



MAXIMA: News and Highlights from the Department of Mathematical Sciences

The University of Texas at El Paso <http://www.math.utep.edu> <http://facebook.com/utep.math> FALL 2015

From the Chair (Dr. Christina Mariani)

Dear Alumni and Friends: 2014 and 2015 were busy and successful years and our Department continues to grow with the last five years yielding nearly 350 peer-reviewed publications and \$27 million in grants.

Our faculty continues to increase as well. This year I am delighted to welcome Assistant Professor in Statistics/Bioinformatics Dr. Jonghyun Yun, a Border Biomedical Research Center hire which will support the Bioinformatics program that is hosted and directed in the Department, the Department's Statistics research program, and the interdisciplinary collaborations with the Border Biomedical Research Center faculty. I am also happy to welcome new full-time lecturers: Louise Guthrie, Kyungeun Nam, and Julio Urenda.

An important attribute that differentiates UTEP from many institutions is the ready access to higher education for underrepresented minority undergraduate students. UTEP professors are at the forefront of using or creating the latest technologies, pedagogies, and applications to tailor instruction to the backgrounds of our students and optimize their learning and professional preparation.

For the second year in a row, UTEP was ranked #1 by *Diverse: Issues in Higher Education* and by *Hispanic Outlook in Higher Education* for Mathematics and Statistics degrees conferred to Hispanic students both for undergraduate and master's degrees.

Ensuring the Department's legacy and the continued strength as a nationwide destination program requires resources and I am asking you be part of improving student's education and faculty success, and their contributions to our field and to society. *Our goal is to raise \$75,000 by March 31, 2016.* Page 3 lists scholarship funds benefitting our students, and our Excellence Fund supports student travel not covered by our budget. There are many existing funds available but you can also establish your own fund or endowment by contacting Audrey Price, Assistant Vice President for the UTEP Office of Institutional Advancement, via email (aprice@utep.edu) or phone (915-747-8522). Thank you for your generosity!

I also want to thank our Dean Dr. Kirken for continually supporting our Department. His leadership is helping the Department achieve excellence in research and teaching to help UTEP become the first national research university with a 21st-century student demographic.

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ALUMNI LUNCH LAUNCHED!

The Department enjoyed sharing delicious empanadas, tamales, pizza, etc., with Alumni at its Thursday lunch during Homecoming Week 2015. Attendees included previous Gold Nugget Award winners **Enrique Gomez** and **Harriet B. May**.



DR. KNAUST WINS 2015 REGENTS' OUTSTANDING TEACHING AWARD!

Dr. Helmut Knaust became the sixth member of the Department in seven years to win a prestigious UT System Regents' Outstanding Teaching Award. This highly competitive award entails rigorous multi-level review of a 150-page dossier of evidence. Dr. Knaust acknowledges being "heavily influenced by the Inquiry-Based Learning movement in mathematics that has its roots in the teaching practices of University of Texas professor R L. Moore" and says his main task in the classroom is "to guide my students' active learning."



Dr. Helmut Knaust

MARIA BARRAZA-RIOS WINS SERVICE AWARD!

María Barraza-Ríos was recognized at the 2015 UTEP Honors Convocation as the winner of this year's Distinguished Achievement Award for Service. Since 1986, Barraza has been giving outstanding service to the Mathematical Sciences Department in roles that have included Teaching Assistant, Lecturer, Computer Lab Director, and Network Manager. This period also includes several years of service as the Technology Implementation Manager for the College of Science. While at UTEP, she has completed a B.S. in Mathematics, an M.S. in Statistics, and is currently pursuing a Ph.D. in Computational Science with Dr. Staniswalis as her advisor.



M. Barraza-Ríos

INITIAL VALUES: MATH GOES ALL THE WAY BACK! by Dr. Lesser

The recently-completed centennial year for UTEP turned up a copy of the 1914-15 debut catalog of the State School of Mines and Metallurgy. The catalog includes courses in mathematics, chemistry, physics, geology, drawing, Spanish, and various metallurgy and mining-related areas. In other words, our institution has changed its name, but has offered mathematics courses since day one! The mathematics faculty (engineering professor John W. Kidd and engineering instructor Mr. T. J. Dwyer) are listed as teaching practical mathematics ("intended primarily for students in the Coal Mine Foreman's Course") that covers plane trigonometry, plane analytical geometry, and calculus. The catalog notes that to emphasize the practical side of instruction, "no member of the faculty will be employed unless in addition to his collegiate training he has had at least five years successful experience in the practice of his profession." Tuition was listed as "free to all", but there are lab fees (ranging from \$1.50 to \$25 per course) and charges for room (\$6/month) and board (\$18/month). The letter grade options included an "F" denoted as "bad failure" as well as an "E" (denoted "failure", but with an opportunity to raise it to a passing D).

