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Meet the New Chair!

Nathaniel Dean

• Ph.D. from Vanderbilt University (1987)
• Prior experience at Texas Southern University, Rice University, and Bell Labs
• Research expertise: Graph Theory
• President of National Association of Mathematicians

Cover:
Drs. Alexander White and Zhonghong Jiang with doctoral students at Spring 2012 awards ceremony.

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Where are they now? Jill Cochran, Texas State Math Ph.D. graduate

Jill Cochran is an assistant professor now at Berry College in Rome, GA. She teaches various math courses for elementary, middle school and high school pre-service teachers as well as some courses in geometry and graph theory for math majors. In addition to her teaching responsibilities, Jill has worked on a grant for in-service teachers for the past two summers helping them prepare through content workshops for the change to the Common Core State Standards. Additionally, Jill has been kept busy with her own and undergraduate student research projects. Most recently, she presented a follow-up study to her dissertation at ICME in South Korea, where she ran into Dr. Alex White.
Sorto receives large grant to research ELL math instruction

Associate Professor M. Alejandra Sorto was awarded $679,000 by the National Science Foundation (NSF) to carry out a five-year CAREER research project. CAREER is the NSF’s most prestigious award in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research within the context of the mission of her or her university.

Sorto’s CAREER project is entitled “Mathematics Instruction for English Language Learners.” The main research goal of this project is to empirically estimate whether and which classroom factors contribute to mathematics gains of English Language Learners in Texas schools. The emphasis is on mathematical knowledge for teaching (MKT), knowledge of students as English Language Learners, academic language proficiency in English and Spanish, and the mathematical quality of instruction (MQI) in Grade 8 classrooms. The main educational goal is to develop professional development for in-service teachers of ELL that are research-based and focus on the mathematics needed to teach ELL efficiently.

The idea for the project came after Dr. Sorto learned from Pam Guettner, Director of Curriculum and Instruction for San Marcos CISD, that there is an interesting phenomenon happening in South Texas school districts with respect to mathematics achievement of English Language Learners—they performed better than students in Central Texas despite the large percentage of socioeconomically disadvantaged students. She knew that there are many factors outside the school that could explain this phenomenon, but she wanted to know if there were any factors related to the knowledge and preparation of the teachers that also explains what is happening. Sorto’s previous experience had been explaining this type of phenomenon between countries in Latin America and Africa. She saw an opportunity to apply the same methodology and design to explain the differences between districts. The project was also written around the time when Texas State earned the title of Hispanic Service Institution (HSI), so the goals of the project are well aligned with the university’s mission.

It is hoped that this project will not only expand our knowledge of a student population we know very little about, but by understanding learning processes better in a range of contexts it will also make it easier to address the pressing challenges of educating all children in the fast-growing population of Latino students in the United States. Additionally, the study will shed light on how best to produce qualified teachers in mathematics who work in bilingual contexts. Finally, the local collaboration of school districts and university educators will expand our reach into new areas of research for the education of mathematic teachers of ELL. This educational experience will create a foundation for the improvement of mathematics teacher education for ELL the way other studies have impacted other aspects of teacher education in mathematics.

Two doctoral students, Aaron Wilson and Carlos Mejia Colindres are being supported by the grant. They are both writing dissertations related to the project.
When Dr. Wayment announced that he was stepping down as chair, we asked him to write a reflection of his thoughts and feelings over his tenure at Texas State University.

As I think about the past 26 years and all of the changes, and reflect upon all of the achievements of the department faculty, I am truly amazed and I congratulate them for their outstanding accomplishments.

In 1986 the Math Department split into two departments: Computer Science and Mathematics. Both departments have experienced impressive growth and development. My comments will focus on the Mathematics Department.

