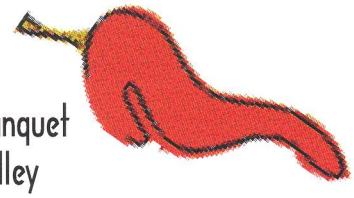
New Mexico Mathematical Association of Two-Year Colleges

Mathematics: Mild, Medium, or HOT!

17th NMMATYC Conference

May 18
Pre-conference workshops
by Richard Aufmann & Ted Stanford

May 19-20
Conference sessions and banquet
Keynote speaker: Anne Dudley



DONA ANA BRANCH COMMUNITY COLLEGE
DABCC
OF NEW MEXICO STATE UNIVERSITY

May 18-20, 2006
DABCC, East Mesa Campus
Las Cruces, New Mexico

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This Conference is Dedicated to Vicki Froehlich

1953 – 2005

http://www.nmmatyc.org/

Dear NMMATYC Members and Guests:

Welcome to Las Cruces for the 17th Annual NMMATYC Conference, Mathematics: mild, medium or HOT! The Conference Planning Committee has organized a great conference with many outstanding sessions and events for us to enjoy. Thursday's pre-conference activities include two workshops, one by Ted Stanford, Professor of Mathematics at NMSU, and one by Richard Aufmann, Professor Emeritus of Mathematics at Palomar College. Directly after the workshops there will be a Chile Pepper Presentation given by Danise Coon of the NMSU Chile Pepper Institute.

The official conference begins Friday morning with several great sessions from which to choose. After a day of learning and sharing ideas with your colleagues, the Friday evening banquet will take place at the scenic NMSU Golf Course Clubhouse. Anne Dudley will give the keynote address, Math & Jeopardy, and the winners of the Michelle Jimenez Memorial Scholarship, the David Lovelock Teaching Excellence Award, the Faculty Professional Development Award and the Student Math League Contest will be announced. The annual business meeting/breakfast will be Saturday morning, followed by more great sessions.

I would like to extend my thanks to René Sierra (Conference Chair), Shakir Manshad and Amal Mostafa for all their hard work putting together this conference. They have spent numerous hours over the past year ensuring that this conference would be a success. Thanks also to all the presenters and exhibitors—without you there would be no conference.

Enjoy your time in Las Cruces!

Ellen M. Schneider
NMMATYC President

Thursday, May 18, 2006 — Pre-Conference Activities

Workshop 1	**10:00 - 12:00**	**Room: 206**
Presenter:	**Ted Stanford**	**NMSU**
Presider:	**Ellen Schneider**	**DABCC**

Title: Angles from K to 20

In this workshop, we will explore the concept of angle from ways that young children can understand it up to some graduate-level topics. We will see some principles in common between the most basic and the most advanced understanding of angle. (No mathematical knowledge will be assumed beyond calculus.) The workshop will include several audience—participation hands—on activities. We will also look at the history of angle.

Bio: Ted Stanford received his Ph.D. in mathematics from Columbia University in 1993. He spent time at universities in Switzerland, California, and Nevada, as well as at the U.S. Naval Academy in Annapolis. He has been at NMSU since 2000. His dissertation was in low-dimensional topology, and he has subsequently written a number of research papers in that field. In recent years, he has become involved in K-12 education. Currently, he is part of a grant that gives him course release time to work with middle school teachers and students.

12:00 – 1:00 **Lunch** **Room: 205**

Workshop 2	**1:00-3:00**	**Room: 206**
Presenter:	**Richard Aufmann**	**Palomar College**
Presider:	**Ellen Schneider**	**DABCC**

Title: Approximation and Quantitative Reasoning in Developmental Math

We will explore some teaching strategies that encourage students in developmental math classes to approximate and to think quantitatively. Some of the types of exercises that we will be sharing with you include ones that ask students to determine which answer is not possible, determine the operation required to solve a problem, explain the meaning of an answer, explore the reasonableness of a calculated answer, and solve scenario problems.

Bio: Richard Aufmann is Professor Emeritus of Mathematics at Palomar College in California where he taught from 1972 to 2000. He is also a renowned author of several mathematics textbooks. He is the lead author of two best-selling developmental math series and a best-selling college algebra and trigonometry series. He has given numerous presentations and workshops at regional and national conferences, including AMATYC and NMMATYC.

