

Dr. John Quintanilla

P.O. Box 311430
Department of Mathematics
University of North Texas
Denton, TX 76203-1430

3729 Lockhurst Lane
Denton, TX 76208-7550
Phone: (940) 382-7867

Office: General Academic Building, Room 418D
Phone: (940) 565-4043
Fax: (940) 565-4805
E-mail: jquintanilla@unt.edu
Web: www.math.unt.edu/~johnq

Education

Princeton University

Ph.D. in Civil Engineering and Operations Research (January 1997)
Thesis Topic: "Microstructure and Properties of Random Materials"
Research Advisor: Prof. Salvatore Torquato
M.A. in Civil Engineering and Operations Research (November 1994) GPA: 4.15/4.0

Stanford University

M.S. in Mathematics (June 1992) GPA: 3.86/4.0
B.S. in Mathematics (June 1992) GPA: 3.89/4.0

Employment

University of North Texas

Lecturer: August 1996 - July 1997
Assistant Professor: August 1997 - June 2003
Associate Professor: June 2003 - present

Teaching

University of North Texas

1. Math 1650, "Precalculus" (TAMS): Fall 1996-2007.
2. Math 1650, "Precalculus": Spring 1998.
3. Math 1680, "Elementary Probability and Statistics": Fall 1997-1999, 2002; Spring 2000, 2003, 2006; Summer I 2002-2003; Summer II 2002.
4. Math 1710, "Calculus I" (TAMS): Spring 1997-2008.
5. Math 1720, "Calculus II": Spring 1999.
6. Math 1780, "Probability": Fall 1996.
7. Math 3410, "Differential Equations I": Fall 2000; Spring 2004, 2005.
8. Math 3420, "Differential Equations II": Spring 2001.
9. Math 3680/4980, "Applied Statistics": Spring 2007-2008, Fall 2007-2008.
10. Math 4050, "Advanced Topics in the Secondary Mathematics Curriculum": Spring 2009.
11. Math 4500, "Introduction to Topology": Spring 1997.
12. Math 4610, "Probability": Fall 2001, 2003, 2006.
13. Math 4650, "Statistics": Spring 2002.
14. Math 4900, "Special Topics": Fall 1997.
15. Math 4900, "Seminar in Problem Solving": Fall 2001, Spring 2002, Fall 2002.
16. Math 4900, "Statistics," Summer 2003.
17. Math 4900, "Partial Differential Equations," Spring 2004.
18. Math 4900, "Actuarial Mathematics," Spring 2005.
19. Math 4900, "Special Problems", Spring 2005 for undergraduate research.
20. Math 4900, "Special Problems", Summer 2005 for undergraduate research.
21. Math 4900, "Probability," Summer 2007.
22. Math 4900, "Special Problems", Summer 2007 for undergraduate research.
23. Math 4900, "Applied Statistics," Summer 2008.
24. Math 4900, "Special Problems", Summer 2008 for undergraduate research.
25. Math 4900, "Special Problems", Spring 2009 for undergraduate research/honors thesis.
26. Math 4951, "Honors College Thesis," Summer 2009.
27. Math 5000, "Instructor Issues for the Professional Mathematician": Fall 2004-2005.
28. Math 5810, "Probability": Fall 2003, 2006.
29. Math 5900, "Stochastic Geometry": Spring 2006
30. Math 6900, "Stochastic Geometry": Fall 2005, Spring 2006
31. Upward Bound Math and Science: Summer 1998, 2000-2007.

Princeton University

Teaching Assistant: Fall 1995 "Computer Methods for Problem Solving": Spring 1995.

Stanford University

Homework Grader: September 1989 - June 1992.

Senior Tutor: January 1989 - June 1991.

AWARDS

National Science Foundation Minority Graduate Fellowship, 1992.

Ford Foundation Predoctoral Fellowship for Minorities (declined), 1992.

Excellence in Teaching Award, Princeton University Engineering Council, 1996.

Nominee, Association of Princeton Graduate Alumni Teaching Award, 1996.
Texas Project NExT (New Experiences in Teaching) Fellow, 1997-1998.
Honorary Member, UNT Golden Key National Honor Society, 1999.
Nominee, Fessor Graham Award, 2001.
Coca-Cola Scholars Foundation Joseph B. Whitehead Educator of Distinction Award, 2001.
Who's Who Among America's Teachers, 2002.
Coca-Cola Scholars Foundation Joseph B. Whitehead Educator of Distinction Award, 2003.
UNT President's Council Teaching Award, 2004.
Texas Section of the Mathematical Association of America Distinguished College or University Teaching of Mathematics Award, 2005.
Honorary Alumnus, Texas Academy of Mathematics and Science, 2005.
Teacher of Merit, Intel Science Talent Search, 2008.
Finalist, UNT Teacher Scholar Award, 2009.

