

ERKAN NANE

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RESEARCH INTERESTS

- Probability and its applications to harmonic analysis, partial differential equations, spectral theory and geometry.
- Fractional diffusions, fractional stochastic partial differential equations, and time-changed processes: path properties, exit times, local times, Hausdorff dimension results, fractional Cauchy problems in bounded domains, and stochastic solutions to partial differential equations.
- Stochastic processes: Iterated Brownian motion, composition of symmetric stable Lévy processes, self-similar processes, Lévy processes, inverse stable subordinator, continuous time random walks and related stochastic processes.

EDUCATION

- May 2006 : **Ph.D. in Mathematics**, Purdue University, West Lafayette
Advisor : Rodrigo Bañuelos
Thesis title: Iterated Brownian motion: Lifetime Asymptotics and Isoperimetric-type Inequalities
- June 2000 : **Masters in Mathematics**, Boğaziçi University, Istanbul, Turkey
- June 1998 : **B.S. in Mathematics**, Boğaziçi University, Istanbul, Turkey

PROFESSIONAL EXPERIENCE

- 2012- : **Associate Professor**, Department of Mathematics and Statistics, Auburn University
- 2008-2012 : **Assistant Professor**, Department of Mathematics and Statistics, Auburn University
- 2006-2008 : **Visiting Assistant Professor**(Post-doc), Department of Statistics and Probability, Michigan State University
- 2000-2006 : **Teaching Assistant** in Department of Mathematics, Purdue University
- 1998-2000 : **Teaching Assistant** in Department of Mathematics, Boğaziçi University, Istanbul

EXTERNAL FUNDING

- (1) PI of Simons Foundation Collaboration Grants for Mathematicians (2021-2026): \$42,000.
- (2) Organizer for NSF-CBMS conference grant Aug. 2–6, 2021: \$35,000.
- (3) Co-PI of ALCoe/U. S. Department of Treasury grant 7/01/2021–7/31/2024: \$372,245.

AWARDS and HONORS

- (1) Spring 2021: Marie Kraska Award for the Excellence in Teaching in Department of Mathematics and Statistics, Auburn University.
- (2) Spring 2015: Mevlana Exchange fellowship from Turkish Council of Higher Education to visit Mathematics Department at Selcuk University, Konya, Turkey during May 24– May 30, 2015.
- (3) Spring 2012: Dr. Robert K. Butz Annual Award for Excellence in Teaching in the Department of Mathematics and Statistics.
- (4) Spring 2011: Jack Brown Endowed Faculty Award, Dept of Mathematics and Statistics, Auburn University.
- (5) Michigan State University Travel support, Summer 2007.
- (6) Purdue Research Foundation Fellowship, Purdue University, Summer 2004.
- (7) NSF research assistant, Purdue University: Summer 2005, Spring 2005, Spring 2003, Fall 2002, Summer 2002.
- (8) Dora Aksoy Award of Boğaziçi University, Istanbul, Turkey. Given to the best graduating Master student of the Department of Mathematics, June 2000.

ACADEMIC VISITS

- Department of Mathematics and Statistics, University of Nevada, Las Vegas, NV, November 2018.
- Department of Statistics and Probability, Michigan State University, East Lansing, MI, October 2018.
- Department of Mathematics, Shanghai Normal University, Shanghai, China, June 14, 2018.
- Department of Mathematics, University of Tennessee, Knoxville, April 2017.
- Department of Mathematics, Çankiri Karatekin University, Çankiri, Turkey, July 2015.
- Department of Mathematics, Selçuk University, Konya, Turkey, May 2015.
- Department of Mathematics, Selçuk University, Konya, Turkey, July 2012.
- Department of Mathematics, Tufts University, February, 2011.

THESIS SUPERVISION: Current

- Major Professor
 - Alex Negash, Ph.D., Auburn University.
- Co-Advising: Mariam Khachatryan, Ph.D., Auburn University (CO-advising with Hans Werner Van Vyk)

THESIS SUPERVISION: Past

- Major Professor
 - Yinan Ni, Ph.D., Auburn University., graduated August 2020. Currently: Tenure-track Assistant Professor at Lewis University, Chicago, IL.
 - Ngartelbaye (Serge) Guerngar, Ph.D., Auburn University, graduated, August 2019. Currently: Tenure-track Assistant Professor at University of North Alabama.
 - Sunday Asogwa, Ph.D., Auburn University, graduated, August 2019. Currently: Tenure-track Assistant Professor at Tuskegee University.
 - Yinan Ni, M.S., Auburn University, graduated May 2014.
 - Jebessa Mijena, Ph.D., Auburn University, graduated August 2013. Currently: Tenured Associate Professor at Georgia College & State University.
- Committee Member
 - Jianfeng Zhang, M.S., Dept. Math and Stat., Auburn University, completed Spring 2021
 - Somak Das, Ph.D., Dept. Math and Stat., Auburn University, completed Summer 2021.
 - Baris Kopruluoglu, Ph.D., Dept. Math and Stat., Auburn University, completed Summer 2020.
 - Olcay Ciftci, Ph.D., Dept. Math and Stat., Auburn University, completed Summer 2020.
 - Serhat Simsek, Ph.D., Dept. Math and Stat., Auburn University, completed Summer 2019.
 - Sunday Asogwa, M.S. in Statistics, Dept. Math and Stat., Auburn University, completed Spring 2019.
 - Le Gao, M.S. Dept. Math and Stat., Auburn University, completed Fall 2017.
 - Guerngar Ngartelbaye (M.S in Statistics) Dept. Math and Stat., Auburn University, completed Spring 2017.
 - Zhefeng Jiang, Ph.D., Auburn University, 2016.
 - Ahmet Yücel, Ph.D., Auburn University, 2016.
 - Dennis Chinemerem IKPE, Ph.D., University of Cape Town, South Africa, 2016 (Outside Examiner).
 - Ashok Kumar Pathak, Ph.D., Indian Institute of Technology, India, 2016 (Outside examiner).
 - Feng Bao, Ph.D., Auburn University, graduated May 2014.
 - Xin He, Ph.D., Auburn University, graduated August 2013.
 - Amy Peterson, M.S., Auburn University, graduated May 2013.
 - Kei Kobayashi, Ph.D., Tufts University, graduated February 2011 (Outside Committee member).
 - Seth Kermouser, M.S., Auburn University, graduated June 2010.