IN MEMORIAM

Professor Emeritus **Dr. J. Michael Gray** passed away August 20, 2015 in Port Aransas, TX where he retired to enjoy fishing. Dr. Gray joined the department in 1970, conducted research in Analysis, directed TexPREP (Texas Prefreshman Engineering Program, a summer intervention for grades 7-12), and retired in 2002. His family is establishing a scholarship in his name.

FACULTY LEAD CONFERENCES

Department faculty have been extremely active in organizing recent and upcoming conferences in mathematics or mathematics education. Dr. Larry Lesser chaired the 12th International Sun Conference on Teaching and Learning March 5-6, 2015, which was attended by over 200 people and covered by KFOX-TV. Dr. Behzad Djafari-Rouhani organized the SUnMaRC conference February 27-March 1, 2015 at UTEP. Dr. Christina Mariani co-organized the 6th annual Modeling High Frequency Finance and Analytics Data in Finance Conference, sponsored by NSF, ASA, IAFE, and IMU, and held October 2015 at Stevens Institute of Technology, Hoboken. Dr. Ming-Ying Leung co-organized the 17th joint UTEP/NMSU Workshop on Mathematics, Computer Science, and Computational Sciences, held at UTEP on November 7, 2015. Department faculty have also gone the extra mile to enable students to attend conferences, such as when Dr. Amy Wagler took Noyce students to the 2015 Joint Mathematics Meetings in San Antonio.

UTEP HOSTS SUnMaRC 2015

The Southwestern Undergraduate Mathematics Research Conference [SUnMaRC] was held at UTEP February 27 to March 1, 2015. The lead organizer was Dr. Behzad Djafari-Rouhani. A total of 66 students and 31 faculty participated in the conference. 30 students presented their research work at the conference each for 20 minutes in 2 parallel sessions. There were also 4 invited speakers who each gave one-hour lectures. Thanks to generous funding by NSF grant DMS-0846477 through the MAA Regional Undergraduate Mathematics Conferences, as well as by many offices at UTEP, including the Provost, ORSP, the Dean of the College of Science, the Graduate School and the Department of Mathematical Sciences, we were able to significantly subsidize the conference registration fee.

STUDENT NEWS

Thirteen M.S. statistics students attended the 2015 Conference of Texas of Statisticians, with **Hao Teng** (advised by Dr. Naijun Sha) winning second place for his poster "Bayesian approach for step-stress accelerated life testing". **Yaa Wonkye** and **Pei Wang** also made presentations. Led by **Justin Strate**, the statistics students have launched a statistics student group called Mu-Sigma or Statistics Society: minetracker.utep.edu/organization/StatisticsSociety.

At the 2015 MAA Southwestern Section meeting held at EPCC in April in conjunction with the NMATYC meeting, **Abigail Muñiz** presented a talk, and M.A.T. graduate students **Alejandro Galvan**, **Ashley Manns Wilson**, and **William Fanning** each made a presentation with their advisor, Dr. Kien Lim.

Departmental awards for academic and research excellence went to the following students this year: In Fall 2014, **Guadalupe Gonzalez** (undergraduate), **Jennifer Esparza** (M.A.T. graduate student), and **Andrzej Pownuk** (mathematics graduate student); in Spring 2015, **Raymond Ford** (undergraduate), **Diana Gomez** (M.A.T. graduate student), **Osei K. Tweneboah** (mathematics graduate student), and **Hao Teng** (statistics graduate student).



Bioinformatics graduate **Javier Ordoñez** (MS, Bioinformatics, 2012) and MS-Stat graduates **Christopher Dodoo** (MS, Statistics, 2013), **Indika Mallawaarachchi** (MS, Statistics, 2011), and **Luis Alvarado** (MS, Statistics, 2011) are employed at Texas Tech University Health Sciences Center.

Online donations may be made at givingto.utep.edu/math

Alumni Data Update Form Department of Mathematical Sciences

Please return this form or visit www.math.utep.edu/alumni so we can update our records!

Name (please print): _____

Maiden Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Phone Home: _____ Business: _____

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 department newsletter or website):

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

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

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El Paso, Texas 79968-0514

INFLECTION POINTS

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

Tuesday J. Johnson had a math appreciation textbook *Jack Appreciates Math* published this year by Cognella.

Dr. Larry Lesser won the National Museum of Mathematics' "Pi Day of the Century" song contest, became Director of UTEP's CETaL, and received a 2015-2017 NSF grant.

Dr. Ori Rosen received an approximately \$250,000 3-year grant from NSF to study Bayesian Time Series Methods in

the Frequency Domain.

Dr. Natasha Sharma received an approximately \$160,000 grant from NSF for Collaborative Research: Numerical Simulation of the Morphosynthesis of Polycrystalline Biominerals.

Drs. Amy Wagler and **Son-Young Yi** were tenured and promoted to Associate Professor.

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APPLIED STATISTICS CERTIFICATE

The Department expects to begin offering a Certificate in Applied Statistics and has thus created new supporting courses in Experimental Design and Intro to Data Mining.

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