

José Enrique Figueroa-López

I. GENERAL INFORMATION

A. Education

- Ph.D. in Applied Mathematics* Spring 2004
Georgia Institute of Technology, Atlanta, GA
Thesis: Nonparametric estimation of Lévy processes with a view towards mathematical finance
Advisor: Christian Houdré.
- M.S. in Quantitative and Computational Finance* Spring 2002
Georgia Institute of Technology, Atlanta, GA
- M.S. in Statistics* Spring 1998
CIMAT-Universidad de Guanajuato, Guanajuato, México
Thesis: Construction of second-order self-similar processes.
Advisor: Victor Pérez-Abreu.
- Bachelor in Applied Mathematics* Spring 1995
Universidad Autónoma Metropolitana, México City, México.
Minor: Computer Science

B. Professional Experience

- Full Professor* Jul 2017 - present
Department of Mathematics and Statistics
Washington University in St. Louis
- Associate Professor (with tenure)* Jul 2015 - Jun 2017
Department of Mathematics
Washington University in St. Louis
- Associate Professor (with tenure)* Aug 2012 - Jun 2015
Department of Statistics
Purdue University, West Lafayette, IN
- Assistant Professor* Aug 2007 - July 2012
Department of Statistics and Department of Mathematics (Courtesy)
Purdue University, West Lafayette, IN
- Postdoctoral Fellow and Visiting Assistant Professor* Jul 2006 - Aug 2007
Center for research in financial mathematics and statistics
University of California, Santa Barbara, CA.
- Research Assistant Professor* Aug 2004 - May 2006
Department of Mathematics, Purdue University, West Lafayette, IN.
- Graduate Teaching Assistant* Aug 1998 - May 2003
Georgia Institute of Technology, Atlanta, GA

C. Awards and Honors

<i>Member of The “Presidents Advisory Board for Carnegie Mellon Universitys Mellon College of Science”</i>	2018.
<i>Associate Editor, SIAM Journal on Financial Mathematics</i>	2017-2020.
<i>NSF Standard Research Grant (DMS-Statistics)</i>	2016-2019
Summer salary, travel, and graduate student support.	
<i>NSF CAREER Grant (DMS-Statistics)</i>	2012-2019
Summer salary, travel, and graduate and undergraduate student support	
<i>Purdue University Faculty Scholar</i>	2014-2015
Purdue University’s recognition for “outstanding accomplishments by faculty mid-way through their academic career”.	
<i>Purdue Research Foundation Grant</i>	Aug 2012-Jul 2013
Graduate student support	
<i>College of Science Team Award</i>	2012
For his outstanding team work in the Computational Finance Program at Purdue	
<i>Purdue Research Foundation Grant.</i>	June 2011-May 2012
Graduate student support	
<i>Department of Statistics Outstanding Assistant Professor Teaching Award</i>	2011
<i>Associate Editor, Electronic Journal of Statistics</i>	2010-2012
<i>NSF Standard Research Grant (DMS-Statistics)</i>	2009-2012
Summer salary and travel.	
<i>Summer Faculty Grant from the Purdue Research Foundation</i>	June-August 2008
<i>Tower Award for high GPA during Ph.D. studies.</i>	April 2004
Georgia Institute of Technology	
<i>Distinguished Alumni of the M.S. in Statistics</i>	September 2003
Centro de Investigación en Matemáticas (CIMAT), Gto., México	
<i>Honor Medal for Best GPA of the 95-mathematics class</i>	Fall 1995
Universidad Autónoma Metropolitana	
<i>First Place in the Fourth Mexican Mathematical Olympiads</i>	1990

II. RESEARCH INTEREST

Mathematical Finance

(i) Option Pricing and Hedging in general jump-diffusion models. (ii) Portfolio optimization and stochastic control. (iii) Limit Order Book modeling and optimal order placement and execution.

Statistics

(i) High-Frequency statistical methods for stochastic processes; (ii) Nonparametric estimation and model selection methods; (iii) Time Series Analysis; (iv) Change Point Detection.

Probability

(i) Limit theorems, construction, and simulation of stochastic processes. (ii) Lévy and other related jump processes. (iii) Short-time asymptotics and their applications thereof. (iv) Concentration inequalities.