The faculty has grown from 39 to 61. Of course there have been many retirements along the way, adding to the number of new hires. As we grew, the faculty decided to build toward a research strength in Discrete Mathematics (Graph Theory). We succeeded to the level that we now have a very strong group (36 research publications by the departmental faculty last year) and we are now turning our attention toward developing strength in the broader, more inclusive, area of applied mathematics. We have also developed a very strong presence in Developmental Mathematics, becoming a leader in the state and nation: we have received National Association of Developmental Education certification and with financial support from the state (Coordinating Board), we have created a center within the department which, among other activities, provides professional development for the Texas Higher Education Coordinating Board programs and provides professional development and program evaluation to other institutions.

There have been several prestigious appointments and elections of our faculty to state and national positions: President of National Association of Mathematicians, President of Texas Association of Academic Administrators in the Mathematical Sciences, appointment by Governor Rick Perry to serve on a focus group for the Texas Math Initiative, and appointments by the governor to co-chair the Mathematics College Readiness Standards Vertical Team for the state. There have also been several prestigious State and National teaching awards garnered by our faculty: the U.S. Department of Education Teacher Recognition Award, the Presidential (Washington, D.C.) Award for Excellence in Science, Mathematics, and Engineering Mentoring Award, the Piper Professor Award, and four times members of our department have received the Texas Section Distinguished College or University Teaching of Mathematics Award from the Mathematics Association of America.

The department has added one bachelor degree, two new masters degrees and a PhD in Mathematics Education (we graduated our first PhD student in August 2010).

The department has financially
strengthened its research position to the point that it has around $4,000,000 in active grants ongoing at this time. We are a leader in the College of Science and Engineering and we were a major contributor toward helping the university achieve Emerging Research status. The department faculty have hosted several state and national conferences. Along the way a group of faculty, willing to start with a shoestring budget, have developed an Honors Summer Math Camp for high school students that has achieved international prominence. They have coupled it with a summer math camp for middle school students and have created another center within the department. One measure of their success is that a team of three students won the International Sieman’s Competition (splitting a $100,000 prize). Another measure is that they have been able to obtain a $1,250,000 matching challenge gift from the Kodosky Foundation - and they have their sights set on a $6,000,000 endowment fund. The department has developed an additional $884,478 in six other endowment funds to support conferences, research and student scholarships.

At times, the success of the faculty presented a challenge for the staff and secretarial support personnel. They have always been able to cheerfully meet the challenge until the resources caught up with the newly created demand. One year, a fire on the bottom floor of MCS shut down our building. Within a couple of hours we were setting up temporary quarters and moving faculty offices and the main Math Office into the Alkek Library. We didn’t miss a beat. I cannot imagine a better team of support personnel than we have had in the Math Department and at the university over the years.

Yes, looking back it is a wonderful view - and looking ahead is to view with anticipation our continued growth and development. I would hope that we will soon obtain a PhD degree in Mathematics and continue to exert a strong positive influence on the enterprise of Mathematics and Mathematics Education.

Alumni Connections

We’d like to hear from you -- our treasured alumni! We’ve made it easy for you to reconnect with Texas State University and the Math Department. Go to the website below to register your information. You’ll be able to stay connected with the happenings here in San Marcos.

http://www.math.txstate.edu/resources/alumni-connections.html
Math Department Award Winners -- Spring 2012

Undergraduate Recognition for Academic Achievement

This award is presented to undergraduate mathematics majors who have completed at least 30 hours of college level course work at Texas State and have a Texas State grade point average of at least 3.00 but less than 3.25.

Natasha R. Bell
Lindsey M. Bienvenu
Jessica R. Beltran
William G. Blackman
Kylon S. Brune
William L. Caldwell
Matthew S. DePugh
Leonardo I. Escandon
Elisa M. Estrada
Ana G. Guerrero
Cassandra Guerrero
Kyrie M. Guzman
Ashley M. Hartgrove
Owen M. Holt
Paige R. Jochen
Denee E. Johnson
Elena V. Kurtova
Jason S. Lee
Katylyn E. Lueders
Mikayla C. Maloney
Owen M. Mason
Wilson L. Moose
Chris L. Murrell
Mitchell B. Otten
Jacqueline E. Price
Matthew J. Priest
Keith R. Pritchard
Kyle A. Pustejovsky
Hannah A. Roberts
Ricardo Rodriguez
Russell G. Stevens
Sarah A. Straughn
Eric N. Vignaud
Cory Wegner
Sion A. Williams
Charlotte P. Wrockloff
Tiffany A. Yanagawa
Justin L. Yonker

