Chair's Column

Charles Conley

Dear members and friends of the UNT Math Department,

It is April, which means that it is time for our annual Awards Day celebrating mathematics at UNT. As you will read in these pages, this has been a year of many changes in the department. We have welcomed several new faculty and staff and seen some of our members move on to new endeavors. In January, Neal Brand retired: thank you and congratulations, Neal!

The division of the College of Arts & Sciences into the College of Liberal Arts & Social Sciences and the College of Science has caused its share of change. After five years as our Chair, Su Gao has been appointed the Interim Dean of the new College of Science. And after ten years as one of the department's Undergraduate Advisors, John Quintanilla has agreed to join Su in the Dean's Office as the Associate Dean for Undergraduate Studies. Matthew Dulock has agreed to take his place and join Huguette Tran and Jay Liu in advising the many, many undergraduates who take math courses.

After five years as the department's Graduate Advisor, I am stepping down in order to fill in for Su. Olav Richter will move into the position of Graduate Advisor beginning this summer. I am grateful to Matt and Olav for taking on these new duties. Please join me in wishing them, and also John and Su, the best of luck in their new roles!

This is the first year that we are awarding the Ram Lal Seekri Scholarship for Undergraduate Studies. This scholarship was endowed by Mr. Raj P. Seekri and Mrs. Raj K. Seekri in honor of Mr. Seekri's father, a mathematics teacher in India. We are grateful to them for their generosity.

In September the department will be hosting a meeting of the Central Section of the American Mathematical Society. This will be an exciting event, with over 400 mathematicians and around 25 parallel sessions of research talks. We look forward to seeing you there!

Charles Conley
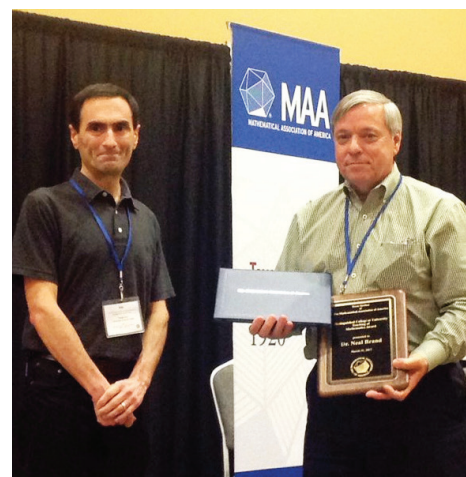*~ Chair*

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Neal Brand Retires

Professor Neal Brand retired this year after a very prestigious career at UNT. Dr. Brand received his Ph.D. from Stanford University in 1978, and came to UNT in 1983. His research is in the areas of the homotopy theory of branched coverings and combinatorial graph theory. He served as Chair of the department for 8 years, finishing in 2007. In 2012 Dr. Brand received the President's Council Teaching Award, and in 2013 he was designated a Distinguished Teaching Professor in recognition of his outstanding achievements in the classroom. In 2017 he received the Texas Section of the MAA Award for Distinguished University Teaching of Mathematics.

Professor Brand has displayed excellence in teaching throughout his entire career at UNT. His effectiveness in teaching has been witnessed by outstanding student evaluations, innovative teaching, and curriculum design. He has supervised six Ph.D. dissertations and five masters projects here at UNT. His dedication to education went far beyond the classroom. For years he coached teams of undergraduate students participating in the Putnam Competition. He has been very active in the Mathematical Association of America

(MAA), and from 2010 to 2013 he was Governor of the Texas Section of MAA.

As a way to express our appreciation of Professor Brand's contributions to the department, members of the department made a donation to UNT's campus beautification fund in his honor. In exchange for that donation, UNT planted a tree on campus on March 24 with a plaque marking dedicated to Professor Brand.
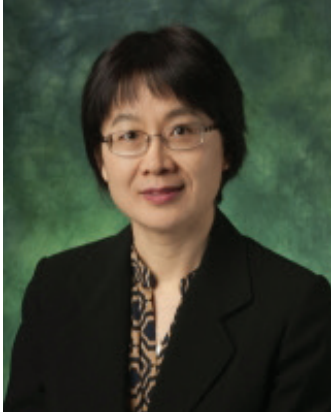

Neal Brand receives the Texas Section of the MAA Award for Distinguished University Teaching