III. PUBLICATIONS

A. Refereed Publications

1. J.E. Figueroa-López and J. Nisen. Second-order properties of thresholded realized power variations of FJA additive processes. *Statistical Inference for Stochastic Processes*, Vol. 22, Issue 3, p. 431-474, 2019.
2. J.E. Figueroa-López and C. Mancini. Optimum thresholding using mean and conditional mean square error. Accepted in *The Journal of Econometrics*, Vol. 208, issue 1, p. 179-210, 2019.
3. J.E. Figueroa-López and S. Ólafsson. Change-point detection for Lévy processes. *Annals of Applied Probability*, Vol. 29, No. 2, p. 717-738, 2019.
4. J.E. Figueroa-López and Y. Luo. Small-time expansions for state-dependent local jump-diffusion models with infinite jump activity. *Stochastic Processes and their Applications*, Vol. 128, Issue 12, p. 4207-4245, 2018.
5. J.E. Figueroa-López, H. Lee, and R. Pasupathy. Optimal placement of a small order in a diffusive limit order book. *High Frequency* 1(2), 87-116, 2018.
6. J.E. Figueroa-López, R. Gong, and M. Lorig. Short-Time Expansions for Call Options on Leveraged ETFs under exponential Lévy models with local volatility. *SIAM Journal on Financial Mathematics* 9(1), 347-380, 2018.
7. J.E. Figueroa-López, R. Gong, and C. Houdré. Third-order short-time expansions for close-to-the-money option prices under the CGMY model. *Journal of Applied Mathematical Finance* 24, 547-574, 2017.
8. J.E. Figueroa-López and K. Lee. Estimation of a noisy subordinated Brownian Motion via two-scale power variations. *Journal of Statistical Planning and Inference* 189, 16-37, 2017.
9. J.A. Chavez-Casillas and J.E. Figueroa-López. A one-level limit order book model with memory and variable spread. *Stochastic Processes and their Applications* 127, 2447-2481, 2017.
10. J.E. Figueroa-López and S. Ólafsson. Short-time asymptotics for the implied volatility skew under a stochastic volatility model with Lévy jumps. *Finance and Stochastics* 20(4), 973-1020, 2016.
11. J.E. Figueroa-López, R. Gong, and C. Houdré. High-order short-time expansions for ATM option prices of exponential Lévy models. *Mathematical Finance*, 26(3), 516-557, 2016.

12. J.E. Figueroa-Lopez and S. Ólafsson. Short-time expansions for close-to-the-money options under a stochastic volatility model with Lévy jumps. *Finance and Stochastics* 20(1), 219-265, 2016.
13. A. Capponi, J.E. Figueroa-López, and A. Pascucci. Dynamic credit investment in partially observed markets. *Finance and Stochastics*, 19(4) p. 891-939, 2015.
14. J.E. Figueroa-López, Y. Luo, and C. Ouyang. Small-time expansions for local jump-diffusions models of infinite jump activity. *Bernoulli*, 20(3), p. 1165-1209, 2014.
15. J.E. Figueroa-López and P. Tankov. Small-time asymptotics of stopped Lévy bridges and simulation schemes with controlled bias. *Bernoulli*, 20(3), p. 1126-1164, 2014.
16. A. Capponi, J.E. Figueroa-López, and J. Nisen. Pricing and semimartingale representations of vulnerable contingent claims in regime-switching markets. *Mathematical Finance*, 24(2), p. 250-288, 2014.
17. A. Capponi and J.E. Figueroa-López. Dynamic portfolio optimization with a defaultable security and regime switching. *Mathematical Finance*, 24(2), p. 207-249, 2014.
18. J.E. Figueroa-López and J. Nisen. Optimally thresholded realized power variations for Lévy jump diffusion models. *Stochastic Processes and their Applications* 123, p. 2648- 2677, 2013.
19. J.E. Figueroa-López and M. Levine. Nonparametric regression with rescaled time series errors. *Journal of Time Series Analysis*, 34, p. 345-361, 2013.
20. J.E. Figueroa-López, R. Gong, and C. Houdré. Small-time expansions of the distributions, densities, and option prices of stochastic volatility models with Lévy jumps. *Stochastic Processes and their Applications*, 122, p. 1808-1839, 2012.
21. J.E. Figueroa-López. Statistical estimation of Lévy-type stochastic volatility models. *Annals of Finance*, 8, p. 309-335, 2012.
22. J.E. Figueroa-López and M. Forde. The small-maturity smile for exponential Lévy models. *SIAM J. Financial Mathematics*, 3(1), p. 33-65, 2012.
23. J.E. Figueroa-López, S. Lancette, K. Lee, and Y. Mi. Estimation of NIG and VG models for high frequency financial data. In *The Handbook of Modeling High-Frequency Data in Finance*. I. Florescu, M.C. Mariani, and F. Viens (eds.), J. Wiley, p. 3-25, 2011.
24. J.E. Figueroa-López. Central limit theorems for the non-parametric estimation of time-changed Lévy models. *Scandinavian Journal of Statistics*, 38, p. 748-765, 2011.
25. J.E. Figueroa-López. Sieve-based confidence intervals and bands for Lévy densities. *Bernoulli*, 17, p. 643-670, 2011.
26. J.E. Figueroa-López. Approximations for the distributions of bounded variation Lévy processes. *Statistics and Probability Letters*, 80, p. 1744-1757, 2010.