RESEARCH PAPERS: Refereed Journal Publications

- (1) V. Q. Mai, E. Nane, D. O'Regan, N. H. Tuan. Terminal value problem for nonlinear parabolic equation with Gaussian white noise. **AIMS special issue: PDEs arising from nonlinear waves and fluid dynamics** (To appear, 2022).
- (2) C.-S. Deng, W. Liu and E. Nane. Finite Time Blowup of Solutions to SPDEs with Bernstein Functions of the Laplacian. **Potential Analysis**, 2022. DOI: <https://doi.org/10.1007/s11118-021-09978-1>
- (3) N.H. Tuan, E. Nane and D. T. Dang. Analysis of a quasi-reversibility method for nonlinear parabolic equations with uncertainty data. **Illinois Journal of Mathematics**, 65(4) (2021), 793-845.
- (4) E. Nane and Y. Ni. Time-changed Stochastic Control Problem and its Maximum Principle Theory. **Probability and Mathematical Statistics**, Vol. 41, Fasc. 2 (2021), pp. 193-215.
- (5) N. Guerngar, E. Nane, R. Tinaztepe, S. Ulusoy and H.-W. van Vyk. Simultaneous inversion for the fractional exponents in the space-time fractional diffusion equation $\partial_t^\beta u = -(-\Delta)^{\alpha/2} u - (-\Delta)^{\gamma/2} u$, **Fract. Calc. Appl. Anal.** Vol. 24, No 3 (2021), pp818-847.
- (6) P. N. Duc, E. Nane, D. O'Regan and T. N. Huy. Approximation of mild solutions of a semilinear fractional differential equation with random noise. **Proceedings of the American Mathematical Society**, Volume 148, Number 8, August 2020, Pages 3339–3357.
- (7) N. Guerngar and E. Nane. Moment bounds of a class of stochastic heat equations driven by space-time colored noise in bounded domains. **Stochastic Process. Appl.** Volume 130, Issue 10, October 2020, Pages 6246-6270.
- (8) E. Nane, E. Nwaeze, and M. E. Omaba. Asymptotic behavior of solution and non-existence of global solution to a class of conformable time-fractional stochastic equation. **Statistics & Probability Letters**, Volume 163, August 2020, 108792.
- (9) S.Asogwa, J. B. Mijena and E. Nane. Blow-up results for space-time fractional stochastic partial differential equations. **Potential Analysis**, Volume 53, pages 357-386 (2020).
- (10) S. Asogwa, M. Foodun, J. Mijena and E. Nane. Critical parameters for reaction-diffusion equations involving space-time fractional derivatives. **Nonlinear Differential Equations and Applications NoDEA** volume 27, Article number: 30 (2020)
- (11) E. Nane, Y. Xiao and A. Zeleke. Strong laws of large numbers for arrays of random variables and stable random fields. **Journal of Mathematical Analysis and Applications**, Volume 484, Issue 1, 1 April 2020, 123737
- (12) X. Meng and E. Nane. Space-time fractional stochastic partial differential equations with Lévy Noise. **Fract. Calc. Appl. Anal.** Vol. 23, No 1 (2020), pp. 224-249.
- (13) M.M. Meerschaert, E. Nane and P. Vellaisamy. Inverse subordinators and time fractional equations. **Handbook of Fractional Calculus with Applications**, In Anatoly Kochubei, Yuri Luchko (Eds.), Basic Theory (pp. 407-426). Berlin, Boston: De Gruyter. <https://doi.org/10.1515/9783110571622-017>.
- (14) M. Foodun W. Liu and E. Nane. Some non-existence results for a class of stochastic partial differential equations. **Journal of Differential Equations**, Volume 266, Issue 5, 15 February 2019, Pages 2575-2596.
- (15) A. Kumar and E. Nane. On Infinite Divisibility of the Distribution of Some Inverse Subordinators. **Modern Stochastics: Theory and Applications** 2018, Vol. 5, No. 4, 509-519.
- (16) E. Nane and Y. Ni. Path stability of the solution of stochastic differential equation driven by time-changed Lévy noises. **ALEA Lat. Am. J. Probab. Math. Stat.** 15 (2018), no. 1, 479–507.
- (17) N. H. Tuan and E. Nane. Approximate solutions of inverse problems for nonlinear space fractional diffusion equations with randomly perturbed data. **SIAM/ASA Journal on Uncertainty Quantification**, 6(1), (2018) 302-338.
- (18) D. T. Dang, E. Nane, D. M. Nguyen and N. H. Tuan. Continuity of solutions of a class of fractional equations. **Potential Analysis** 49 (2018), no. 3, 423-478.
- (19) M. Kirane, E. Nane and N. H. Tuan. On a backward problem for multidimensional Ginzburg-Landau equation with random data. **Inverse Problems**, 34 (2018) 015008 (21pp).

