Materials from the Spring 2004 Section Meeting at Northern Arizona University. Originally posted at

http://oak.ucc.nau.edu/hagood/maa2004.html

Annual Meeting
Southwestern Section of the MAA
and ArizMATYC
April 2-3, 2004

Northern Arizona University
Flagstaff, Arizona

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Local Information

Invited Speakers

David Bressoud
MAA Pólya Lecturer, Macalester College
Alternating Sign Matrices

Underwood Dudley
DePauw University
Trisecting the Angle

Call for Papers

We invite proposals for 20-25 minute talks. Please submit titles and abstracts by March 19 to: John.Hagood@nau.edu or Janet.McShane@nau.edu

Worshops:

- *ConcepTests* - Deborah Hughes-Hallett, University of Arizona
- *Cross-Stitching in the News* (computer imaging) - Josefina Alvarez, New Mexico State University
- *CUPM Curriculum Guide 2004* - David Bressoud, Macalaster College
- *Facilitating Effective Problem Solving: Best Practices Drawn from the TIMMS Video Study* - Jeffrey Shamatha, Northern Arizona University
- *Revising the AMATYC Crossroads Standards* - Alan Jacobs, Scottsdale Community College
- *Using Computational Science in the Mathematics Classroom* - Dan Russow, et.al., Arizona Western College

Other Sessions:

- Preconference Event: Thursday, April 1, 6:30 pm:

  Formulas for Primes, Underwood Dudley
  (Part of Department Honors Ceremony)

- Contributed Paper Sessions
- Student Paper Sessions

Deadlines:

- Contributed papers (20-25 minutes long) - March 19, 2004
- Preregistration[1] - March 19, 2004
- Banquet reservations and fees[2] - March 19, 2004

[1]Participants may also register at the meeting, but payment for the banquet is required in advance.

[2] Please be sure to indicate choice of entree:
Chicken Provencal, Manicotti, Beef Wellington.

Meeting Sponsors:

The following have provided funds for continental breakfasts each morning, refreshments Friday afternoon and room rental fees.

Addison-Wesley

Brooks/Cole-Thomson Learning

Houghton-Mifflin

McGraw-Hill

Prentice-Hall

W.H. Freeman

Thanks to our sponsors for their generous support. Please visit the displays in AMB 205 during the meeting.

Meeting Contacts:

John Hagood or Janet McShane
Department of Mathematics and Statistics
PO Box 5717
Northern Arizona University
Flagstaff, AZ 86011
Phone (928) 523-6879 (Hagood) or (928) 523-1252 (McShane)
Fax (928) 523-5847

2004 Joint Meeting of the SW Section of the MAA and ArizMATYC

Thursday Evening, April 1	**Wettaw Lecture Hall**			
6:30 – 7:20 pm	*Formulas for Primes* – Underwood Dudley			
Friday Morning, April 2	**Adel Lobby**		**AMB 205**	
8:00 am – 12:00 pm	Registration			
8:00 am – 8:40 am			Continental Breakfast	
8:00 – 11:30 am			Vendor Exhibits and MAA Booksales	
	LA 135		**AMB 206**	**AMB 224**
8:45 am	Welcome – Roy St. Laurent, Department Chair			
9:00 – 10:00 am	Campus Reports			
10:05 – 11:05 am	*ConcepTests* – Deborah Hughes-Hallett			10:10-10:35 *A numerical investigation of semilinear elliptic PDE on Family of Stadions,* Jay Hineman 10:40-11:05 *A generalization of Pappus's Theorem: volumes of solids of revolution - and more* - Frank Attanucci
	AMB 208		**AMB 206**	**AMB 224**
11:10 am – 12:10 pm	ArizMATYC Business Meeting		*The CUPM Curriculum Guide 2004,* David Bressoud	11:10-11:35 *Web-based activities to enhance mathematics learning* - Hamide Dogan-Dunlap 11:40-12:05 *Finding the Crossing Points of a Linear Matrix Inequality* - Shafiu Jibrin
12:10 – 1:25 pm	Lunch on your own			

