

# Indiana Section of the Mathematical Association of America

## Fall 2004 Newsletter



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# Upcoming Meeting Schedule

## Section Meetings

- *Spring 2005*: Indiana-Purdue University Fort Wayne, (Fort Wayne, IN), April 1-2, 2005
- *Fall 2005*: Depauw University (Greencastle, IN), November 5, 2005
- *Spring 2006*: Taylor University (Upland, IN), March 17-18, 2006
- *Fall 2006*: Valparaiso Univeristy (Valparaiso, IN), TBA
- *Spring 2007*: University of Indianapolis (Indianapolis, IN)
- *Fall 2008*: Manchester College (?)

## National Meetings

- *Winter 2005*: AMS-MAA-SIAM Joint Meetings, Atlanta, GA, *January 5-8, 2005*
- *Summer 2005*: Mathfest, Albuquerque, NM, *August 4-6, 2005*
- *Winter 2006*: AMS-MAA-SIAM Joint Meeting, San Antonio, TX, *January 12-15, 2006*
- *Summer 2006*: MathFest, Knoxville, TN, *August 10-12, 2006*

## Other Meetings

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## Statement from Amos Carpenter (Chair of the Indiana Section)

I am excited about our Fall Section Meeting at the University of Evansville, Evansville, Indiana. This is a Tri-Section Meeting organized by the MAA Sections from Illinois, Indiana, Kentucky, and the Midwest History of Mathematics Group. We will have three invited speakers -- **Ron Graham** (President of the Mathematical Association of America), **Brian Conrey** (Executive Director, American Institute of Mathematics), and **Woody Dudley** (formerly at Depauw University). The Friday after dinner invited presentation will be given by Woody Dudley. He will be talking about *Angle Trisectors*, which is appropriate for a Tri-Section Meeting. The Saturday morning invited presentation will be given by Brian Conrey, who will talk about *Primes and zeros: a million dollar mystery*. The Saturday afternoon invited presentation will be given by Ron Graham, who will talk about *Archimedes, Combinatorics and the Stomachion*. We will also have a wide variety of contributed talks on topics from both mathematics and the history of mathematics. I think everyone will be able to find something to match their mathematical taste.

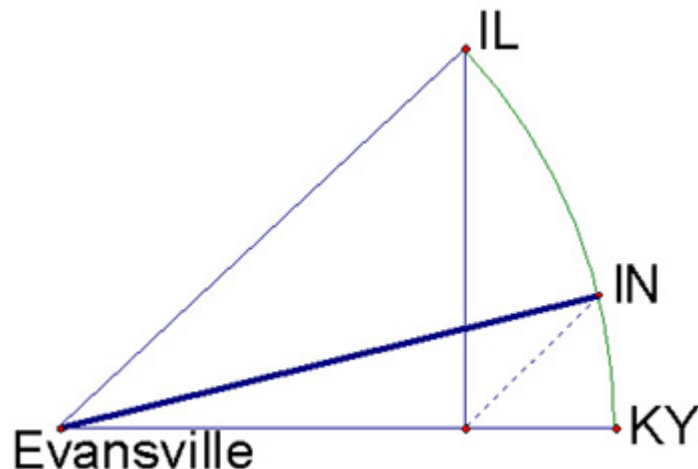
On Friday and Saturday there will be a Project NExT Workshop run by Will Turner and Tom Langley. There will be a follow-up workshop during our Spring Meeting (April 1-2, 2005) at Indiana University-Purdue University Fort Wayne. If your department has new faculty and/or tenure-track faculty, please invite them to participate in this program. There will also be a PMET (Preparing Mathematicians to Educate Teachers) workshop during our Spring 2005 Meeting. The invited speaker for the Spring 2005 Meeting is Jim Tattersall. Registration for this meeting will be done online through the section's website.

Another highlight of this Tri-Section Meeting is the individual mathematics competition (on November 5, 2004) for undergraduate students. This competition will be a multiple choice examination. It will be a one-time competition. We will host the annual Indiana College Mathematics Competition (ICMC) on Friday, April 1, 2005 at Indiana University-Purdue University Fort Wayne.

I am pleased to see all of the campus news in this newsletter. Please continue to send all the news to David Finn, our Newsletter Editor. It is nice to be able to read what is happening on our campuses.

I look forward to seeing you all at the University of Evansville.

***TRI-SECTION MEETING of the MAA  
ILLINOIS, INDIANA, and KENTUCKY SECTIONS  
AND  
MIDWEST HISTORY of MATHEMATICS***



**UNIVERSITY OF EVANSVILLE**

Evansville, Indiana

November 5-6, 2004

The featured speaker on Friday is:

**Woody Dudley** formerly at Depauw University who will reprise his well-known talk on trisectors.

The featured speakers on Saturday are:

**Ron Graham**, President of Mathematical Association of America  
and

**Brian Conrey**, Executive Director, American Institute of Mathematics.

**MEETING REGISTRATION:**

Registration can be made online at [INMAA Online Registration](#). The regular meeting registration fee, if you register before October 8, is \$15. After October 8, the registration fee is \$20. There is no registration fee for students.

### Directions to the University of Evansville Campus

**From the North:** Follow US 41 South into Evansville to Lincoln Avenue. Turn left on Lincoln Avenue and go approximately one half mile. The University sits on the left and parking is available in the front oval, or in Lot C. To access Lot C, turn left at the stoplight onto Weinbach Avenue and then another immediate left into the lot.

**From the South:** Follow US 41 North into Evansville. Turn right onto Lincoln Avenue and travel approximately one half mile. The University sits on the left and parking is available in the front oval, or in Lot C. To access Lot C, turn left at the stoplight onto Weinbach Avenue and then another immediate left into the lot.

**From the East:** Taking Interstate 64 West towards Evansville, merge onto exit number 29A, this is I-164 South. Drive about thirteen and a half miles and merge onto exit number 7B, IN-66 West (or the Lloyd Expressway West). Turn right, and head west about 4 miles. Take the Weinbach Avenue exit, and turn left at the stoplight. Go through the next 2 stoplights, staying on Weinbach Ave., about one half of a mile. Turn right at the third stoplight, onto Lincoln Avenue. The University of Evansville is about a half a block west and sits on the right.

**From the West:** Taking Interstate 64 East towards Evansville, merge onto US 41 South via exit number 25A into Evansville. Travel about 14 miles after exiting and turn right onto Lincoln Avenue. Go approximately one half mile. The University sits on the left and parking is available in the front oval, or in Lot C. To access Lot C, turn left at the stoplight onto Weinbach Avenue and then another immediate left into the lot.

