

Curriculum Vitae

NAME: MICHAEL LUDKOVSKI

RANK: FULL PROFESSOR

A. EDUCATION

Simon Fraser University, Burnaby, BC, Canada

B.Sc., Honors Mathematics, 2001

Governor General's Academic Silver Medal (highest graduating GPA, campus-wide)

Budapest Semesters in Math (Exchange Student), Fall 1999

Princeton University, Princeton, NJ

Ph.D., Operations Research and Financial Engineering, 2005

B. ACADEMIC APPOINTMENTS

University of Michigan, Ann Arbor, MI

Department of Mathematics Term Assistant Professor 2005 – 2008

University of California, Santa Barbara, CA

Department of Statistics and Applied Probability

Assistant Professor 2008 – 2012

Associate Professor 2012 – 2016

Professor 2016 – present

Vice Chair 7/2014 – 6/2017

Chair 9/2018 – 6/2022

Center for Financial Mathematics and Actuarial Research, **Co-Director** 2016 – present

UCSB Actuarial Program, **Co-Director** 2010 – 2017, 2019 – 2020

College of Creative Studies, Affiliated Faculty (Mathematics) 2010 – 2014

Center for Control, Dynamics and Computation, Affiliated Faculty 2011 – present

Center for Responsible Machine Learning, Affiliated Faculty 2019 – present

Center for Aging and Longevity Studies, Affiliated Faculty 2024 – present

Université Paris Dauphine, Professeur Invité June 2017

London School of Economics, Visiting Professor Jan – July 2018

C. PUBLICATIONS (available at <http://ludkovski.pstat.ucsb.edu>)

BOOKS

1. *Commodities, Energy and Environmental Finance*. R. Aid, M. Ludkovski and R. Sircar, Editors. Fields Institute Communications Series, vol. 74, Springer, 2015. (Collected volume of 16 refereed research and survey articles)
2. *Gaussian Processes for Quantitative Finance*. M. Ludkovski, J. Risk. Under contract with Springer, tentative publication in late 2024. (Research monograph, 135 pages)

PUBLICATIONS IN REFEREED JOURNALS (IN CHRONOLOGICAL ORDER)

3. Filling the Gap between American and Russian Options: Reduced Regret, with S. Dayanik, *Stochastics*, **79**(1-2), pp. 61–83, 2007.
4. Pricing Asset Scheduling Flexibility using Optimal Switching, with R. Carmona. *Applied Mathematical Finance*, **15**(6), pp. 405–447, 2008.
5. Indifference Pricing of Annuities under Stochastic Mortality and Stochastic Interest Rates, with V.R. Young, *Insurance: Mathematics and Economics*, **42**(1), pp. 14–30, 2008.
6. On Comonotonicity of Pareto Optimal Allocations, with L. Rüschendorf, *Statistics and Probability Letters*, **78**(10), pp. 1181–1188, 2008.
7. Financial Hedging of Operational Flexibility, *International Journal of Theoretical and Applied Finance*, **11**(8), pp. 799–839, 2008.
8. Relative Hedging of Systematic Mortality Risk, with E. Bayraktar. *North American Actuarial Journal*, **13**(1), pp. 106–140, 2009.
9. Sequential Tracking of a Hidden Markov Chain using Point Process Observations, with E. Bayraktar, *Stochastic Processes and Applications*, **119**(6), pp. 1792–1822, 2009.
10. Optimal Risk Sharing with Distorted Probabilities, with V.R. Young, *Mathematics and Financial Economics*, **2**(2), pp. 87–105, 2009.
11. Valuation of Energy Storage: An Optimal Switching Approach, with R. Carmona, *Quantitative Finance*, **10**(4), pp. 359–374, 2010.
12. Inventory Management with Partially Observed Nonstationary Demand, with E. Bayraktar, *Annals of Operations Research*, **176**, pp. 7–39, 2010.
13. A Simulation Approach to Optimal Stopping under Partial Information, *Stochastic Processes and Applications*, **119**(12), pp. 2071–2087, 2009.
14. Ex Post Moral Hazard and Bayesian Learning in Insurance, with V.R. Young, *Journal of Risk and Insurance*, **77**(4), pp. 829–856, 2010.
15. Optimal Dynamic Policies for Influenza Management, with J. Niemi, *Statistical Communications in Infectious Diseases*, **2**(1), article 5, 2010.
16. Optimal Trade Execution in Illiquid Markets, with E. Bayraktar, *Mathematical Finance*, **21**(4), pp. 681–701, 2011.
17. Stochastic Switching Games and Duopolistic Competition in Emissions Markets, *SIAM Journal on Financial Mathematics*, **2**, pp. 488–511, 2011.
18. Monte Carlo Methods for Robust Disorder Problems, Numerical Methods in Finance, eds. R. Carmona et al., vol 12, *Springer Proceedings in Mathematics*, pp. 83–112, 2011.
19. Optimal Timing to Purchase Options, with T. Leung, *SIAM Journal on Financial Mathematics*, **2**, pp. 768–793, 2011.
20. Finite Horizon Decision Timing with Partially Observable Poisson Processes, with S. Sezer, *Stochastic Models*, **28**(2), pp. 207–247, 2012.
21. Impact of Counterparty Risk on the Reinsurance Market, with C. Bernard, *North American Actuarial Journal*, **16**(1), pp. 87–111, 2012.
22. Exploration and Exhaustibility in Dynamic Cournot Games, with R. Sircar, *European Journal of Applied Mathematics*, **23**(3), pp. 343–372, 2012.
23. Liquidation in Limit Order Books with Controlled Intensity, with E. Bayraktar, *Mathematical Finance*, **24**(4), pp. 627–650, 2014.