Undergraduate Recognition for Scholarship

This award is presented to undergraduate mathematics majors who have completed at least 30 hours of college level course work at Texas State and have a Texas State grade point average of at least 3.25 but less than 3.6.

Samuel P. Allred
Austin Arzaga
Kristen N. Boggess
Michelle R. Braden
Rebecca L. Breeding
Sarah A. Bullock
Jorge E. Canada
Jasmine M. Crist
Edward E. Cruz Medrano
Hayden R. Dooley
Amanda N. Emery
Aschley L. Eschenburg
Jessica R. Garcia
Michael D. Hicks
Katrina R. Hoag
Elena Horn
Justin A. Jacobs
Lucy B. Koen
Ryan P. Laughlin
Christopher Martinez
Robert E. Monroe
Demenaya L. Moore
Monica Moss
Courtney N. Murach
Amber J. O’Donnell
Tiana M. Owens
Charles C. Peck
Ethan C. Pfeiffer
Julie A. Prugh
Kip E. Rittenhouse
Krista L. Rubey
Danielle N. Schielbelbein
Martin T. Schmidt
Taylor N. Shimek
Benjamin J. St. Vigne
Casey A. Stovall
Andrew Suarez
Adrian M. Tullock
Ryan S. Wiersma
Timothy Z. Young

Undergraduate Recognition for Academic Excellence

This award is presented to undergraduate mathematics majors who have completed at least 30 hours of college level course work at Texas State and have a Texas State grade point average of at least 3.6.

Carlos H. Aguirre
Craig N. Barnes
Kyle E. Bell
Meagan R. Benavides
Aubrey N. Borges
Derek A. Bush
Daniel L. Campos
Brandi D. Castillo
Joseph D. Castleman
Adriana Chavez-Medrano
Priscilla R. Collard
Nancy N. Cortez
Joel M. Davis
Megan B. Frazier
Rebecca L. Gaddy
Ryan W. Gates
Eric A. Harper
Benjamin B. Hoffman
Jerry R. Hook
Kathryn E. Hurley
Sarah E. Johnston
Joshua S. Kelly
Georgiana A. Kritikos
Kaittin B. Kunetz
Sean W. Mac Diarmid
Sara A. Medlin
Rachel L. Menking
Labeeb I. Mohammed
William R. Moody
Minh-Anh N. Nguyen
Zachary T. Pingel
Graciela A. Prado
Mark A. Proctor
Laura Provident
Tyler L. Purcell
Leah R. Ramirez
Alexander N. Rasche
Jack E. Rhoades
Joseph W. Skelton
Courtney R. Stuart
Maria E. Tomasso
Francis B. Toto
Laddi B. Turner
Preston E. Walker
Krista R. Weaver
Matthew A. Whipple
Alexander J. Wright
Megan N. Zamora

Graduate Recognition for Academic Excellence

This award is presented to graduate mathematics majors at the Master’s level who have completed at least 15 hours of 5000+ level mathematics courses at Texas State and have a Texas State grade point average of at least 3.75.

Kimberly J. Brandsma
Bobbi A. Brekke
Daniel C. Cheshire
Rosa M. De Leon
Anthony W. Harrison
Rebecca A. Hofer
Joann M. Holliday
Pedro J. Merced
Geoffrey F. Miller
Brittany A. Webre
Samuel N. Wilson
Joshua E. Goodson
Robert W. Jaster
Ewelina Suchacka McBroom
Rini Oktavia
Alana A. Rosenwasser
Michelle Schrauth
Aimee Tennant
Debra D. Ward

Graduate Recognition for Academic Excellence

This award is presented to graduate mathematics majors at the Ph.D. level who have completed at least 36 hours of 7000 level mathematics courses at Texas State and have a Texas State grade point average of at least 3.75.