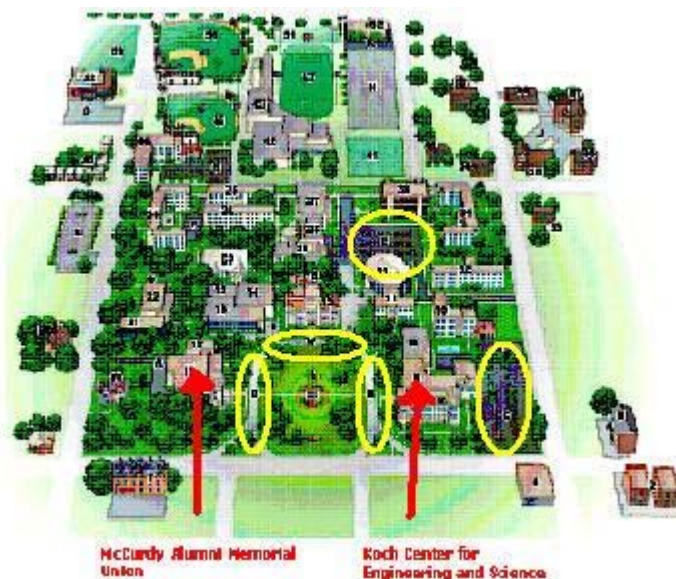
### Campus Map

A campus map of the University of Evansville is shown to the right, and can be found at

<http://www.evansville.edu/aboutue/campusmap.asp>

### Parking on Campus

On Friday and Saturday, participants can park where they find space. Security will not be giving citations on these days due to the conference. Parking lots close to the meeting locations are circled in yellow. The buildings used during the conference are designated with red arrows.



### Onsite Registration

The MAA meeting will be held in the Koch Center for Engineering and Science. On campus registration will be held in the Koch Center Atrium beginning at 3:00 p.m. on Friday and 7:00 a.m. on Saturday. The onsite registration fee is \$20. All participants, including students, are expected to sign-in at the registration table.

### Meal Reservations

Dinner will be served in the McCurdy Alumni Memorial Union Building. Dinner will be a buffet and the cost is \$20 per person. Lunch will be served in the McCurdy Alumni Memorial Union Building. Lunch will be a buffet and the cost is \$9 per person. Advanced reservation is required for lunch and dinner and must be made no later than October 8, 2004. Reservations must be made online at [INMAA Online Registration](#).

### Math Competition

Undergraduates, join us November 5, 2004 for a special mathematics competition commemorating the Trisection Meeting! This competition will consist of multiple choice questions over topics ranging throughout the undergraduate mathematics curriculum. Scoring will be done by taking the number of questions answered correctly and subtracting one-quarter of the number of questions answered incorrectly. There will be no penalty for answers left blank. We will have awards for the overall winner and the top three finishers by class. Also, all who compete will receive some recognition of participation. The competition is free. Preregistration is required by October 8, 2004; please e-mail <mailto:maa@evansville.edu?subject=COMPETITION REGISTRATION> with the subject line "COMPETITON REGISTRATION". Include in the body of the e-mail your name, school, and class (freshman, sophomore, junior, senior). Please be aware that the competition registration is separate from the conference registration. To register for the conference and to make reservations for meals, you need to visit the Indiana MAA website (<http://www.rose-hulman.edu/~rader/INMAA/>)

### Area Accommodations

#### **Rooms Reserved at the Following Hotels: \*All rooms are individual pay\***

Executive Inn                      877-424-0888                      <http://www.executiveinnevansville.com/>

40 non-smoking only rooms, 37 double and 3 king suites, at \$55/night

Executive Inn offers a shuttle between their hotel and UE during the conference

Reservation cut off date: 10/6/2004

Casino Aztar Hotel                      800-544-0120                      <http://www.casinoaztar.com/hotel/>

40 rooms, 30 non-smoking and 10 smoking, \$65/night

Reservation cut off date: 10/15/2004

Refer to block #2146 or UE Tri-state Math Association block

Fairfield Inn East                      812-471-7000

800-228-2800

40 rooms: 30 non-smoking, 10 smoking and 20 double rooms and 20 king rooms  
at \$55/night

Reservation cut off date: 10/15/2004

Hampton Inn                      812-473-5000

800-426-7866

40 rooms: 20 king and 20 double at \$66/night

Reservations made by calling 1-800-HAMPTON and asking for group code - TSM

Reservation cut off date: 10/15/2004

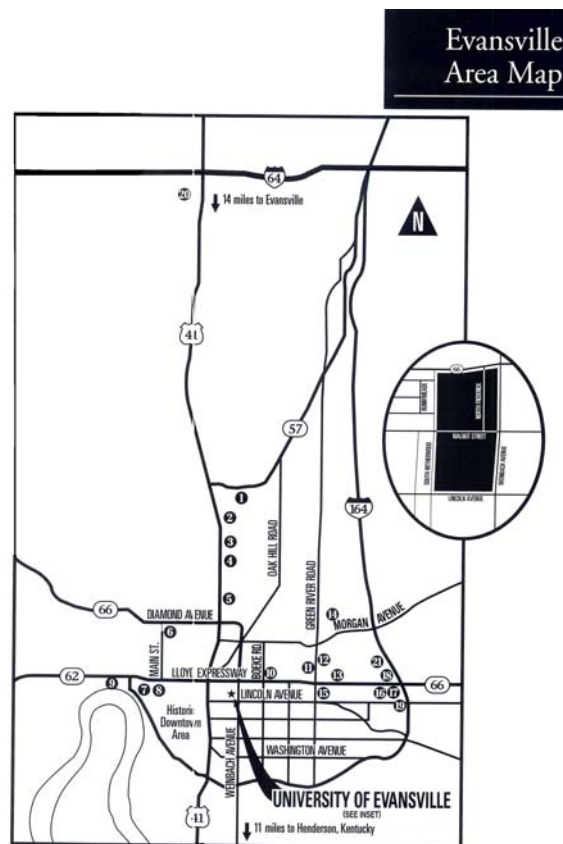
## Other Area Hotels

River House	812-425-3176	Lee's Inn	812-477-6663
Radisson Hotel	812-424-8000		800-733-5337
Marriott Hotel	812-867-7999	Comfort Inn	812-477-2211
	800-228-9290	Drury Inn East	812-471-3400
Holiday Inn - Airport	812-424-6400		800-378-7946
	800-465-4329	Red Roof Inn	812-476-3600
Drury Inn North	812-423-5818		800-843-7663
Holiday Inn	812-473-0171	Residence Inn	812-471-7191
	800-465-4329		800-331-3131
Signature Inn	812-476-9626	Baymont Inn	812-477-2677
	800-822-5252	Best Western	812-471-3414
Holiday Inn Express	812-867-1100	Studio Plus	812-479-0103

## Student Accomodations

Limited student housing will be available on a first come/first serve basis. Students are expected to bring sleeping bag, towels, etc. Interested students should email their name, year in school, affiliation and gender to <mailto:maa@evansville.edu?subject=Conference Student Housing>.

Area map located below with larger version at <http://www.evansville.edu/docs/areamap.pdf>.