THESIS COMMITTEES

Member, Dissertation Committee for Artemi Berlinkov, 2001.
Member, Master's Thesis Committee for Mario Jimenez, 2002.
Member, Dissertation Committee for LeRoy Valdes, 2002.
Advisor, Master's Thesis Committee for Pavan Appannagari, 2005.
Defense of "Survival Probability and Dynamic Programming" made on May 31, 2005.
Member, Master's Thesis Committee for Orestis Vantzou, 2006.
Member, Master's Thesis Committee for John Adams, 2006.
Advisor, Master's Thesis Committee for Chris Tiftickjian, 2005-2006.
Defense of "Corner Positive Matrices and the Class of Unit Covariances" made on August 11, 2006.
Member, Master's Thesis Committee for Evan Brooks, 2007.
Advisor, Master's Thesis Committee for Benjamin Owens, 2008-2009.
Defense of "Continuum Percolation with Steps on the Square or Disc" made on July 2, 2009.
Member, Dissertation Committee for Travis Cogdill, 2009.

Research

BOOKS

1. M. Bittinger, N. Brand and J. Quintanilla, **Calculus for the Life Sciences**, 1st edition (Addison-Wesley, New York, 2006).

PEER-REVIEWED AND INVITED PUBLICATIONS

Stochastic Geometry and Applications to Materials Science

2. J. Quintanilla and S. Torquato, "New Bounds on the Elastic Moduli of Suspensions of Spheres," *Journal of Applied Physics*, **77**, pp. 4361-4372 (1995). This article was funded by a National Science Foundation Minority Graduate Fellowship.
3. J. Quintanilla and S. Torquato, "Microstructure and Conductivity of Hierarchical Laminate Composites," *Physical Review E*, **53**, pp. 4368-4378 (1996). This article was funded by a National Science Foundation Minority Graduate Fellowship.
4. J. Quintanilla and S. Torquato, "Lineal Measures of Clustering in Overlapping Particle Systems," *Physical Review E*, **54**, pp. 4027-4036 (1996). This article was funded by a National Science Foundation Minority Graduate Fellowship.
5. J. Quintanilla and S. Torquato, "Clustering Properties of d -dimensional Overlapping Spheres," *Physical Review E*, **54**, pp. 5331-5339 (1996). This article was funded by a National Science Foundation Minority Graduate Fellowship.
6. J. Quintanilla and S. Torquato, "Microstructure Functions for a Model of Statistically Inhomogeneous Random Media," *Physical Review E*, **55**, pp. 1558-1565 (1997). This article was funded by a National Science Foundation Minority Graduate Fellowship.
7. J. Quintanilla and S. Torquato, "Local Volume Fraction Fluctuations in Random Media," *Journal of Chemical Physics*, **106**, pp. 2741-2751 (1997). This article was funded by a National Science Foundation Minority Graduate Fellowship.
8. J. Quintanilla and S. Torquato, "Clustering in a Continuum Percolation Model," *Advances in Applied Probability*, **29**, pp. 327-336 (1997). This article was funded by a National Science Foundation Minority Graduate Fellowship.
9. J. Quintanilla and S. Torquato, "Local Volume Fraction Fluctuations in Periodic Heterogeneous Media," *Journal of Chemical Physics*, **110**, pp. 3215-3219 (1999).
10. J. Quintanilla, "Microstructure and Properties of Random Heterogeneous Materials: A Review of Theoretical Results," *Polymer Engineering and Science*, **39**, pp. 559-585 (1999).
11. J. Quintanilla and S. Torquato, "Percolation in a Model of Statistically Inhomogeneous Random Media," *Journal of Chemical Physics*, **111**, pp. 5947-5955 (1999). This article was funded by a UNT Faculty Research Grant and a UNT Junior Faculty Summer Research Fellowship.
12. J. Quintanilla, "Microstructure Functions for Random Media with Impenetrable Particles," *Physical Review E*, **60**, pp. 5788-5794 (1999). This article was funded by a UNT Junior Faculty Summer Research Fellowship.
13. J. Quintanilla, S. Torquato and R. M. Ziff, "Efficient Measurement of the Percolation Threshold for Fully Penetrable Disks," *Journal of Physics A: Mathematical and General*, **33**, pp. L399-L407 (2000). This article was funded by a UNT Junior Faculty Summer Research Fellowship.
14. J. Quintanilla, "Measurement of the Percolation Threshold for Fully Penetrable Disks of Different Radii," *Physical Review E*, **63**, 061108 (2001). This article was funded by a UNT Junior Faculty Summer Research Fellowship.