{Faculty News

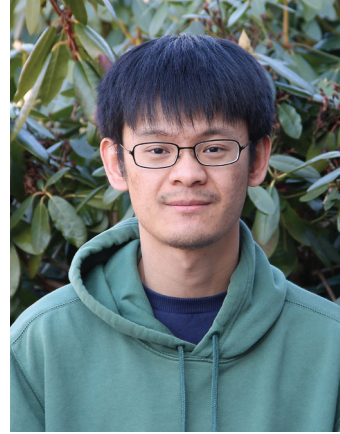## New Associate Professor

Xuexia (Helen) Wang

joined the department in Fall 2016 as an associate professor. She received two Ph.D.'s, one in quantitative economics in July 2004 from Capital University of Economics and Business, in Beijing, China, and another in statistics/mathematical sciences in December 2008 from Michigan Technological University, in Houghton, Michigan. Her research interests are in biostatistics. Her work on using math to treat childhood cancer was featured in the March 1, 2017 edition of the UNT newsletter InHouse.

NSF postdoc

William Chan

will join the department as a postdoc in Fall 2017, sponsored by a prestigious NSF postdoctoral fellowship. He will graduate with his Ph.D. this spring from the California Institute of Technology. His research is in set theory, descriptive set theory, and Borel equivalence relations. His Ph.D. advisor is Alexander Kechris, and his postdoctoral mentor at UNT will be Steve Jackson.

College Split

The current College of Arts and Sciences (CAS) will split on May 15, 2017 into two new colleges: College of Science (COS) and College of Liberal Arts and Social Sciences (CLASS). Our department Chair, Su Gao has been appointed Interim Dean of COS. He is currently leading a task force to create COS, and Charles Conley and Olav Richter are also serving on that task force. Charles Conley has been appointed Interim Chair of the department, and John Quintanilla has been appointed Associate Dean for Undergraduate Studies of COS. Congratulations to Su, Charles, and John on their new appointments!

Promotions

Several faculty members were promoted this year. Dr. Lior Fishman and Dr. Rajeev Azad received tenure and were promoted to associate professor. Lucia Liu was promoted to principal lecturer, and Dr. Nirmala Naresh was promoted to senior lecturer. Congratulations to Lior, Rajeev, Lucia, and Nirmala for their hard-earned achievement.

{Number Facts

2016 Research by the Numbers:

In 2016 the department had 24 tenure/tenure-track faculty members of which 21 had a research component to their workloads.

50 research papers published by faculty members

7 research grants from the Simons Foundation

8 research grants from the National Science Foundation

11 foreign countries where faculty members gave invited research talks (Australia, Austria, Canada, France, Japan, Poland, Romania, Singapore, Taiwan, United Kingdom, and Vietnam)

2 postdocs

1 conference hosted by the department

13 research journals where faculty members served on the editorial board

{ Department News

New Staff Member

Laura Carson joined the Department of Mathematics as the Grant and Travel Coordinator in September 2016. Laura worked for several years in the airline industry before moving from California to Texas. In 2013 she received her Bachelors in Mathematics with a minor in Chemistry at Texas Woman's University. Prior to the working in the math department she worked in International. Currently she processes all faculty travel documents and is responsible for purchases and travel made through grants. Laura also manages the math department Twitter and Facebook page. We are happy to have Laura join the math team and look forward to working with her.

Carol Fichera is a returning Department of Mathematics staff member. Carol rejoined the math team in January 2017 and works as an Administrative Specialist IV, assisting the Graduate Program advisor, as well as assisting with class scheduling. Carol has an Associates degree in Radiologic Technology and previously worked for two years in the Admissions Department here at UNT. We are glad to have Carol rejoin the math team and look forward to working with her.

AMC Competition

Each year the Mathematical Association of America offers the American Mathematics Competition to middle school and high school students. The AMC 8 and AMC 10/12 offer a challenging competition for students who have not yet completed grades 8, 10 and 12 respectively. The UNT mathematics department offered all three levels of the exam. A total of 15 students from area middle schools participated in the AMC 8 in November, and 5 students from area high schools participated in the AMC 10/12 in February. Congratulations to all the students who participated in the AMC 8 and AMC 10/12. A special recognition goes to Sarah Quintanilla who made the top score in the AMC 8, and to Andrew Bogdan who made the top score in the AMC 10.

UNT Mathematics and Social Media

The Department of Mathematics entered the 21st Century by having a presence on Twitter and Facebook. Follow us at @UNTMATH on twitter and UNT Mathematics on Facebook. We promise not to overwhelm you with postings!

{ **Alumni** News

Teach North Texas

Approximately half of our undergraduate math majors are also pursuing teacher certification through the innovative Teach North Texas program. TNT enjoys a strong reputation in the DFW metroplex for producing college graduates who are well prepared to begin their careers as high school educators. Indeed, every TNT graduate who wanted to be a secondary mathematics teacher is currently employed as a teacher, and multiple school districts reach out to the program every year to see if there are any graduates left to send them. This year, TNT has expanded its reach to also include the preparation of middle school mathematics teachers.