- (20) E. Nane, N. H. Tuan and N. H. Tuan. A random regularized approximate solution of the inverse problem for the Burgers' equation. **Statistics & Probability Letters**, 132, January 2018, Pages 46-54.
- (21) M. Foodun, N. Guerngar* and E. Nane. Some properties of non-linear fractional stochastic heat equations on bounded domains. **Chaos, Solitons & Fractals**, 102 (2017), 86–93.
- (22) E. Nane and Y. Ni*. Stability of the solution of stochastic differential equation driven by time-changed Lévy noise. **Proc. Amer. Math. Soc.**, 145 (2017), no. 7, 3085-3104.
- (23) S. Asogwa* and E. Nane. Intermittency fronts for space-time fractional stochastic partial differential equations in $(d + 1)$ dimensions. **Stochastic Processes and their Applications**, 127 (2017), no. 4, 1354-1374.
- (24) Y. Çenesiz, A. Kurt and E. Nane. Stochastic solutions of Conformable fractional Cauchy problems. **Statistics & Probability Letters** Volume 124, May 2017, 126-131.
- (25) M. Foodun and E. Nane. Asymptotic properties of some space-time fractional stochastic equations. **Mathematische Zeitschrift**, Volume 287 (2017), Issue 1-2, 493-519.
- (26) N.H. Tuan and E. Nane. Inverse source problem for time fractional diffusion with discrete random noise. **Statistics & Probability Letters** Volume 120, January 2017, Pages 126-134.
- (27) M. Foodun, J.B. Mijena and E. Nane. Non-linear noise excitation for some space-time fractional stochastic equations in bounded domains. **Fract. Calc. Appl. Anal.** Vol. 19, No 6 (2016), pp. 1527-1553.
- (28) E. Nane and Y. Ni*. Stochastic Solution of Fractional Fokker-Planck Equations with Space-Time-Dependent Coefficients. **Journal of Mathematical Analysis and Applications**, Vol. 442 (2016), 103-116.
- (29) M. D'Ovidio and E. Nane. Fractional Cauchy problems on compact manifolds. **Stochastic Analysis and Applications**, Vol. 34 (2016), No. 2, 232-257.
- (30) J.B. Mijena and E. Nane. Intermittence and time fractional stochastic partial differential equations. **Potential Anal.**, Vol. 44 (2016) 295-312.
- (31) J.B. Mijena and E. Nane. Space-time fractional stochastic partial differential equations. **Stochastic Processes and their Applications**, vol.125 (2015) 3301-3326.
- (32) J. B. Mijena and E. Nane. Correlation structure of time-changed Pearson diffusions. **Statistics & Probability Letters**, vol. 90 (2014), 68-77.
- (33) Jebessa B. Mijena and E. Nane. Strong analytic solutions of fractional Cauchy problems. **Proceedings of the American Mathematical Society**, vol. 142 (2014), 1717-1731.
- (34) M. D'Ovidio and E. Nane. Time dependent random fields on spherical non-homogeneous surfaces. **Stochastic Processes and their Applications**, vol. 124 (2014) 2098-2131.
- (35) R. Bañuelos, J. Mijena and E. Nane. Two-term trace estimates for relativistic stable processes. **Journal of Mathematical Analysis and Applications**, vol. 410 (2014) 837-846.
- (36) M.M. Meerschaert, E. Nane and Y. Xiao. Fractal dimensions for continuous time random walk limits. **Statistics & Probability Letters**, vol. 83 (2013), No. 4, pp. 1083-1093.
- (37) M.M. Meerschaert, E. Nane and P. Vellaisamy. Transient Anomalous Sub-diffusion on bounded domains. **Proc. Amer. Math. Soc.**, vol. 141 (2013), No. 2, pp. 699-710.
- (38) H. Allouba and E. Nane. Interacting time-fractional and Δ^ν PDEs systems via Brownian-time and Inverse-stable-Lévy-time Brownian sheets. **Stochastics and Dynamics**, vol. 13, No.1 (2013) pp. 1250012.
- (39) Z.-Q. Chen, M.M. Meerschaert and E. Nane. Space-time fractional diffusion on bounded domains. **Journal of Mathematical Analysis and Applications**, vol. 393, Issue 2, 15 September 2012, Pages 479-488.
- (40) E. Nane, Y. Xiao and D. Wu. α -Time Fractional Brownian Motion: PDE Connections and Local Times. **ESAIM: Probability and Statistics**, vol. 16 (2012), 1-24.
- (41) E. Nane. Fractional Cauchy problems on bounded domains: survey of recent results, pp: 185-198 In **Fractional Dynamics and Control**. D. Baleanu, J.A.T. Machado, A.C.J. Luo (Editors). Springer (2012).
- (42) A. Kumar, E. Nane and P. Vellaisamy. Time-changed Poisson processes. **Statistics & Probability Letters**. vol. 81 (2011), 1899-1910.