27. J.E. Figueroa-López and J. Ma. Optimal portfolios in Lévy markets under state-dependent bounded utility functions. *The International Journal of Stochastic Analysis*, Article ID 236587, 2010.
28. J.E. Figueroa-López and C. Houdré. Small-time expansions for the transition distribution of Lévy processes. *Stochastic Processes and their Applications*, 119, p. 3862-3889, 2009.
29. J.E. Figueroa-López. Nonparametric estimation of time-changed Lévy models under high-frequency data. *Advances in Applied Probability*, 41, p. 1161-1186, 2009.
30. J.E. Figueroa-López. Nonparametric estimation for Lévy models based on discrete-sampling. *IMS Lecture Notes-Monograph Series. Optimality: The Third Erich L. Lehmann Symposium. J. Rojo (eds.)*, 57, p. 117-146, 2009.
31. J.E. Figueroa-López. Small-time moment asymptotics for Lévy processes. *Statistics and Probability Letters*, 78, p. 3355-3365, 2008.
32. J.E. Figueroa-López and C. Houdré. Risk bounds for the non-parametric estimation of Lévy processes. *IMS Lecture Notes-Monograph Series. High Dimensional Probability IV. E. Giné, V. Kolchinskii, W. Li, J. Zinn (eds.)*, 51, p. 96-116, 2006.
33. J.E. Figueroa-López and C. Houdré. On the asymptotic redundancy of lossless block coding with two codeword lengths. *IEEE Transactions on Information Theory*, 51, p. 688-692, 2005.
34. J.L. Marroqui, M. Servin, and J.E. Figueroa-López. Robust Quadrature Filters. *Journal of the Optical Society of America A*, 14, p. 779-791, 1997.

B. Books and book chapters

1. Jump-diffusion models driven by Lévy processes.
An invited chapter in the Handbook of Computational Finance. Jin-Chuan Duan, James E. Gentle, and Wolfgang Härdle(eds). Springer, 2012.
2. M. Breen, G. Chikhladze, J.E. Figueroa-López, Y. Gershon, Y. Muliadi, and I. Predergast. Modeling the economics of differentiated durable-goods markets. IMA Preprints 1886, July 2002 series.
3. Construcción de Procesos Autosimilares de Variancia Finita
(Construction of self-similar processes with finite variance),
Advanced text series of the Mexican Mathematical Society, Mexico 2000. 215 Pages.

C. Submitted

1. J.E. Figueroa-López and C. Li. Optimal Kernel Estimation of Spot Volatility of Stochastic Differential Equations. 48 pages. Submitted, 2019+.
2. J.E. Figueroa-López, C. Li, and J. Nisen. Optimal Iterative Threshold-Kernel Estimation of Jump Diffusion Processes. 29 pages. Submitted, 2019+.
3. Qi Wang, J.E. Figueroa-López, and Todd Kuffner. Bayesian Inference on Volatility in the Presence of Infinite Jump Activity and Microstructure Noise . 46 pages. Submitted, 2019+.

IV. GRANT ACTIVITY

A. Current

1. A New Approach Toward Optimal and Adaptive Nonparametric Methods for High-Frequency Data (PI: J.E. Figueroa-López), NSF-DMS-Statistics. Project Period: 2016-2020. Role: Sole PI.
2. CAREER: Bridging high-frequency data analysis and continuous-time features of Lévy models (PI: J.E. Figueroa-López), NSF-DMS-Statistics. Project Period: 2012-2020. Role: Sole PI.