Friday Afternoon, April 2	**Wettaw Lecture Hall**			
1:25 pm	Recognition of 25-year and 50-year Members			
1:30 – 2:20 pm	*Angle Trisectors*, Underwood Dudley			
	AMB 205			
1:30 – 4:30 pm	Vendor Exhibits, MAA booksales			
	AMB 164		**AMB 206**	**AMB 224**
2:30 – 3:30 pm	2:30 – 2:55 *Characterization of prime numbers* – Emil Schwab 3:00 – 3:25 *Best practices: using classroom technology* – J. Hagood, J. McShane, M. Ratliff		*Cross-stitching in the news* – Josefina Alvarez	2:30-2:55 *Bringing Math to Life: Activities with CBL* - Katie Louchart and Patricia Anderson 3:00-3:25 *Successful Collaborative Teaching: Math Content and Math Methods* - Olga Kosheleva and Ahmed Abdelfattah 3:30-3:55 *Preservice teachers' values and their performance in mathematics* - Melinda Ramos and Mo Pak 4:00-4:25 *Changing students' perception in the study of mathematics, pedagogy and math methods* - Olga Kosheleva, Hamide Dogan-Dunlap, Elena Izquierdo Michael Ratliff
3:40 – 5:00 pm	*Revisiting the AMATYC Crossroad Standards* – Alan Jacobs		3:40 – 4:40 *MyMathLab* – Patrician Anderson and Jason Crossett	

Friday Evening, April 2	**Inn at NAU**			
5:00 – 6:15 pm	Social Hour			
	Ashurst Hall			
6:30 – 8:30 pm	Banquet			

Saturday Morning, April 3	**AMB 205**			
8:00 – 8:50 am	Continental Breakfast			
8:00 – 11:30 am	Vendor Exhibits, MAA Booksales			
	Cline Library Auditorium			
9:00 – 9:50 am	*Alternating Sign Matrices,* David Bressoud			
	AMB 206		**AMB 222**	**AMB 224**
10:00 – 11:00 am			*Using computational science in the mathematics classroom* – Roy Cavanaugh, Renee Macaluso, Brian Karasek, George Montopoli, David Baughman, Rakesh Pangasa, Dan Russow	10:00-10:25 *Using wavelets as a computational tool for homogenization* - Laura Watkins 10:30 - 10:55 *For what functions is* $f^{-1}(x) = 1/f(x)$*?* - Sharon MacKendrick
	AMB 206		**AMB 208**	**AMB 224**
11:10 am - 12:00 pm	*Facilitating effective problem solving: best practices drawn from the TIMSS video study* – Jeffrey Shamatha		MAA SW Section Business Meeting	11:05-11:30 *College Algebra for Science, Mathematics, Engineering and Technology majors* - Sally Jacobs 11:35-12:00 *Heat equation and gradient flows to a new active convex hull model for efficient content-based image retrieval* - Nikolay Sirakov

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Thanks to our sponsors for their generous support:

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Prentice-Hall

W. H. Freeman

Their support provided funding for breakfast fare and meeting room costs. Please visit the displays in AMB 205 during the meeting.

Abstracts

Invited Talks - chronological order

Formulas for Primes - Underwood Dudley, DePauw Univ. (Department Honors Ceremony)
Formulas are good things and primes are fascinating, so formulas for primes should be doubly interesting. This talk surveys the field and contains a moral message. Exactly one theorem is proved. Thursday Evening, April 1, 6:30 - 7:20 pm Wettaw Lecture Hall

Angle Trisectors - Underwood Dudley, DePauw Univ.
Though it's impossible to trisect angles with straightedge and compass alone, there are always people who think that they have done it and cannot be convinced otherwise. This talk surveys trisections (a straightedge with two scratches on it lets you trisect) and trisectors, and contains practical advice. Friday, April 2, 1:30 pm - 2:20 pm, Wettaw Lecture Hall

Alternating Sign Matrices - David Bressoud, Macalester College
This will be an overview of what is known and what is Conjectured about Alternating Sign Matrices, a combinatorial structure with ties to partition theory, representation theory, and statistical mechanics. The talk will include an overview of the story of the Alternating Sign Matrix. Conjecture, a tale that begins with a Lewis Carroll algorithm for evaluating determinants and ends with Kuperberg's realization that the 6-vertex model of Izergin and Korepin held the key to the solution. Saturday, April 3, 9:00 - 9:50 am, Cline Lecture Hall

Workshops - chronological order

ConcepTests - Deborah Hughes-Hallett, University of Arizona
ConcepTests is a kind of interactive teaching that has been very successful in physics and which we have recently adapted for calculus. Friday, April 2, 10:05 am - 11:05 am, LA 135.

