



## MAXIMA: News and Highlights from the Department of Mathematical Sciences

The University of Texas at El Paso

<http://www.math.utep.edu>

Fall 2005

### From the Chair

After a 4-year hiatus, our annual newsletter is back! In the meantime our programs have prospered: we now have more than 125 undergraduate majors, and the number of graduate students has increased to more than 80, many of them teachers enrolled in the MAT program. The department is taking a leadership role in the new interdisciplinary M.S. program in Bioinformatics, and two years from now (I keep my fingers crossed...) the first students will enroll in the new interdisciplinary Ph.D. program in Computational Science.

In 2003, Dr. Nancy Marcus was honored by the Minnie Stevens Piper Foundation for her superior teaching at the college level. Drs. Dogan and Duval are recent recipients of the John R. Bristol Teaching Award from the College of Science.

Dr. Pavel Šolín has acquired a 72-processor Cray XD1 supercomputer using a \$200,000 award from the Department of Defense. The supercomputer will support our efforts in Computational Science.

New faculty members hired since our last newsletter include Drs. Miguel Argáez and Pavel Šolín in Computational Mathematics, Drs. Hamide Dogan-Dunlap, Lawrence Lesser, and Matthew Winsor in Mathematics Education, Drs. Naijun Sha and Ori Rosen in Statistics, and Drs. Behzad Rouhani and Emil Schwab in Pure Mathematics; Dr. Ming-Ying Leung joined our department as director of the Bioinformatics program. Since 2004, mathematics educator Dr. Mourat Tchoshanov holds a dual appointment in our department and the College of Education.

Drs. Michael Gray, William Kaigh, John Narvarte and James Nymann have joined the ranks of emeriti

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### MAA Section Meeting a Success!



*Deborah Hughes-Hallett delivering her talk*

UTEP hosted the annual Mathematical Association of America's Southwestern Section meeting on April 1-2, 2005. The meeting was widely hailed as a success in terms of organization and higher-than-usual participation (65 presentations and 123 attendees spanning 16+

institutions), and the sessions themselves. One attendee stated: "I would have to count it as one of the very best meetings we've had in the Southwestern Section and I have missed very few such meetings since 1982 ... All of the NAU group was very pleased with the meeting. Lots of variety and excellent invited speakers."

Invited plenary talks were given by well-known NMSU mathematics educators Drs. Annie and John Selden ("Two Research Traditions Separated by a Common Subject: Mathematics and Mathematics Education") and *American Mathematical Monthly* editor and UT-Austin's Dr. Bruce Palka ("Why Things Go Quasi in Higher Dimensions"). Most of the time, there were three parallel sessions of contributed paper or special sessions, including one chaired by last year's winner of the section teaching award, renowned mathematics educator and calculus text author Dr. Deborah Hughes-Hallett.

The conference also featured special entertainment. Before the banquet, a group of high school and university students performed a new play ("Count Her In!") about the lives of seven female mathematicians (Hypatia, Kovalevskaya, Noether, etc.). The play was directed by Sherry Lowell-Lewis and funded by an MAA Tensor Grant by UTEP's Hamide Dogan-Dunlap and EPCC's Joanne Peoples, and was performed at the 2005 MAA MathFest.

At the banquet, Dr. Art Duval was surprised with the section's 2005 Award for Distinguished University Teaching of

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## MAA Meeting (continued from page 1)

Mathematics (see Aug./Sept. 2005 MAA *Focus*), the second winner from UTEP (1995 was Dr. William Kaigh) since the award's inception in 1991. The banquet concluded with a "math song sing-along" with Dr. Larry Lesser (see: [www.math.utep.edu/Faculty/lesser/Mathemusician.html](http://www.math.utep.edu/Faculty/lesser/Mathemusician.html)).

The 2005 section meeting was organized by UTEP faculty Drs. Hamide Dogan-Dunlap (conference chair), Art Duval, and Larry Lesser, and sponsored primarily by the El Paso Mathematics and Science Partnership (MSP). Wolfram Inc. donated 4 copies of *Mathematica* for the highest-rated undergraduate and graduate presentations – and 3 of the winners were UTEP students!