B. Past

1. Nonparametric estimation of financial jump-diffusion models via random thresholding (Sole PI: Figueroa-López), Purdue Research Foundation. Project Period: 2012-2013. Grant for graduate student support.
2. Nonparametric methods for jump processes under microstructure noise (Sole PI: J.E. Figueroa-López), NSF-DMS-Statistics. Project Period: 2009-2012.
3. Estimation methods for jump-diffusion models (Sole PI: Figueroa-López), Purdue Research Foundation. Project Period: 2011-2012. Role: Sole PI. Grant for graduate student support.
4. Nonparametric estimation methods for financial models driven by Lévy processes (Sole PI: J.E. Figueroa-López), Purdue Research Foundation. Project Period: Jul/2008 - Aug/2008.

V. GRADUATE PROGRAM INVOLVEMENT

A. Graduated Ph.D. students

	Name	Subject	University & Department	Grad.	First Taken Position
1	Jonathan Chávez-Casillas	Stochastic modeling of limit order books	Purdue, Mathematics	Aug 2015	Postdoc at the University of Calgary
2	Cheng Li	Optimal Iterative Threshold Kernel Estimation of Jump-Diffusion Processes	Purdue, Mathematics	Aug 2017	Quant at Goldman Sachs, NY
3	Hyoeun Lee [‡]	Optimal Allocation Problem under stochastic Limit Order Book model	Purdue, Statistics	Aug. 2018	Postdoc at University of Illinois at Urbana-Champaign
4	Yankeng Luo [†]	Small-time expansions for local jump-diffusion models	Purdue, Mathematics	Aug 2015	Instructor at Virginia Commonwealth University
5	Jeffrey Nisen	Statistical estimation of jump-diffusion models via optimal thresholding	Purdue, Statistics	Aug 2013	Quant at Barclays, NY
6	Sveinn Ólafsson	Applications of short-time asymptotic methods to option pricing and change point detection for Lévy models	Purdue, Statistics	Aug 2015	Postdoc at University of California at Santa Barbara

[‡] co-advised with Professor Raghu Pasupathy, Statistics Department, Purdue University.

[†] co-advised with Professor Frederi Viens, Statistics and Mathematics Departments, Purdue University.

B. Current Ph.D. students

Name	Subject	University & Department	Exp. grad.
Qi Wang*	Bayesian Methods for Misspecified Jump-Diffusion Models	Washington University, Mathematics & Statistics	Aug. 2020
Bei Wu	Optimal Kernel Estimation of Spot Volatility with Microstructure Noise	Washington University, Mathematics & Statistics	Aug. 2022
Zoe Yu	Reinforced Learning for Algorithmic Trading	Washington University, Mathematics & Statistics	Aug. 2021
Yuchen Han	Optimal Iterative Estimation of Estimation Using Truncated Realized Variations	Washington University, Mathematics & Statistics	Aug. 2022

* co-advised with Professor Todd Kuffner, Department of Mathematics and Statistics, Washington University.

C. Master Thesis Advisor

Name	Subject	Degree	Year
Zhenyi An	Different Estimation Methods for the Basic Independent Component Analysis Model	MA in Stat	2019
Weiliang Wang	Statistical Analysis of Short-time Option Prices Based on a Lévy Model	MA in Stat	2018
Xinyi Cai	Algorithmic Trading with Prior Information	MA in Stat	2018
Teng Tu	Nonparametric estimation of time series volatility model estimation	MA in Stat	2018
Xin Xu	Deep Learning Analysis of Limit Order Book	MA in Stat	2018
Zheng Xu	A Simulation Study of Bipower and Thresholded Realized Variations for High-Frequency Data	MA in Stat	2018
Yiyao Luo	Statistical Analysis of Markovian Queueing Models of Limit Order Books	MA in Stat	2017
Ying Zhuang	Statistical Analysis of Price Process Jumps Based on LOB Data	MA in Stat	2017
Jiachen Wang	Portfolio Optimization under Solvency Constraints: A Dynamical Approach	MA in Stat	2017
Weixuan Gao	Spot Volatility Estimation of Ito Semimartingales Using Delta Sequences	MA in Stat	2016