24. Accounting for Risk Aversion in Derivatives Purchase Timing, with T. Leung, *Mathematics and Financial Economics*, **6**(4), pp. 363–386, 2012.
25. Bayesian Quickest Detection in Sensor Arrays, *Sequential Analysis*, **31**(4), pp. 481–504, 2012.
26. Priority Option: the Value of Being a Leader, with M. Grasselli and V. Leclere, *International Journal of Theoretical and Applied Finance*, **16**(1), p. 1350004, 2013.
27. European Option Pricing with Liquidity Shocks, with Q. Shen, *International Journal of Theoretical and Applied Finance*, **16**(7), p. 1350043, 2013.
28. Sequential Bayesian Inference in Hidden Markov Stochastic Kinetic Models with Application to Detection and Response to Seasonal Epidemics, with J. Lin, *Statistics and Computing*, **24**(6), pp. 1047–1062, 2014.
29. Dynamic Cournot Models for Production of Exhaustible Commodities under Stochastic Demand, with X. Yang, in *Commodities, Energy and Environmental Finance*, Fields Institute Communications Series, R. Aid et al. Eds, Springer, pp. 371–396, 2015.
30. Game Theoretic Models for Energy Production, with R. Sircar, in *Commodities, Energy and Environmental Finance*, Fields Institute Communications Series, R. Aid et al. Eds, Springer, pp. 317–334, 2015.
31. Sequential Design for Optimal Stopping Problems, with R. Gramacy, *SIAM Journal on Financial Mathematics*, **6**(1), pp. 748–775, 2015.
32. Testing Alternative Regression Frameworks for Predictive Modeling of Healthcare Costs, with I. Duncan and M. Loginov, *North American Actuarial Journal*, **20**(1), pp. 1–23, 2016. [Awarded the 2018 Brockett and Arnold Shapiro Actuarial Journal Award]
33. Optimal Execution with Dynamic Order Flow Imbalance, with K. Bechler, *SIAM Journal on Financial Mathematics*, **6**(1), pp. 1123–1151, 2015.
34. Stochastic Optimal Coordination of Small UAVs for Target Tracking Using Regression-based Dynamic Programming, with J. Hespanha and S. Quintero, *Journal of Intelligent & Robotic Systems*, **82**(1), pp. 135–162, 2016.
35. Technology Ladders and R&D in Dynamic Cournot Markets, with R. Sircar, *Journal of Economic Dynamics and Control*, **69**, pp. 127–151, 2016.
36. Statistical Emulators for Pricing and Hedging Longevity Risk Products, with J. Risk, *Insurance: Mathematics and Economics*, **68**, pp. 45–60, 2016.
37. Kriging Metamodels and Experimental Design for Bermudan Option Pricing, *Journal of Computational Finance*, **22**(1), pp. 37–77, 2018. arxiv.org/abs/1509.02179
38. Sequential Design for Ranking Response Surfaces, with R. Hu, *SIAM/ASA Journal on Uncertainty Quantification*, **5**(1), pp. 212–239, 2017
39. Detection and Identification in the Wiener Disorder Problem with Post-Change Drift Uncertainty, with O. Hadjiliadis and H. Yang, *Stochastics*, **89**(3-4), pp. 654–685, 2017
40. Capacity Expansion Games with Application to Competition in Power Generation Investments, with R. Aid and L. Li, *Journal of Economic Dynamics and Control*, **84**(1), pp. 1–31, 2017.
41. Order Flows and Limit Order Book Resilience on the Mesoscale, with K. Bechler, *Markets, Microstructure and Liquidity*, **3** (03n04), 1850006 electronic, 2017.

42. Gaussian Process Models for Mortality Rates and Improvement Factors, with J. Risk and H. Zail, *ASTIN Bulletin*, **48** (3), pp. 1349–1349, 2018.
43. Practical Heteroskedastic Gaussian Process Modeling for Large Simulation Experiments with M. Binois and R. Gramacy, *Journal of Computational and Graphical Statistics*, **27**(4), pp. 808–821, 2018.
44. Replication or Exploration? Sequential Design for Stochastic Simulation Experiments, with M. Binois and J. Huang and R. Gramacy, *Technometrics*, **61**(1), pp. 7–23, 2019. [Awarded the 2020 Youden Prize for Best Expository Article in *Technometrics* in 2019]
45. Sequential Design and Spatial Modeling for Portfolio Tail Risk Measurement, with J. Risk, *SIAM Journal on Financial Mathematics*, **9**(4), pp. 1137–1174, 2018.
46. Simulation Methods for Stochastic Storage Problems: A Statistical Learning Perspective, with A. Maheshwari, *Energy Systems* **11**, pp. 377–415, 2020. arxiv.org/abs/1803.11309
47. Dynamic Contagion in a Banking System with Births and Defaults, with T. Ichiba and A. Sarantsev, *Annals of Finance*, **15**, pp. 489–538, 2019. arxiv.org/abs/1807.09897
48. Information Directed Sampling for Stochastic Root Finding, with S. Rodriguez, *TOMACS*, **30**(1), article no. 2, 2020. arxiv.org/abs/1711.00843
49. Multi-Population Longevity Models: a Spatial Random Field Approach, with N. Huynh and H. Zail, *Living to 100*, Society of Actuaries, 2020. [Featured on SOA International Section Podcast: <http://soapodcasts.libsyn.com/international-section-multi-population-longevity-models>]
50. Probabilistic Bisection with Spatial Metamodels, with S. Rodriguez, *European Journal of Operational Research*, **286**(2), pp. 588–603, 2020. arxiv.org/abs/1807.00095
51. The Effect of Rate Design on Power Distribution Reliability Considering Adoption of DERs, with M. Heleno and A. Maheshwari, *Applied Energy*, **268**, June, article 114964, 2020.
52. Gaussian Process Models for Incremental Loss Ratios, with H. Zail, *Variance*, **15** (1), 2022.
53. Statistical Learning for Probability-Constrained Stochastic Optimal Control, with A. Balata, A. Maheshwari and J. Palczewski, *European Journal of Operational Research*, **290**(2), pp. 640–656, 2021. arxiv.org/abs/1905.00107
54. Evaluating Gaussian Process Metamodels and Sequential Designs for Noisy Level Set Estimation, with X. Lyu and M. Binois, *Statistics & Computing*, **31** article 43, 2021. arxiv.org/abs/1807.06712
55. A machine learning approach to adaptive robust control, with T. Chen, *SIAM Journal on Financial Mathematics*, **12**(3), pp. 1226–1256, 2021. arxiv.org/abs/1912.00244
56. Multi-Output Gaussian Processes for Multi-Population Longevity Modeling, with N. Huynh. *Annals of Actuarial Science*, **15**(2), pp. 318–345, 2021. arxiv.org/abs/2003.02443
57. An Impulse-Regime Switching Game Model of Vertical Competition, with R. Aid, L. Campi and L. Li, *Dynamic Games and Applications*, **11**, pp. 631–669, 2021. arxiv.org/abs/2006.04382
58. Adaptive Batching for Gaussian Process Surrogates with Application in Noisy Level Set Estimation, with X. Lyu, *Statistical Analysis and Data Mining*, **15** (2), pp. 225–246, 2022. arxiv.org/abs/2003.08579
59. KrigHedge: Gaussian Process Surrogates for Delta Hedging, with Y. Saporito, *Applied Mathematical Finance*, **28** (4), pp. 330–360, 2022. arxiv.org/abs/2010.08407