*Invited speaker Annie Selden and conference chair Hamide Dogan-Dunlap*

## From the Chair (continued from page 1)

of our department; Drs. Ralph Liguori and Vilappakkam Srinivasan are currently in phased retirement.

On a sad note: Mr. Herman Gladman (our first department chair) passed away in December 2003, our former faculty member Mr. Lawrence Huntley passed away in April of this year, and we mourn the loss of our colleague of 29 years, Dr. Gavin Gregory, who also died this April.

Thanks to your generous contributions to the Gladman Scholarship Fund over the years, we have been able to support numerous outstanding mathematics students in need of financial support. Your contributions to our Excellence Fund help us pay for student travel to conferences and other items not covered by our budget. This year we particularly ask for your support of the new scholarship fund in memory of Dr. Gregory. Your continued support will be greatly appreciated by our students.

Mark your calendars: **our Homecoming Coffee for alumni, faculty, students and department friends is scheduled for Saturday, October 22, from 10-noon in Bell Hall 125.** The event is free and no reservation is required. I hope to see you all there! For more information, contact Mrs. Lanna Tallmon (915-747-5761, [lanna@utep.edu](mailto:lanna@utep.edu)) or visit our website: [www.math.utep.edu](http://www.math.utep.edu)

—Helmut Knaust

## In Memory of Dr. Gavin Gregory

(by Dr. Joan Staniswalis)

Dr. Gavin Gregory passed away April 27, 2005 after 29 years on the UTEP faculty. He was special, but I didn't fully appreciate this until his family extended an open invitation to attend his memorial service. The obituary notice that appeared in the *El Paso Times* is based on recollections and expressions of love made by his family at the services, and excerpts are posted at [www.math.utep.edu/Faculty/gregory.html](http://www.math.utep.edu/Faculty/gregory.html).

I worked with Gavin over the last 15 years at UTEP, during which time he coordinated the Graduate Statistics Program and collaborated with biomedical researchers through the Statistical Consulting Laboratory, in addition to the usual graduate and undergraduate teaching assignments. Gavin was a humble man you could count on, who did what he did because he enjoyed it.

In his early years as a statistician, Gavin Gregory made significant contributions to the theory of U-statistics. One candidate interviewing for a position in the department was joyful and anxious to meet the author who had deeply influenced his own dissertation work. I still recall Gavin's face, so surprised by the attention, baffled by all the fuss.

More recently, Gavin collaborated closely with Dr. Rafael Cabeza (Biological Sciences) on statistical models for understanding duration of REM sleep and time between REM sleep. That was the first of Gavin's manuscripts that I had read. It is beautiful in its writing style, attention to mathematical details, and elegant in approach to modeling a very messy problem. This is a seminal paper in the field of sleep research, providing a systematic way to study the effect of chemicals on sleep patterns. Gavin was working on a manuscript up to his death, which his family submitted for publication on his behalf. After his memorial service, I came away thinking "What a wonderful life!"

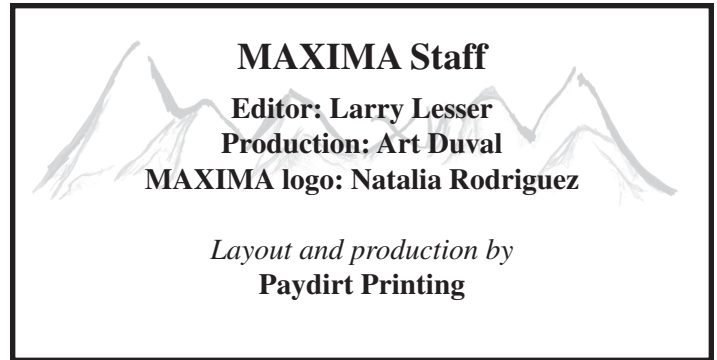
Gavin's family asked that we not forget him here. Even after Gavin was struggling with his health, he was dedicated to providing opportunities to students, specifically requesting that we build upon the legacy to which he had contributed, the legacy of well thought out course offerings in structured degree-programs within the Mathematical Sciences. To honor the life of Dr. Gregory, you may make a gift/pledge for a departmental student scholarship fund by contacting the Office of Institutional Advancement's Scott Whittet (915-747-8569; [swhittet@utep.edu](mailto:swhittet@utep.edu)) or online at [www3.utep.edu/givingto](http://www3.utep.edu/givingto).