D. Ph.D. committee member

Name	Subject	Degree	Major Professor	University
Liqun Yu	Stat	Ph.D. 2018	Lin Nan	WU
Xiaoyu Dai	Stat	Ph.D. 2018	Lin Nan	WU
Juan José Viquez	Math	Ph.D. 2012	Dr. Baudoin	Purdue
Luis Barboza	Stat	Ph.D. 2012	Dr. Li and Dr. Viens	Purdue
Joseph Zadeh	Math	Ph.D. 2012	Dr. Viens	Purdue
Richard Eden	Math	Ph.D. 2012	Dr. Viens	Purdue
Ha-Young Kim	Math	Ph.D. 2010	Dr. Viens	Purdue
Alexandra Chronopoulou	Stat	Ph.D. 2009	Dr. Viens	Purdue
Yusun Wang	Math	Ph.D. 2009	Dr. Ma	Purdue
Shan Yang	Math	Ph.D. 2009	Dr. Ma	Purdue
Jesse Cunningham	Stat	Ph.D. 2009	Dr. Viens	Purdue
Arun Chockalingam	IE	Ph.D. 2009	Dr. Schmeiser	Purdue
Songfu Zhang	Math	Ph.D. 2008	Dr. Roeckner	Purdue
Noah Dean	Math	Ph.D. 2008	Dr. Davis	Purdue
Jinguang (Tony) Li	Stat	Ph.D. 2008	Dr. Levine	Purdue
Song Yao	Math	Ph.D. 2008	Dr. Ma	Purdue
Yu-Juan Jien	Math	Ph.D. 2008	Dr. Ma	Purdue
Andrew B. Vizcarra	Math	Ph.D. 2006	Dr. Viens	Purdue
Yuhua Yu	Math	Ph.D. 2006	Dr. Ma	Purdue
Yuping Liu	Math	Ph.D. 2005	Dr. Ma	Purdue
Meike Niederhausen	Math	Ph.D. 2005	Dr. Ma	Purdue
Yalcin Sarol	Stat	Ph.D. 2005	Dr. Viens	Purdue

VI. UNDERGRADUATE RESEARCH PROJECTS

Name	Research Project	Year	University
Enpeng Yuan	Optimal partial hedging strategies in a volatility jump Diffusion Model	2016	WU
Zach Virgilio	Level I Limit Order Book Models	2016	WU
Yantong Li	State of the Art Stochastic Model of the Limit Order Book (LOB)	2015	WU
Li Kang	Level-I LOB Modeling with variable spread	2014	Purdue
Haowei Chen	High-Frequency measures of variability and tail heaviness under microstructure noise	2012	Purdue
Lu Ye	EM Estimation of time-changed Lévy models	2012	Purdue
Tian Li	EM Estimation of time-changed Lévy models	2012	Purdue
Yue Wu	ML Estimation of Lévy-driven Merton models	2010	Purdue

VIII. TALKS AND PRESENTATIONS

A. Upcoming and Recent invited conference and external seminar talks

1. Workshop On Stochastic Control in Finance, NUS, Singapore, July 22, 2019. Title: *Market Making: Comparison between Reinforcement Learning and Analytical Benchmarks.*
2. SIAM Conference on Financial Mathematics & Engineering, June 7, 2019. University of Toronto. Title: *Optimum Thresholding Using Mean and Conditional Mean Squared Error.*
3. School Of Mathematics, University Of Minnesota, Mar. 14, 2019. Title: *Short-Time Asymptotics in Financial Mathematics.*
4. Department Of Mathematics, NCSU, Feb. 8, 2019. Title: *Utility Maximization in Hidden Regime-Switching Markets with Default Risk.*
5. Department Of Statistics and Probability, MSU, Nov. 29, 2018. Title: *Short-Time Asymptotics in Financial Mathematics.*
6. INFORMS International Conference, Phoenix, Nov. 4-7, 2018. Title: *Optimal Kernel Estimation of Spot Volatility.*
7. 3rd Eastern Conference on Mathematical Finance, Illinois Institute of Technology, Chicago, Oct. 26-28, 2018. Title: *Optimal Kernel Estimation of Spot Volatility.*
8. **Plenary Speaker** at “A Symposium On Optimal Stopping”, Rice University, Jun. 26, 2018. Title: *Optimal Change-Point Detection For Lévy Processes.*
9. Conference on Portfolio Managing, Stochastic Processes and Financial Econometrics, University of Florence, Italy, May. 18, 2018. Title: *Optimal Kernel Estimation of Spot Volatility.*
10. Department of Applied Mathematics, Illinois Institute of Technology, Apr. 15, 2018. Title: *Short-Time Asymptotics in Financial Mathematics.*
11. Department of Mathematics, North Carolina State University, Feb. 5, 2018. Title: *Short-Time Asymptotics in Financial Mathematics.*
12. ORIE Department, Cornell University, Jan. 18, 2018. Title: *Short-Time Asymptotics in Financial Mathematics.*
13. **Main Speaker** at the Conference on Market Microstructure: The CFM-Imperial Workshop, London, Dec. 11-12, 2017. Title: *Optimal placement of a small order in a diffusive limit order book.*
14. INFORMS International Conference, Houston, Oct. 23, 2017. Title: *Optimum Thresholding for Semimartingales with Levy Jumps under the mean-square error.*
15. INFORMS Applied Probability Conference, Northwestern, Chicago, July 10, 2017. Title: *Optimal Kernel Estimation of Spot Volatility of SDE.*