The CUPM Curriculum Guide 2004 - David Bressoud, Macalester College
This will be a focus session on the new guide just completed in January. It contains extensive recommendations for undergraduate programs in mathematics. The session will be split between a description of the guide and a time for questions and discussion.
Friday, April 2, 11:10 am - 12:10 am, AMB 206.

Cross-stitching in the news - Josefina Alvarez, New Mexico State University
What is the process by which an image appears on a computer screen? How does a computer deal with colors? What is involved in designing the letters and symbols that appear on the screen? Mathematics plays a central role in answering these and many other questions. Metaphorically, mathematics is the lighting behind the thunder of any technological advance. And behind the mathematics is the common sense approach that initially responded to a human need. Friday, April 2, 2:30 -3:30 pm, AMB 206

Revisiting the AMATYC Crossroads standards - Alan Jacobs, Scottsdale Community College
This session will provide an opportunity to study and react to the most recent draft, version 5, of the Crossroads Revisited, especially recommendations for these areas: Quantitative Literacy, Developmental mathematics, Technical mathematics and Math-intensive programs. Friday, April 2, 3:40 pm - 5:00 pm, AMB 164

MyMathLab - Patricia Anderson, NAU and Jason Crossett, Addison-Wesley
Features of the program MyMathLab will be explained followed by a description of the experience with MyMathLab at NAU over the past several semesters. Friday, April 2, 3:40 pm - 4:40 pm, AMB 206

Using computational science in the mathematics classroom - Roy Cavanaugh, Renee Macaluso, Brian Karasek, George Montopoli, David Baughman, Rakesh Pangasa, Dan Russow, Arizona Western College
Seven instructors from Arizona Western College are participating in the education program of SC-2003. This program is sponsored by the National Computational Science Institute and is funded by NSF, Microsoft, IEEE, Dell, ACM and others. Arizona Western College has participated in this program for two years and would like to share what they have learned with the Arizona math community. Our presentation will begin with a brief overview of the SC-2003 program. We will then provide an introduction to *Interactivate*, an archive of dozens of free math computer simulations ready to be used in the classroom. Also, attendees will be introduced to *Stella*, a dynamical systems modeling software package, which Arizona Western College will use in its College Math Applications courses beginning in fall, 2004. The session will hopefully be hands-on and attendees will leave with information on tools that can be used immediately upon their return to their respective institutions. Saturday, April 3, 10:00 - 11:00 am, AMB 222

Facilitating effective problem solving: best practices drawn from the TIMMS video study - Jeffrey Shamatha, NAU
The Third International Mathematics and Science Study (TIMSS) documented significantly lower mathematics student achievement in United States 8th grade students compared to Japanese students of the same grade. The follow-up TIMSS video study exposed instructional practices that Japanese teachers utilize to engage their students in higher levels of mathematical thinking. These TIMSS findings, which highlight effective Japanese practices, align with the ways that the United States' National Council of Teachers of Mathematics' Principles and Standards for School Mathematics recommendations emphasize increased mathematical problem solving, communication, and reasoning. Viewing another cultural system can help us to better critique our own
practices. This workshop will dissect an effective Japanese problem solving classroom lesson in order to facilitate conversation of strategies that United States' teachers can utilize towards increasing student understanding and achievement with their own students. Saturday, April 3, 11:10 am - 12:00 pm, AMB 206

Contributed Papers - in chronological order

Finding the Crossing Points of a Linear Matrix Inequality - Shafiu Jibrin, NAU
The talk will describe techniques for finding the crossing points of a linear matrix inequality constraint. This is in connection to current research with Caron and Traynor on developing a set covering method for linear matrix inequality constraints. The work has potential applications to solving large semidefinite programming problems which seek to optimize a linear objective function subject to a system of linear matrix inequality constraints. Friday, April 2, 10:10-10:35, AMB 224