- (43) M.M. Meerschaert, E. Nane and P. Vellaisamy. *The fractional Poisson process and the inverse stable subordinator*. **Electronic Journal of Probability**, vol. 16 (2011), no. 59, 1600-1620.
- (44) M.M. Meerschaert, E. Nane and P. Vellaisamy. *Distributed-order fractional diffusions on bounded domains*. **Journal of Mathematical Analysis and Applications**, vol.379 (2011) 216-228.
- (45) E. Nane, Y. Xiao and A. Zeleke. *A strong law of large numbers with applications to self-similar stable processes* **Acta Scientiarum Mathematicarum (Szeged)**, vol.76:3-4 (2010), 697-711.
- (46) E. Nane. *Stochastic solutions of a class of higher order Cauchy problems in \mathbb{R}^d* . **Stochastics and Dynamics**, vol. 10, Issue: 3 (2010) , 341-366.
- (47) B. Baeumer, M.M. Meerschaert and E. Nane. *Space-time duality for fractional diffusion*. **Journal of Applied Probability**, vol. 46, Number 4 (2009), 1100-1115.
- (48) E. Nane. *Laws of the iterated logarithm for a class of iterated processes*, **Statistics & Probability Letters**. vol. 79 (2009), 1744-1751.
- (49) M.M. Meerschaert, E. Nane and P. Vellaisamy. *Fractional Cauchy problems on bounded domains*. **The Annals of Probability**. vol. 37 (2009), 979–1007.
- (50) M.M. Meerschaert, E. Nane and Y. Xiao. *Correlated continuous time random walks*. **Statistics & Probability Letters**. vol. 79 (2009), 1194–1202.
- (51) B. Baeumer, M.M. Meerschaert and E. Nane. *Brownian subordinators and fractional Cauchy problems*. **Transactions of American Mathematical Society**. vol. 361 (2009), 3915–3930.
- (52) E. Nane. *Isoperimetric-type inequalities for iterated Brownian motion in \mathbb{R}^n* , **Statistics & Probability Letters**. vol. 78 (2008), 90–95.
- (53) E. Nane. *Higher order PDE's and iterated processes*, **Transactions of American Mathematical Society**. vol. 360 (2008), 2681–2692.
- (54) E. Nane. *Symmetric α -stable subordinators and Cauchy problems: IJPAM (International Journal of Pure and Applied Mathematics)*. vol. 42 no.2 (2008), 217–225.
- (55) M.M. Meerschaert, E. Nane and Y. Xiao. *Large deviations for local time fractional Brownian motion and applications*. **Journal of Mathematical Analysis and Applications**. vol. 346 (2008), 432–445.
- (56) E. Nane. *Lifetime asymptotics of iterated Brownian motion in \mathbb{R}^n* , **ESAIM: Probability and Statistics**. vol. 11 (2007), 147–160 (electronic).
- (57) E. Nane. *Laws of the iterated logarithm for α -time Brownian motion*, **Electronic Journal of Probability**. vol. 11 (2006), no. 18, 434–459 (electronic).
- (58) E. Nane. *Iterated Brownian motion in bounded domains in \mathbb{R}^n* , **Stochastic Processes and their Applications**. vol. 116 (2006), no. 6, 905–916.
- (59) E. Nane. *Iterated Brownian motion in parabola-shaped domains*, **Potential Analysis**. vol. 24 (2006), no. 2, 105–123.

RESEARCH PAPERS: Preprints

- (1) C.-S. Deng, W. Liu and E. Nane. Pathwise Blowup of space-time fractional SPDEs. **Submitted, 2022**.
- (2) E. Nane and A. Negash. Level of noise and long time behavior of space-time fractional SPDEs in bounded domains, **Submitted 2021**.
- (3) E. Nane and Y. Ni, Estimation of Mean-Reverting Stochastic Differential Equations with Compensated Poisson Jumps using Neural Networks, **Submitted, 2021**.
- (4) N.T. Bao, E. Nane, H. H. Tuan. On a terminal value problem for stochastic space-time fractional wave equations, **Submitted, 2021**.
- (5) N. M. Dien, E. Nane and D. D. Trong. *The nonlinear fractional diffusion equations with Nagumo-type sources and perturbed orders*. **Submitted 2021**. URL: <https://arxiv.org/abs/2002.06747>
- (6) B. Guo, E. Nane, N. H. Tuan, R. Wang. *Invariant Measures for Discrete Wave Equations Driven by Superlinear Noise*. **Submitted 2020**.
- (7) P. D. Nguyen; E. Nane; O. Nikan; T. H. Nguyen. *Approximation of the initial value for a damped nonlinear hyperbolic equations with random Gaussian white noise on the measurements* **Submitted 2020**.

- (8) N. Guerngar, E. Nane and S. Ulusoy. Inverse problem for a three-parameter space-time fractional diffusion equation. **Submitted**, 2018. URL:<https://arxiv.org/abs/1810.01543>

DISCOVERIES

- (1) Member Discoveries: Fractional Cauchy Problems.(page 5 at [Url:http://bulletin.imstat.org/pdf/38/6](http://bulletin.imstat.org/pdf/38/6))
IMS bulletin paper on our paper “Fractional Cauchy problems on bounded domains: (Joint with M.M. Meerschaert and P. Vellaisamy), The Annals of Probability vol. 37 (2009), 979-1007.” By Mark M. Meerschaert.

EDITORIAL SERVICE

- Associate Editor, Statistics and Probability Letters. URL: <https://www.journals.elsevier.com/statistics-and-probability-letters/editorial-board>
- Editorial Board Member of Fractional Differential Calculus (Since 2017). URL: <http://fdc.ele-math.com/editorial>
- Member of Editorial Advisory Board: An International Journal of Optimization and Control: Theories and Applications(IJOCTA) (Since 2011). URL: <http://www.ijocta.com/ojs/index.php/files>
- Scientific Advisory Board of Karatekin Mathematics Days, Turkey (June 11-13, 2014). (URL: <http://kmd.karatekin.edu.tr/scientific-advisory-board-329-sayfasi.karatekin>).