16. Conference: 10th Anniversary of CFMAR, UCSB, May 19, 2017. Title: *Optimal Placement of a Small Order Under a Diffusive Limit Order Book Model*.
17. Spring Central AMS Sectional Meeting, April 2, 2017. Title: *Optimum Thresholding for Semimartingales with Levy Jumps under the mean-square error*.
18. Mathematical Finance, Risk and Uncertainty Seminar, Department of Industrial and Enterprise Systems Engineering, UIUC, Mar. 7, 2017. Title: *Optimum Thresholding for Semimartingales using conditional mean square error*.
19. Probability and Mathematical Finance Seminar. Department of Mathematical Sciences, Carnegie Mellon University, Feb. 20, 2017. Title: *Short-Time Asymptotic Methods in Financial Mathematics*.
20. **Main Speaker** at the 12th German Probability and Statistics Days, Bochum, Germany, Mar. 1, 2016. Title: *Optimal Kernel Estimation of Spot Volatility*.
21. Informs. Philadelphia Nov. 1, 2015. Optimally Thresholded Realized Power Variations for Stochastic Volatility Models with Jumps.
22. 60th World Statistics Congress. Rio de Janeiro, Brasil, July 26-31, 2015. Title: *Optimally Thresholded Realized Power Variations for Stochastic Volatility Models with Jumps*.
23. Special Session on High-Frequency Problems. Central Spring AMS Sectional Meeting. Michigan State University, East Lansing, MI March 14-15, 2015. Title: *Optimally Thresholded Realized Power Variations for Stochastic Volatility Models with Jumps*.
24. SIAM Conference on Financial Mathematics & Engineering, Chicago, Nov. 13-15, 2014. Title: *Optimally Thresholded Realized Power Variations for Lévy Jump Diffusion Models*.
25. Seminar in stochastic analysis, math finance and PDE, Department of Mathematics, Rutgers University, Nov. 3, 2014. Title: *Power Utility Maximization in Hidden Regime-Switching Markets with Default Risk*.
26. Financial Statistics Conference. Stevanovich Center, The University of Chicago, Sept. 27, 2014. Title: *Optimally Thresholded Realized Power Variations for Levy Jump Diffusion Models*.
27. Conference on Statistics, Jump Processes, and Malliavin Calculus: Recent Applications. University of Barcelona, Barcelona, Spain, Jun. 25-27, 2014. Title: *Short-time expansions for close-to-the-money options under a Lévy jump model with stochastic volatility*.
28. 7th International Conference in High Dimensional Probability. Institut d'Etudes Scientifiques de Cargse. Nice University, Nice, France, May 26-30, 2014. Title: *Optimally Thresholded Realized Power Variations for Lévy Jump Diffusion Models*.
29. **Plenary speaker** at the XI Symposium of Probability and Stochastic Processes. Center of Research in Mathematics (CIMAT), Guanajuato, Mexico, Nov. 18-22, 2013. Title: *Advances on the short-time behavior of option prices under stable-like small jumps*