A generalization of Pappus's Theorem: volumes of solids of revolution - and more - Frank Attanucci, Scottsdale Community College
Let C be the closed contour: $x = x(t)$, $y = 0$, $z = z(t)$, for $a \leq t \leq b$, where $x(t) \geq 0$ on $[a, b]$. Assume that C is sectionally smooth and that it satisfies the hypothesis of Green's theorem in the plane. Let S be the surface (a "generalized torus") produced when C revolves around the *z*-axis. I refer to C as the "generator" of S. In this paper, I derive an integral formula for the volume *V* of the region having S as its boundary. Next I indicate how this volume formula can be modified when the generator of S changes in shape and/or position as it revolves around the *z*-axis. I show how to apply the formula in several "typical cases"– including, for example, those in which the generator C *(i)* moves vertically (parallel to the *z*-axis), *(ii)* moves radially (away from or towards the *z*-axis), or *(iii)* continuously changes shape (i.e. "morphs") as it revolves around the *z*-axis. Finally, I prove a rotational analogue of Cavalieri's Principle (for solids), which will be shown to include Pappus' theorem as a special case. The calculations of volume in the various illustrative examples in this paper were carried out using the computer algebra system (CAS) Maple 6. These calculations have been placed in an accompanying Maple worksheet, included here as an Appendix. Friday, April 2, 10:40-11:05, AMB 224

Web-based activities to enhance mathematics learning - Hamide Dogan-Dunlap, UTEP
Presentation will focus on pedagogy of learning and teaching abstract concepts via inquiry based online environments while discussing an example of web-based *Mathematica* supported linear algebra activities. Content and pedagogy issues that may occur while implementing inquiry based online learning environments will also be considered.
Friday, April 2, 11:10-11:35, AMB 224

A numerical investigation of semilinear elliptic PDE on Family of Stadions, Jay Hineman, NAU
We consider the semilinear elliptic PDE $\Delta u+\lambda u+f(u) = 0$ with zero-Dirichlet boundary condition on a family of regions, namely stadions. Linear problems on such regions have been widely studied in the past. We seek to observe the corresponding phenomena in our nonlinear setting. Using the Gradient Newton Galerkin Algorithm (GNGA) of Neuberger-Swift, we investigate bifurcation and nodal structure of solutions.
Using both the dimension of the stadions and the value λ as parameters, we analyze the bifurcation and symmetry of solutions. In particular, we find that the so-called crossing and avoided crossing of eigenvalues as the

dimension of the stadions vary influence the symmetry and structure of nonlinear solutions in a natural way. Friday, April 2, 11:40-12:05, AMB 224

A Characterization of Prime Numbers - Emil Schwab, UTEP, and Gabriela Schwab, El Paso Community College
Using multiplicative arithmetic functions, we give a new characterization of prime numbers. Friday, April 2, 2:30-2:55 pm, AMB 164

Bringing Math to Life: Activities with CBL - Katie Louchart and Patricia Anderson, NAU
Several activities using the CBL (Calculator Based Laboratory) will be demonstrated. This device allows the instant collection of real-world data, which can then be retrieved and analyzed using a graphing calculator. The activities presented will be geared toward calculus and precalculus students. A list of resources will be provided. Friday, April 2, 2:30-2:55 pm, AMB 224

Best practices: using classroom technology - J. Hagood, J. McShane, M. Ratliff, NAU
Several uses of classroom computer display units will be presented. Those present will be invited to participate in a project to identify valuable internet applications for compilation and general distribution.
Friday, April 2, 3:00-3:25 pm, AMB 164

Successful Collaborative Teaching: Math Content and Math Methods - Olga Kosheleva and Ahmed Abdelfattah, UTEP
We are discussing various techniques that were used to devise a successful collaborative approach to teaching math content and math methods courses. Samples of math projects, preservice teachers' presentations as well as videoclip from student's micro-teaching at local middle schoolwill be shown and discussed.
Friday, April 2, 3:00-3:25 pm, AMB 224