Alumni Highlight

Dr. David Simmons, a former undergraduate and graduate student from UNT, received his Ph.D. in 2012 from the UNT math department under the supervision of Professor Urbanski. He worked as a Zassenhaus Assistant Professor at Ohio State University, and is currently a Postdoctoral Research Fellow at the University of York. His main areas of research are dynamical systems, Diophantine approximation, and the interactions between the two fields. He currently has 19 publications, with four more papers accepted for publication, many in highly respected journals. This is quite an impressive output for a recent graduate!

Math Blog

Dr. Quintanilla hosts a daily blog on mathematics and mathematics education at www.meangreenmath.com. Though he began his blog to continue mathematical conversations with his former students, his blog was recently selected as one of the Top 100 Math Blogs in the World; others in the list include the blogs of Terence Tao, Keith Devlin, the American Mathematical Society, Wolfram Research, and Scientific American magazine. To date, Dr. Quintanilla's blog has received nearly 150,000 page views with over 6,000 page views per month. You are welcome to visit his blog and to even subscribe via e-mail or Facebook.
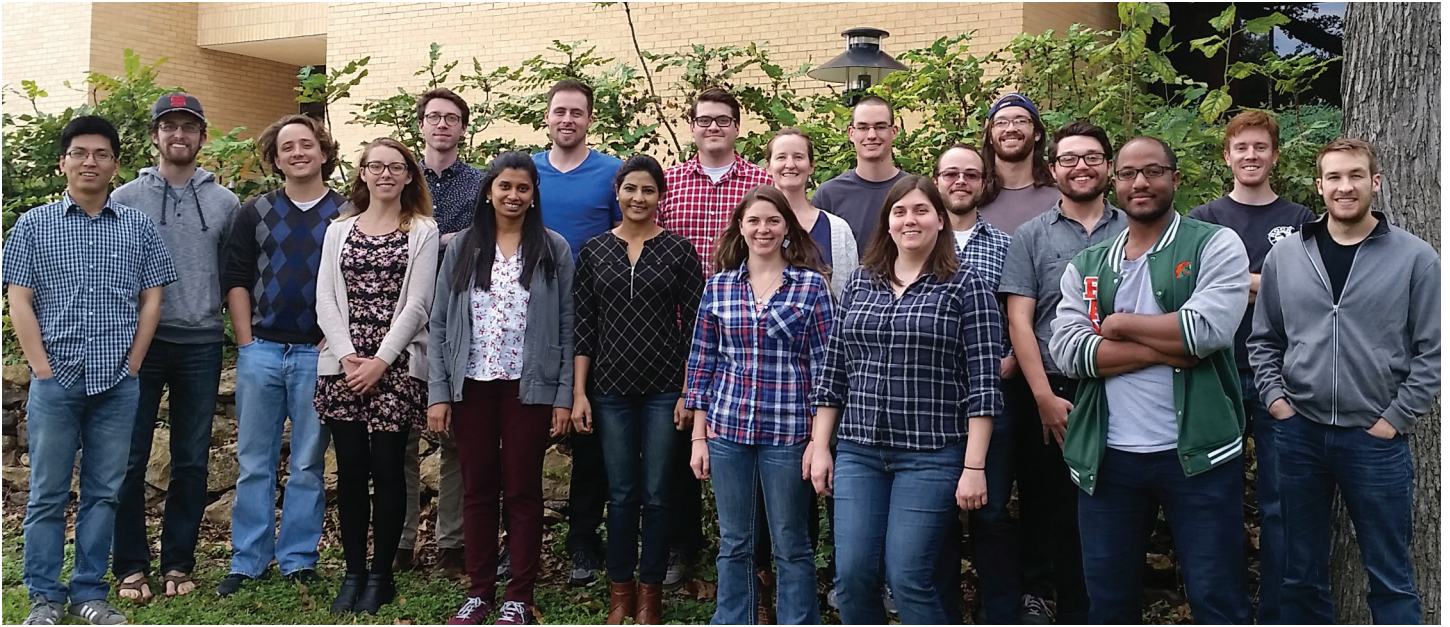
Where Are They Now?

UNT mathematics graduates live and work all over the world. Here is an update on a few of them.