REFEREE/REVIEWER

- Served on NSF Panel on Probability (2020).
- Reviewer for government agencies: Italy (2021), Chile (2019), Croatia (2017), Poland(2016)
- Served in NFS Panel for graduate fellowships in 2015/2016 academic year.
- Reviewer for NSA in 2013
- AMS Mathematical Reviews
- Advances in Water Resources
- An International Journal of Optimization and Control: Theories and Applications(IJOCTA).
- Annals of Fuzzy Mathematics and Informatics
- Annales de l’Institut Henri Poincaré (B) Probabilités et Statistiques
- Applicable Analysis
- Applied Mathematics and Computation
- Applied Soft Computing
- Arab Journal of Mathematical Sciences
- Bernoulli
- Chaos, Solitons & Fractals
- Communications on Pure and Applied Analysis
- Computers and Mathematics with Applications
- Discrete and Continuous Dynamical Systems
- Electronic Journal of Differential equations
- Electronic Journal of Probability
- EuroPhysics Letters
- Fractals
- Inverse Problems
- Journal of Applied Probability
- Journal Of Computational Physics
- Journal of Functional Analysis
- Journal of Mathematical Analysis and Applications
- Journal of Vibration and Control
- Journal of the Franklin Institute
- Journal of Theoretical Probability
- Journal of Physics A: Mathematical and Theoretical
- Journal of Statistical Physics

- Journal of Stochastic Analysis and Applications
- Mathematical Methods in the Applied Sciences
- Methodology and Computing in Applied Probability
- Scientia Iranica
- Statistics & Probability Letters
- Stochastic Analysis and Applications
- Stochastic Processes and Their Applications
- Transactions of the AMS

TALKS

- (1) *Blow-up results for space-time fractional dynamics. Special session “Stochastic Analysis and Applications” at the AMS Sectional Meeting at University of South Alabama in Mobile, AL, November 20–21 (Saturday–Sunday). Virtual Conference.*
- (2) *Blow-up results for space-time fractional dynamics. Applied Math Seminar, Auburn University, Auburn, AL, November 2020. Zoom Seminar.*
- (3) *Probabilistic approach to fractional calculus. Math and Stat Department Graduate Student Seminar, Auburn University, November 2020. Zoom seminar.*
- (4) *Stochastic models for space–time fractional dynamics. Workshop on theory and applications of SPDEs. Fields Institute, University of Toronto, Canada, June 10-14, 2019. **45-min Plenary Talk***
- (5) *Stochastic models for space–time fractional dynamics. Nonlocal and Fractional Operators: In honour of Prof. Renato Spigler, Sapienza University of Rome, Italy, April 12-13, 2019. **30-min Plenary Talk***
- (6) *Blow-up results for space–time fractional Dynamics. Special Session on Probability and Stochastic Processes. AMS Southeastern Sectional Meeting at Auburn, AL, March, 15-17, 2019. **30-min talk***
- (7) *Blow-up results for space–time fractional dynamics. Applied Math Seminar, Auburn University, Auburn, AL, February 2019.*
- (8) *Stochastic Models for Space–time fractional Dynamics. Colloquium Talk. University of Nevada, Las Vegas, Nevada, November 2018.*
- (9) *Fractional Cauchy problems on compact manifolds. Special Session on Self-similarity and Long-range Dependence in Stochastic Processes. AMS Central Sectional Meeting, Ann Arbor, MI, October 20-21, 2018. **30-min Talk***
- (10) *Blow-up results for space-time fractional dynamics. Probability Seminar, Michigan State University, October 2018.*
- (11) *Blow-up results for space-time fractional dynamics. Probability Seminar, Auburn University, October 2018.*
- (12) *Stochastic Models for Space-Time Fractional Dynamics. Joint International Meeting of Chinese Mathematical Society and American Mathematical Society. Fudan University, Shanghai, China (June 11-June 14, 2018)*
- (13) *Stochastic Models for Fractional Dynamics. Invited Seminar talk at Shanghai Normal University, Shanghai, China (June 14, 2018).*
- (14) *Stochastic models for fractional dynamics. MANNA Workshop (<https://sites.google.com/site/manna2017abq/manna-workshop>), Santa Fe, NM (December 2017) (40-min Plenary talk)*
- (15) *Stochastic models for fractional dynamics. Colloquium talk, Department of Mathematics and Statistics, Auburn University, September 6, 2017. (50-min lecture)*
- (16) *Analysis of Space-Time Fractional Stochastic Partial Differential Equations. Stochastics Seminar at University of Tennessee, Knoxville. April 25, 2017. Invited by Yu-Ting Chen.*
- (17) *Analysis of Space-Time Fractional Stochastic Partial Differential Equations. AMS Spring Central Sectional Meeting at Indiana University, Bloomington. April 1-2, 2017. (25-minute **invited** lecture)*
- (18) *Space-Time Fractional Stochastic Partial Differential Equations. Workshop on Future Directions in Fractional Calculus Research and Applications. October 17-21, 2016. **60-min Plenary talk***