Pre-service teachers' values and their performance in mathematics - Melinda Ramos and Mo Pak, UTEP
Presentation describes a pedagogical approach implemented in education and mathematics courses offered in a cohort setting for pre-service teachers, and discusses the findings of an ongoing study investigating the effect of the approach on pre-service teachers' attitude towards and perception of mathematics. One of the goals of the approach is to enhance pre-service teachers' mathematical knowledge by making positive changes on students' attitude towards and perception of mathematics. It is expected that positive attitude towards mathematics will result in increase in motivation and confidence to learn mathematics and think mathematically
. Friday, April 2, 3:30-3:55 pm, AMB 224

Changing students' perception in the study of mathematics, pedagogy and math methods - Olga Kosheleva, Hamide Dogan-Dunlap, Elena Izquierdo, UTEP
We are evaluating what factors are influencing the successful implementation of a pedagogical approach An Integrated, Collaborative, Field-Based Approach To Teaching and Learning Mathematics. The evaluations are done using the results from teaching several Block 1 classes for preservice teachers at the University of Texas at El Paso. Block I offers a pedagogy, math methods,

math content courses as well as internship at local elementary schools. Various levels of integration, collaboration and team-teaching were used in different Block 1 classes. Friday, April 2, 4:00-4:25 pm, AMB 224

Order-statistics, uniform distributions, and confidence intervals: using order statistics in the classroom - Michael Ratliff, NAU

In introductory statistics courses, confidence intervals for the population mean and population proportion are constructed by considering the sampling distribution of the sample mean and the sample proportion. Both of these sampling distributions are from the family of normal distributions and are thus symmetric in form. That is, the middle 95% of these distributions is symmetric with respect to the mean, and gives rise to the minimal length confidence for these parameters. The situation is quite different when the sampling distribution is asymmetric, in this case, the middle 95% of the distribution will not, in general, give rise to the minimal length confidence interval.

Let us take a simple random sample of size, n, from the uniform distribution on [0, b], where b is unknown. Our problem is to construct a minimal length confidence interval for b, using **order statistics** as estimators. We consider four methods of solution; one method is a graphical method, another method is an application of Newton's Method, using LaGrange Multipliers, to obtain the solution numerically. The third method uses MS-Excel's Solve, and the fourth uses techniques of Linear Programming, to transform the problem into one solvable by the Simplex Method.

We'll also use Order Statistics to illustrate such statistical estimation ideas as expectation, bias, efficiency, and consistency. Friday, April 2, 4:30-4:55 pm, AMB 224

Using wavelets as a computational tool for homogenization - Laura Watkins, Glendale Community College

Since the cost of petroleum fluctuates widely, it is advisable to optimize extraction of oil and other hydrocarbon products from exiting oil reserves. Due to the costs involved in recovering oil from a reservoir, predicting reservoir performance can be a useful tool for determining whether continued extraction might be profitable. This can be done using computer simulations of the physical processes involved such as pressure/head, fluid velocities, and so forth. Fluid flow within a reservoir occurs at a very small scale relative to the size of the reservoir. The size difference makes performing simulations at the physically appropriate scale unfeasible. To make the problem of numerical simulation of flow in heterogeneous petroleum reservoirs more manageable we can average or up-scale physical parameters such as porosity and permeability. Homogenization is a method of averaging that incorporates fluid flow in the averaging process. We will consider averaging the permeability parameter via homogenization using wavelets as a tool. Saturday, April 3, 10:00-10:25 am, AMB 224

For what functions is $f^{-1}(x) = 1/f(x)$? - Sharon MacKendrick, Dine College

Several years ago, Henry, a college student, posed the following question: "I finally got it through my thick

skull that $f^{-1}(x) \neq 1/f(x)$. My question is: Are there any functions for which it is true that $f^{-1}(x) = 1/f(x)$?" The answer to this question turned out to be rather surprising, and will be presented in the talk. Saturday, April 3, 10:30 - 10:55 am, AMB 224

College Algebra for Science, Mathematics, Engineering and Technology majors - Sally Jacobs, Scottsdale Community College
This year the mathematics department at Scottsdale Community College is piloting a special topics college algebra course designed for science, mathematics, engineering and technology majors. The course is designed to build skills in algebraic symbolic manipulation that students need for success in the SMET areas. This 1-credit course is a co-requisite with a 4-credit college algebra course that emphasizes a functions approach. The course outline, assessment instruments, and preliminary evaluation data will be shared at this session. Saturday, April 3, 11:00-11:25 am, AMB 224