**Additional Info:** [maa@evansville.edu](mailto:maa@evansville.edu)

**Program for  
Tri-Section MAA Meeting of the  
Illinois, Indiana, and Kentucky Sections  
and  
Midwest History of Mathematics**

**Friday and Saturday, November 5-6, 2004 University of Evansville, Evansville, Indiana**

**INVITED PRESENTATIONS**

*Friday After Dinner Talk*

**Angle Trisectors**

Woody Dudley, formerly of Depauw University

*Since 1837 it has been known that it is impossible to trisect angles with straightedge and compass alone. Nevertheless, people continue to try and some think that they have succeeded. This talk is a survey of trisections and trisectors and contains practical suggestions for dealing with them.*

*Saturday Morning Talk*

**Primes and zeros: a million dollar mystery**

Brian Conrey, Executive Director, American Institute of Mathematics

*The Riemann Hypothesis has received a lot of publicity recently. Notably, three popular books on the subject appeared last year. In this expository talk, we will describe some of the issues relating prime numbers, the Riemann Hypothesis, and Random Matrix Theory in a way that will, hopefully, convince the audience that the Riemann Hypothesis is indeed worthy of all this attention.*

*Saturday Afternoon Talk*

**Archimedes, Combinatorics and the Stomachion**

Ron Graham, President of the Mathematical Association of America

*Greek mathematics has long been known for its fundamental contributions to geometry and diophantine equations, for example. However, there is now evidence that ancient Greek mathematicians were also interested in various combinatorial problems. In this talk, I will describe some recent work exploring this theme which arose from the analysis of a puzzle called the Stomachion, which was recently discovered in a long lost manuscript written by Archimedes.*

Schedule and Abstracts of the Contributed Papers follow

## Friday, November 5, 2004

Time	Event	Place
9:00-4:00	<b>Project NexT-IN Workshop</b> William Turner, Wabash College Thomas Langley, Rose-Hulman Inst. of Technology	Room 200 in McCurdy Alumni Memorial Union Building
3:00-4:30	Meeting Registration	Koch Center Foyer
3:00-6:00	MAA Book and Publishers' Book Sale	Koch Center Atrium
4:00-6:15	Mathematics Competition	KC133
4:30-5:30	Indiana MAA Executive Board Meeting	KC124

Next Three Tables are for Parallel Sessions

Time	Event	Place
4:30-4:55	<b>Should Number Theorists Study Set Theory?</b> Andy Martin, University of Kentucky	KC100
5:00-5:25	<b>The number of times an anonymous rule violates independence in the 3X3 case</b> Robert Powers, University of Louisville	KC100
5:30-5:55	<b>A Mathematical Tour of England</b> Herbert Kasube, Bradley University	KC100

Time	Event	Place
4:30-4:55	<b>Using Mathematica in Mathematical Programming</b> Dirk Schlingman, Eastern Kentucky University	KC101
5:00-5:25	<b>Grundy Values for Combinatorial Games via the Von Neumann Theory</b> Robert Riehemann, Thomas More College	KC101
5:30-5:55	<b>The N+1 Queens Problem</b> Doug Chatham, Morehead State University	KC101
6:00-6:15	<b>Counting on the Art of James Mai</b> Daylene Zielinski, Bellarmine University	KC101

## Friday, November 5, 2004

Time	Event	Place
4:30-4:55	<b>Using Mathematica in Mathematical Programming</b> Dirk Schlingman, Eastern Kentucky University	KC131
5:00-5:25	<b>Grundy Values for Combinatorial Games via the Von Neumann Theory</b> Robert Riehemann, Thomas More College	KC131
5:30-5:55	<b>The N+1 Queens Problem</b> Doug Chatham, Morehead State University	KC131
6:00-6:15	<b>Counting on the Art of James Mai</b> Daylene Zielinski, Bellarmine University	KC131

Time	Event	Place
4:30-4:55	<b>Some results related to the integral mean value theorem</b> Prasanna Sahoo, University of Louisville	KC131
5:00-5:25	<b>Covering Regular Maps on Affine Surfaces</b> Christopher Schroeder, Morehead State University	KC131
5:30-5:55	<b>Cubic Curves in the Plane of a Triangle</b> Clark Kimberling, University of Evansville	KC131
6:00-6:15	<b>Finding Central Sets of Tree Structures in Synchronous Distributed Systems</b> Dan Hrozencik, Chicago State University	KC131

Time	Event	Place
6:30-7:30	BANQUET	Dunigan Hall in the Union Building
7:30-7:45	Awards	Dunigan Hall in the Union Building
7:45-8:45	<b>Angle Trisectors</b> Woody Dudley, formerly at Depauw University	Dunigan Hall in the Union Building

## Saturday, November 6, 2004

Time	Event	Place
7:30-8:30	Meeting Registration	Koch Center Foyer
8:00-3:00	MAA Book and Publishers' Book Sale	Koch Center Atrium

Next Three Tables are Parallel Sessions

Time	Event	Place
8:30-8:55	<b>Mathematics and the Maya</b> Patricia Kiihne, Illinois College	KC131
9:00-9:25	<b>Values for Partially Defined Cooperative Games</b> David Housman, Goshen College	KC131
9:30-9:55	<b>Graphical Approach and Property Tests in Fair Division Problems with Indivisible Objects and Monetary Compensation</b> Aeron Huang, Goshen College	KC131

Time	Event	Place
8:30-8:55	<b>Quantitative Literacy: Theory into Practice</b> Rick Gillman, Valparaiso University	KC101
9:00-9:20	<b>A Teaching-Centered Math Content Course for Pre-Service Elementary Students</b> Christine Leverenz, Georgetown College	KC101
9:30-9:50	<b>A Mathematics Educator in a Mathematics Department: A Case Study</b> Paula Stickles, Indiana University	KC101

Time	Event	Place
8:30-8:55	<b>The Mathematical Foundations of Shape Perception</b> Morteza Seddighin, Indiana University East	KC100
9:00-9:25	<b>Leonhard Euler, Hopeful Trisector, or: What Euler's Line Was Really For</b> Homer White, Georgetown College	KC100
9:30-9:50	<b>al-Biruni's trigonometry: one millenium later</b> Daniel Otero, Xavier University	KC100

Welcome, Awards and Invited Address

<b>Time</b>	<b>Event</b>	<b>Place</b>
10:00-10:15	Welcome by the President of the University of Evansville Dr. Stephen G. Jennings	Cokes Lecture Hall, Hyde Hall
10:15-10:30	Student Awards Joe Stickles, University of Evansville	Cokes Lecture Hall, Hyde Hall
10:30-11:30	<b>Primes and zeros: a million dollar mystery</b> Brian Conrey Executive Director, American Institute of Mathematics	Cokes Lecture Hall, Hyde Hall
11:35-12:25	<b>LUNCH</b>	Dunigan Hall in the Union Building

Next Three Tables are Parallel Sessions

<b>Time</b>	<b>Event</b>	<b>Place</b>
12:30-12:55	<b>Tight Subdesigns of the Higman-Sims Design</b> Steven Klee, Valparaiso University	KC131
1:00-1:25	<b>Pentalpha -- History and Extensions</b> Eric Nelson, Butler University	KC131
1:30-1:55	<b>Comparing Classes of Finite Structures</b> Wesley Calvert, University of Notre Dame	KC131

<b>Time</b>	<b>Event</b>	<b>Place</b>
12:30-12:55	<b>Learning Mathematics by Using and Creating Examples</b> Mary Porter, St. Mary's College David Housman, Goshen College	KC101
1:00-1:25	<b>Using Reading Assignments in First Semester Calculus</b> Joe Stickles, University of Evansville	KC101
1:30-1:55	<b>Using On-Line Courseware to Implement Step-Wise Learning for Math Students</b> Ken Luther, Valparaiso University	KC101