- Dr. Cheng Chang (Ph.D. 2016) is an Assistant Professor at Mercy College.
- Dr. Cody Dance (Ph.D. 2016) is an Adjunct Professor at Las Positas College.
- Dr. Ojas Dave (Ph.D. 2016) is a Lecturer at Radford University.
- Dr. James Martin (Ph.D. 2016) is a Visiting Instructor at Hardin-Simmons University.
- Dr. Elizabeth Rasmussen (M.S. 2016) is an Adjunct Professor at UNT.
- Dr. Drew Tomlin (Ph.D. 2016) is a Visiting Instructor at Hendrix College.
- Dr. Christine Uhl (Ph.D. 2016) is an Assistant Professor at St. Bonaventure University.

{ Graduate Student News

Algebra Symposium

The 7th biannual Algebra Symposium was hosted and organized by Chelsea Drescher, Drew Tomlin, and the University of North Texas, on Saturday, November 5th, in the General Academic Building. There were 25 participants and 7 speakers from the University of North Texas, University of Texas at Arlington, and University of Oklahoma. Five participants (three from OU and two from UTA) were in their first semester in their Ph.D. program. The next Algebra Symposium will be organized and held at the University of Texas at Arlington on April 29th, 2017.

Incoming and Outgoing Graduate Students

The department welcomed 16 new fully supported graduate students this year, 14 in Fall 2016 and 2 in Spring 2017.

Ten graduate students completed their degree in the past year, seven with a Ph.D. and three with an M.S.

Graduate	Degree	Date	Advisor
Christopher Caruvana	Ph.D.	May 2017	Kallman
Jose Chavez	M.S.	May 2017	Krueger
Cody Dance	Ph.D.	Dec. 2016	Jackson
Ojas Dave	Ph.D.	Aug. 2016	Douglass
Jared Holshouser	Ph.D.	May 2017	Jackson
James Martin	Ph.D.	Dec. 2016	Richter
Jennifer McCluskey	M.S.	May 2017	Liu
Elizabeth Rasmussen	M.S.	Aug. 2016	Quintanilla
Drew Tomlin	Ph.D.	Dec. 2016	Douglass
Christine Uhl	Ph.D.	Aug. 2016	Shepler

{ Undergraduate News

Math Department CAS Ambassadors

Madison Carrier and Ashley Taylor will serve as ambassadors representing the Department of Mathematics for the 2017-18 academic year.
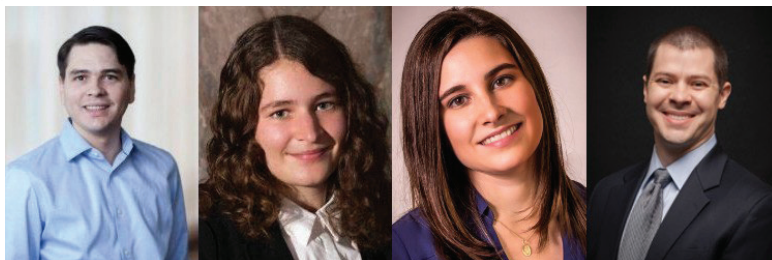
Math Club

Math Club Picnic, Fall 2016

The Math Club, consisting mostly of undergraduate math majors, meets every Friday at 1 p.m. in GAB 440A to discuss mathematics informally, interact, and play games. The math club organizes a picnic each semester at North Lakes Park. Soccer, croquet, and ultimate frisbee are among the favorite activities at this fun social event. On March 30, members of the math club attended the Mathematical Association of America (MAA) Calculus Bowl at Texas A&M University-Commerce in Commerce, Texas. Our team came in 6th out of 28 teams. For more information about the math club, go to http://math.unt.edu/seminars/math-club.

Actuarial Science

The Actuarial Science Club held the first meeting on Thursday, February 9, 2017. The current secretary is Sarah How.

UNT Actuarial Science Program presented the Actuarial Science Information Session with Speakers from Aon on February 10 to help students learn more about the actuarial profession, and gain insight into internships and job opportunities. Two speakers, Alex Pax and Ashley Miller, are former UNT students. Alex Pax graduated from UNT in December 2014 with a major in mathematics. He has successfully completed exams 1/P, 2/FM, 3/MFE, 4/C, and 5. Ashley Miller graduated from UNT in 2016 with a major in mathematics. She has successfully completed exams 1/P and 2/FM, as well as her VEEs.