15. W. Brostow, A. M. Cunha, J. Quintanilla and R. Simões, "Crack Formation and Propagation in Molecular Dynamics Simulations of Polymer Liquid Crystals," *Macromolecular Theory and Simulations*, **11**, pp. 308-314 (2002).
16. J. Quintanilla, R. F. Reidy, B. P. Gorman and D. W. Mueller, "Gaussian Random Field Models of Aerogels," *Journal of Applied Physics*, **93**, pp. 4584-4589 (2003).
17. S. Zuyev and J. Quintanilla, "Estimation of Percolation Thresholds via Percolation in Inhomogeneous Media," *Journal of Mathematical Physics*, **44**, pp. 6040-6046 (2003).
18. J. Quintanilla, "Measures of Clustering in Systems of Overlapping Particles," *Mechanics of Materials*, **38**, pp. 848-857 (2006).
19. J. A. Quintanilla and W. M. Jones, "Using Convex Quadratic Programming to Model Random Media with Gaussian Random Fields," *Physical Review E*, **75**, 046709 (2007).
20. J. A. Quintanilla, J. T. Chen, R. F. Reidy, and A. J. Allen, "Versatility and Robustness of Gaussian Random Fields for Modeling Random Media," *Modelling and Simulation in Materials Science and Engineering*, **15**, pp. S337-S352 (2007).
21. J. A. Quintanilla and R. M. Ziff, "Near Symmetry of Percolation Thresholds of Fully Penetrable Disks with Two Different Radii," *Physical Review E*, **76**, 051115 (2007).
22. J. A. Quintanilla, "Necessary and Sufficient Conditions for the Two-Point Phase Probability Function of Two-Phase Random Media," *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **464**, pp. 1761-1779 (2008).

Mathematics Education

23. J. Quintanilla, "Beyond the Chalkboard: The Job of a Math Professor", *Imagine*, **5**, No. 4, p. 10 (March/April 1998).
24. J. Quintanilla, "Ascending and Descending Fractions," *Mathematics Teacher*, **95**, pp. 539-542 (2002).
25. J. Quintanilla, "The Taylor Polynomials of $\sin \theta$," *College Mathematics Journal*, **38**, No. 1, pp. 58-59 (2007).
26. J. Quintanilla, "Fallacies, Flaws, and Flimflam," *College Mathematics Journal*, **38**, No. 5, pp. 375-376 (2007).
27. J. A. Quintanilla, J. Liu, N. D'Souza and R. Mirshams, "Integration of Engineering Concepts in Freshman Calculus," *2007 American Society of Engineering Education Annual Conference*, AC 2007-1878.
28. E. Brooks, N. Brand and J. Quintanilla, "Mathematics Placement Changes at the University of North Texas," in preparation.

UNDERGRADUATE RESEARCH

1. Advisor, Jennifer Newsom, 1998.
2. Advisor, Jonathan Burns, 1998-2000.
3. Advisor, Bert Chan, 2000.
4. Advisor, Su Kim, 2000.
5. Advisor, Albert Shiue, 2001.
6. Advisor, Steve Brunton, 2001-2002.
7. Co-advisor, Shawn Ranjbaran, 2003-2004.
8. Co-advisor, Allen Torng, 2003-2004.
9. Co-advisor, John Freeman, 2003-2004.
10. Co-advisor, Brian Britton, 2003-2005.
11. Co-advisor, Russell Landry, 2003-2004.
12. Advisor, Ambreen Rahman, 2004-2005.
13. Advisor, Max Jones, 2004-2006. (Winner of a 2006 Barry M. Goldwater scholarship.)
14. Co-advisor, Jared Tucker, 2005.

15. Advisor, Abigail Goring, 2005.
16. Co-advisor, Timmy Chan, 2005.
17. Advisor, Jordan Chen, 2005.
18. Advisor, Osbert Bastani, 2006-2008. (Semifinalist, 2007 Siemens Westinghouse Competition.)
19. Advisor, Di Wu, 2006-2008. (Semifinalist, 2007 Siemens Westinghouse Competition.)
20. Advisor, Robert Schumaker, 2008.
21. Advisor, Tonya March, 2009. (Published by T. March in *The Eagle Feather* in 2009.)

