SOUTHWESTERN SECTION NEWSLETTER

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Editor: Thomas Gruszka, WNMU

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1. SPRING MEETING, April 13-14, 2007, Los Lunas, NM

The annual meeting of the Southwestern Section of the MAA and the first joint meeting with the New Mexico Mathematical Association of Two-Year Colleges (NNMATYC) will be held on April 13-14, 2007 at the UNM Valencia Campus in Las Lunas, NM.

Dr. Nancy Hagelgans, Professor Emerita of Mathematics and Computer Science at Ursinus College, will be giving the keynote address at the Friday night banquet. Also, Dr. Hagalgans will facilitate a 3-hour hands-on workshop dealing with cooperative learning in collegiate mathematics classes from College Algebra through Calculus. Information about Dr. Hagelgans and the content of her presentations are included in this newsletter.

Call for Papers and Presiders:

Proposals for talks, mini-courses, workshops, panel discussions, and the like are invited as well as volunteers to preside over a conference session.Proposal forms and presider applications can be found at the website http://www.nmmatyc.org/Conference2007/confinfo.htm.

Registration and Accommodations:

The registration form, hotel information, and driving directions are attached to this newsletter. Rooms at the negotiated conference rates will be held until March 31, 2007. When reserving a room be sure to mention that you will be attending the NMMATYC/MAA conference to receive the special rate.

Deadlines:

Proposals for mini-courses, workshops, panel discussions, and contributed papers need to be submitted by **March 23, 2007.**

Banquet reservations and fees would be appreciated if submitted by **April 6, 2007.**

Information can also be found at the website http://www.nmmatyc.org/Conference2007/confinfo.htm. Questions about the conference can be directed to Mary Robinson, maryrobn@unm.edu, or (505) 925-8622.

2. SECTIONAL NEWS

Arizona Western College (by Dan Russow <daniel.russow@azwestern.edu>)

Tony Bottone has had his contract changed from full-time temporary to full-time continuing faculty. We are currently seeking a full-time instructor for our South Yuma campus. Most of our math classes now have on-line alternatives to the traditional classroom setting. We are in the process of piloting modular classes in the developmental math sequence. We have added a Maple lab component to our Calculus 2 class and increased the credit hours from 4 to 5. Finally, we are in the process of planning the construction of a math learning center.

University of Texas at El Paso (by Naijun Sha <nsha@utep.edu>)

The Department of Mathematical Sciences at University of El Paso (UTEP) hosted the 2006 StatFest on November 18, 2006. Located in the heart of the U.S.-Mexico border, nearly 72 percent of UTEP student body is Hispanic, and another 10 percent are Mexican nationals. Ranked third in the nation in awarding undergraduate degrees to Hispanics, majority of the UTEP students are first-generation college students. StatFest, a one day conference is an ongoing initiative of ASA's Committee on Minorities in Statistics (CMS), aimed at encouraging undergraduate minority students to pursue careers and graduate studies in statistical sciences. This was the first StatFest to be held at a Hispanic institution. Naijun Sha, Assistant Professor of Statistics at UTEP and Nagambal Shah, Professor of Mathematics at Spelman College and Chair of CMS, were the conference coordinators. Conference was sponsored by CMS and UTEP Statistical Consulting Lab.

Over 100 students were in attendance. The conference focused on the role of statistics in academia, industry, and government; graduate studies in the statistical sciences; summer internships, and undergraduate student research. The keynote speaker was Robert Santos, Senior Institute Methodologist, Urban Institute, Washington, D.C. In his address titled "Visioning What a Future in Statistics Offers", Santos discussed how a career in statistics can be a portal to realizing one's dreams, aspirations and personal goals. Sharing his personal journey, Santos discussed the role of Statistician as Problem Solver pointing at the many rewards all along.

The speakers in the session on Statistics in Academia included Ori Rosen and Melchor Ortiz from UTEP, Brisa Sanchez from University of Michigan (a graduate of UTEP), Geoffrey Vining from Virginia Tech and Wesley Thompson from University of Pittsburgh. They discussed a variety of interesting research problems they are engaged in – distribution of fast food Restaurants, distribution of Malaria incidence, DNA analysis, stress and Brain Study, Agricultural, Environmental, Social Epidemiology related and Ecological problems, industrial Statistics problems like Pen Barrel and Silicon Wafer Problem and consulting opportunities-giving a glimpse at the theory behind the applications. There were four presenters in the Graduate Studies in Statistical Sciences Session: Joan Staniswalis, UTEP; Yolanda Munez (a graduate of UTEP), UT Huston; Wayne Woodward, SMU; and Kimberley Weems, NC State. They spoke of graduate school application, undergraduate preparation, securing graduate education funding (fellowships/assistantships) and graduate school navigation-qualifying exam, choosing an advisor, writing thesis, challenges and support system etc. Three graduate students made research presentations: Bereket Weldeslassie and Charles Rogers both from UTEP and James Haney from SMU.

