MAXIMA: News and Highlights from the Department of Mathematical Sciences

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From the Chair

After one year of serving as chair, I am very happy about the Department and all the work that we have done together. The Department is poised to meet the new challenges for the field of mathematics in today's environment at a research university. We are augmenting and integrating our research areas, and working in the development of new PhD programs, beginning with a proposal for a PhD in Statistics.

Our excellent colloquium series gives students the opportunity to know what is done in different areas of math. The Department also has a weekly Statistics Seminar sponsored by the Stat Lab, featuring research talks by speakers from UTEP and elsewhere.

The Department has strong graduate and bachelors programs in mathematics, statistics and math education. We provide graduate support, scholarships, tuition, assistance and fellowships to about 40 graduate students. We routinely arrange for summer research positions for many graduate students and fellowships and research opportunities for undergraduate students.

I am also delighted to welcome Dr. Indranil Sen Gupta as a post doc in the Department. Most of all, I thank Alumni and Friends for last year's generous contributions. The Gladman Fund helps our most talented undergraduates, the Gregory Fund helps graduate students in statistics, the Miculka Fund (named for former instructor Vladik "Chuck" Miculka) helps Math/Physics undergraduates, and our Excellence Fund supports student travel to meetings and other items not covered by our budget.

– Dr. Christina Mariani

COMPUTATIONAL SCIENCE PROGRAM ENTERS YEAR 3

The UTEP Graduate Program in Computational Science, approved in summer 2008 by the Texas Higher Education Coordinating Board, offers tracks leading to a PhD, a Master of Science, or a Professional Master. The 30 faculty members involved span 8 Departments in the Colleges of Engineering and Science and Program Director Leticia Velázquez is an Associate Professor in our Department. The program regularly invites top researchers from national labs, academia and industry and recently added its first research assistant professor, Pablo Guillen, from the Universidad de los Andes, Merida Venezuela for 2010-2012.

The program has grown quickly, graduating its first master's student at the end of its first calendar year, and having the number of doctoral students increase each year from 4 to 17 to 23. Of these students, 10 are funded by the program, and the rest are RAs, lecturers or part-time UTEP staff. Dr. Velázquez' and Dr. Miguel Argáez' grants, averaging approximately \$250,000 per year since 2006, fund six doctoral students. The Program recently started a Computational Science Gift Fund to help students with unexpected expenses.

The doctoral students' accomplishments include co-publishing five papers, presenting papers at conferences (e.g., the SACNAS and SIAM annual meetings), having research collaboration visits to University of Texas at Austin and Stanford University, and completing four summer internships in nationally-recognized labs, industry or academia. Doctoral student Miguel Hernandez IV won the "Outstanding Scientific Presentation in Engineering & Physics" at the 2010 Minority Serving Institution Research Partnership Consortium Conference.

Perhaps the ultimate testimony of success is that program director Velázquez was recently brought to Texas A&M University in Commerce, TX to present an invited lecture and advise that university's computational science group about starting its own PhD program.

STATISTICS PhD PROGRAM SOUGHT

The Department's accomplished cadre of six T/TT statisticians has written a Preliminary Request for Authorization to prepare a proposal for a statistics PhD program to be housed in the Department. The proposed program would prepare students for a field with excellent job prospects and satisfaction, as well as have synergies with the local medical school, the Statistical Consulting Lab, and nine UTEP graduate programs that use statistics extensively.

A statistics PhD program would not only be a satisfying followup to the successful statistics MS program the Department has had for three decades, but would also provide a needed option in Texas, where all existing statistics PhD programs have reached their capacity limits.

Other new PhD programs being considered (but less far along in their proposals) are a PhD in Mathematics and Science Education (to be housed in the College of Science) and Pure and Applied Mathematics (in the Department). These exciting plans are part of UTEP's push to become the first national research university with a twenty-first century student demographic.



photo courtesy of University Communications

HONORED ALUM VISITS

Department alum Matthew "Matt" Diethelm was named one of the three 2010 Gold Nugget Award recipients for the College of Science. While here for UTEP's 2010 Homecoming Week, Diethelm not only was honored by the College for his award, but also honored the Department by giving a well-attended special colloquium talk entitled "An Education without Limits." One of the gems of advice for students in that talk was to expect any STEM job to require more knowledge than you have, but that "learning new things is the best part of the job."

After obtaining his BS in mathematical sciences in our Department in 1963, Diethelm went on to obtain MS and PhD degrees in engineering from Arizona State, focused on mission planning for NASA's Apollo space program as an employee of General Electric, and served as a VP for Intel Corp. systems group.

As *UTEP Magazine* reports, Diethelm's retirement in 1998 did not lead to inactivity. He was vocal about his belief that all children can learn when provided with proper teaching environments and was named to the Arizona State Board of Education, where his three-year term included one year as president.

FACULTY ACTIVE IN CONFERENCES

Dr. Christina Mariani co-organized a national conference (on modeling high frequency data in finance) that will rotate between UTEP, Purdue, and Stevens Institute of Technology. In 2010, Dr. Kien Lim was an organizer of a session of papers at the Joint Mathematics Meetings and of a working group at the Psychology of Mathematics Education North America conference. The April 2010 AMS regional meeting held in Albuquerque included three sessions organized by UTEP faculty: Dr. Christina Mariani, Pia Beccar-Varela, Dr. Art Duval, Dr. Osvaldo Mendez, Dr. Behzad Rouhani, and Dr. Amine Khamsi. Dr. Larry Lesser gave the opening keynote for an SRO-audience of 800 in Nashville for a 2010 regional conference of the National Council of Teachers of Mathematics.