GRANTS

Teaching Grants

1. (with M. Monticino) University of North Texas, Teaching with Technology Category (Summer 1999); Project Title: *Distributed Learning Statistics Course and Virtual Statistics Center*; Amount Granted: \$3,850; Amount Requested: \$5,200.
2. (with M. Monticino) University of North Texas, Undergraduate Instructional Development Grant (Summer 1999); Project Title: *Virtual Statistics Center*; Amount Granted: \$7,700; Amount Requested: \$15,600.
3. Senior Personnel (in support of R. A. Mirshams, N. A. D'Souza, O. N. Garcia, S. Nasrazadani, and M. R. Varanasi, co-PIs) National Science Foundation, Engineering Education Centers, Department Level Reform Program (March 2005); Project Title: *Planning for an Innovative Interdisciplinary Mechanical and Energy Engineering Curriculum*; Amount Granted: \$99,954; Amount Requested: \$99,954.
4. Senior Personnel (in support of R. A. Mirshams, N. A. D'Souza, O. N. Garcia, S. Nasrazadani, and M. R. Varanasi, co-PIs) National Science Foundation, Engineering Education Centers, Department Level Reform Program (December 2005); Project Title: Research Experiences for Teachers supplement to *Planning for an Innovative Interdisciplinary Mechanical and Energy Engineering Curriculum*; Amount Granted: \$20,000; Amount Requested: \$20,000.
5. co-PI (with M. Harris, co-PI) National Mathematics and Science Initiative and Greater Texas Foundation (April-December 2007); Project Title: *Teach North Texas*; Amount Granted: \$2,400,000 (2008-2013); Amount Requested: \$2,400,000.
6. co-PI (with M. Harris, co-PI) National Mathematics and Science Initiative and Greater Texas Foundation (April 2008); Project Title: *Teach North Texas Math and Science Teacher Scholarship Program*; Amount Granted: \$150,000 (2008-2010); Amount Requested: \$150,000.
7. Educational Advancement Foundation; Project Title: *Teach North Texas: Functions and Modeling*; Amount Granted: \$21,150; Amount Requested: \$39,250.
8. co-PI (with M. Harris, co-PI) Texas Instruments Foundation (August 2009); Project Title: *Teach North Texas TI Foundation Master Teachers*; Amount Granted: \$425,000; Amount Requested: \$425,000.
9. co-PI (with D. Mason [PI], L. Hughes, P. Sweany, and K. Hunter), NSF Science, Technology, Engineering, and Mathematics Talent Enhancement Program (September 2009). Project Title: *Student Talent Expansion Programs Designed for Undergraduate Partnerships and Science Technology Engineering Mathematics Learning Centers (STEP'D UP STEM Learning Centers)*. Dates: June 1, 2010 – May 31, 2015. Amount requested: \$2,484,877.

Research Grants

1. University of North Texas, RIP Category (Summer 1997); Project Title: *Characterizing the Microstructure of Random Heterogeneous Materials*; Amount Granted: \$2,500; Amount Requested: \$5,000.
2. University of North Texas, Junior Faculty Summer Research Fellowship (Summer 1997); Project Title: *Characterizing the Microstructure of Random Heterogeneous Materials*; Amount Granted: \$3,500; Amount Requested: \$3,500.

3. University of North Texas, Junior Faculty Summer Research Fellowship (Summer 1998); Project Title: *Microstructure and Effective Properties for a New Model of Random Heterogeneous Materials*; Amount Granted: \$3,500; Amount Requested: \$3,500.
4. University of North Texas, Junior Faculty Summer Research Fellowship (Summer 2000); Project Title: *Percolation Phenomena for Fully Penetrable Disks and Spheres*; Amount Granted: \$5,000; Amount Requested: \$5,000.

CONFERENCE PROCEEDINGS

Invited Presentations

1. *Modeling Inhomogeneous Random Media*, invited talk presented for the *Joint AMS-SMM International Meeting*, Denton, TX, May 19-22, 1999. With S. Torquato.
2. *Stochastic Geometry: Simulation and Computation of Cluster Statistics*, invited talk presented for the *41st Annual Technical Meeting of the Society of Engineering Science*, Lincoln, NE, October 10-13, 2004.
3. *Instructor Issues for the Professional Mathematician*, invited talk presented for Project NExT and Project ACCESS at the *2006 MAA Texas Section Meeting*, Wichita Falls, TX, April 7, 2006.
4. *Inspiring Students Beyond Computational Proficiency*, invited address presented for the *2006 MAA Texas Section Meeting*, Wichita Falls, TX, April 7, 2006.
5. *Analytic and Computational Reconstruction of Random Media*, invited talk presented at the *7th World Congress on Computational Mechanics*, Los Angeles, CA, July 21, 2006.
6. *Characterization of Gaussian Random Field Models of Aerogels*, presented at the *2008 ASME International Mechanical Engineering Congress and Exposition*, Boston, MA, November 3, 2008. With O. Bastani and D. Wu.