Heat equation and gradient flows to a new active convex hull model for efficient content-based image retrieval - Nikolay Sirakov, NAU
Saturday, April 3, 11:30-11:55 am, AMB 224

Registration
Southwestern Section of the MAA and ArizMATYC
Flagstaff, Arizona, April 2-3, 2004

Please submit the form below before March 19, 2004. This will help us to have a reasonable count for rooms, supplies and meals. After that date, meeting registration will still be accepted. Banquet seating is limited, so although you may request banquet tickets later than March 19, 2004, there is no guarantee that seats will be available. You may also download the form for easier entry.

Name (as you want it on name tag): _____

Professional Affiliation: _____

Nature: 4 yr college/university __ 2 yr college __ school __ business/government __

Position: Faculty __ Undergraduate Student __ Graduate Student __ Other (specify) __

Memberships (check all that apply): MAA __ AMATYC __ ArizMATYC __ NCTM __
AATM ___ AMS ___ SIAM ___ AWM ___ Other ___

Mailing Address: _____

_____

_____

_____

Telephone: _____ Fax: _____

e-mail: _____

Parking Permit Desired _____

Registration Fee $10 __ Banquet (number) _____ at $20 each* Total Enclosed _____

Banquet Entrée: Chicken Provencal ____ Manicotti (vegetarian) ____ Beef Wellington ____

*** Banquet fees should arrive by March 19. It may not be possible to honor later requests.**

Make checks payable to: MAA Southwestern Section

Send to:

John Hagood
Department of Mathematics and Statistics
PO Box 5717

Northern Arizona University
Flagstaff, AZ 86011-5717
John.Hagood@nau.edu

Travel Information

Annual Meeting
Southwestern Section of the MAA
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April 2-3, 2004
Northern Arizona University
Flagstaff, Arizona

Public Transportation

Flagstaff is served by **Amtrack and America West Express**. **Open Road Tours** provides convenient shuttle service from Phoenix Sky Harbor Airport. Interstates 17 and 40 meet just south of the NAU campus.

Travel by Automobile

Via I-17

Proceeding north on I-17, the interstate turns into South Milton road. Turn right on University before the Target store, and then left on Knoles at the light. The Adel Mathematics Building (#26) is ahead and to the right at the next four way stop. Parking Lot #15 is adjacent to the building.

Via US 89

Traveling north on US 89A (through Oak Creek Canyon), continue through the intersection with University Heights/Lake Mary Drive (where there is a traffic signal) and under the interstate (I-40). Turn right at McConnell Circle and proceed under the interstate (I-17). Turn left onto Knoles Drive (the first left available), drive up the hill and down the other side to the traffic light at the intersection with University Drive. Then continue on Knoles to the first 4-way stop. The Adel Mathematics Building is to the right as is parking lot #15. (If you miss McConnell Circle, turn right onto Forest Meadows, then left onto South Milton road and proceed as in the I-17 route above.)

Traveling from the north of Flagstaff south on US 89, continue through town to the downtown area. Turn left onto Beaver at a traffic signal, proceed through the next traffic signal at Butler and turn right at the next street (Dupont) and then left onto Knoles (where you must turn). Proceed south on Knoles to the second 4-way stop. The Adel Mathematics Building (#26) is on your left as is parking lot #15.

Via I-40

If you travel via I-40, take Exit 195 to Flagstaff/Northern Arizona University and proceed as above. (If you find yourself on McConnell Circle, turn left onto Knoles Drive, drive up the hill and down the other side to the traffic light at the intersection with University Drive. Then continue on Knoles as above.) The meeting headquarters will be in the Adel Mathematics Building, building # 26.

Parking

Permits will be required to park on campus on Friday, April 2, but not on Saturday, April 3. Permits will be avaiable at the registration desk in the lobby of the Adel Mathematics Building. These permits are valid for lots P1 (off of Dupont on the north end of campus), P13, P14, P15 (adjacent to the Adel Mathematics Building, but small and often full after 9:00) and P29. Consult the maps below for locations.