<b>Time</b>	<b>Event</b>	<b>Place</b>
12:30-12:55	<b>Equations in Arabic Algebra</b> Jeff Oaks, University of Indianapolis	KC100
1:00-1:25	<b>For the Recorde, the coming of mathematical tests to the British Isles</b> Michael Woodzak, William Woods University	KC100
1:30-1:55	<b>Writing a History of the Kentucky Section MAA</b> Richard Davitt, University of Louisville Leanne Faulkner, Kentucky Wesleyan University	KC100

Invited Address

<b>Time</b>	<b>Event</b>	<b>Place</b>
2:00-3:00	<b>Archimedes, Combinatorics and the Stomachion</b> Ron Graham, President of the MAA	Cokes Lecture Hall, Hyde Hall

# Abstracts for the Tri-Section Meeting

**Friday, November 5, 2004**

4:30-4:55 in KC100

## **Should Number Theorists Study Set Theory?**

Andy Martin, University of Kentucky

*This expository talk discusses Kirby and Paris's 1982 result that Goodstein's Theorem (1944) is provable in Zermelo-Fraenkel set theory, but not in Peano Arithmetic. (Goodstein's Theorem is number theoretic and is expressible in PA.)*

5:00-5:25 in KC100

## **The number of times an anonymous rule violates independence in the $3 \times 3$ case**

Robert C. Powers, University of Louisville

*A voting rule takes as input a collection of linear orders and outputs a complete binary relation. A well known example is Borda's rule. A rule is anonymous if any permutation of the input leads to the same output relation. If an anonymous rule  $f$  always outputs a transitive relation and preserves pairwise unanimity, then, by Arrow's theorem,  $f$  violates the condition of independence. The condition of independence states that if two inputs  $\pi$  and  $\pi'$  agree when restricted to a pair  $\{x, y\}$ , then the outputs  $f(\pi)$  and  $f(\pi')$  agree when restricted to  $\{x, y\}$ . In this talk, we will present a result that gives lower and upper bounds for the number of times an anonymous rule violates independence in the case of 3 voters and 3 alternatives.*

5:30-5:55 in KC 100

## **A Mathematical Tour of England**

Herbert Kasube, Bradley University

*In the Spring of 2004 MAA sponsored a mathematical study tour of England. This talk presents some of the speaker's experiences on this trip.*

4:30-4:55 in KC101

## **Using Mathematica in Mathematical Programming**

Dirk Schlingmann, Eastern Kentucky University

*The technological computing software, Mathematica, has greatly enhanced the way we do, teach, learn, and research mathematics. Designing algorithms to encapsulate complex problems is a new trend in mathematics, relieving mathematicians from doing tedious, repetitive calculations by hand. I will present a few Mathematica programs I have designed.*

5:00-5:25 in KC101

**Grundy Values for Combinatorial Games via the Von Neumann Theory**

Robert Riehemann, Thomas More College

*A derivation of the Grundy valuation for impartial combinatorial games is offered by way of the Von Neumann game tree.*

5:30-5:55 in KC101

**The  $N + 1$  Queens Problem**

Doug Chatham, Morehead State University

*We show that for  $N \geq 6$ , it is possible to place  $N + 1$  queens on an  $N \times N$  chessboard so they don't attack each other -- if we are allowed to also put a single pawn on the board. We discuss related problems, such as the " $N + k$  Queens Problem" ( $N + k$  queens and  $k$  pawns on an  $N \times N$  board). (This is joint work with Gerd Fricke.)*

6:00-6:15 in KC101

**Counting on the Art of James Mai**

Daylene Zielinski, Bellarmine University

*James Mai of Illinois State University in Normal, Illinois uses organizations of geometric shapes and color to create paintings that invite the viewer to discover the general ordering principle of each work of art. I will discuss several of Mai's works and their connections to graph theory, number theory, figurate numbers, and even Burnside's Theorem.*

4:30-4:55 in KC131

**Cubic Curves in the Plane of a Triangle**

Clark Kimberling, University of Evansville

*An arbitrary triangle has a number of special points (e.g., incenter, centroid, circumcenter) known as triangle centers. There are also many "central" lines, circles, conics, and cubics. Among the latter is the Darboux cubic, defined as the locus of a point  $X$  such that the pedal triangle of  $X$  is a cevian triangle. Well known properties of the Darboux cubic will be presented, leading to an open question regarding the set of triangle centers that lie on this cubic. The presentation will include an introduction to the online Encyclopedia of Triangle Centers, based at the University of Evansville, as well as a remarkable French online graphical resource on central cubic curves.*

5:00-5:25 in KC131

### **Covering Regular Maps on Affine Surfaces**

Christopher Schroeder, Morehead State University

An algebraic map is a chamber system  $M = (B, a, b, c)$  where  $B$  is a set called blades and  $a, b$ , and  $c$  are involutory permutations on  $B$ . Maps exist on surfaces, and those that allow for the best possible symmetry are called regular. We will investigate regular affine maps (those that exist on surfaces of genus 1) and classify coverings of these maps with the so-called Steinberg and Accola coverings. While much of the behind-the-scenes machinery is beyond the undergraduate level, the goal and result should be accessible to undergraduates.

5:30-5:55 in KC131

### **Some results related to the integral mean value theorem**

Prasanna Sahoo, University of Louisville

The mean value theorem for integrals gives conditions which guarantee the existence of a number  $\xi$  in  $(a, b)$  for which

$$f(\xi) = \frac{\int_a^b f(t) dt}{b - a}.$$

In 1970, S. G. Wayment proved a variant of the integral mean value theorem that gives conditions which guarantee the existence of a number  $\xi$  in  $(a, b)$  for which

$$f(\xi) = \frac{\int_a^\xi f(t) dt}{\xi - a}.$$

There are nine possible quotients having for numerators one of  $\int_a^b f(t) dt$ ,  $\int_a^\xi f(t) dt$ ,  $\int_\xi^b f(t) dt$ , and for denominator one of  $b - a$ ,  $\xi - a$ ,  $b - \xi$ . The integral mean value theorem and Wayment's theorem show that under appropriate conditions two of these nine quotients are equal to  $f(\xi)$ . In this talk, we will present conditions for each of the other seven cases, that is, conditions which guarantee the existence of a number  $\xi$  in  $(a, b)$  for which  $f(\xi)$  equals to the desired quotient.

6:00-6:15 in KC131

### **Finding Central Sets of Tree Structures in Synchronous Distributed Systems**

Dan Hrozencik, Chicago State University

Finding the central sets, such as center and median sets, of a network topology is a fundamental step in the design and analysis of complex distributed systems. This talk will discuss distributed synchronous algorithms for finding central sets in general tree structures.