Robert and Brita Northcutt Scholarship

This award is given to a full time Texas State student majoring in mathematics, with a Texas State GPA of at least 3.0, who has completed at least 30 hours of coursework at Texas State. Students may receive this award multiple times.

Sara A. Medlin
Give back -- Support Mathematics Education

Contributions to our scholarship funds are always welcome. As the university and Math Department grow, more and more students rely on your generous gifts to support their education. Please consider giving support to our majors in one of these scholarship funds.

**Established Scholarship Funds**

_____ Department of Mathematics Discretionary Fund  
_____ Robert and Brita Northcutt Scholarship – awarded to Texas State student majoring in mathematics with Texas State GPA of at least 3.0 on at least 30 hours of coursework at Texas State.  
_____ Lynn H. Tulloch Math Scholarship – awarded to full time Texas State student majoring in mathematics and pursuing teacher certification. Preference should be given to athletes. The student should have a Texas State GPA of at least 3.0 on at least 30 hours of coursework at Texas State.  
_____ Don and Helen Cude Award – awarded to undergraduate mathematics major pursuing teacher certification who has the highest GPA among senior level students who have completed at least seven upper level mathematics courses.  
_____ R. H. Bing Award – awarded to undergraduate mathematics major not pursuing teacher certification who has the highest GPA among senior level students who have completed at least seven upper level mathematics courses.  
_____ Mathworks Fund

To contribute, mark the scholarship fund to donate to and complete the form below:

Name: ____________________________________________________________________________________________
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Country: _______________________________________ Phone: _____________________________________________
Email: ____________________________________________________________________________________________
Signature: _________________________________________________________________________________________
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JCK 480  
601 University Drive  
San Marcos, Texas  78666
Texas State Hosts Summer Math Camp

The 23rd annual Mathworks Honors Summer Math Camp was held on the Texas State campus, June 17 - July 28. This year’s program included 60 students from across Texas and six other states, as well as two students from Indonesia!

First-year students in the program enjoyed taking Number Theory, Mathematica, and Honors Seminar. Returning students had courses in Analysis, Combinatorics, Abstract Algebra, and opportunities to conduct original research with University professors. Weekly guest speakers from academia and industry inspired the students to examine their own academic and career goals while providing additional mathematical research ideas.

Here is what first-year student Jovanny (of San Marcos) had to say about his time at the 2012 HSMC:

“Joining HSMC was a great experience for me because while I was at Camp, I was exposed to advanced mathematics beyond my understanding. I had no idea that the mathematics that I was being taught actually existed. Before joining HSMC, I thought I knew everything. I always understood mathematics easily, so I didn’t see no difficulty in it. At the same time, it was fun learning it too. So on that first day of HSMC, my perspective changed. I noticed that mathematics was far beyond just some ordinary topic you learn at school every day. HSMC is a program that extends your capability of learning and understanding, not just in mathematics. Coming here to the Honors Summer Math Camp, I have gained so much knowledge. I have now experienced a small fragment of college, and I think experiencing it now will make me ready for my career path. The Honors Summer Math Camp has been an extraordinary experience. Every year, the HSMC is changing people’s lives and perspectives.”

This year’s HSMC was supported in part by Silicon Labs, Rackspace, Texas Workforce Commission Summer Merit Program, Tokyo Electron, American Math Society Epsilon Fund, Google RISE, South Texas Money Management, and Mathworks alumni and parents. Thanks to the above and many others, Mathworks was able to provide 25 camp scholarships for the 2012 HSMC, giving opportunities to those who would not otherwise have access to high quality math programs!

For more information on Mathworks, visit the website: [http://www.txstate.edu/mathworks](http://www.txstate.edu/mathworks)

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