- (19) *Space-time fractional stochastic partial differential equations*. Invited Seminar Talk at Applied Math Seminar at Auburn University (Nov 13, 2015).
- (20) *Intermittence and space-time fractional stochastic partial differential equations*. Invited Seminar Talk at Çankiri Karatekin University, Çankiri, Turkey (July 2, 2015).
- (21) *Intermittence and space-time fractional stochastic partial differential equations*. 2nd Ankara-Istanbul Workshop on Stochastic Processes(0634SP2015), Koc University, Istanbul, Turkey (June 18-19, 2015). **50-min Plenary talk**
- (22) *Intermittence and space-time fractional stochastic partial differential equations*. International Conference on Applied Analysis and Mathematical Modelling, ICNAAM 2015. Yildiz Technical University, Istanbul, Turkey (June 8-12, 2015). **50-min Plenary talk**
- (23) *Intermittence and space-time fractional stochastic partial differential equations*. Invited Seminar Talk at Aksaray University, Aksaray, Turkey (May 29, 2015).
- (24) *Intermittence and space-time fractional stochastic partial differential equations*. Invited Seminar Talk at Melikşah University, Kayseri, Turkey (May 28, 2015).
- (25) *Intermittence and space-time fractional stochastic partial differential equations*. Invited Seminar Talk at Konya Selcuk University, Konya, Turkey (May 27, 2015).
- (26) *Intermittence and time fractional stochastic partial differential equations*. AMS Spring Southeastern Sectional Meeting at the University of Alabama in Huntsville March 27-29, 2015.
- (27) *Intermittence and time fractional stochastic partial differential equations*. SAMSA conference (Nov 24-28, 2014), Victoria Falls, Zimbabwe. **40-min Plenary talk**
- (28) *Importance of Mathematics in Engineering*. Alabama Power Academic Excellence Summer Bridge Program (July 9, 2014).
- (29) *Continuous Time Random Walk Limits: Governing Equations and Fractal Dimensions*. NSF/CBMS Conference on “Analysis of Stochastic Partial Differential Equations” Michigan State University (August 19–23, 2013).
- (30) *CTRW Limits: Fractal Properties and Governing Equations*. 8th World Congress in Probability and Statistics. Istanbul, Turkey (July 9-14, 2012).
- (31) *Continuous Time Random Walk Limits: Governing Equations and Fractal Dimensions*. Probability Colloquium, Department of Mathematics, Selcuk University, Konya, Turkey (July 2012)
- (32) *Continuous Time Random Walk Limits in Bounded Domains*. 4th International Conference on Porous Media & Annual Meeting of the International Society for Porous Media. Purdue University, West Lafayette, IN, May 14-16, 2012.
- (33) *Continuous Time Random Walk Limits: Governing Equations and Fractal Dimensions*. Colloquium, Department of Mathematical Sciences, University of Alabama at Huntsville (Nov 2011).
- (34) *Time-changed processes and Cauchy problems*. Colloquium, Department of Mathematics, University of Alabama at Birmingham, AL. (September 2011).
- (35) *Fractional Cauchy Problems for time-changed Processes*. Tufts University Probability Seminar, Boston, MA (February 2011).
- (36) *Cauchy Problems Solved by Running Subordinate Processes*. Informs 2010 Annual Meeting. Austin, Texas (November 7-10, 2010).
- (37) *Cauchy Problems in Bounded Domains and Iterated Processes*. EMS2010, 28th European Meeting of Statisticians. EMS 2010, Piraeus, Greece, University of Piraeus (August 2010).
- (38) *Fractional Cauchy problems on bounded domains: survey of recent results*. Third Conference on Nonlinear Science and Complexity. Ankara, Turkey, Çankaya University (July 2010).
- (39) *Stochastic solution of Cauchy problems*. Graduate student seminar, Department of Mathematics and Statistics, Auburn University, October 2009.
- (40) *Publish and Flourish*. Second Annual Workshop for Young Scholars, Southern Polytechnic State University, Georgia, August 2009.
- (41) *Fractional Cauchy problems*. Gaussian Analysis & SPDEs, AMS southeastern sectional meeting. University of Alabama in Huntsville, October 2008.
- (42) *Subordinated processes and Cauchy problems*. Malliavin Calculus & Appl. Regional CBMS/NSF conference, Kent State University, OHIO, August 6-12, 2008.

- (43) *Subordinated processes and Cauchy problems*. Probability Seminar, Department of mathematics, University of Illinois, Urbana-Champaign, April 2008.
- (44) *Iterated Brownian motion and a related class of processes*. Department of Mathematics Colloquium, University of Oregon, Eugene, Oregon, February 2008.
- (45) *Iterated Brownian motion and a related class of processes*. Department of Mathematics Colloquium, Auburn University, Alabama, February 2008.
- (46) *Iterated Brownian motion and a related class of processes*. Department of Mathematics and Statistics Colloquium, American University, Washington, DC, February 2008.
- (47) *Iterated Brownian motion and a related class of processes*. Statistics Colloquium, Department of Statistics and Operations Research, University of North Carolina, Chapel Hill, January 2008.
- (48) *Symmetric α -stable subordinators and Cauchy problems*. Fourth International Conference of Applied Mathematics and Computing, (Plovdiv, Bulgaria, August 12 - 18, 2007) (30-min lecture)
- (49) *Symmetric α -stable subordinators and Cauchy problems*. Department of Statistics and Probability Seminar, Michigan State University, March 2007. (two-hour lecture)
- (50) *Iterated Brownian motion: lifetime asymptotics and isoperimetric-type inequalities*. Department of Statistics and Probability Colloquium, Michigan State University, September 2006.
- (51) *Iterated Brownian motion in open sets in \mathbb{R}^n* . Probability seminar, Department of Mathematics, Purdue University, October 2004.

CONFERENCES ORGANIZED:

- (1) AMS 2021 Fall Southeastern Meeting Special Session on “Stochastic Analysis and Applications” at the University of Alabama, Mobile, AL, on November 20-21, 2021. Co-organized with Le Chen and Ngartelbaye Guerngar.
- (2) NSF/CBMS Conference: Gaussian Random Fields, Fractals, SPDEs, and Extremes (August 02-06, 2021, University of Alabama in Huntsville). Co-organized with Toka Diagana and Dongsheng Wu.
- (3) AMS Spring Southeastern Sectional Meeting Special Session on “Probability and Stochastic Processes” March 15-17, 2019, Auburn University, Auburn, AL. Co-organized with Ming Liao and Jerzy Szulga.
- (4) AMS Special Session on Stochastic Processes and Modelling at Joint Mathematics Meeting, January 4-7, 2017. Hyatt Regency Atlanta and Marriott Atlanta Marquis, Atlanta, GA. Organized jointly with Jebessa B. Mijena from Georgia College and State University.
- (5) AMS Spring Southeastern Sectional Meeting Special Session on “Stochastic Processes and Related Topics” March 27-29, 2015, University of Alabama in Huntsville, Huntsville, Alabama. Co-organized with Donsheng Wu from University of Alabama in Huntsville and Paul Jung from University of Alabama at Birmingham.