[Parking Lot and Building Map]
[Campus Maps]

[Main Meeting Page]

Meeting Contacts

John Hagood or Janet McShane
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PO Box 5717
Northern Arizona University
Flagstaff, AZ 86011
Phone (928) 523-6879 (Hagood) or (928) 523-1252 (McShane)
Fax (928) 523-5847

Section Meeting Page

Lodging Information

Annual Meeting
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April 2-3, 2004
Northern Arizona University
Flagstaff, Arizona

The following room rates were current as of January, 2004. Please mention the MAA meeting at NAU and ask for the government rate. Days Inn and Embassy Suites have set aside blocks of rooms at the listed rates until March 11 and March 1 respectively. When two rates are given, the second is the rate for double occupancy. You may wish to consult the City of Flagstaff web site, or the Flagstaff Convention and Visitor's Bureau site for additional lodging information.

Lodging	Address	Phone No.	Rate(s)
Days Inn*	1000 W. Route 66	928-774-5221	39.95
Embassy Suites**	706 S. Milton Rd	928-774-4333	79.00
AmeriSuites	2455 S. Beulah Blvd	928-774-8042	69.00
Econo Lodge	914 S. Milton Rd	928-774-7326	36.95
Fairfield Inn (Marriott)	2005 S. Milton Rd	928-773-1300	59.00
Hampton Inn & Suites	2400 S. Beulah Blvd	928-913-0900	79.00
Hilton Garden Inn	350 W. Forest Meadows St	928-226-8888	81.99
La Quinta Inn & Suites	2015 S. Beulah Blvd	928-556-8666	50.00
Motel 6	2745 S. Woodlands Village Blvd	928-779-3757	32.99-38.99
Quality Inn	2000 S. Milton Rd	928-774-8771	55.00
Radisson Woodlands	1175 W. Route 66	928-773-8888	69.00
Sleep Inn	2765 S. Woodlands Village Blvd	928-556-3000	51.99-56.99
Comfort Inn	2355 S. Beulah Blvd	928-774-2225	79.95

* Block of rooms reserved at this rate until March 11.

** Block of rooms reserved at this rate until March 1.

Main Meeting Page

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Section Meeting Page

Banquet Information

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Northern Arizona University
Flagstaff, Arizona

Please submit banquet fees by March 19, 2004, using the registration form to insure an accurate count.

April 2, 2004

5:00 - 6:15 Social Hour - No host bar, The Inn at NAU (building # 33)

6:30 - 8:30 Dinner - Ashurst Hall (second floor, building # 11)

Dinner activity led by Games and Puzzle Master, Steve Wilson (NAU)

Banquet Menu

Choice of Chicken Provencal, Manicotti (vegetarian), Beef Wellington
Mesculan Greens
Fresh Seasoned Vegetables
Chef's Choice of Potato, Rice or Pasta
Fresh Baked Rolls
Coffee, Decaf Coffee, Ice Tea, Ice Water
Raspberry White Chocoate Mousse Parfait

[Main Meeting Page]

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Section Meeting Page

Other Events

Annual Meeting
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Northern Arizona University
Flagstaff, Arizona

- Department Honors Presentation 6:30 pm, Thursday, April 1, Wettaw Lecture Hall (#88)

Formulas for Primes, Underwood Dudley

- Flagstaff Attractions
- Red Rock country (Oak Creek Canyon and Sedona) south of Flagstaff on US 89A.
- The Grand Canyon - about 80 miles north of Flagstaff on US 180.
- Numerous other

Northern Arizona attractions.

Main Meeting Page

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Site Information

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Northern Arizona University
Flagstaff, Arizona

Meeting Headquarters

Adel Mathematics Building (#26), Room 205, will serve as the meeting headquarters. This room will contain the registration station, publishers' displays, MAA book sales, and complimentary refreshments. Sessions and talks will be held in this building and others on campus as listed in the program.

Parking

Permits will be required to park on campus on Friday, April 2, but not on Saturday, April 3. Permits will be available at the registration desk in the lobby of the Adel Mathematics Building. These permits are valid for lots P1 (off of Dupont on the north end of campus), P13, P14, P15 (adjacent to the Adel Mathematics Building, but small and often full after 9:00) and P29. Consult the maps below for locations.

Directions to Campus

Campus Maps

Main Meeting Page

Meeting Contacts

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