30. **Plenary speaker** at the 2nd Workshop on Risk Analysis in Economics and Finance. University of Guanajuato, Gto. Mexico, May. 15-17, 2013. Title: *Applications of short-time asymptotics to the statistical estimation and option pricing of Levy-driven model.*
31. Graduate Seminar Series. Department of Mathematics and Statistics, University of Missouri at Kansas City, April 2013. Title: *Optimal Thresholding for Lévy jump diffusion models.*
32. Quantitative Finance Seminar. Department of Industrial Engineering, Seoul National University, Seoul, Korea, August, 2012. Title: *Small-time asymptotics of stopped Lévy bridges and simulation schemes with controlled bias.*
33. Quantitative Finance Seminar. Department of Financial Engineering, Ajou University, Seoul, Korea, August, 2012. Title: *Small-time asymptotics of stopped Lévy bridges and simulation schemes with controlled bias.*
34. SIAM Conference on Financial Mathematics and Engineering, Minneapolis, July 9-11, 2012. Title: *Small-time Expansions for Stochastic Volatility Models with Lévy Jumps.*
35. CLAPEM 2012: XII Latin American Congress of Probability and Mathematical Statistics, Via del Mar, Chile, March 26-30, 2012. Title: *Small-time asymptotics of stopped Lévy bridges and simulation schemes with controlled bias.*
36. Informs 2011. Annual Meeting, Charlotte, NC, November 13-16, 2011. Title: *Dynamic Portfolio Optimization with a Defaultable Security and Regime Switching.*
37. Sixth International Conference in High Dimensional Probability, Banff International Research Station for Mathematical Innovation and Discovery, Canada, October 13-16, 2011. Title: *Small-time expansions for local jump-diffusion models with infinite jump activity.*
38. 7th International Congress on Industrial and Applied Mathematics - ICIAM 2011, Vancouver, BC, Canada, 2011. Title: *Near-expiration option prices in Lévy financial models.*
39. Conference on Statistics and Modeling for Complex Data, Ecolé des Ponts Paris-Tech, Paris, France, 2011. Title: *Central limit theorems for the nonparametric estimation of time-changed Lévy model.*
40. Risk Seminar, Statistics Department, Columbia University, 2011. Title: *Near-expiration behavior of implied volatility for exponential Lévy models.*
41. Financial Mathematics Seminar, the Stevanovich Center for Financial Mathematics, The University of Chicago, 2011. Title: *Near-expiration behavior of implied volatility for exponential Lévy models.*
42. SIAM-SEAS Minisymposium in Mathematical Finance, University of North Carolina at Charlotte, NC, 2011. Title: *Near-expiration behavior of implied volatility for exponential Lévy models.*
43. Bachelier Financial Seminar, Paris, France, 2010. Title: *Small-time asymptotics for Lévy processes and their application to estimation and option pricing.*

44. Mathematics seminar, Nice University, Nice, France, 2010. Title: *Small-time asymptotics for Lévy processes and their application to estimation and option pricing.*
45. Seminar on Mathematical Finance and Financial Engineering, Georgia Tech, GA, 2010. Title: *Small-time statistical behavior of Lévy processes and its application to the estimation and pricing of Lévy-based financial models.*
46. Statistics Colloquium, Indiana University, IN, 2010. Title: *High-Frequency based estimation of exponential Lévy Models.*
47. The Fifth International Workshop in Applied Probability. Univeridad Carlos III de Madrid, Spain, 2010. Title: *Optimal portfolios and admissible strategies in a Lévy-driven markets.*
48. The Pan-American Advanced Studies Institute. Centro de Investigación en Matemáticas (CIMAT), Guanajuato, Mexico, 2010. Title: Mini course on *Statistical Methods for Financial Models driven by Lévy Processes.*
49. Applied Mathematics Colloquia, Illinois Institute of Technology, IL, 2009. Title: *Nonparametric estimation of time-changed Lévy models.*
50. Mathematical Finance and Probability Seminar, Rutgers University, NJ, 2009. Title: *Non-parametric estimation of time-changed Lévy models.*
51. Stochastic Analysis at Purdue '09 Workshop. Purdue University, IN, 2009. Title: *Optimal portfolios and admissible strategies in a Lévy market.*
52. Workshop on Infinitely Divisible Processes. Centro de Investigación en Matemáticas (CIMAT), Guanaajuato, México, 2009. Title: *Non-parametric methods for Lévy-based financial models.*
53. Fifth International Conference in High Dimensional Probability. Centre International de Recontres Mathématiques (C.I.R.M.), Luminy, France, 2008. Title: *Model selection for Lévy processes based on discrete-sampling.*
54. The third Erich L. Lehmann symposium, Rice University, TX, 2007. Title: *Non-parametric estimation for some models driven by Lévy processes.*
55. Kent-Purdue Mini Symposium on Financial Mathematics, Kent University, OH, 2007. Title: *State-dependent utility maximization in Lévy markets.*