MEETINGS/WORKSHOPS ATTENDED

- (1) NSF/CBMS Conference: Gaussian Random Fields, Fractals, SPDEs, and Extremes (August 02-06, 2021, University of Alabama in Huntsville).
- (2) Workshop on theory and applications of SPDEs. Fields Institute, University of Toronto, Canada, June 10-14, 2019.
- (3) Nonlocal and Fractional Operators: In honour of Prof. Renato Spigler, Sapienza University of Rome, Italy, April 12-13, 2019
- (4) AMS Spring Southeastern Sectional Meeting, March 15-17, 2019, Auburn University, Auburn, AL.
- (5) AMS Central Sectional Meeting, Ann Arbor, MI, October 20-21, 2018
- (6) Joint International Meeting of Chinese Mathematical Society and American Mathematical Society. Fudan University, Shanghai, China (June 11-June 14, 2018)
- (7) MANNA Workshop (<https://sites.google.com/site/manna2017abq/manna-workshop>), Santa Fe, NM (December 2017).
- (8) AMS Spring Central Sectional Meeting at Indiana University, Bloomington. April 1-2, 2017.
- (9) Workshop on Future Directions in Fractional Calculus Research and Applications at Michigan State University, 17 - 21 October 2016.

- (10) 2nd Ankara-Istanbul Workshop on Stochastic Processes(0634SP2015), Koc University, Istanbul, Turkey (June 18-19, 2015).
- (11) International Conference on Applied Analysis and Mathematical Modelling, ICNAAM 2015. Yildiz Technical University, Istanbul, Turkey (June 8-12, 2015).
- (12) AMS Spring Southeastern Sectional Meeting at the University of Alabama in Huntsville March 27-29, 2015.
- (13) The Fourth Annual Masamu Advanced Study Institute (MASI) and Workshops in Mathematical Sciences, November 22 - November 30, 2014,Victoria Falls, Zimbabwe
- (14) SAMSA conference (Nov 24-28, 2014), Victoria Falls, Zimbabwe.
- (15) NSF/CBMS Conference on “Analysis of Stochastic Partial Differential Equations” Michigan State University (August 19–23, 2013).
- (16) 8th World Congress in Probability and Statistics. Istanbul, Turkey (July 9-14, 2012).
- (17) NSF/CBMS Regional Research Conference in the Mathematical Sciences. University of Alabama in Huntsville, AL, June 4–8, 2012.
- (18) 4th International Conference on Porous Media & Annual Meeting of the International Society for Porous Media. Purdue University, West Lafayette, IN, May 14-16, 2012.
- (19) Informs 2010 Annual Meeting. Austin, Texas (November 7-10, 2010).
- (20) EMS2010, 28th European Meeting of Statisticians. EMS 2010, Piraeus, Greece, University of Piraeus (August 2010).
- (21) Third Conference on Nonlinear Science and Complexity. Ankara, Turkey, Çankaya University (July 2010)
- (22) Second Annual Workshop for Young Scholars, Southern Polytechnic State University, Georgia, August 2009.
- (23) AMS southeastern sectional meeting. University of Alabama in Huntsville, October 2008.
- (24) CBMS/NSF conference on Malliavin Calculus & Appl., Kent State University, OHIO, August 6-12, 2008.
- (25) Fourth International Conference of Applied Mathematics and Computing, (Plovdiv, Bulgaria, August 12 - 18, 2007)
- (26) Twenty-Ninth Midwest Probability Colloquium, Northwestern University, October 2007
- (27) AMS Regional Meeting, at Bloomington, IN, April 2003

DEPARTMENTAL COMMITTEES

- Chair, International Programs Committee, Since Fall 2013
- Committee member, Hiring Committee Open rank position in PDE, (Fall 2021–Spring 2022)
- Chair, Probability hiring Committee, (Fall 2020-Spring 2021)
- Hiring Committee for Probability Position (Fall 2019-Spring 2020)
- Chair of Faculty Awards Committee (Fall 2016-Fall 2018)
- Member of the Undergraduate studies Committee (Since Fall 2015-Fall 2018)
- Member of Advisory board for DMS Chair (Fall 2015-Fall 2018)
- Hiring Committee for Rosemary Brown Professorship (Fall 2016–Spring 2019)
- Administrative review for DMS chair, Fall 20015-Spring 2016.
- Self Study report Committee, Fall 2013-Spring 2014
- GSC chair, Fall 2013-Fall 2014.
- GSC, Fall 2011-Fall 2014
- Curriculum correction committee, Fall 2012
- Lecturer hiring committee, Spring 2013
- Jack Brown award committee, Spring 2013

MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Mathematical Society (AMS)