60. Regression Monte Carlo for Impulse Control, *MathematicS in Action*, **11** (1), pp. 73–90, 2022. arxiv.org/abs/2203.06539
61. Large-scale local surrogate modeling of stochastic simulation experiments, with A. Cole and R. Gramacy, *Computational Statistics and Data Analysis*, **174**, article 107537, 2022. arxiv.org/abs/2109.5324
62. Statistical Machine Learning for Quantitative Finance, *Annual Review of Statistics and Its Applications*, **10**(1), pp. 271–295, 2023.
63. mlOSP: Towards a Unified Implementation of Regression Monte Carlo Algorithms, *Journal of Computational Finance*, **17**(1), pp. 59–109, 2023. arxiv.org/abs/2012.00729
64. Joint Models for Cause-of-Death Mortality in Multiple Populations, with N. Huynh, *Annals of Actuarial Science*, **18**(1), pp. 51–77, 2024. arxiv.org/abs/2111.06631
65. On Parametric Optimal Execution and Machine Learning Surrogates, with T. Chen and M. Voss. *Quantitative Finance*, **24**(1), pp. 15–34, 2024. arxiv.org/abs/2204.08581
66. Expressive Mortality Models through Gaussian Process Kernels, with J. Risk. *ASTIN Bulletin*, **54**(2), pp. 327–359, 2024 arxiv.org/abs/2305.01728
67. Least-Cost Structuring of 24/7 Carbon-Free Electricity Procurements, with S. Mouti and G. Swindle, 2024. *IEEE PES GM 2024 Proceedings*, arxiv.org/abs/2312.07733
68. Optimal Dispatch of Hybrid Renewable–Battery Storage Resources: A Stochastic Control Approach, with T. Aung, 2024. *Proceedings of the 2024 IEEE CDC*, in Press
69. Gaussian Processes for Statistical Learning in Actuarial Science, with J. Risk, 2024. In *Springer Foundations for Undergraduate Research in Mathematics: Actuarial Science*, in Press

REFEREED PROCEEDINGS AND OTHER PUBLICATIONS

70. Renewables Reliability in the Era of Force Majeure, with R. Aid and R. Sircar, *SIAM News*, May 2021
71. Information directed sampling for stochastic root finding (with S. Rodriguez), *Proceedings of the 2015 Winter Simulation Conference*, (S. Jain et al., Eds.), 2015, pp. 3142–3143, 2015. [Poster]
72. *Computational Method for Epidemic Detection in Multiple Populations*, with E. Shatskikh, *Proceedings of the ISDS 2014 Annual Meeting*, *Online Journal of Public Health Informatics* 7(1): e158, 2014. [Poster]
73. *Bayesian Quickest Detection with Observation-Changepoint Feedback*, *Proceedings of the 2012 IEEE Conference on Decisions and Control*, Maui HI, pp. 166–171, 2012.
74. *Tau-leaped Particle Learning*, with J. Niemi, *Proceedings of the 2012 ISDS Annual Meeting*, *Online Journal of Public Health Informatics* 5(1): e8, 2012.
75. *Optimal Disease Outbreak Decisions using Stochastic Simulation*, with J. Niemi, *Proceedings of the 2011 Winter Simulation Conference*, M. Fu Eds., 2011.
76. *Illiquidity Effects in Optimal Consumption-Investment Problems*, with H. Min, revised, Aug 2010. <http://arxiv.org/abs/1004.1489>
77. *Swing Options*, with R. Carmona, *Encyclopedia of Quantitative Finance*, R. Cont Ed., Wiley, 2009.
78. *Energy Trading*, with R. Carmona, *SIAM News*, 39(5), June 2006.

79. *Spot Convenience Yield Models for the Energy Markets*, with R. Carmona, Mathematics of Finance, AMS Comm. volume 351, G. Yin and Q. Zhang Eds., pp. 65–80, 2004.
80. *New Families of Ideal 2-Level Autocorrelation Ternary Sequences from Second Order Decimation Hadamard Transform*, with G. Gong, International Workshop in Coding and Cryptography, Elsevier, pp. 345–354, 2001.
81. mlOSP: R software package, <http://github.com/mludkov/mlOSP> . Includes demos, datasets, vignette and user manual, 2020-present

PREPRINTS & WORKING PAPERS

82. Bayesian Epidemic Detection in Multiple Populations, with K. Shatskikh, 2015, *Permanent working paper*.
83. Mean Field Game for Production and Exploration of Exhaustible Commodities, with X. Yang, 2017, *Permanent working paper*, arxiv.org/abs/1710.0513.
84. Stochastic Switching Games, with L. Li, 2018, *Working paper*. arxiv.org/abs/1807.03893
85. Large Scale Probabilistic Simulation of Renewables Production, with G. Swindle and E. Grannan, 2022, *Submitted* arxiv.org/abs/2205.04736
86. Extreme Scenario Selection in Day-Ahead Power Grid Operational Planning, with G. Terren-Serrano, 2023, *Submitted* arxiv.org/abs/2309.11067
87. Analyzing State-Level Longevity Trends with the U.S. Mortality Database, with D. Padilla, 2023, *Submitted* arxiv.org/abs/2312.01518
88. Probabilistic Spatiotemporal Modeling of Day-Ahead Wind Power Generation with Input-warped Gaussian Processes, with Q. Li, 2024, *Submitted*

D. HONORS AND AWARDS

Bachelier Lecturer, Bachelier Finance Society World Congress, Rio de Janeiro, Brazil	2024
First place and \$3000 team prize, Society of Actuaries Individual Life Experience Committee 2021 Mortality Forecasting Contest	2021
American Society for Quality and American Statistical Association's Youden Award for Best Expository Article Appearing in <i>Technometrics</i> in 2019	2020
American Risk and Insurance Association's Patrick Brockett and Arnold Shapiro Actuarial Journal Award for <i>NAAJ</i> articles	2018
Hellman Family Foundation Faculty Fellow, UCSB	2010–2011
Regents Junior Faculty Fellowship, UCSB	2010
Francis S. Upton Fellowship, Princeton U	2001–2005
Governor General's Silver Medal, Simon Fraser U	2001

Awards received by supervised students:

- PhD Student Nhan Huynh, *Runner-Up*, Best Student Presentation, Actuarial Research Conference, 2019.

- PhD Student Kyle Bechler: *Finalist*, SIAM Activity Group on Financial Mathematics Conference Paper Prize (chair of Kyle's PhD Committee), 2014
- MS Student Cody Pulliam: *Winner*, 2014 Actuarial Research Conference Poster Prize (faculty advisor on group research project)
- MS Student Tiffany Sun: *Winner*, 2013 Actuarial Research Conference Student Paper Prize (faculty advisor on group research project)
- MS Student Michael Loginov: *Winner*, 2012 Actuarial Research Conference Student Paper Prize (faculty advisor on group research project)
- BS Students Dario Biasini, Filip Branitchev and Garth Johnson: *Winners*, UCSB Emeritus Association Prize for Best Undergraduate Research in Physical Sciences and Mathematics, 2011

E. MENTORING AND STUDENTS

- **Postdoctoral Fellows Mentored:**
 - T. Chen 2017—2020 (currently in industry)
 - Q. Guo 2018 —2020 (currently TT Assistant Professor at Ball State U)
 - Z. Zhu 2021 — 2024 (currently TT Assistant Professor at HKUST Guangzhou)
 - M. Patra 2021 — 2022 (currently in industry)
 - S. Mouti 2022 — 2024 (currently VAP at Worcester Polytechnic Institute)
 - G. Terren-Serrano, 2022 — present
- **PhD Students (committee chair, 11 completed, 4 in progress):**
 - Q. Shen 2009—2012 (currently in industry)
 - C. Lu 2010—2014 (currently in industry)
 - K. Bechler 2013—2015 (currently in industry)
 - X. Yang 2013—2017 (Postdoc at Carleton U, Canada)
 - K. Shatskikh 2013—2017 (currently in industry)
 - J. Risk 2015— 2017 (TT Assistant Professor, Cal Poly Pomona)
 - S. Rodriguez 2015—2018 (Amazon, Seattle)
 - L. Li 2016—2019 (JP Morgan, New York)
 - A. Maheshwari 2017—2019 (Amazon, Seattle)
 - X. Lyu 2016—2020 (Google, Mountain View)
 - N. Huynh 2019—2021 (SB Actuaries)
 - Q. Li 2021—
 - C. Borsa 2022 —
 - T. Aung 2024 —
 - O. Mulkin 2024—