Thursday **3:15 – 4:15** **Room: 206**
Chile Pepper Presentation: Danise Coon **NMSU Chile Pepper Institute**

6:00 to 8:00 **Dinner at Pepper's Café in Old Mesilla**

CONFERENCE PROGRAM

Friday, May 19

Exhibits	**Room: 208**	**(8:00 – 4:00)**
Hospitality Room	**Room: 205**	**(8:00 – 4:00)**
NM Articulation Meeting	**Room: 121**	**(9:00 – 12:00)**

Session: F1-A **Room: 221** **(8:30 – 9:30)**
Presenter: Elaine Cohen **New Mexico State University**
Presider: Suzanne Hill **Doña Ana Branch Community College**

Title: Proportional Reasoning: Why Do We Need It?

It has been shown that students who do not have "scientific" reasoning skills do not do well in science classes. One of these skills is the ability for students to reason accurately about multiplicative relationships, or proportional relationships. There is a collection of mathematical activities we can give our students to help them develop this type of reasoning. I will present a selection of these activities and talk about how each helps with proportional reasoning skills.

Session: F1-B **Room: 222** **(8:30 – 8:55)**
Presenter: Linda Zimmerman **New Mexico State University**
Presider: Sinnathamby Pankayatselvan **Doña Ana Branch Community College**

Title: What Do College Students Need to Know?

As part of the process of developing the new Algebra sequence, the NMSU Department of Mathematical Sciences surveyed departments across the campus asking the question, "What math do your students need to know?" Highlights of some of the responses received and impact of the survey on curriculum development will be presented.

Session: F1-C **Room: 222** **(9:05 – 9:30)**
Presenters: Ivette Chuca **El Paso Community College**
Gabriel Mendoza **El Paso Community College**
Presider: Sinnathamby Pankayatselvan **Doña Ana Branch Community College**

Title: Involving Your Students Through the Use of I-Clickers

Are you tired of getting no response from your students? Want to get your students more involved? Come and learn about the latest technology and how it can help you get your students more involved.

Session: F1-D **Room: 206** **(8:30 – 9:30)**
Presenter: Fritz Schanz **Thomson Higher Education**
Presider: Joanne Peeples **El Paso Community College**

Title: Interactive Classroom and the Self-Paced Learning Lab

Turning Point is a classroom response system. It allows attendance taking,comprehension checks, quizzing, diagnostics, and standards-based tracking. Ultimately, it creates a more dynamic classroom based on active learning. The Learning Equation is courseware. It delivers a complete course online. It addresses the AMATYC and NCTM standards by offering guided inquiry, active learning, and multiple representations. Students work at their own pace, in an active learning environment in which they may apply their preferred learning styles.

Session: F2-A **Room: 221** **(9:45 – 10:45)**
Presenter: Tom Hibbs **Texas Instruments**
Presider: Gordon DeSpain **San Juan College**

Title: TI Navigator - Assessment and Student Collaboration

TI Navigator is a student assessment and collaboration system that connects wirelessly to your students' TI-84 graphing calculators. Features include Activity Center, Quick Poll, calculator Screen Capture and display, Learning Check quiz and test creator, and Class Analysis for instant grading and recording. A TYC solution for improved math achievement.

Session: F2-B **Room: 222** **(9:45 – 10:45)**
Presenters: David Dudley **Scottsdale CC**
Jenifer Bohart **Scottsdale CC**
Presider: Amal Mostafa **New Mexico State University**

Title: Implementing the Standards, a Hot Topic

Scottsdale Community College has taken implementing the Standards to heart. We will examine their text selection process for revising the curriculum in Beginning and Intermediate Algebra. Also, a Professional Learning Community was developed to bring the adjuncts into the fold. We will share where SCC is now.

Session: F2-C **Room: 206** **(9:45 – 10:45)**
Presenters: Ali Ahmad **Doña Ana Branch Community College**
German Moreno **Doña Ana Branch Community College**
Presider: Diana Orrantia **El Paso Community College**

Title: Solving Quadratic Equations using JAVA Applets

The presenters will share their experiences of teaching quadratic equations using two methods-traditional lecture and internet activities based on JAVA applets. Student achievement in both groups will be presented as well as the student's attitudes toward the online activity. The participants will have the opportunity to share their insights into the use of technology and JAVA applets to teach math concepts.