AON Representatives: From Left to Right: Alex Pax, Ashley Miller, Courtney Morris, and Doug Nistetter
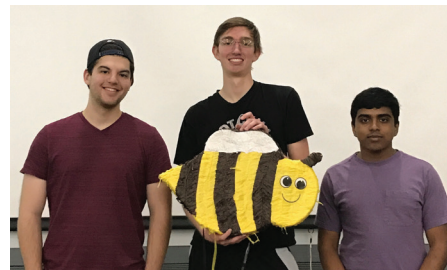
Putnam Competition

Several undergraduates participated in the December 2016 Putnam exam. They were: Tony Gao, Andrew Sansom, Ethan Seals. The William Lowell Putnam exam is offered every year on the first Saturday in December to undergraduates. The problems are quite challenging. For the last several years in the fall, Dr. Allaart and Dr. Iaia have team taught Math 3010 – a problem solving class which helps undergraduates prepare for the Putnam exam.
http://math.scu.edu/putnam/; http://kskedlaya.org/putnam-archive/

Integration Bee 🐝

The integration bee is a contest for undergraduate and high school students, which tests skills in evaluating indefinite integrals. There's fun, cake, Math Trivia, and lots of integrals. It takes place each spring, and this year was on April 7. The current organizer of the integration bee is Dr. Iaia. The 2017 winners were Zach Thompson (First Place, TAMS), Pranav Murugan (Second Place, TAMS), and Austin McGregor (Third Place). Prizes are $75, $50, and $25 for first, second, and third place respectively, and the prize money can be used towards UNT tuition. For more information, go to http://math.unt.edu/integration-bee.

Integration Bee winners, from left to right: Austin McGregor, Zach Thompson, Pranav Murugan

Problem of the Month

Every month during regular semesters, the math department and the math club feature the problem of the month competition. This contest is open to all currently enrolled undergraduate students. Students who submit correct solutions receive cash prizes and certificates of excellence. For more information, go to: http://math.unt.edu/problem-of-the-month.

Mathematical Modeling Competition

Each year, students at UNT compete in the Mathematical Contest in Modeling (MCM). The UNT MCM team is coached by Dr. Jay Liu. In Spring 2016 Jeffrey Huang, Zachary Simpson, and Steven Yuan competed for five days, January 28 – February 1. The team was recognized as Honorable Mention.

Calculus Bowl 2017
Pictured from Left to Right: Zhaochen Gu, Tramshika DeWalt, Ethan Seal, James Atchley

This year UNT has two MCM teams.

Team 1: Zachary Simpson and Jeremy Trammell and

Team 2: Fernando Moreno, Benjamin Sivoravong, and Zhanwei Xu.

Good luck, UNT MCM teams!

{ Department Awards

2017 College & Department Awards and Scholarships

Department Faculty Awards

Faculty Research Award:	Dr. Mariusz Urbanski
Faculty Teaching Award:	Dr. Olav Richter and Krista Hines
Faculty Service Award:	Dr. William Cherry and Dr. Huguette Tran

College Graduate Awards

Altermann and Bradford Scholarship:	Logan Crone

Department Graduate Awards

Teaching Award:	James Reid
Academic Excellence Award:	Philip Puente
Overall Excellence Award:	Logan Crone

College Undergraduate Awards

Aspiring Actuary Scholarship:	Madison Carrier
Newell Memorial Scholarship:	Madison Carrier

Department Undergraduate Scholarships

E. H. Hanson Scholarship:	Kaitlyn Mustico
Ram Lal Seekri Scholarship:	Deanna Cravens

{ **You** Can Help!

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E-mail _____ Phone (_____) _____

Enclosed is my check for $_____.

Please make check payable to the University of North Texas.

Please charge $_____ to my:

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{ Please mail contribution to:

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Department of Mathematics
1155 Union Circle #311430

I would like my gift to support the following areas in the amounts specified:

$_____   Mathematics Department Fund: An expendable fund that enables the chair to support department priorities such as faculty recruitment, outreach activities, research visitors, student events and conferences.

$_____   John Ed Allen Scholarship

$_____   David F. Dawson Scholarship $_____   Mildred Masters McCarty Scholarship

$_____   E. H. Hanson Scholarship $_____   John W. Neuberger Scholarship

$_____   Joseph P. S. Kung Scholarship $_____   Roger L. Perry Scholarship

$_____   The Dan Mauldin Endowment $_____   Ram Lal Seekri Scholarship
                for Student Excellence

☐   **I would like to make this donation anonymously.**

We invite friends of the department to contribute to an existing fund or to contact the chair to discuss creating a new fund for a specific purpose. Thank you for supporting the activities of the UNT Department of Mathematics.

Please Tell Us!

Your classmates and the UNT Department of Mathematics would love to know what important things are going on in your life. Email your updates to mathchair@unt.edu. We look forward to hearing from you!

Name _____ E-mail Address _____

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