Ehrenborg reveals the mathematics of juggling (photo by Eduardo Cervantes)

UTEP HOSTS STUDENT RESEARCH CONFERENCE

UTEP welcomed 70 students and 17 faculty from several states to the Southwestern Undergraduate Mathematics Research Conference [SUnMaRC] this past March. Club Zero students had attended this annual conference many times since 2004, and enthusiastically stepped into the role of first-time host, with Angel Davalos and Melissa Pugh coordinating many activities and other UTEP students moderating faculty and student talks throughout the weekend.

Faculty plenary speakers were: Art Benjamin (Harvey Mudd College), fresh from his January 27 TV appearance on the Colbert Report; Richard Ehrenborg (University of Kentucky); Rodrigo Bañuelos (Purdue University); Larry Lesser (UTEP); and Leo Saldivar (UTEP). There were 40 student talks, many more than in previous years, necessitating an unprecedented three parallel sessions. Topics spanned a wide range of areas, as can be seen at www.math.utep.edu/sunmarc/Program.pdf.

UTEP student attendee and active Club Zero member Eduardo Cervantes said, "I really liked the whole experience of students from different states giving their presentations, socializing with us, and the whole weekend to math." (note: Cervantes also represented UTEP at a problem solving competition held at 2010 MAA MathFest.)

The conference was generously supported by the Departmental gift fund, by the College of Science, the graduate school, the UTEP Provost's office, and by NSF grant DMS-0846477 through the MAA Regional Undergraduate Mathematics Conference program.

MAXIMA Staff

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ALUMNI NEWS



Jovany Aguirre (BA Math, 2008) taught for Anthony ISD before starting a position at Jefferson HS (EPISD).

Tami K. Dashley (BS Math, 2008; MAT Math, 2010) began a position at EPISD's Transmountain Early College HS. Dashley received the top MAT student award at spring 2010 COS Pre-Commencement ceremonies and presented her thesis research at the 2010 Joint Mathematics Meetings.

Angel Davalos (BS Math, 2008; MS Stat, 2010) was recognized as the Outstanding Graduate Student in Statistics in Spring 2010, and is now enrolled in the Biostatistics doctoral program at the University of North Carolina.

Cesar Garza-Garza (MS Math, 2009) was recognized for having the Outstanding Graduate Thesis in Mathematical Sciences in Spring 2010.

Diana Gomez (BS Math, 2009) was the College of Science Banner Bearer at the Winter 2009 commencement. She is now a student in our MAT-Mathematics program.

Andrea Luevano (BS Math, 2007) has been teaching with the Fort Worth ISD since January 2008, teaching Algebra 2 at North Side HS.

Melissa Pugh (BS Math, 2008; MS Stat, 2010) is enrolled in the Biostatistics doctoral program at the University of Iowa.

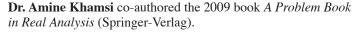
Javier Rojo (BS Math, 1973; MS Math, 1976), who taught at UTEP for 17 years before accepting a position at Rice University in 2001, received the 2010 Don Owen Award. This is a North American award sponsored by the American Statistical Association to recognize excellence in research, statistical consultation, and service to the statistical community.

Hector Valenzuela (BA Math, 1988) teaches mathematics at ITT Tech. He reports, "As a seasoned leader and educator with a 17-year career in high-impact corporate setting and also teaching at the college level, leading and management roles, I have experience teaching, coaching and relationship building."

Alumni Data Update Form Department of Mathematical Sciences Please return this form or visit http://www.math.utep.edu/alumni so we can update our records!	
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Position/Title: Let us know what you have been up to (to be included in the Math Department newsletter or website):	Please return to: The University of Texas at El Paso Department of Mathematical Sciences El Paso, Texas 79968-0514

INFLECTION POINTS

(see www.math.utep.edu for other faculty accomplishments too numerous to list!)



Dr. Larry Lesser co-authored the 2009 book *For All Practical Purposes* (COMAP/Freeman) and received the 2010 Distinguished College or University Teaching of Mathematics Award from the Southwestern Section of the MAA.

Drs. Emil Schwab and **Helmut Knaust**'s project "Cross-Institutional Implementation of Supplemental Instruction" was funded by the U.S. Department of Education –MSEIP program for the third year (total: \$479,202) to transfer and implement the Supplemental Instruction(SI) model to the EPCC Precalculus courses. Eight of our graduate students serve as SI workshop leaders.

Dr. Joan G. Staniswalis' project "Principal Differential Analysis with Covariates for Functional Data" was funded by NIH, 2010 through 2013, for \$336,375 (total direct and indirect costs).

Dr. Mourat Tchoshanov (who teaches for the Teacher Education Department as well as ours) received a 2010 UT System Board of Regents' Outstanding Teaching Award.

Dr. Amy Wagler co-led a weeklong summer workshop for math and science teachers that resulted in local media coverage for the hands-on unit on Madagascar hissing cockroaches. She is also a co-PI on a \$1.2 million NSF Robert Noyce grant awarded this year.

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