B. Contributed conference talks

1. Spring AMS Central Section Meeting, Special Session on Stochastic Processes with Applications to Mathematical Finance, University of Iowa, IA, 2011. Title: *Near-expiration behavior of implied volatility for exponential Lévy models.*
2. Conference on Modeling High Frequency Data in Finance II, Stevens Institute of Technology, NJ, 2010. Title: *Parametric Estimation of Geometric Lévy Models under High-Frequency Data.*

3. Spring AMS Southeastern Section Meeting, Special Session on Financial mathematics and statistics, University of Kentucky, KY, 2010. Title: *Nonparametric estimation for a Time-changed Lévy Model*.
4. Spring AMS Central Section Meeting, Special Session on Financial Mathematics, Bloomington, IN, 2008. Title: *State-dependent utility maximization in markets driven by additive Lévy processes*.

IX. SOME PROFESSIONAL SERVICE

1. Organizer: Special Session on High-frequency driven methods: econometrics, liquidity, and algorithmic trading, June 4-7, University of Toronto, 2019.
2. Served in the NSF grant review panel, Fall 2018.
3. *Member of "Presidents Advisory Board for Carnegie Mellon University Mellon College of Science"*, 2018
4. *Associate Editor, SIAM Journal on Financial Mathematics (SIFIN)*, 2017-2020.
5. Served in the NSF grant review panel for Applied Mathematics, Spring 2017.
6. Organizer: Special Session on Asymptotic Methods in Financial Models at the International INFORMS Conference, Oct. 23-25, Houston, Texas, USA, 2017.
7. Co-Organizer: 8th International Conference in High Dimensional Probability. Casa Matemática Oaxaca (BIRF-affiliated mathematics research centre), Oaxaca, México, May 28-June 2, 2017.
8. Organizer: Special Session on Asymptotic Methods in Financial Models with Jumps at the SIAM Conference on Financial Mathematics & Engineering, Nov. 13-15, Chicago, Illinois USA, 2014.
9. Organizer: Special Session on Statistical Inference for Stochastic Processes within the framework of the XI Symposium of Probability and Stochastic Processes, CIMAT, Guanajuato, Mexico, 2013.
10. Served in the NSF grant review panel for Statistics during Spring 2014.
11. Served as Associate Editor of the *Electronic Journal of Statistics* (2010-2012).
12. Jointly with Professors Levine and Viens, organized a special session on Quantitative Finance at the 8th International Symposium on Statistics held at Purdue University, June 20-24, 2012.
13. Jointly with I. Florescu and M. Mariani, organized the international conference on Modeling High Frequency Data in Finance III held at Stevens Institute of Technology, NJ, July 2010.
14. Organized a special session on "Stochastic Processes with Applications to Mathematical Finance" at the Sectional Meeting of the American Mathematical Society in Iowa City, IA, March 18-20, 2011.

15. Organized a special session on “Financial Mathematics and Statistics” at the Sectional Meeting of the American Mathematical Society in University of Kentucky, March 27-28, 2010.
16. Reviews scientific manuscripts for several journals and refereed conference proceeding including:
 - Annals of Finance
 - Annals of Statistics
 - Applied Mathematical Finance
 - Applied Mathematics and Optimization
 - The Canadian Journal of Statistics
 - Finance and Stochastics
 - Journal of the American Statistical Association
 - Journal of Applied Probability
 - Journal of Statistical Planning and Inference
 - Mathematical Finance
 - Market Microstructure & Liquidity
 - Statistics and Probability Letters
 - Stochastic Processes and their Applications
 - SIAM journal on Control and Optimization
 - SIAM journal on Financial Mathematics
 - Stochastics and Dynamics
 - Probability Theory and Related Fields
 - Proceedings of the third Erich Lehman Symposium
 - Proceedings of the Fourth International Conference in High Dimensional Probability
 - Quantitative Finance