- **Member of PhD Committee (17 total):** W. Strong (PSTAT): 2009-2011; C. Gao (PSTAT): 2010-2013; R. Sau (PSTAT): 2010-2012; B. Ren (PSTAT): 2010-2013, L. Sun (PSTAT): 2011-2014; S. Quintero (*UCSB Electrical Engineering*): 2012-2014; Y. Saporito (PSTAT): 2012-2014; Y. Chiu (PSTAT): 2012-2015; R. Hu (PSTAT): 2014-2018; H. Yang (*CUNY Graduate Center*), 2013-15; M. Dela (PSTAT): 2015-2019; M. Mousavi (PSTAT): 2015-2017; Z. Zhang (PSTAT): 2017-2019; A. Angiuli (PSTAT): 2019-2021; H. Li (PSTAT): 2021-23; J-D Mejia-Becerra (PSTAT): 2023-present
- **External Reviewer for PhD Dissertations:** P. Fodra (Univ Paris 7, France, 2014), R. Donnelly (U of Toronto, Canada, 2014), G. Liu (Ecole Polytechnique, France, 2016), J. Funk (Princeton U, 2017), S. Kaakai (Univ Paris 6, France, 2017), B. Baldacci (Ecole Polytechnique, France, 2021); FM Boire (Western U, Canada, 2022)
- **McNair Program Faculty Mentor** (18-month-long mentoring on an undergraduate project for first-generation students): R. Hernandez 2019-2021

F. CAMPUS GOVERNANCE

Departmental Service

- *Co-Director*, UCSB Center for Financial Mathematics and Actuarial Research, 2016—present
- *Chair*, Department of Statistics and Applied Probability, 9/2018—6/2022 (4 years)
- *Vice-Chair*, PSTAT Department, UCSB, 2014—2017 (3 years)
- *Co-Director*, UCSB Actuarial Program, 2009—2017; *Interim Director*: 07/2019-04/2020
- *Chair*, PSTAT Visitors Search Committee, 2014—15, 2015—16, 2016—17
- *Chair*, Probability PhD Qualifying Exam, 2009, 2014, 2016, 2018 (also Committee Member 2008, 2010—2013, 2017)
- *Member*, PSTAT Graduate Admissions Committee, 2012—13, 2013—14
- *Member*, PSTAT Faculty Search Committee, 2011—12, 2015—16, 2017—18
- *Chair*, PSTAT Open-Level Faculty Search Committee, 2018—19
- *Chair*, Janet and Ian Duncan Chair in Actuarial Science, Search Committee, 2019—20
- *Chair*, Open-Rank Teaching Professor in Statistics and Data Science, 2020—21
- *Chair*, Mellichamp Chair in Statistics of Environmental Justice, 2023—24
- *Member*, PSTAT Mentoring and Promotions Committee, 2021—22, 2022—23, 2023-24
- *Member*, PSTAT Actuarial Science Committee, 2022—23, 2023—24
- *Member*, PSTAT Data Science Committee, 2020—21, 2021—22, 2022—23, 2023—24
- *Site Director*, Pacific Alliance for Low-Income Inclusion in Statistics & Data Science, 2022—23, 2023—24 (coordinate outreach & admissions for a need-based NSF-funded scholarship)
- *Site Director*, Southern California Consortium for Data Science, 2023—24 (coordinate activities for a multi-site Curriculum Development and Professional Learning project)

- *Co-Organizer*, PSTAT Department Colloquium, 2010—11, 2011—12
- *Representative*, Faculty Legislature, 2009—10, Fall 2017

Fundraising Activities:

- *Hull Family Foundation PhD Fellow (2020-22)*: Established a new PhD Fellowship by building a connection with Hull Tactical Inc
- *Amazon-UCSB Partnership (2017-19)*: Established Amazon PhD Fellowships in Data Science and expanded Amazon-sponsored Distinguished Lecture Series in Data Science
- *Accelerator Initiative in Data Science (2018-2024)*: worked with an anonymous donor to establish the UCSB Data Science Teaching Fellows program and the PSTAT Course Redesign Fund supported by a \$2.7M gift
- Worked to sign up three financial firms to the *CFMAR Industrial Affiliate Program (2016-present)*

Campus Service:

- *Member*, UCSB Council on Planning and Budget (campus-wide Senate Committee), 2022- present (Area Co-Chair, Committee on Academic Planning & Resource Allocation, 2023-24 and 2024-25)
- *Member*, UCSB Data Science Faculty Advisory Committee, 2018-present
- *Member*, UCSB Graduate Council (campus-wide Senate Committee), 2015-16, 2016-17
- *Chair*, Outstanding Graduate Teaching Assistant Award (campus-wide), 2017
- *Committee Member*, Faculty Career Development Award Committee, 2019
- *Committee Member*, Outstanding Graduate Mentor Award Committee (campus-wide), 2016
- *Committee Member*, Graduate Committee on Program Review, 2015-2016
- *Committee Member*, Hellman Family Foundation Fellowship Committee, 2015
- *Committee Member*, Continuing Graduate Fellowships Committee, 2015
- *Committee Member*, Central Graduate Fellowship Recruitment Committee, 2014

G. EXTRAMURAL SUPPORT

- “S-STEM: PALIISADS: Pacific Alliance for Low-income Inclusion in Statistics and Data Science”, **NSF Grant**, 2022-2028, \$5,000,000. Lead PI for a new consortium of 7 institutions across California and Washington.
- “Southern California Consortium for Data Science”, **CA Learning Lab Grant**, 2023-2027, \$1,300,000. Lead PI for a new consortium of 8 institutions (1 UC, 4 Cal State and 3 Community Colleges) focused on Data Science Pathways in higher education.