INVITED PRESENTATION (After Dinner Talk)

7:45-8:45 in Dunigan Hall

**Angle Trisectors**

Woody Dudley, formerly at DePauw University

*Since 1837 it has been known that it is impossible to trisect angles with straightedge and compass alone. Nevertheless, people continue to try and some think that they have succeeded. This talk is a survey of trisections and trisectors and contains practical suggestions for dealing with them.*

**Saturday, November 6, 2004**

8:30-8:55 in KC131

**Mathematics and the Maya**

Patricia Kiihne, Illinois College

*In this talk I will report on the National Science Foundation Chautauqua #28 "Ancient Maya Mathematics in the Ruins of the Yucatan Peninsula, Mexico." I examine some of the mathematical ideas of the ancient Maya, including their use of zero as a placeholder and their intricate calendar system. I will also look at the Maya use of mathematics in their architecture, both in their building placement to coincide with astronomical events and their use of proportion stemming from their creation myths and still in use today.*

9:00-9:25 in KC131

**Values for Partially Defined Cooperative Games**

David Housman, Goshen College

*By collaborating on a joint venture, five players can obtain a large profit. Each player plays a different role and makes a different contribution to the joint profit. What is a fair way of allocating the profit among the five players? Cooperative game theory suggests that we determine the profits obtained by each subset of the players on their own (these are called the "coalitional worths"), and then this information can be used to determine an allocation of the profit that satisfies several fairness properties. For example, if two of the players could generate twice as much profit as the other three, each group acting on its own, then it seems reasonable that in the final allocation, the first two players deserve more than the last three. The purpose of this presentation is to suggest possible approaches when it is infeasible to determine all coalitional worths. Some results obtained by undergraduate students will be highlighted.*

9:30-9:55 in KC131

**Graphical Approach and Property Tests in Fair Division Problems with Indivisible Objects and Monetary Compensation**

Aeron Huang, Goshen College

*Consider the following problem: three siblings (Anna, Bruce and Calvin) are trying to divide three objects ( a cabin, a car and a set of antique dishes) as their inheritance. Anna thinks the cabin worth \$5,000, the car worth \$2,000 and the dishes worth \$500; Bruce thinks the cabin worth \$2,000, the car worth \$8,000 and the dishes worth \$0; Calvin thinks the cabin worth \$10,000, the car worth \$200 and the dishes worth \$50. What would be the fair way to divide these three objects? Which method of dividing would satisfy all three siblings? This presentation introduces a graphical approach toward the study of several properties in a fair division problem with indivisible objects and monetary compensation. The properties include efficiency, envy-freeness, individual rational and individual stand-alone.*

8:30-8:55 in KC101

**Quantitative Literacy: Theory into Practice**

Rick Gillman, Valparaiso University

*Quantitative literacy is current topic and numerous volumes have been written defining the concept and promoting its value. This talk reviews these definitions and then provides examples of implementation from campuses across the country, including specific problems used to assess students' level of quantitative literacy.*

9:00-9:20 in KC101

**A Teaching-Centered Math Content Course for Pre-Service Elementary Students**

Christine Leverenz, Georgetown College

*The design for a two-semester mathematics course for pre-service elementary teachers will be discussed. This course uses student thinking and problem solving (often from "Teaching Children Mathematics") to deeply cover standard content. Written pieces are used as part of the math methods course and students include mathematics work in their teaching portfolio. As a result, mathematics scores from the PRAXIS test are often the highest subscores.*

9:30-9:50 in KC101

**A Mathematics Educator in a Mathematics Department: A Case Study**

Paula R. Stickles, Indiana University

*This paper presents a case study of a mathematics educator's perception of his work in a mathematics department. In particular, the study explores his perceptions of the attitudes and beliefs of his colleagues and the expectations placed upon him by the mathematics department. Data were gathered through four on-line interviews and a phone interview. Results of the data focus on the participant's professional self-identity. Future research directions are suggested.*

8:30-8:55 in KC100

**The Mathematical Foundations of Shape Perception**

Morteza Seddighin, Indiana University East

*Shape Perception is a topic of interest to psychologists, biologists, and architects of artificial intelligence. We will discuss some of the advances made in this field and outline various mathematical tools such as Conformal Mapping, Statistical Geometry, Antieigenvalue Theory and Lie groups which can be used to construct mathematical models for the process of Shape Perception.*

9:00-9:25 in KC100

**Leonhard Euler, Hopeful Trisector, or: What Euler's Line Was Really For**

Homer S. White, Georgetown College

*In his 1765 paper "Solutio Facilis Problematum Quorundam Geometricarum Difficillimorum", Leonhard Euler proves the existence of his now-famous line that contains the orthocenter  $O$ , circumcenter  $C$ , and centroid  $G$  of a triangle. Nowadays it is not well-known that Euler did this in order to facilitate the analysis of a difficult construction problem (given the location of the incenter and any pair of the points  $O$ ,  $C$ , and  $G$ , to construct the triangle itself), finding in the end that the construction may be accomplished in general - provided one can trisect an arbitrary angle.*

9:30-9:55 in KC100

**al-Biruni's trigonometry: one millenium later**

Daniel E. Otero, Xavier University

*One thousand years ago, central Asia was a vital center of mathematical research. It was from there that abu-Rayhan al-Biruni (953-1048), a Tajik polymath, wrote The Exhaustive Treatise on Shadows, an early work on trigonometry that provided a context for studying what we now recognize as tangent and secant. The author will summarize and highlight the main points of Biruni's work.*

10:30-11:30 INVITED ADDRESS in Cokes Lecture Hall

**Primes and zeros: a million dollar mystery**

Brian Conrey, Executive Director, American Institute of Mathematics

*The Riemann Hypothesis has received a lot of publicity recently. Notably, three popular books on the subject appeared last year. In this expository talk, we will describe some of the issues relating prime numbers, the Riemann Hypothesis, and Random Matrix Theory in a way that will, hopefully, convince the audience that the Riemann Hypothesis is indeed worthy of all this attention.*

12:30-12:55 in KC131

**Tight Subdesigns of the Higman-Sims Design**

Steven Klee, Valparaiso University

*The Higman-Sims design is an incidence structure of 176 points and 176 blocks of cardinality 50 with every two blocks meeting in 14 points. The automorphism group of this design is the Higman-Sims simple group. We demonstrate that the point set and the block set of the Higman-Sims design can be partitioned into subsets  $X_1, X_2, \dots, X_{11}$  and  $B_1, B_2, \dots, B_{11}$ , respectively, so that the substructures  $(X_i, B_i), i = 1, 2, \dots, 11$ , are isomorphic symmetric  $(16, 6, 2)$ -designs.*

1:00-1:25 in KC131

**Pentalpha - History and Extensions**

Eric Nelson, Butler University

*A brief history of where and when the puzzle Pentalpha originated. The basic rules to the game and how to solve the puzzle on the original board as well as other possible boards.*

1:30-1:55 in KC131

**Comparing Classes of Finite Structures**

Wesley Calvert, University of Notre Dame

*What makes one sort of structures "more complicated" than another? For instance, why are graphs more complicated than vector spaces? In joint work with Cummins, Knight, and S. Miller, I defined a notion that makes such comparisons precise. I will tell about this notion, and about how several of our favorite types of structures line up.*

12:30-12:55 in KC101

**Learning Mathematics by Using and Creating Examples**

Mary Porter, Saint Mary's College

David Housman, Goshen College

*Is using a theorem and proof approach the best way to teach mathematical principles? Is presenting formal definitions the best way to teach mathematical concepts? Is solving a set of problems the best way for students to learn mathematical procedures and problem solving? Based upon a review of the literature, we will address these questions and argue that the judicious use and creation of examples can enhance and sometimes even be a replacement for other educational approaches.*