Contributed Presentations

1. *Microstructure and Properties of Random Heterogeneous Materials: A Review of Theoretical Results*, presented for the *International Conference on Polymer Characterization*, Denton, TX, January 8-10, 1997.
2. *Microstructure Functions for a Model of Statistically Inhomogeneous Random Media*, presented for the *Second SIAM Conference on Mathematical Aspects of Materials Science*, Philadelphia, PA, May 12-14, 1997. With S. Torquato.
3. *Microstructure Functions for Models of Impenetrable Nonaligned Particles*, presented for the *1998 Joint Mathematics Meetings*, Baltimore, MD, January 7-10, 1998.
4. *Simulating Models of Impenetrable Particles*, presented for the *International Conference on Polymer Characterization*, Denton, TX, January 11-14, 2000.
5. *Computer Simulation and Animation of Crack Propagation in Polymer Liquid Crystals*, poster presented for the *International Conference on Polymer Characterization*, Denton, TX, January 11-14, 2000. With W. Brostow, C. Karashin and J. Khatib.
6. *Percolation and Microstructure for a Model of Statistically Inhomogeneous Disks*, presented for the *Third SIAM Conference on Mathematical Aspects of Materials Science*, Philadelphia, PA, May 21-24, 2000. With S. Torquato and R. Ziff.
7. *Making Your Retirement Fund Last Forever*, presented for the *2001 Joint Mathematics Meetings*, New Orleans, LA, January 10-13, 2001.
8. *Making Your Retirement Fund Last Forever*, presented for the *2001 Texas MAA Section Meeting*, Houston, TX, March 29-31, 2001.
9. *Mathematical Models of Aerogels*, presented for the *SIAM Conference on Mathematical Aspects of Materials Science*, Los Angeles, California, May 23-26, 2004.

10. *Proofs Without Words: The Maclaurin Polynomials of $\sin x$* , presented for the 2005 Texas MAA Section Meeting, Arlington, TX, April 14-16, 2005.
11. *Molecular Dynamics Simulations of Chain-Forming Inorganic Glasses*, presented for the 65th Annual Technical Conference of the Society of Plastics Engineers, Boston, MA, May 2005. With W. Brostow, K. Kavi, J.-M. Saiter and L. White.
12. *Convex Quadratic Programming and Gaussian Random Fields*, presented for the 2006 MAA Texas Section Meeting, Wichita Falls, TX, April 7, 2006. With W. M. Jones. Winner of an Outstanding Student Presentation Award.
13. *Verifying Einstein's Theory of General Relativity in a First-Semester Differential Equations Class*, presented for the 2006 MAA Texas Section Meeting, Wichita Falls, TX, April 7, 2006.
14. *Hydration and Percolation*, presented for the International Summit on Cement Hydration Kinetics and Modeling, Quebec City, QC, July 27-29, 2009. With G. Scherer, S. Peethamparan, J. Zhang, E. Weissinger, and S. Torquato.

UNT PRESENTATIONS

For the Department

1. *The Microstructure of the Poisson Blob Model*: presented in the Department's *Brown Bag Seminar*, November 1, 1996, 2 PM.
2. *Mathematical Methods for Characterizing the Microstructure and Effective Properties of Random Heterogeneous Materials*: presented for the Department's *Faculty Colloquium Series*, January 30, 1998, 1:00 PM.
3. *Prove that $\lim_{n \rightarrow \infty} \sum_{k=0}^n e^{-k} \frac{k^{n-k}}{(n-k)!} = \frac{1}{2}$* : presented for the Department's *Graduate Student Seminar Series*, February 27, 1998, 1:00 PM.
4. *Mathematical Methods for Characterizing the Microstructure and Effective Properties of Random Heterogeneous Materials*: presented for the Department's *Stochastic Seminar Series*, October 1, 1998, 12:30 PM.
5. *Percolation Phenomena in Inhomogeneous Random Media*: presented for the Department's *Stochastic Seminar Series*, April 23, 1999, 12:30 PM.
6. *Measuring Percolation Thresholds*, presented for the Department's *Stochastic Seminar Series*, September 30, 1999, 12:30 PM.
7. *Numerical Solutions to Portfolio Problems*, presented for the Department's *Stochastic Seminar Series*, November 11, 1999, 12:30 PM.
8. *Making Your Retirement Fund Last Forever*: presented jointly for the Department's *Graduate Student Seminar* and *Stochastic Seminar Series*, February 16, 2001, 12:00 PM.
9. *How to Make Your Retirement Fund Last Forever*: presented for the Department's *Stochastic Seminar Series*, November 2, 2001, 12:00 PM.
10. *An Elementary Proof of Pearson's Chi-Squared Test*: presented for the Department's *Stochastic Seminar Series*, February 15, 2002, 12:00 PM.
11. *Modeling with Gaussian Random Fields*, presented for the Department's *Stochastic Seminar Series*, February 14, 2003, 12:00 PM.
12. *Using Scattering Data to Mathematically Model Aerogels*, presented for the Department's *Stochastic Seminar Series*, March 7, 2003, 12:00 PM.
13. (with W. M. Jones) *Filtering Out Noise to Fit a Prescribed Model*, presented for the Department's *Applied Mathematics Seminar*, September 9, 2005, 1:00 PM.
14. *Gaussian Random Field Models of Aerogels*, presented for the Department's *Applied Mathematics Seminar*, April 13, 2007, 1:00 PM.