Session: F3-A Room: 221 (11:00 – 12:00)
Presenter: Bill Pletsch Albuquerque TVI
Presider: Steve Krevisky Middlesex Community College

Title: A Counting Problem using some Math Reform Techniques— Redux

A counting problem with many different formulations will be presented. Central to the discussion will be the role math reform techniques played in the course of discovery. The new methods that we teach our students really work.

Session: F3-B Room: 222 (11:00 – 12:00)
Presenters: Ivette Chuca El Paso Community College
Edith Aguirre El Paso Community College
Huli Wang El Paso Community College
Presider: Robert Miller NMSU - Alamogordo

Title: Napier Bones and Genelle Rulers

Come and relax while you have fun with Napier Bones and Genelle Rulers. This presentation will demonstrate how Napier Bones and Genelle Rulers were used to make calculations in the past. How can you use them today in your classes?

Session: F3-C Room: 206 (11:00 – 12:00)
Presenter: Lisa Juliano El Paso Community College
Presider: Jay Malmstrom Oklahoma City Community College

Title: Building Community in Your Classroom

Practice simple techniques for creating an open, positive atmosphere in your class from day one. We will start with an ice-breaker, do group problem-solving activities, and some different group formats including the jigsaw method, and think-pair-share.

Lunch Room: 205 (12:00 – 1:30)

Session: F4-A **Room: 221** **(1:30 – 2:30)**
Presenter: Steve Krevisky **Middlesex Community College**
Presider: Ellen Schneider **Doña Ana Branch Community College**

Title: Who Are the Top Runs Batted In players in baseball?

Using Z scores, we analyze who are the top batters in Runs Batted In (RBI's), relative to the league. We consider such luminaries as Hack Wilson, Ernie Banks, Babe Ruth, Jimmie Foxx and many others. Come cheer for your favorites! Intended for teachers of Algebra, Probability and Statistics, and Quantitative Literacy.

Session: F4-B **Room: 222** **(1:30 – 2:30)**
Presenter: Frank J. Attanucci **Scottsdale Community College**
Presider: Sharon MacKendrick **NMSU - Grants**

Title: Analyzing the Surface Behavior of the Fluid in a Revolving Container

A container (in the form of a generalized cylinder) sits on a turntable whose axis of rotation is the z-axis. After filling the container with fluid to an initial depth h (in meters), the turntable is spun at an angular speed omega. In my presentation, I (i) find a formula for the depth of the fluid z = f(x, y, omega); (ii) experimentally confirm the result; (iii) create an animation of the phenomenon and (iv) show how the results can, in some cases, be extended by a technique called "equi-symmetric partitioning."

Session: F4-C **Room: 206** **(1:30 – 2:30)**
Presenter: Sharon Yu-Shattuck **El Paso Community College**
Presider: Shakir Manshad **Doña Ana Branch Community College**

Title: Writing in Mathematics Highly Affecting Students' Achievement

This session reports the statistical analysis of how much students' writing in mathematics affects students' achievement and of the evaluation of part-time mathematics instructors' classroom performance. This session also presents learning theories including philosophy of learning, and the strategies of how to improve students' writing in mathematics through our teaching.

Session: F5-A Room: 221 (2:45 – 3:45)
Presenter: Jay Malmstrom Oklahoma City Community College
Presider: Seth Abrahamson San Juan College

Title: Dangerous Dan Goes Digital

Self-working card tricks depend on the structure of a pack of cards. Because of this, topics from discrete mathematics can be used to analyze them. Digital addresses, duals of binary strings and bit switching algorithms will be discussed. Plus you might even learn how to do a perfect shuffle!

Session: F5-B Room: 222 (2:45 – 3:45)
Presenter: Robert Shankin Santa Fe Community College
Presider: Bill Pletsch Albuquerque TVI

Title: Improving Students' Test Scores

Many math students are often poor test takers. This is no mystery, because common teaching practice does not involve having students practice the skills needed on a test. These skills involve remembering previous lessons and working out a problem without contentual clues or a reference example. Ways to efficiently practice test-taking skills in the classroom will be presented and discussed.