1:00-1:25 in KC101

**Using Reading Assignments in First Semester Calculus**

Joe Stickles, University of Evansville

*Most, if not all, mathematics professors and teachers (including the presenter) stress to their students the importance of reading the textbook. We all believe this is an important part of the learning process, but how much do the students actually get out of it? In an attempt to determine the significance of reading the section before that section is covered in class, the presenter experimented with two sections of Calculus I during the fall semester of 2003. One section was given worksheets with questions over the section that was to be covered the next class period while the other section was not. The presenter will supply the surprising "results" of this experiment and discuss other possible contributing factors.*

1:30-1:50 in KC101

**Using On-Line Courseware to Implement Step-Wise Learning for Math Students**

Ken Luther, Valparaiso University

*Valparaiso University recently made available to its students and faculty an on-line courseware system. I have found this technology very useful in implementing a step-wise study and learning strategy for students in my freshman and sophomore level math classes, such as Calculus I, II, and III. This step-wise strategy forces students to stay on pace, increases the number of problems they solve while decreasing the number of problems that require grading by hand, and avoids the traditional drill method of assigning many, many problems in bulk assignments. In this talk, I will discuss the step-wise strategy I use, its implementation in the on-line courseware system, and an informal assessment of its effectiveness via student feedback.*

12:30-12:55 in KC100

**Equations in Arabic Algebra**

Jeff Oaks, University of Indianapolis

*When solving a problem by algebra, medieval Arabic mathematicians would not state an equation until all the operations posed in the enunciation had been worked out. Thus the expressions on both sides of an equation were linear combinations of treasures (squares, or  $\mathbf{x}^2$ ), things ( $\mathbf{x}$ ), and dirhams (units). A close look into the vocabulary and phrasing of these solutions reveals that the expressions were not thought of as linear combinations in the modern sense, with addition, subtraction, and scalar multiplication. Rather they involved no operations at all, and were understood merely as collections of treasures, things, and dirhams.*

1:00-1:25 in KC100

**For the Recorde: the coming of mathematical texts to the British Isles**

Michael Wodzak, William Woods University

*In England in the first half of the sixteenth century, the transmission of printed books from the Continent was severely restricted and the number of English printing presses was so small that the number of home produced books was tiny when compared to the production of either France or Germany. In this scenario, the physician Robert Recorde published the first mathematics textbooks in the English language. These books provided not only a comprehensive course of European mathematical knowledge of the time, but also were so popular that William Shakespeare, writing forty years later, was familiar with them and quoted from or alluded to them in numerous plays.*

1:30-1:55 in KC100

**Writing a History of the Kentucky Section MAA**

Richard M. Davitt, University of Louisville

Leanne Faulkner, Kentucky Wesleyan College

*The co-presenters have been authorized to write an official history of the Kentucky Section MAA by the current Board of Officers of the section. This talk will describe their initial efforts to follow the guidelines for creating such histories - found at MAAOnline - and indicate the records and sources of information about the section's activities they are using or plan to use in completing the project. The initial report will also list a few of the key historical milestones of the Kentucky Section MAA uncovered to date.*

2:00-3:00 INVITED ADDRESS in Cokes Lecture Hall

**Archimedes, Combinatorics and the Stomachion**

Ron Graham, President of the Mathematical Association of America

*Greek mathematics has long been known for its fundamental contributions to geometry and diophantine equations, for example. However, there is now evidence that ancient Greek mathematicians were also interested in various combinatorial problems. In this talk, I will describe some recent work exploring this theme which arose from the analysis of a puzzle called the Stomachion, which was recently discovered in a long lost manuscript written by Archimedes.*

# Project NExT-Indiana

Project NExT-IN (New Experiences in Teaching), a program of the Indiana section of the Mathematical Association of America which is an offshoot of the national Project NExT, is a year-long program geared toward new or recent doctoral recipients in the mathematical sciences who are employed by Indiana colleges or universities. While the national Project NExT requires applicants to be no more than two years removed from confirmation of their doctorate, we at Project NExT-IN will accept applications from any faculty interested in participating. We especially encourage those who are new to their section and those who are pre-tenure to apply. Through a series of workshops in conjunction with the Fall tri-section meeting and the Indiana section meeting in the Spring, as well as through informal chats, participants will explore key aspects of life in academia while building lasting relationships with other participants and with senior faculty mentors from around the region. The following topics are representative of issues to be addressed

- Beginning and maintaining a research program
- Balancing teaching, research and service
- Undergraduate mathematics education
- Undergraduate research opportunities
- Grant writing

Workshops for this year will be held on **November 5-6, 2004** at the **University of Evansville** (Indiana/Illinois/Kentucky Tri-Section meeting), and on **April 1-2, 2005** at **Indiana University - Purdue University Fort Wayne**. For more information or an application see the website at:

[www.rose-hulman.edu/~langley/NEXT-IN/announcement](http://www.rose-hulman.edu/~langley/NEXT-IN/announcement)

or contact Tom Langley ([thomas.langley@rose-hulman.edu](mailto:thomas.langley@rose-hulman.edu)) or William Turner ([turnerw@wabash.edu](mailto:turnerw@wabash.edu)).

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## INDIANA COLLEGE MATHEMATICS COMPETITION (ICMC)

### Preregistration for 2005 ICMC

For the 2005 ICMC at Indiana University Purdue University Fort Wayne, we strongly recommend that teams pre-register, so that the host institution can reserve enough rooms for the contest. Teams that pre-register will be guaranteed admission to the contest, while those teams that register on-site will be granted admission provided that space is available.

To preregister, please visit the Section website <http://www.maa.org/indiana> in January

### Team results for the 2004 ICMC

There were 42 teams participating. The top four teams were Rose-Hulman, Taylor University, Ball State University and Indiana University. Congratulations to these teams and thanks to all who participated. More details on the results can be found at the Section Website <http://www.maa.org/indiana>

### Solutions for the Spring 2004 ICMC

Solutions for the Spring 2004 contest may be found in pdf format at

## SECTION NEWS

### **Ball State University**

The Department welcomes Irene Livshits in a tenure-track position, with emphasis in numerical computational mathematics. Irene received her Ph.D. in 1995 at the Bar-Ilan University Weizmann Institute of Science and was most recently employed by the University of Central Arkansas.

This year the Department is running tenure-track searches in both mathematics education and statistics.

The Ball State University Mathematics Exchange continues to feature the work (both original and expository) of undergraduate mathematics majors. Information about the journal as well as submission instructions may be found at [www.bsu.edu/virtualpress/mathexchange/](http://www.bsu.edu/virtualpress/mathexchange/).

### **Butler University**

The Department of Mathematics and Actuarial Science here at Butler has two new faculty members this fall. Scott Parsell is an assistant professor of mathematics. Scott is a University of Michigan Ph.D. (MIT undergrad) with a research interest in number theory. He comes to us from a post-doc at Penn State. Kristin Bunnell is a new lecturer in our department. Kristin has an M.A. in mathematics from Clemson (Elon College undergrad) and comes to us after serving as a lecturer at Clemson.