15. *Microstructure and Properties of Random Heterogeneous Materials*, presented for the *UNT Math Club*, October 5, 2007, 1:00 PM.

Other UNT Presentations

1. *Characterizing the Microstructure of Random Media: Theory and Applications*: presented for the *UNT Seminar in Materials Science and Engineering*, February 19, 1997, 3:30 PM.
2. *Rigorous Bounds on the Effective Properties of Random Heterogeneous Materials Through their Microstructure*: presented for the *UNT Physics Department Colloquium Series*, September 16, 1997, 3:30 PM.
3. *Mathematical Methods for Characterizing the Microstructure and Effective Properties of Random Heterogeneous Materials*: presented for *TAMS Junior Seminar Series*, February 16, 1998, 5:00 PM.
4. *Probability, Stochastic Geometry and Materials Science*: presented for *TAMS Junior Seminar Series*, October 26, 1998, 5:00 PM.
5. *Probability, Stochastic Geometry and Materials Science*: presented for *TAMS Junior Seminar Series*, October 25, 1999, 5:00 PM.
6. *Probability, Stochastic Geometry and Materials Science*: presented for *TAMS Junior Seminar Series*, October 9, 2000, 5:00 PM.
7. *Applying Mathematics to Problems in Random Materials*: presented jointly for the *UNT Physics Department Colloquium Series* and the *UNT Materials Science Department Colloquium Series*, October 10, 2000, 3:30 PM.
8. *Computational Issues in Applied Mathematics*, presented for *UNT Interdisciplinary Research Seminar Series*, September 10, 2004, 12:00 PM.
9. *Should You Trust the Polls? A Critique of Technopoly*, presented for the *TAMS Thursday Think Tank Series*, September 29, 2005, 8:00 PM.
10. *Inspiring Students Beyond Computational Proficiency*, presented for the *UNT Center for Teaching, Learning, and Assessment*, October 4, 2007, 12:00 PM.
11. *Exploring Science Education*, presented for the *I Have A Dream conference*, July 24, 2009. With A. Popa and B. Probst.

OTHER PRESENTATIONS

1. *Characterizing the Microstructure of Random Materials*: presented for the *Calvin Mathematics Colloquium*, held at Calvin College, Grand Rapids, MI, February 29, 1996, 3:30 PM.
2. *Mathematical Methods for Characterizing the Microstructure and Effective Properties of Random Heterogeneous Materials*: presented for the *SMU Mathematics Department Research Colloquium Series*, held at Dallas, TX, October 1, 1997, 3:30 PM.
3. *Mathematical Methods for Characterizing the Microstructure and Effective Properties of Random Heterogeneous Materials*: presented for the *Texas A&M Commerce Mathematics Department Student/Faculty Seminar Series*, held at Commerce, TX, October 8, 1997, 3:30 PM.
4. *Portfolio Survival with Stochastic Volatility Under Discrete Time*, presented for *Daniel H. Wagner Associates*, held at Malvern, PA, May 18, 2000, 11:30 AM.
5. *Applying Stochastic Geometry to Problems in Random Materials*: presented for the *University of Glasgow Statistics Seminar Programme*, held at the University of Glasgow, Scotland, June 6, 2001, 3:00 PM.

Service

REFEREE

1. Computational Statistics and Data Analysis
2. Comptes Rendus
3. Department of Energy, Office of Basic Energy Services
4. Industrial and Engineering Chemistry Research
5. Journal of the Mechanics and Physics of Solids
6. Physical Review E
7. Physical Review Letters
8. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences

MEMBERSHIPS

1. Mathematical Association of America, 1988-present.
2. Association of Christians in the Mathematical Sciences, 1996-present.

CONSULTING

1. Reviewer for S. Torquato, **Random Heterogeneous Materials: Microstructure and Macroscopic Properties** (Springer-Verlag, New York, 2002): 1999-2000.
2. Reviewer for the Graduate Record Examination Quantitative Exam: 2000-present.
3. Reviewer for M. L. Bittinger, **Calculus and Its Applications** (Addison-Wesley, New York, 2000): 2002.
4. Consultant for Tour Andover Controls: 2005.
5. Reviewer for M. Marder, **Research Methods** (Cambridge University Press): 2009.
6. Reviewer for E. P. Armendariz and M. L. Daniels, **Constructing Numbers: A Creative and Connected Approach** (Wiley): 2009.