Career Sessions included Statistics in Industry and Government. Charlotte Baidoo from GlaxoSmithKline and Brian Miller from Eli Lilly spoke about the role of statistician in Pharmaceutical industry and necessary preparations. Robert Rodriguez from SAS Institute discussed career opportunities in statistical computing and software development. Juanita Lott from Census Bureau discussed opportunities and challenges in Census; Alyson Wilson spoke on the role of statistician at Los Alamos National Laboratory in solving National problems in defense, energy, environment etc. and Joe Gonzalez talked about the role of statistics at NCHS/CDC in presenting Nation's health.

Vasant Waikar presented information about REU in statistics at Miami University of Ohio (SUMSRI) for underrepresented minority students and women. Of 114 total SUMSRI participants 70% are either in grad school or hold graduate degree. Two of the 2005 SUMSRI students Amber Shoecraft (Johnson C. Smith University) and Ashley Brooks (Winston Salem State University) presented their summer research.

As rightly expressed by Juanita Lott in her communications following StatFest , "Student attendees and presenters viewed statistics as the portal and key to boundless opportunities to problem-solve, work on interdisciplinary teams, create useful products and services,

and to travel domestically and abroad. There was tremendous energy and a sense of power to create the future. I felt like I was in a gifted and talented class."

Western New Mexico University (by Tom Gruszka <tpeter@cs.wnmu.edu>)

Department chair, Rick Johnson, will retire after the summer session, and DeAnne Miller will take the helm.

The WNMU Mathematics and Science Partnership grant was funded for another year with possible additional funding for two more subsequent years. The grant will be used to serve middle school and high school mathematics teachers in nine school districts in the western part of New Mexico by offering a summer mathematics academy along with yearlong professional development follow-up.

3. MAA SECTION OFFICERS MEETING

The minutes from the January meeting of section officers is posted at MAA Online, under the Sections link.

4. THE NEWSLETTER BY EMAIL

If any member of the Southwestern Section would like to receive the sectional newsletter by email INSTEAD of through the postal service please email the editor (<tpeter@cs.wnmu.edu>) with the words EMAIL PLEASE in the subject heading or the body of the message. The newsletter is published twice a year, once in the fall and once in the spring.

5. WANTED: NEWSLETTER EDITOR

The section is in need of a newsletter editor. If you would like to take on this endeavor or if you would like to suggest a colleague who might be interested in being the editor please write to the section governor, Janet McShane <janet.mcshane@nau.edu>, providing that information.

We are pleased to introduce to you

Dr. Nancy Hagelgans

Dr. Hagelgans will be delivering our keynote address at the Friday night banquet
(April 13) of this year's joint meeting of
NMMATYC and the Southwest Section of MAA. In addition, she will be presenting a
Three-Hour Workshop following
the close of the regular conference sessions on Saturday, April 14 from 1:00-5:00 PM.
Brief descriptions of Friday's
keynote address and Saturday's workshop appear below.

	Nancy Hagelgans is Professor Emerita of Mathematics and Computer Science at Ursinus College , where she taught a great variety of mathematics and computer science courses for 26 years and served two terms as department chairperson. She earned a Ph.D. in algebraic topology at Johns Hopkins University and later an M.S. in computer science at Villanova University . Her A. B. in mathematics was awarded by Goucher College , which she entered on a Ford Foundation Early Admissions Scholarship and where she was elected to Phi Beta Kappa. Her interests include discrete mathematics, computer solutions to mathematics problems, and student learning. She was a co-author of the MAA book "A Practical Guide to Cooperative Learning in Collegiate Mathematics". Currently she is a member of the MAA Executive Committee, Chair of the MAA Committee on Sections, Chair of the MAA Strategic Planning Working Group on Professional Development, and an adjunct faculty member in graduate computer science at Villanova University . She plays the violin in a symphony orchestra and various chamber music groups.
Keynote Address	**Planar Linkages** A planar linkage is constructed in the plane from rigid links or rods that are connected with movable joints at their ends. Robot arms and carpenters' rulers are examples of planar linkages in which the links are connected to form a chain. We will examine the reachability regions of robot arms, which are chains with one fixed end. Then we will go on to solve the minimal folding problem of carpenters' rulers with links of different lengths. Finally, we will address some planar linkages that can be used to convert one type of motion to another type of motion.
Saturday Workshop	**Co-operative Learning in Collegiate Mathematics Classes** Cooperative learning is a method of active learning in which stable groups of students produce a significant amount of work in a course. Their work is assessed and counts in the course grade. We will discuss formation of student groups, initial activities for groups, groups in the classroom and computer lab, assignments outside class, difficulties with groups, monitoring the groups, modes of operation within groups, assessment in the courses, and group testing, Participants will experience the processes related to cooperative learning groups as well as group activities involving undergraduate-level mathematics that is not widely known. Courses considered will include Mathematics for the Liberal Arts, Calculus with Review, Calculus I-III, Discrete Mathematics, Abstract Algebra, and Topology.