We also announce the retirement of Professor Bay Chotlos after at 30-year career at Butler.

### **Depauw University**

Underwood Dudley has retired after 37 years of teaching at DePauw. He plans to continue doing mathematics in Florida, where he is moving this fall. Michelle Penner has joined the faculty of Cheyney University in Pennsylvania after 5 years at DePauw. Ellen Maycock has just begun a 3-year term as chair of the Mathematics Department.

The Department has welcomed three new faculty members this fall. Andrew Ellett ( Ph.D. candidate at Indiana University, in Martingale methods in finance), Rahim Elghanmi (Ph.D., Washington University in St. Louis, in differential geometry), who recently taught at Butler University, and Joung Min Song (Ph.D., University of Illinois at Urbana-Champaign, in analytic number theory), who just completed a post-doctoral position at Rice University

### **Goshen College**

David Housman received funding to support four undergraduates from underrepresented groups during the Goshen College Maple Scholars Program in summer 2004 as part of the Mathematical Association of America (MAA)'s National Research Experience for Undergraduates Program, a project of the MAA's Strengthening Underrepresented Minority Mathematics Achievement program funded by the National Security Agency and the National Science Foundation.

- Rosanna Nafziger was one of 310 students in the nation to receive a Goldwater Scholarship for the 2004-2005 academic year. The Goldwater Scholars were selected on the basis of academic merit from a field of 1,113 mathematics, science, and engineering students who were nominated by the faculties of colleges and universities nationwide. Rosanna was one of 29 mathematics majors receiving the scholarship nationwide.
- Student Mary Leigh published a Goshen College Pinch Penny book, "Mathematical Beauty"; an illustrated discussion of symmetry patterns and group theory.
- Five students participated in 3 presentations at the annual Goshen College Academic Student Symposium. Rosanna Nafziger presented "Folding Paper and Planes". Andrew Hinstead presented "The Range Nucleolus for Cooperative Games." Reuven Hodges, Sean Kauffman, and Theodore Budiardja

presented "Refining the 3D Pipeline."

### **Indiana-Purdue University Fort Wayne**

John LaMaster was named the Friends of the University Outstanding Teacher for 2004 and was promoted to Senior Instructor. John is the first faculty member on campus to hold this newly created title. He has been a leading advocate of effective use of technology in the classroom and has also made sweeping reforms in the way we teach college algebra.

Lowell Beineke is now firmly in charge of The College Mathematics Journal (CMJ), having recently taken over as editor.

Ray Pippert will retire this year after 40 years of service to the department and the university. Ray has done extensive research in graph theory as well as held numerous positions of leadership in the department and the university. He has also found time to visit nearly every habitable country on earth. I'm sure his travels will continue in earnest after retirement.

### **Indiana University Purdue University-Indianapolis**

News from the IUPUI Department of Mathematical Sciences:

- Carl Cowen comes to IUPUI from Purdue as the new Dean of the School of Science and faculty member of the department. He is the President-elect of the MAA.
- Richard Patterson and Jon Luke both retired this summer. Patterson had 30 years of service at IUPUI and Luke had 29. Patterson will continue to be active in mathematics, and in fact wrote this article.
- Bart Ng was selected as the first holder of the Marvin L. Bittinger Chair in Mathematics Education.
- The department hired 4 new faculty members:
  - Fang Li earned her PhD in Statistics this year from Michigan State University. She is interested in nonlinear models and time series analysis.
  - Bruce Kitchens comes from IBM, via a visit at SUNY Stonybrook. His area is dynamical systems and coding theory.
  - Leonid Rubchinsky is in Mathematical Biology, specifically the neurophysiology of Parkinson's disease. He spent the last 3 years as a postdoc at U.C. Davis.
  - Luoding Zhu earned his degree at the Courant Institute, then had a postdoc at U.C. Santa Barbara. His area is computational fluid dynamics.

### **Indiana University Northwest**

The Department of Mathematics and Actuarial Science is pleased to welcome back Dr. Gayla S. Domke as a visiting associate professor for 2004/2005 school year. Dr. Domke is a graph theorist and is on leave from Georgia State University.

In June, Jon Becker, Senior Lecturer and Director of Developmental Mathematics, was appointed Dean's liaison to regional high schools. In May, Dr. Vesna Kilibarda was appointed to serve on the ICTM Board as the Mathematics Competition Coordinator. Our lecturer, Stela Pudar-Hozo was awarded Indiana University Summer Faculty Fellowship for adding spreadsheet applications component to Brief Survey of Calculus classes.

Our senior, Jason McGee, has received an Indiana University Undergraduate Research funding for his proposal "U(n) Groups - Cyclic or Not?"

### **Indiana University at South Bend**

New Faculty:

- 1) Dr. Zhong Quan, associate professor, statistics
- 2) Michaela Vajiac, mathematics lecturer

Retiring Faculty: Dr. Paul Beem

## **Purdue University**

Some items from Purdue University, Professor Carl Cowen became Dean of Science at Indiana University-Purdue University, Indianapolis . The Mathematics Department celebrated the 50-year career of Professor Justin J. Price at a retirement dinner held at the Purdue Memorial Union on June 12. Of the many noteworthy contributions made by Professor Price, several are worth noting in this Newsletter. In 1976 he was awarded a Lester R. Ford Award for Expository Writing by the MAA for the paper "Topics in Orthogonal Functions" (MAA Monthly, 1975) and perhaps most noteworthy is that Price was awarded the MAA national award for Distinguished College and University Teaching in 1994. More information on the happenings at Purdue can be found at the Mathematics Department's Newsletter

Purdue welcomes the following new faculty:

- Associate Professor (with tenure) Yi-Jen Lee whose research interests are mathematical physics, gauge theory who comes to Purdue from Princeton, IAS, MSRI
- Assistant Professor (tenure track) Edray Goins whose research interests are number theory and algebraic geometry, and comes to Purdue from California Institute of Technology
- ResearchAssistant Professor (3 yr.) Jose E. Figueroa-Lopez whose research interests are mathematical finance and stochastic processes and comes to Purdue from Georgia Tech; Roman J. Sasyk whose research interests are functional analysis and ergodic theory and comes to Purdue from UCLA; and Yanqiu Wang whose research interests are applied mathematics and comes to Purdue from Texas A&M

## **Rose Hulman**

David Finn and Jeffrey Leader were awarded tenure, while Jerry Muir left Rose-Hulman to go to University of Scranton and Tanya Leise left Rose-Hulman to go to Amherst College.

Professor Steve Carlson will spend the winter and spring terms of the 2004-2005 academic year as a Visiting Mathematician with the Washington, DC headquarters of the Mathematical Association of America. His duties, which fall under the direction of the MAA's Department of Programs and Services, will involve supporting MAA regional sections and special interest groups, promoting new MAA curricular guidelines, facilitating professional development opportunities, and other assignments as they arise.

Professor John Rickert is on sabbatical this year at the NSA in Fort Meade, Maryland. So you can ask what he is doing on his sabbatical, but most likely he will not tell be able to tell you.