Session: F5-C Room: 206 (2:45 – 3:45)
Presenter: Philip Kaatz Mesalands Community College
Presider: Joanna Ortiz Albuquerque TVI

Title: Using History to Motivate Beginning Algebra Students

I have investigated using historical aspects of mathematics as a method of motivating Beginning Algebra students and providing a context for the mathematical content of the class. An experimental approach was done comparing two classes in which one class experienced learning math through additional historical presentations and problems. I will present quantitative and qualitative results of the influence of using the history of math to motivate these students in learning mathematics.

BANQUET ***NMSU Golf Course Clubhouse*** ***(5:00 – 8:30)***

Saturday, May 20

Business Meeting/ Breakfast ***Rooms: 205 & 206*** ***(8:00 – 9:00)***

Exhibits ***Room: 208*** ***(8:00 – 11:00)***

Hospitality Room ***Room: 205*** ***(8:00 – 11:30)***

Session: S1-A **Room: 206** **(9:15 – 10:45)**
Presenter: Patricia Baggett **New Mexico State University**
Andrzej Ehrenfeucht **University of Colorado**
Presiders: Ivette Chuca **El Paso Community College**

Title: Geometric Dissections: Playful Patterns and Puzzles

Geometric dissections deal with having to cut a figure into parts that are rearranged to form another figure. The mathematics is based on the theorem that that any polygon can be transformed into any other of the same area by a "cut-and-paste" method. In this workshop for teachers we will design and make 2- and 3-D dissections and explore their mathematics and history.

Session: S1-B **Room: 221** **(9:15 – 10:15)**
Presenter: Greg Allison **New Mexico State University**
Presider: Mary Caffey **Clovis Community College**

Title: Using Knowledge of Students as Learners in Course Development

Challenged to rise to the "next level of excellence" College track faculty in the Department of Mathematical Sciences carried out a two and a half year process of research and program development. Greg will present some of the results of his study of NMSU's Intermediate Algebra students and how these results were used to develop new student-centered courses.

Session: S1 – C **Room: 222** **(9:15 – 10:15)**

Presenters:	**Sinnathamby Pankayatselvan**	**Doña Ana Branch Community College**
	Rene Sierra	**Doña Ana Branch Community College**
Presider:	**Lucy Gurrola**	**Doña Ana Branch Community College**

Title: Project-Based Learning

This presentation addresses project-based learning in prealgebra, algebra and business applied calculus. The presenters will give examples of group or individual projects pertaining to these courses. Students worked individually on each project, and their actual work will be demonstrated.

Session: S2-A **Room: 221** **(10:30 – 11:30)**

Presenters:	**Linda Zimmerman**	**New Mexico State University**
	Greg Allison	**New Mexico State University**
Presider:	**Marlene Chavez-Toivanen**	**NMSU – Grants**

Title: Taking Advantage of Pressure: The New Intermediate Algebra Course

After two years of study, the Department of Mathematical Sciences at NMSU's main campus is ready to unveil their new Intermediate Algebra course next fall. We will explore the collaborative-learning curriculum and discuss the goals for the course and how we plan to achieve them.

Session: S2-B **Room: 222** **(10:30 – 11:30)**

Presenter:	**Paul A. Mason**	**Doña Ana Branch Community College**
Presider:	**Rene Sierra**	**Doña Ana Branch Community College**

Title: Some Tools for Teaching Mathematical Measurement

Many students do not understand the fact that mathematics has many applications to ordinary life. In this presentation I will demonstrate several teaching activities using simple equipment aimed at giving students an appreciation of mathematical measurement. The applications have been designed for developmental and/or liberal arts math students.

Session: S2-C **Room: 206** **(11:00 – 11:30)**
Presenter: **Yoliette Fournier** **Prentice Hall**
Presider: **Janet Macaluso** **Eastern New Mexico University-Roswell**