COURSES TAUGHT

- **Auburn University**

- **Fall 2020:** Calculus II (Math 1620), lecture-recitation and Probability and Stochastic Processes I (Math 5/6670).
- Summer 2020: Caculus II online (Math 1623).
- **Spring 2020:** Topics in Linear Algebra (Math 2660), two sections.
- **Fall 2019:** Introduction to Advanced Mathematics (MATH 3100), Probability and Statistics I (STAT 3600) and Online Statistics for Biological and Health Sciences (Stat 2513).
- **Summer 2019:** Online Pre-Calculus algebra (Math 1123) and Introduction to Advanced Mathematics (MATH 3100).
- **Spring 2019:** Introduction to Advanced Mathematics (MATH 3100) and Probability and Statistics I (STAT 3600).
- **Fall 2018:** Online course: Calculus III (Math 2633), Topics in Linear Algebra (Math 2660) and Probability and Stochastic Processes I (MATH 5/6670).
- **Summer 2018:** Online course: Pre-calculus: Algebra and Trigonometry (Math 1153) and Pre-calculus: Algebra and Trigonometry (Math 1150).
- **Spring 2018:** Topics in Linear Algebra (Math 2660) and Honors Calculus III (MATH 2637).
- **Fall 2017:** Probability and Statistics I (STAT 3600), Honors Calculus III (MATH 2637), and online course: Precalculus: Trigonometry(MATH 1133).
- **Summer 2017:** Matrix Theory and Applications (MATH 5/6050) and online course: Pre-Calculus algebra (Math 1123).
- **Spring 2017** Probability and Statistics I (STAT 3600).
- **Fall 2016** Probability and Statistics I (STAT 3600) and Probability and Stochastic Processes I (MATH 5/6670).
- **Summer 2016:** Online courses: Pre-calculus: Algebra and Trigonometry (Math 1153) and Pre-Calculus algebra (Math 1123)
- **Spring 2016** Probability and Statistics I (STAT 3600) and Introduction to Advanced Mathematics (MATH 3100).
- **Fall 2015** Two sections of Calculus I (Math 1610) and Pre-calculus: Algebra and Trigonometry (Math 1153).
- **Summer 2015** Pre-calculus: Algebra and Trigonometry (Math 1153) and Pre-Calculus algebra (Math 1123).
- **Spring 2015** Applied Stochastic Processes II (Math 7830) and Honors Calculus II (Math 1627).
- **Fall 2014:** Probability and Statistics I (STAT 3600) and Applied Stochastic Processes (MATH 7820).
- **Summer 2014:** Experimental Statistics I (Stat 7000).
- **Spring 2014:** Topics in Linear Algebra (Math 2660).
- **Fall 2013:** Probability and Statistics I (STAT 3600), Probability and Stochastic Processes I (MATH 5/6670).
- **Summer 2013:** Experimental Statistics I (Stat 7000).
- **Spring 2013:** Honors Calculus II (MATH 1627), Applied Stochastic Processes (MATH 7830).
- **Fall 2012:** Introduction to Advanced Mathematics (MATH 3100), Applied Stochastic Processes (MATH 7820)
- **Summer 2012:** Experimental Statistics I (Stat 7000).
- **Spring 2012:** Introduction to Advanced Mathematics (MATH 3100), Probability and Stochastic Processes II (MATH 5/6680).
- **Fall 2011:** Statistics for Engineers and Scientists (Stat 3010), Probability and Stochastic Processes I (MATH 5/6670).
- **Summer 2011:** Experimental Statistics I (Stat 7000).
- **Spring 2011:** Probability II (Math 7810), Applied Time-Series Analysis (Stat 4630).
- **Fall 2010:** Probability I (Math 7800), Statistics for Engineers and Scientists (Stat 3010)
- **Summer 2010:** Statistics for Engineers and Scientists (Stat 3010).

- **Spring 2010:** Probability and Statistics I (STAT 3600), Topics in Linear Algebra (Math 2660).
- **Fall 2009:** Probability and Statistics I (STAT 3600), Topics in Linear Algebra (Math 2660).
- **Spring 2009:** Probability and Statistics I (STAT 3600), Probability and Stochastic Processes II (MATH 5/6680).
- **Fall 2008:** Probability and Statistics I (STAT 3600).
- **Michigan State University** (2006-2008) :
 - Probability and Statistics for Engineering (STT351)(Fall 06, Spring 07, Summer 07): Calculus based statistics course.
 - Statistics I (STT421) (Spring 07, Summer 07, Fall 07): Statistics course without Calculus.
 - Introduction to Probability and Statistics (STT430) (Summer 08).
 - Probability and Statistics I: Probability (STT441) (Fall 06, Spring 07, Spring 2008).
 - Theory of Probability and Statistics I (STT861) (Fall 07): Graduate level Probability course.
- **Purdue University** (2000-2006) :
 - Algebra and Trigonometry (MA 153)(Fall 05): Basic algebra and trigonometry for freshmen.
 - Real Analysis (MA 598R), (Summer 03): Qualifier preparation course for graduate students.
- **Other** : Developed and taught Mathcounts and Olympiad preparation courses for middle and high school students for Purdue University Math and Science Initiative (2004-2005)

COURSES ASSISTED(as TA/Grader)

- **Undergraduate Courses:** Calculus (I, II, III), Linear Algebra, Functional Analysis, Real Analysis
- **Graduate Courses:** Real-Complex Analysis, Linear Algebra, Advanced Topics in Analysis

EXTRA CURRICULAR ACTIVITIES

- I volunteered to supervise the “Mousetrap Vehicle” competition in the 2013 Science Olympiad.
- I volunteered to supervise the “Storm the Castle” competition in the 2011 and 2012 Science Olympiad.
- I volunteered to supervise the “Trajectory” competition in the 2009 and 2010 Science Olympiad.

COMPUTER SKILLS

- Programming Languages : Pascal
- Technical Software Packages: Minitab, Maple, Matlab, “R”, SAS.