- “Designing California's clean and climate resilient electricity grid for vulnerable communities”, **University of California** Climate Action grant, 2023-2027, \$2,000,000. Co-PI on the UCSB team with a subcontract from UCSD, ~\$250,000 personal portion.
- “Block-level Approach for Risk Mitigation in Electricity Networks: Variance Reduction Curves”, **DOE** Grant, 2023-24. PI on a sub-contract from Lawrence Berkeley National Lab, \$60,000.
- “PERFORM: Stochastic Models, Indices & Optimization Algorithms for Pricing & Hedging Reliability Risks in Modern Power Grids”, **ARPA-E** Contract, 2020-2024 (subcontract from Princeton U, \$3,500,000 total, \$675,000 personal portion)
- “NSF HDR DSC Central Coast Data Science Partnership”, **NSF** Grant, 2020-2023, \$970,000, One of five co-PIs for a multi-site undergraduate training grant (no faculty share).
- “CDS&E-MSS/Collaborative Research: Gaussian Process Frameworks for Modeling and Control of Stochastic Systems”, **DMS NSF** Grant, 2018-2022, \$150,000, PI. Collaboration with R. Gramacy (Virginia Tech)
- “AMPS: Stochastic Modeling of the Power Grid”, **DMS NSF** Grant, 2017-2021, \$170,000, PI. Collaboration with R. Sircar (Princeton)
- “Gaussian Process Models in Actuarial Science: A Guided Tour”, Casualty Actuarial Society **CKER** Grant; 2018-2019, \$17,500, PI. Collaborative with H. Zail, Elucidor LLC.
- “CDS&E-MSS/Collaborative Research: Sequential Design for Stochastic Control: Active Learning of Optimal Policies”, **DMS NSF** Grant, 2015—2018, \$218,351, PI. Collaborative research team with R. Gramacy (U Chicago & Virginia Tech)
- “Conference on Stochastic Asymptotics and Applications joint with Sixth Western Conference on Mathematical Finance”, UCSB. **DMS NSF** Grant, 2014, \$20,000, PI
- STORY: Stochastic and Robust Optimization and Applications, Fondation Mathématique Jacques Hadamard (€31,000 split across an international network of 8 researchers in California and France, 2 conferences organized), PI M. De Lara, 2014
- Fields Institute Focus Program on Commodities and Environmental Finance, Toronto, Canada (\$100,000 CAD from Fields to organize a month-long thematic program at the Institute), 2013, Lead Organizer
- “Collaborative Research: ATD: Sequential Quickest Detection and Identification of Multiple Co-dependent Epidemic Outbreaks”, **DMS NSF** Grant, 2012—2015, \$212,000, PI. Collaborative research team with O. Hadjiliadis (CUNY)
- Hellman Family Foundation Fellowship, 2010—2011, \$20,000, PI
- “Optimal Risk Sharing with Background Risk”, with C. Bernard, **AERF** Grant, Society of Actuaries; 2010, \$12,000, PI
- “Third Western Conference in Mathematical Finance”, **DMS NSF** Grant, co-PI with J-P. Fouque, 2009, \$16,000
- “Relative Hedging of Systematic Mortality Risk”, with E. Bayraktar. **CKER** Grant, Society of Actuaries, 2007, \$10,000, PI

- “Financial Engineering for Actuarial Mathematics Workshop”, NSF Grant, 2007, \$15,000, PI

H. PROFESSIONAL ACTIVITIES SINCE JOINING UCSB

1. *Invited mini-course lecturer*, PIMS Summer School on Forecasting and Mathematical Modeling for Renewable Energy, Kelowna, BC, Canada, July 2024 (6 hours over 2 days)
2. *Scientific Committee Member*, Insurance Data Science Conference, Stockholm, Sweden, 2024
3. *Main Organizer*, Fourth UCSB InsurTech Summit, April 2023 (60 participants)
4. *Committee Member*, SIAG FME Officer Election Nominating Committee, 2023
5. *Invited mini-course lecturer*, SIAM Gene Golub Summer School, Gran Sasso Institute, Italy, Aug 2022 (10 hours of lectures over 2 days)
6. *Main Organizer*, Third UCSB InsurTech Summit, Jan 2022 (70 participants) - *virtual*
7. *Workshop Co-Organizer*, Applications of Mean Field Games: from Models to Practice Institute for Mathematical and Statistical Innovation, Chicago IL, November 2021
8. *Member*, Bachelier Finance Society Council, 2022-2025
9. *Chair*, SIAG FME Junior Scientist Prize Committee, 2020-21
10. *Minisymposium Co-Organizer*, SIAM Annual Meeting AN'20, Toronto Canada, July 2020 (2 sessions within the Financial Mathematics track) – *virtual conference due to Covid-19*
11. *Scientific Advisory Board member*, One World Actuarial Research Seminar, 2020 (global bi-weekly seminar series <http://www.maths.usyd.edu.au/u/munir/owars/>)
12. *Program Committee Member*, Commodities & Energy Markets Association Annual Meeting CEMA '20, Madrid Spain, June 2020 – *postponed to 2021 due to Covid-19*
13. *Main Organizer*, Second UCSB InsurTech Summit, Jan 2021 (60 participants) – *virtual*
14. *Lead Co- Organizer*, Workshop on Stochastic Modeling for the Smart Grid, Princeton NJ, June 2021 (50 participants)
15. *Scientific Committee Member*, Workshop on Advances in Stochastic Analysis for Handling Risks in Finance and Insurance, CIRM Luminy France, October 2019
16. *Committee Member*, SIAG FME Officer Election Nominating Committee, 2019
17. *Minisymposium Co-Organizer*, International Congress on Industrial and Applied Mathematics, ICIAM '19, Valencia, Spain
18. *Program Committee Member*, Commodities & Energy Markets Association Annual Meeting CEMA '19, Pittsburgh PA, July 2019
19. *Main Organizer*, First UCSB InsurTech Summit, May 2019, UCSB (50 participants)
20. *Faculty Mentor*, Financial Mathematics Team Challenge, Rio De Janeiro, Brazil, August 2018 (intensive 10-day mentoring of a team of 3 Masters students)
21. *Prize Committee Member*, Third Bar-Ilan Conference on Financial Mathematics, Bnei Brak, Israel, May 2018

22. *Organizing Committee Co-chair* Conference on Mathematical Modeling in Finance, Aug 2017, London, UK, co-sponsored by SIAM and LMS (160 participants)
23. *Lead Co-Organizer*, CFMAR 10th Anniversary Conference, May 2017, UCSB (60 participants)
24. *Chair*, SIAM Activity Group on Financial Mathematics and Engineering (SIAG FME), 600+ members. January 2015—December 2016.
25. *Organizing Committee Co-chair*, SIAM Financial Mathematics and Engineering (FM16) Conference, Nov 2016, Austin, TX (~300 participants)
26. *Prize Committee Member*, Second Bar-Ilan Conference on Financial Mathematics, Bnei Brak, Israel, May 2016
27. *Member, Organizing Committee*, 2016 Insurance, Mathematics and Economics Congress, July 2016, Atlanta, GA
28. *Long-Term Senior Participant*, IPAM Long Program on Broad Perspectives and New Directions in Financial Mathematics, March-June 2015
29. *Coordinator*, SIAG/FME Financial Mathematics Stream, 2015 International Congress on Industrial and Applied Mathematics ICIAM 2015, Beijing, China, Aug 2015. Put together 11 minisymposium sessions in financial mathematics and insurance.
30. *Secretary*, SIAM Activity Group on Financial Mathematics and Engineering (SIAG FME), Jan 2013—Dec 2014
31. *Program Director*, SIAM Activity Group on Financial Mathematics and Engineering (SIAG FME), Jan 2011— Dec 2012
32. *Newsletter Editor*, SIAG FME, 2013—2015
Inaugurated a bi-annual online newsletter for the activity group
33. *Co-Director*, UCSB Actuarial Program, 2009—2017
Instrumental in getting Center of Actuarial Excellence (CAE) designation by the Society of Actuaries for UCSB (2014—present). Also, together with R. Feldman led the effort in developing the 5-year BS/MS degree in Actuarial Science (started in 2012), and opening a full-fledged Actuarial Science major (started in 2010).
34. *Scientific Committee Chair*, 49th Actuarial Research Conference, ARC 2014, Santa Barbara, CA, July 2014
Led the organization of the scientific program for a meeting with over 80 presentations and 200+ participants. Reviewed submissions and put together the abstracts booklet.
35. *Chair*, Conference on Stochastic Asymptotics and Applications joint with Sixth Western Conference on Mathematical Finance, Santa Barbara, CA, Sept 2014
Main local organizer for a meeting with over 70 participants.
36. *Co-chair*, Fields Institute Focus Program on Commodities and Environmental Finance, August 2013, Toronto, ON, Canada
Program included a Summer School and two Research Workshops (100+ participants)
37. *Organizing Committee Co-chair*, SIAM Financial Mathematics and Engineering (FM12) Conference, July 9-11, 2012, Minneapolis, MN (300+ participants)