Title: MyMathLab by Pearson Education

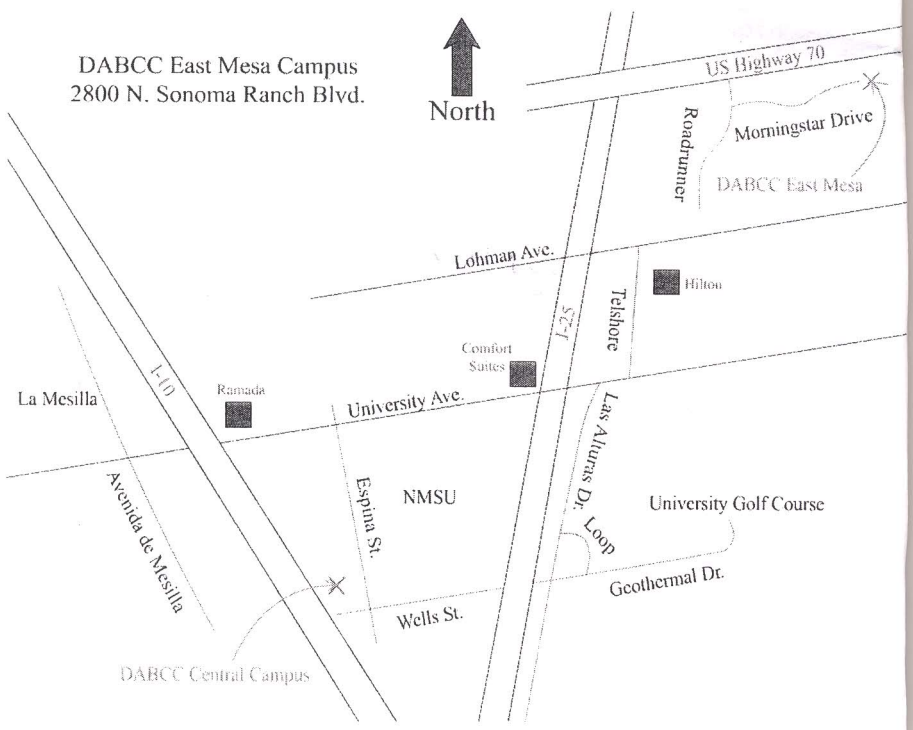
Come and take a tour of MyMathLab and open the door to a world of dynamic multimedia resources and course management tools. Powered by CourseCompass and MathXL, MyMathLab is a series of text-specific online courses that accompany Pearson Addison-Wesley and Pearson Prentice Hall textbooks in Mathematics and Statistics. MyMathLab provides instructors with a rich and flexible set of course materials, along with course-management tools that make it easy to deliver all or a portion of your course online. Since 2001, one million students at over 1100 colleges and universities have had more success in Math with MyMathLab's dependable and easy-to-use online homework, guided solutions, multimedia, tests, and eBooks. Pearson's premier proven service teams provide training and support when you need it. And MyMathLab offers the broadest range of titles available for adoption.

Session: S2-D **Room: ~~221~~ 121** **(10:30 – 11:30)**
Presenter: **Shakir Manshad** **Doña Ana Branch Community College**
Amal Mostafa **NMSU**
Presiders: **Rockford Burris** **NMSU – Alamogordo**

Title: Classroom Improvement to Allows Students to Become Active Participants

This presentation will focus on the Student Management Team (SMT), Pair test, team work and the Minute Paper as means of assessing student learning and allowing for students to make recommendation for making class time more and active and useful. These tools allow for ongoing student recommendations for classroom improvement.

Map of Las Cruces



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THANK YOU FROM THE CONFERENCE CHAIR

I would like to express my appreciation to all of those who spent so much time helping to make this year NMMATYC Conference a success. A special thanks to ConferenceCommittee members: Ellen M Schneider for her guidance and support, Shakir Manshad for his overwhelming energy, and Amal Mostafa for her calming personality. I appreciate the support of my supervisors Bernard Piña, Carmen Aguilera-Goerner and Margie Huerta. I appreciate the assistance of the math faculty: S.Panket, Lucy Gurrola, German Moreno, Karen Pagel, and Suzanne Hill. I would also like to thank our secretary Raquel Armendariz. A big thanks to Abby Osborne from Digital Imaging & Design and her two students Joy Miller and Lisa Jones for working on conference flyer and conference program.

DONATIONS

NMMATYC would like to thank the following people, businesses and organizations for supporting this conference with their donations.

Dr. Margie Huerta, CEO, DABCC
Houghton Mifflin Company
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Maplesoft
Prentice Hall

EXHIBITORS

NMMATYC would like to thank the following companies for exhibiting at our conference. The exhibits will be open Friday from 8:00 to 4:00 and Saturday from 8:00 to 11:00 in Room 208.

Casio
Houghton Mifflin
MacKichan Software
McGraw-Hill
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