## Alumni Notes

Yolanda Muñoz Maldonado (MS-Stat, 2000): awarded statistics PhD in 2005 from Texas A&M University under Randy Eubank. She is an Asst. Professor in the Univ. of Texas-Houston Health Science Center's Biostatistics Dept.

Hongling Yang (M.S. statistics, 2005): studying Ph.D. statistics program at Arizona State University.

Liye Zhou (M.S. statistics, 2005): hired as a full-time lecturer in UTEP Math. Sciences Dept.



### Alumni Data Update Form

#### Department of Mathematical Sciences

Please fill in the form below so we can update our records

Name: \_\_\_\_\_

Maiden Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Home Phone: \_\_\_\_\_ Business Phone: \_\_\_\_\_

Email Address: \_\_\_\_\_

Degree(s) and Major: \_\_\_\_\_

Year(s): \_\_\_\_\_

Employer: \_\_\_\_\_

Position/Title: \_\_\_\_\_

Let us know what you have been up to  
(To be included in the Math Department newsletter or website).

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Yes, I want to support the Department of Mathematical Sciences!

Enclosed is my gift in the amount of \$\_\_\_\_\_ for:

Mathematical Sciences Excellence Fund

G. G. Gregory Scholarship Fund

C. H. Gladman Scholarship Fund

or you may use:  Mastercard  Visa  Discover

Card Number: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

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Please return to:

The University of Texas at El Paso  
Department of Mathematical Sciences  
El Paso, Texas 79968-0514

## Bioinformatics Program Launched

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The UTEP Bioinformatics Program was launched in 2001 with funding from the Alfred P. Sloan Foundation to offer a new Professional Science Master's degree. Aiming to meet the challenges in many fast growing industries in diverse areas of biomedical research, faculty members from Biology, Chemistry, Computer Science, Mathematics, and Statistics actively participate in interdisciplinary team teaching and collaborative research in bioinformatics.

This January, Dr. Max Shpak will join UTEP as the first Assistant Professor of Bioinformatics. His research applies stochastic models and differential equations to a wide range of biological problems in population genetics, phylogeny, and ecology.

The Bioinformatics Program has ten graduates, some of whom work in biotechnology and software industries, while others are lab managers and programmer analysts in prestigious research organizations like the Broad Institute at MIT, National Cancer Institute at NIH, and Washington University.

Computational, mathematical, and statistical expertise will continue to be in great demand in bioinformatics. As a result of the interdisciplinary nature of bioinformatics, many students from other disciplines have renewed their interest in mathematical sciences. Several graduates have expressed the intention to pursue a Ph.D. in the mathematical or computational sciences after working in the real world for a few years. For more details, contact Program Director Dr. Ming-Ying Leung or visit [www.bioinformatics.utep.edu](http://www.bioinformatics.utep.edu).

## Reaching Out with Outreach

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It's been an active year for mathematics outreach, with major activities on and off campus. Students from Club Zero (our student math club, sponsored by Dr. Art Duval), represented UTEP well at the second annual Arizona Mathematics Undergraduate Conference at the University of Arizona, attending nightly problem sessions, presenting talks (on topics from pure mathematics, applied mathematics and mathematics education), and making the largest complex origami structure at the banquet!

Club Zero also presented UTEP's first celebration of Pi Day (on 3/14, naturally). Freshman Jaime Ramos won the digits contest by correctly writing from memory the first 136 digits of pi! Those passing by Bell Hall that day could purchase a variety of small **pies** or try various mathematical activities and puzzles. The activities were put to good use again at April's Bhutan Days (when 150 El Paso-area high schoolers visited campus) and a May morning visit by the eighth grade of Henderson Middle School.

Other outreach efforts involving department faculty include the Texas Prefreshman Engineering Program, Dr. Larry Lesser's initiation of Pi Day at Henderson MS and mathematics scripts for the KTEP-FM program "Desert Diaries", and Dr. Les Foged's ongoing work with math contests. Feel free to **try this problem from this year's UTEP annual contest for high schoolers**: "Find a rational function whose graph intersects its slant asymptotes at exactly 2 points."

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