UNT SERVICE

To the University

1. Library Faculty Focus Group, November 27, 1996.
2. University Representative, Nortel College Fair (Richardson, Texas), June 30, 1998.
3. Host, UIL SuperConference, September 18, 1999.
4. University Representative, Annual Meeting of the North Texas Commission (Dallas, Texas), September 22, 2000.
5. Panelist, 11th Annual Meeting of the Hispanic Friends of the University of North Texas, October 6, 2000.
6. Panelist, "What I Should Know About Graduate School," UNT College of Arts & Sciences Ambassadors program, October 29, 2001.
7. Student Evaluator, 5th Annual Texas McNair Research Conference, March 1, 2003.
8. Member, University Review Committee, 2003-2006.
9. Faculty Advisor, Eagles for Life, 2003-present.
10. Student Evaluator, 6th Annual Texas McNair Research Conference, February 21, 2004.
11. Student Evaluator, 7th Annual Texas McNair Research Conference, February 19, 2005.
12. Member, CAS Faculty Focus Group, May 11, 2005.
13. Member, CAS Undergraduate Affairs Committee, 2005-2006.
14. Member, URC Investigative Subcommittee, Fall 2005.
15. Student Evaluator, 8th Annual Texas McNair Research Conference, February 18, 2006.

16. Member, UNT Foundations of Excellence Learning Dimension Committee, 2006-2007.
17. Student Evaluator, 9th Annual Texas McNair Research Conference, February 17, 2007.
18. Panelist, "What do Award-Winning Teachers Do?", sponsored by the UNT Center for Teaching, Learning, and Assessment, October 4, 2007.
19. Student Evaluator, 10th Annual Texas McNair Research Conference, February 16, 2008.

With the College of Education

1. Co-Director, Teach North Texas, 2008-present.
2. Member, Hiring Committee for Associate Dean for Teacher Education, 2008-2009.
3. Member, Teacher Education Council, 2008-present.
4. Member, Teacher Education Council Executive Committee, 2009-present.
5. Member, College of Education Assessment Committee, 2009-present.

To TAMS

1. *Incoming Students*
 - a. Panelist, TAMS Preview Day, December 4, 1997.
 - b. Panelist, TAMS Preview Day, October 1, 1998.
 - c. Panelist, TAMS Preview Day, October 14, 1999.
 - d. Panelist, TAMS Preview Day, November 12, 1999.
 - e. Faculty Interviewer, TAMS Interview Day, January 26, 2001.
 - f. Faculty Interviewer, TAMS Interview Day, March 9, 2001.
 - g. Faculty Interviewer, TAMS Interview Day, March 16, 2001.
 - h. Member, TAMS Selection Committee, 2002-present
2. *Summer Orientation*
 - a. Panelist, 1997 TAMS Summer Orientation, June 13, 1997.
 - b. Panelist, 1998 TAMS Summer Orientation, June 5, 1998.
 - c. Proctor, 1999 TAMS Summer Orientation, June 1999.
 - d. Proctor, 2000 TAMS Summer Orientation, June 2000.
 - e. Proctor and Discussion Group Leader, 2001 TAMS Summer Orientation, June 15-16, 2001.
 - f. Proctor, 2002 TAMS Summer Orientation, June 15, 2002.
 - g. Proctor, 2003 TAMS Summer Orientation, June 14, 2003.
 - h. Proctor, 2004 TAMS Summer Orientation, June 12, 2004.
 - i. Proctor, 2005 TAMS Summer Orientation, June 11, 2005.
 - j. Proctor, 2006 TAMS Summer Orientation, June 10, 2006.
 - k. Proctor, 2007 TAMS Summer Orientation, June 9, 2007.
 - l. Proctor, 2008 TAMS Summer Orientation, June 8, 2008.
 - m. Proctor, 2008 TAMS Summer Orientation, June 7, 2009.
 - n. Proctor, 2009 TAMS Summer Orientation, June 13, 2009.
3. *Moving-In Day*
 - a. Volunteer, TAMS Moving-In Day, August 30, 1997.
 - b. Volunteer, TAMS Moving-In Day, August 29, 1998.
 - c. Volunteer and Discussion Group Leader, TAMS Moving-In Day, August 26, 1999.
 - d. Volunteer and Discussion Group Leader, TAMS Moving-In Day, August 24, 2000.
 - e. Volunteer and Discussion Group Leader, TAMS Moving-In Day, August 23, 2001.
 - f. Volunteer and Discussion Group Leader, TAMS Moving-In Day, August 22, 2002.
 - g. Volunteer and Discussion Group Leader, TAMS Moving-In Day, August 21, 2003.
 - h. Volunteer, TAMS Moving-In Day, August 25, 2005.

i. Volunteer, TAMS Moving-In Day, August 24, 2006.

4. *Fall Convocation*

- a. Presenter, September 10, 2000.
- b. Presenter, September 9, 2001.
- c. Presenter, September 8, 2002.
- d. Presenter, September 7, 2003.
- e. Presenter, September 12, 2004.
- f. Presenter, September 11, 2005.
- g. Presenter, September 10, 2006.
- h. Presenter, September 9, 2007.
- i. Presenter, September 7, 2008.
- j. Presenter, September 13, 2009.