38. *Local Co-Organizer*: Southern California Probability Symposium: Dec 2013 (USC)
One day regional meeting with 40+ participants
39. *Local Organizer*: Third Western Conference in Mathematical Finance, Santa Barbara, CA, 2009 (NSF Grant co-PI); Workshop on Financial Engineering for Actuarial Mathematics, Ann Arbor, MI, 2007 (NSF Grant PI)
40. *Local Co-Organizer*: Southern California Probability Symposium: Dec 2009 (UC Irvine).
41. *Symposia Co-Organizer*: Minisymposium on Monte Carlo Methods in Finance, SIAM FM14 Conference, Chicago, IL; Session on Optimal Stopping and American Options, INFORMS APS 2013 Conference, San Jose, Costa Rica, 2013; Mini-symposium on Stochastic Games, Emission Markets and Commodity Modeling, SIAM FM10 Conference, San Francisco, CA, 2010; Mini-symposium on Optimal Stopping and Impulse Control, SIAM FM08 Conference, New Brunswick, NJ, 2008

SEMINAR AND CONFERENCE PRESENTATIONS SINCE 2010:

- 2024 IEEE PES General Meeting, Seattle, WA, July 2024
- *Bachelier Finance Society World Congress, Rio De Janeiro, Brazil, July 2024
- BIRS Workshop on New Trends and Challenges in Stochastic Differential Games, Kelowna, BC, Canada, June 2024
- Lawrence Berkeley Lab Energy Technologies Area seminar, Berkeley, CA, May 2024
- ARPA-E Energy Innovation Summit (poster + booth presenter), Dallas, TX, May 2024
- One World Actuarial Research Series, *virtual*, May 2024
- Cornell CFEM and UBS AI & Data Research Seminar, *virtual*, April 2024
- Worcester Polytechnic Institute Applied Mathematics Seminar, Worcester, MA, November 2023
- *World Online Seminars on Machine Learning in Finance (global event), *virtual*, November 2023.
- *SIAM Activity Group on Financial Mathematics Virtual Seminar Series (global event), *virtual*, October 2023
- Columbia University Financial Mathematics Seminar, New York, NY, September 2023
- International Congress on Industrial and Applied Mathematics ICIAM 2023, Tokyo, Japan, August 2023
- *Workshop on Forecasting and Mathematical Modeling for Renewable Energy, Pacific Institute for Mathematical Sciences PIMS, Vancouver, Canada, July 2023
- SIAM Conference on Financial Mathematics and Engineering FM23, Philadelphia, PA, June 2023
- Insurance Data Science Conference, London, UK, June 2023
- *One World Actuarial Science Webinar (global event), *virtual*, May 2023
- *Fields Institute Quantitative Finance Seminar, Toronto, ON, April 2023
- ARPA-E Energy Innovation Summit, *booth presenter* at Technology Showcase, Washington, DC, March 2023
- SIAM Conference on Computational Science and Engineering CSE23, Amsterdam, Netherlands, February 2023
- Boston University, Quantitative Finance Seminar, Boston MA, October 2022

- U of Connecticut, Actuarial Science Seminar, Storrs CT, October 2022
- Human Mortality Database Users Conference, invited speaker, *virtual*, October 2022
- Duncan Chair in Actuarial Science Research Day, Santa Barbara, CA, September 2022
- Research in Options 2022 Conference, Rio de Janeiro, Brazil, *invited plenary speaker*, August 2022
- SIAM Annual Meeting 2022 AN22, July 2022, *virtual*
- Insurance Data Science Conference, Milano, Italy, July 2022
- ARPA-E Energy Innovation Summit, *booth presenter*, Denver CO, May 2022
- NSF Algorithms for Modern Power Systems (AMPS) PI Workshop, May 2022, *virtual*
- UCSB Institute for Energy Efficiency Seminar, Santa Barbara, CA, April 2022
- Brigham Young University, Statistics Seminar, Provo UT, April 2022
- *2021 Commodities and Energy Markets Association (CEMA) Annual Meeting, June 2021, *plenary speaker, virtual*
- SIAM Conference on Financial Mathematics and Engineering FM21, July 2021, *virtual*
- Insurance Data Science Conference, June 2021, *virtual*
- Dept of Statistics and Actuarial Science, U of Waterloo, Canada, April 2021. *virtual seminar*
- One World Optimal Stopping Seminar (global event), *virtual seminar*, March 2021
- *Panelist*, California Alliance for Data Science Education, February 2021, *virtual*.
- *The Virtual Symposium on Statistics and Risk Management, *plenary speaker*, Dept of Statistics, Chinese University of Hong Kong, December 2020, *virtual*
- NSF Algorithms for Modern Power Systems (AMPS) PI Workshop, November 2020, *virtual*
- Bielefeld Stochastic Afternoon seminar series, November 2020, *virtual*
- *Panelist: AI and ML in Insurance, 2020 Actuarial Research Conference, August 2020, *virtual*
- 2020 Actuarial Research Conference, August 2020, *virtual*
- SIAM Annual Meeting 2020, July 2020, *virtual*
- Panelist, SIAM Financial Mathematics & Engineering seminar series (global event), May 2020, *virtual*
- Online International Conference in Actuarial Science, Data Science and Finance, ISFA Lyon, April 2020, *virtual*
- *Advances in Financial Mathematics, *plenary speaker*, Paris, France, Jan 2020
- Center for Mathematics Oaxaca Workshop on “Stochastic Optimization for Energy Transition”, Oaxaca, Mexico, Sept 2019
- Actuarial Research Conference 2019, Indianapolis, IN, August 2019
- ICIAM Congress 2019, Valencia, Spain, July 2019
- 2019 CEMA Annual Meeting, Pittsburgh PA, June 2019
- SIAM Conference on Financial Mathematics and Engineering FM’19, Toronto Canada, June 2019
- *VIASM Quantitative Finance Workshop, *plenary speaker*, Tuan Chau Vietnam, May 2019
- U of Wisconsin Risk Management and Insurance Seminar, March 2019