Rose-Hulman welcomes three new faculty members,

- W.Steve Galinatis, who comes to Rose-Hulman from teaching at Ferrum College in Virginia, received his PhD from Virginia Tech. His research interests are in mathematical modelling of shape memory alloys.
- Brian Martensen who comes to Rose-Hulman after a post-doc at University of Texas-Austin, after receiving his PhD from the University of Montana. His research interests are in topology and dynamical systems
- Ken McMurdy who comes to Rose-Hulman after a post-doc at University of Rochester, after receiving his PhD from the University of California-Berkeley. His research interests are in number theory.

## **Taylor University**

Matt DeLong was awarded tenure. Bill Klinger is returning to teaching after serving as the interim Academic Dean for the institution. Jeremy Case is returning to teaching after a spring semester Sabbatical. Student News: Michael Anderson participated in an REU at Iowa State University.

The Taylor Math Department revised the curriculum for math majors entering in 2004. In response to the growth of students entering with AP calculus credit, the department is implementing a second-semester, freshman Problem Solving course to serve as an introduction to the mathematical sciences.

The department added a bachelor of science degree with a major in mathematics-interdisciplinary. The requirements include a core of 40 hours of math and a minor in accounting, economics, finance, biology, chemistry, computer science, or physics.

### **Tri-State University**

Mitch Voisei has joined the faculty at Tri-State University. Dr. Voisei received his Ph.D. from Ohio University in Athens, Ohio. His area of interest is Optimization and P.D.E. Dr. Voisei was born in Romania.

### **University of Indianapolis**

Krystina Leganza received a \$6,000 grant for "Math for Girls Only Day", a program for middle school girls. There will be a keynote speaker, hands-on activities, prizes, etc. Leslie Gardner, Jeff Adams (School of Business) and Jerry Flatto (School of Business) were funded for a \$50,000 "Emerging Careers Grant in Supply Chain and Logistics". To quote their proposal: "The purpose of the grant is to develop state of the art curriculum in supply chain management at the undergraduate and MBA levels, to develop paying, external internships to for juniors and seniors studying supply chain management that support this curriculum, to market the new curriculum to prospective students, and to enable faculty to develop and maintain the expertise to sustain a state of the art curriculum."

Allan Swett received a \$5,000 IEC Planning Grant entitled "IT Security and Forensic Computing Initiative". It aims to develop courses and certificates which will promote Indiana-based employment and enterprise opportunities in the area of forensic computing. >From his proposal: "Nationally, "computer security" is a problem, a hot topic, an opportunity. And its subfield "forensic computing" brings together "CSI"... a motivating piece of curiosity and pop culture... with some interesting and user-friendly ideas in technology (Computer Science). Jeff Oaks is the new chair of the Department of Mathematics and Computer Science

### **Valparaiso University**

Ken Luther was awarded tenure and promoted to Associate Professor. David Hull and Jim Caristi will be on sabbatical this fall. Karen Whitehead is doing NSF funded research in South Korea this summer and will be leaving the department in December to begin working at Michigan State University. Zsuzsanna Szanizslo and Rick Gillman will be running an NSF funded REU program beginning in the summer of 2005.

## **SECTION AWARDS**

### **2004 Awards**

The 2004 Distinguished Service Award was received by Don Miller (St. Mary's College). There was no award given for Distinguished College or University Teaching of Mathematics by the Section in 2004.

### **Call for Nominations for the Indiana Section Award for Distinguished College or University Teaching of Mathematics**

Nominations for the thirteenth annual Indiana Section Award for Distinguished College or University Teaching of Mathematics are now being welcomed. The Indiana Section Selection Committee will choose one of the nominees for the Section Award. The awardee will be honored at the 2005 Spring Section meeting and will be widely recognized and acknowledged within the Section. The awardee will also be the official Section candidate for the pool of Section awardees from which the national recipients of the Deborah and Franklin Tepper Haimo Awards will be selected (except that one of the national winners may be selected from another source). There will be at most three national awardees, each of whom will be honored at the

national MAA meeting in January 2006 and receive a \$1000 check and a certificate.

Anyone is entitled to make a nomination, but nominations from mathematics department chairs are especially solicited. Although it is not mandatory, involvement of a nominee in preparing the nomination packet is permitted and encouraged. However, self-nomination is not permitted. A previous nominee for this award who did not become a Section awardee can be nominated again. Indeed, the Section has instructed the selection committee that "meritorious nominations for the Distinguished Teaching Award which do not result in an award will be continued as active nominations for next year's Distinguished Teaching Award and, if again not successful, will be continued for a third year as well."

### **Eligibility**

- College or university teachers assigned at least half-time during the academic year to teaching of a mathematical science in a public or private college or university (from two-year college teaching through teaching at the Ph.D. level) in the United States or Canada. Those on approved leave (sabbatical or other) during the academic year in which they are nominated qualify if they fulfilled the requirements in the previous year.
- At least five years teaching experience in a mathematical science.
- Membership in the Mathematical Association of America.

### **Guidelines for Nomination**

Nominees should

- be widely recognized as extraordinarily successful in their teaching<sup>1</sup>
- have teaching effectiveness that can be documented
- have had influence in their teaching beyond their own institution<sup>2</sup>
- foster curiosity and generate excitement about mathematics in their students

Nominations must be submitted on the official "Nomination Form," a copy of which may be obtained from David Housman by using the address listed below or by e-mail [dhousman@goshen.edu](mailto:dhousman@goshen.edu). Please follow the instructions on the form precisely to assure uniformity in the selection process both at the Section and National levels. If a file on a Section awardee significantly exceeds the prescribed limits (as stated on page two of the Nomination Form), it will not be considered for a national award and will be returned to the Section.

Please send six copies of each nomination packet to:

David Housman, Department of Mathematics  
Goshen College, Goshen, IN 46526

so as to be received no later than February 1, 2005.

The Section Selection Committee will select the Section awardee prior to February 15, 2005, at which time it will communicate its selection to the national selection committee so that the national committee can then make its selections. We look forward to your participation in this exciting MAA venture of taking substantive action to honor extraordinarily successful teaching. We want to see such teaching recognized at

all post-secondary schools. We depend on you to help us identify those who merit such recognition.

### **Call for Nominations for the Indiana Section Distinguished Service Award**

The Indiana Section Distinguished Service Award was established in 1992 to annually honor a member of the Section for his or her extraordinary contributions to the Section and outstanding efforts consistent with the stated purposes of the MAA and the Section, namely, assisting in promoting the interests of, and improving education in, the mathematical sciences in America, especially at the collegiate level.

The Service Award Committee is soliciting nominations for the 2005 award, which will be presented at the Section's Spring 2005 Meeting. If you wish to nominate an individual, please send a letter of nomination and support to

David Housman, Department of Mathematics  
Goshen College, Goshen, IN 46526

so as to be received no later than February 1, 2005.

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#### **Footnotes:**

<sup>1</sup> "teaching" should be interpreted in its broadest sense, not necessarily limited to classroom teaching (it may include activities such as preparing students for mathematical competitions at the college level, or attracting students to become majors in a mathematical science).

<sup>2</sup> "influence beyond their own institution" can take many forms, including demonstrated lasting impact on alumni, influence on the profession through curricular revisions in college mathematics teaching with national impact, influential innovative books on the teaching of college mathematics, etc.