5. *Recommendations*

- a. During the 1997-1998 academic year, I wrote 128 letters of recommendation for 26 students.
- b. During the 1998-1999 academic year, I wrote 72 letters of recommendation for 22 students.
- c. During the 1999-2000 academic year, I wrote 120 letters of recommendation for 40 students.
- d. During the 2000-2001 academic year, I wrote 116 letters of recommendation for 28 students.
- e. During the 2001-2002 academic year, I wrote 97 letters of recommendation for 33 students.
- f. During the 2002-2003 academic year, I wrote 152 letters of recommendation for 34 students.
- g. During the 2003-2004 academic year, I wrote 182 letters of recommendation for 39 students.
- h. During the 2004-2005 academic year, I wrote 120 letters of recommendation for 41 students.
- i. During the 2005-2006 academic year, I wrote 160 letters of recommendation for 35 students.
- j. During the 2006-2007 academic year, I wrote 150 letters of recommendation for 50 students.
- k. During the 2007-2008 academic year, I wrote 152 letters of recommendation for 42 students.
- l. During the 2008-2009 academic year, I wrote 95 letters of recommendation for 21 students.

6. *Commencement*

- a. Faculty Marshall, May 15, 1998.
- b. Faculty Marshall, May 14, 1999.
- c. Faculty Marshall, May 12, 2000.
- d. Faculty Marshall, May 11, 2001.
- e. Faculty Marshall, May 10, 2002.
- f. Faculty Marshall, May 9, 2003.
- g. Faculty Marshall, May 7, 2004.
- h. Commencement Speaker, May 13, 2005.
- i. Faculty Marshall, May 12, 2006.
- j. Faculty Marshall, May 11, 2007.
- k. Faculty Marshall, May 9, 2008.
- l. Faculty Marshall, May 15, 2009.

7. *Other*

- a. Greeter, TAMS Family Weekend, November 8, 1997.
- b. Member, TAMS Disciplinary Appeal Committee, February 8, 1999.

To the Mathematics Department

1. *Course Coordinator*

- a. Course Coordinator, TAMS, 1999-2007.
- b. Course Coordinator, Math 1680-1780, 1999-2000, 2008-09.

- c. Course Coordinator, Math 1010, 2004-2006.
2. *Standing Departmental Committees*
 - a. Member, Undergraduate Affairs Committee, 1998-1999, 2005-2010 (Chair 2006-2009).
 - b. Member, Computer Committee, 1998-1999, 2000-2001.
 - c. Member, Space Committee, 1999-2000, 2001-2005 (Chair 2003-2005).
 - d. Member, Real Analysis Qualifying Exam Committee, 1999-2000.
 - e. Member, Complex Analysis Qualifying Exam Committee, 2000-2009.
 - f. Member, Scholarship/Selection Committee, 2003-2005.
 - g. Member, Industry Relations Committee, 2006-2007.
 - h. Member, Executive Committee, 2008-2009.
 - i. Member, Lecturer Executive Committee, 2009.
 3. *Textbook Committees*
 - a. Member, Math 1680 Textbook Committee, February 1998.
 - b. Chair, Math 1710/1720/2730 Textbook Committee, 2000.
 - c. Member, Math 1680 Textbook Committee, March 2003.
 - d. Member, Math 1710/1720/2730 Textbook Committee, March 2005.
 - e. Member, Math 1010 Textbook Committee, February 2007.
 - f. Member, Math 1680 Textbook Committee, March 2007.
 4. *Grade Appeal Committees*
 - a. Member, Grade Appeal Committee, February 2000.
 - b. Member, Grade Appeal Committee, February 2001.
 - c. Member, Grade Appeal Committee, May 2001.
 - d. Chair, Grade Appeal Committee, February 2002.
 - e. Member, Grade Appeal Committee, June 2005.
 - f. Member, Grade Appeal Committee, July 2008.
 5. *Hiring Committees*
 - a. Member, Lecturer Hiring Committee, August 2006.
 - b. Member, Applied Probability/Statistics Hiring Committee, 2006-2007.
 - c. Member, Applied Probability/Statistics Hiring Committee, 2009-2010.
 - d. Member, Lecturer Hiring Committee, 2009-2010.
 6. *Other*
 - a. Coordinator, Mathematics Awareness Week, 1997-1999.
 - b. Faculty Advisor, UNT Mathematical Contest in Modeling teams, 2000-2001.
 - c. Chair, Applied Statistics Subcommittee, Fall 2004.
 - d. Co-Undergraduate Advisor, 2007-present.
 - e. Program Director for Certificate in Actuarial Science, 2009-present.
 - f. Peer Teaching Evaluator, November 2009.

OTHER SERVICE

1. Judge, Lee Elementary Science Fair, January 29, 2009.