussa of the NMT Math Department.



Allen Stenger/For El Defensor Chieftain: The youngest speaker at the conference was 16-year-old high-school student Olivia Orrantia-Kotowski, who talked about her fascination with the number pi.

Nearly all the attendees were college-level math teachers, and much of the conference was devoted to swapping techniques for helping students learn better. There has been an explosion in the popularity of online courses at the college level, and several speakers dealt with the particular challenges of teaching students whom you don't see.

The luncheon keynote speaker was Dr. Brigette Russell, policy director of the New Mexico Higher Education Department. She spoke about the low graduation rates at New Mexico colleges, which she

attributes in part to the large number of students who need remedial math at the college level. Remedial courses, also called developmental courses, don't carry college credit, and many students run out of money and financial aid before they can finish enough credits to graduate.

Russell advocated more targeted developmental courses that provide more help in a shorter period of time, and "intrusive advising," where advisers take a more aggressive role in channeling students into courses that count toward the requirements for a major.

Mathematicians experiment with making the tetrahedron, a geometric figure, from a sealed and folded envelope. Hands-on geometric exercises help students develop a sense for numbers and sizes.

There were a number of talks on more purely technical subjects, ranging from nanotubes to math for biology to the number pi. The banquet keynote speaker was Dr. Robert L. Devaney, national president of the MAA and a professor at Boston University. He gave a simple and entertaining walk-through of fractals and the Mandelbrot set, and mesmerized the audience with some animated movies he and his students had made showing the characteristics of these mathematical objects.

The technical and educational parts of the conference concluded with a series of business meetings and administrative roundtables.