- IIT Chicago Applied Mathematics Colloquium, September 2018
- NSF Algorithms for Modern Power Systems (AMPS) PI Workshop, Washington DC, September 2018
- ANR Caesars “Advances in Modeling and Control for Power Systems of the Future” Conference, Palaiseau France, September 2018
- Bachelier Finance Society World Congress, Dublin, Ireland, July 2018
- Data Science in Insurance Conference, Cass Business School, London UK, July 2018
- Duisburg-Essen University, Energy Finance Seminar, Essen Germany, July 2018
- Chairs Days: Insurance, Actuarial Science, Data and Models Workshop, Paris France, June 2018
- London School of Economics, Risk and Stochastics Seminar, May 2018
- Ludwig Maximilians University of Munich Financial Mathematics Seminar, Munich Germany, May 2018
- Imperial College Mathematical Finance Seminar, London, UK, May 2018
- Oxford University Financial Mathematics Colloquium, Oxford UK, March 2018
- Cass Business School Actuarial Science Seminar, London UK, March 2018
- Univ of Sussex Finance and Stochastics Seminar, Brighton UK, Feb 2018
- Univ of Leeds Financial Mathematics Seminar, Leeds UK, Feb 2018
- Financial Mathematics Seminar, Columbia U, New York, NY, October 2017
- Actuarial/Financial Mathematics Seminar, University of Michigan, Ann Arbor, MI, September 2017
- Applied Probability Society Conference APS’2017, Evanston, IL, July 2017
- International Conference on Monte Carlo Methods and Applications, Montreal, Canada, July 2017
- Matinee Chaire Actuariat Durable, Paris Dauphine Universite, Paris, France, June 2017
- Seminaire Bachelier, Institut Henri Poincare, Paris, France, June 2017
- *Market Microstructure: Confronting Many Viewpoints #4 Conference, *plenary speaker*, Paris, France, Dec 2016
- SIAM FM’16, Minisymposium on Machine Learning in Finance, Austin, TX, Nov 2016
- 2016 Insurance: Mathematics and Economics Congress, Atlanta, GA, July 2016
- Ninth Bachelier Society World Congress, New York, NY, July 2016
- *International Conference on Monte Carlo Techniques, Paris, France, July 2016
- PSTAT Department Seminar, UCSB, April 2016
- CUNY Hunter College Applied Probability and Statistics Seminar, New York, NY, March 2016
- U of Toronto Statistics Colloquium, Toronto, ON, February 2016
- U of Washington Applied Mathematics Colloquium, Seattle WA, February 2016
- *7th Western Conference on Mathematical Finance, Austin, TX, October 2015
- USC Mathematical Finance Seminar, Los Angeles, CA, September 2015
- Minisymposium on Stochastic Mean Field Games, ICIAM 2015, Beijing, China, August 2015
- NSF-DTRA ATD Program Review, Washington DC, July 2015
- *Smart Energy and Stochastic Optimization SESO 2015, Paris, France, June 2015

- IPAM Long Program on Financial Mathematics Culminating Workshop, Lake Arrowhead, CA, June 2015
- *IPAM Workshop on Commodity Markets and their Financialization, May 2015
- *Stevanovich Center Conference on High Frequency and Algorithmic Trading, Chicago, IL, May 2015
- IPAM Workshop on the Mathematics of High Frequency Markets, April 2015
- *Conference on Mathematical Finance and Related Issues, Osaka, Japan, March 2015
- *SIAM FM'14 *Plenary Speaker*, Chicago, IL, Nov 2014
- New Directions in Financial Mathematics, Banff, AB, Canada, July 2014
- *Labex Louis Bachelier SIAM-SMAI Conference on Financial Mathematics, *plenary speaker*, Paris, France, June 2014
- AMS-IMU Joint Meeting, Bar-Ilan U, Israel, June 2014
- Ecole des Ponts Probability and Optimization Seminar, Paris, France, April 2014
- FiME Seminar, Paris, France, April 2014
- NSF-DTRA Algorithms Workshop, Boulder, CO, March 2014
- *Research in Options Workshop, Buzios, Brazil, Dec 2013
- Actuarial Mathematics Seminar, ISFA Lyon, France, Sep 2013
- Workshop on Stochastic Games, Fields Institute, Toronto, Canada, Aug 2013
- INFORMS Applied Probability Society 2013 Conference, San Jose, Costa Rica, July 2013
- *Workshop on High Frequency and Algorithmic Trading, University College London, London, UK, April 2013
- CUNY Graduate Center Probability Seminar, New York, NY, Feb 2013
- AMS Annual Meeting, San Diego, CA, Jan 2013
- IEEE Annual Conference on Decisions and Control, Maui, HI, Dec 2012
- International Society for Disease Surveillance Annual Conference, ISDS 2012, San Diego, CA, Dec 2012
- NSF Workshop on Algorithms for Threat Detection, San Diego, CA, Nov 2012
- Workshop on Sequential Monte Carlo Methods in Finance, Paris, France, Oct 2012
- SIAM FM'12 Conference, Minneapolis, MN, July 2012.
- Financial Math Seminar, Université du Maine, Le Mans, France, June 2012.
- Mathematics of the New Financial Systems, IMA Workshop, Minneapolis, May 2012.
- Asymptotics in Finance Workshop, U of Chicago, May 2012.
- U of Pittsburgh Quantitative Finance Seminar, March 2012.
- 2011 Winter Simulation Conference, Phoenix, AZ, December 2011.
- Optimal Stopping and Stochastic Control in Finance Workshop, Toulouse, France, December 2011.
- INRIA Probability Seminar, Bordeaux, France, December 2011.
- IGERT Systems Biology Seminar, UCSB, November 2011.
- Center for Control, Dynamical Systems and Computation Seminar, UCSB, October 2011.
- Operations Research Seminar, Stanford University, October 2011.
- Risk Seminar, Columbia University, October 2011.
- 2011 Actuarial Research Conference, Storrs, CT, August 2011.

- International Congress on Industrial and Applied Mathematics ICIAM 2011, Vancouver, Canada, July 2011.
- Third International Workshop on Sequential Methodologies, Stanford, June 2011
- 4th Western Conference in Mathematical Finance, USC, June 2011
- Probability Seminar, UC San Diego, April 2011
- Actuarial and Financial Mathematics Seminar, U of Michigan, March 2011.
- Fields Quantitative Finance Seminar, Toronto, Canada, February 2011.
- PSTAT Department Seminar, UCSB, January 2011.
- Research in Options Workshop, Angra Dos Reis, Brazil, November 2010.
- SIAM FM'10 Conference, San Francisco CA, November 2010.
- Second conference in Modeling High Frequency Data in Finance, Hoboken, NJ, June 2010.
- Sixth Bachelier Society World Congress, Toronto, Canada, June 2010.
- IMA Workshop on New Mathematical Models in Economics and Finance, Minneapolis MN, June 2010
- WatRISQ Seminar, U of Waterloo, Waterloo, Canada, March 2010.
- TMU Young Researchers Workshop on Finance, Tokyo, Japan, March 2010.
- IPAM New Directions in Financial Mathematics Workshop, UCLA, January 2010.

Editorial and Referee Activity

- Associate Editor, Mathematical Finance, 2020—present
- Associate Editor, Applied Mathematics and Optimization, 2020—2022
- Associate Editor, SIAM Journal on Financial Mathematics, 2013—present
- Associate Editor, Management Science, 2015—2022
- Associate Editor, Journal on Computational Finance, 2015—present
- Associate Editor, Journal of Risk and Insurance, 2019—present
- Editorial Board Member, SIAM Book Series on Financial Mathematics, 2013—present
- Editorial Board Member, Springer Briefs on Quantitative Finance, 2014—present (act as handling editor for 1-2 book proposals per year)
- Grant proposal reviewer for National Science Foundation, NSF DMS (2015, 2023); NSERC Canada (2011, 2015, 2020, 2023); Austrian Science Foundation (2014); Swiss National Science Foundation (2016, 2018, 2023), Fonds du Recherche Quebec, Canada (2017); International Center for Mathematical Sciences, Edinburgh, UK (2018); Army Research Office (ARO 2020); Banff International Research Station, Canada (2020, 2022).
- Book proposal reviewer for Springer (x2), SIAM (x4), Chapman & Hall/CRC Press (x2); journal proposal reviewer for Springer
- External letter writer for 15+ tenure/full professor promotion cases (Princeton U, U of Connecticut, Ohio State U, U of Calgary, EPF Lausanne, UC Merced, Brigham Young U, U of Wisconsin Madison, Oxford U (x2), Uppsala U, Illinois Institute of Technology, Temple U, Arizona State U, U Buffalo, Bilkent U, FGV Rio de Janeiro)

Also reviewed (over 100 reviews total) for: Operations Research (5 articles), Mathematical Finance (10+), SIAM Journal on Financial Mathematics (10+), Mathematics of Operations Research (4), SIAM Journal on Control and Optimization (6), Annals of Applied

Probability (3), Finance & Stochastics (5), Journal of Computational Finance (10+), Energy Economics (2), Quantitative Finance (3), Annals of Finance (2), Automatica, Applied Mathematical Finance (4), Bernoulli, Mathematics & Financial Economics (4), Management Science (8), International Journal of Theoretical and Applied Finance (2), Finance Research Letters, Journal of Applied Probability (2), Probability Uncertainty and Quantitative Risk, Market Microstructure and Liquidity, SIAM Journal on Mathematical Analysis, SIAM Journal on Uncertainty Quantification (3), Journal of American Statistical Association (2), Technometrics (2), Journal of Economic Dynamics and Control (4), North American Actuarial Journal (5+), Insurance: Mathematics and Economics (5+), ASTIN Bulletin (2), SIAM Journal on Scientific Computation, Energy Systems, Methods of Mathematical Operations Research, Journal of Banking and Finance, Journal of Risk and Insurance (3), IMA Journal of Management Mathematics, Mathematical Biosciences, SIAM Book Reviews, Applied Mathematics Letters, IEEE Transactions on Information Theory (3), IEEE Transactions on Automatic Control, Stochastics, IEEE PES General Meeting.

I. TEACHING

Courses numbered 200+ are graduate-level, 100-199 are upper division undergraduate

- PSTAT 213A *Introduction to Stochastic Processes*: Fall 2012, Fall 2013, Fall 2015, Fall 2017
- PSTAT 213B-C *Probability Theory*: Winter-Spring 2009, Winter-Spring 2017
- PSTAT 223A *Financial Mathematics*: Fall 2012, Fall 2014
- PSTAT 223B *Financial Modeling*: Winter 2009, Winter 2020
- PSTAT 262FM *Computational Optimal Stopping*: Fall 2019
- PSTAT 176/276 *Advanced Financial Mathematics*: Spring 2016, Spring 2017, Spring 2019
Spring 2021

(I developed this class on Optimal Investment and Computational Finance for UG Seniors)

- PSTAT 109 *Statistics for Economics*: Fall 2014
(a large course with enrollment of 460 students)
- PSTAT 296A-B *Actuarial Research Project*: 2011, 2012, 2013, 2014
(I developed this group research class that takes place over 2 quarters each year)
- PSTAT 196 *Introduction to Pensions*: Spring 2013, Spring 2014
(I developed this directed studies module for UG Seniors)
- PSTAT 160A *Introduction to Stochastic Processes*: Spring 2021, Summer 2023
(Co-developed a fully online offering via an Instructional Development grant)
- PSTAT 170 *Introduction to Financial Mathematics*: Spring 2011, Spring 2012, Winter 2014,
Winter 2016, Spring 2016
Fall 2022, Winter 2023, Winter 2024
- CCS Math 120A *Probability*: Spring 2011, Spring 2012, Spring 2013
(this is an Honors first-year course for College of Creative Studies students)
- PSTAT 210 *Measure Theory for Probability*: Fall 2009, Fall 2013
- PSTAT 221A *Computational Finance*: Fall 2010, Spring 2023

- PSTAT 223C *Topics in Financial Mathematics*: Spring 2010, Spring 2021 (co-taught), Spring 2024
- PSTAT 173 *Risk Theory*: Winter 2010
- PSTAT 171 *Introduction to Mathematics of Fixed Income Markets*: Fall 2009

Course Development:

- Developed a new summer course PSTAT 194TR: Transfer Exploration Seminar in Data Science (co-taught with U. Ravat, 6 contact hours)
- Developed a hybrid mode (asynchronous + synchronous Zoom lectures) online offering for PSTAT 160A; professionally recorded more than a dozen video segments.
- Developed a new course PSTAT 176/276 on *Advanced Financial Mathematics*. In particular, I developed a comprehensive set of RMarkdown interactive lecture notes for the class.
- Developed PSTAT 296A-B: group research projects in actuarial science. Each year the project involves 6-8 undergraduate/Masters students and is run in collaboration with an industrial company partner
- Developed PSTAT 196 *Introduction to Pensions* (partnering with Towers Watson actuarial group, offered twice a self-study module to 6-8 undergraduate students during 2012-2014)
- Offered numerous PSTAT 199 *Directed Studies* projects to individual undergraduate students (Spring 2010, Winter 2011, Winter 2013, Spring 2013 (x2), Winter 2016, Fall 2017, Spring 2019, Spring 2020, Fall-Winter 2022-23, Fall-Winter 2023-24)
- Participated in PSTAT 5H Statistics Honors Module (2012—2015, 2022-2024 13 quarters total). Developed a 1-hour presentation on *Statistical methods for bio-surveillance* and *Introduction to Mortality Modeling* for freshman statistics students.

J. COLLABORATORS

- **Collaborators in last 7 years:** R. Aid (Paris Dauphine), M. Binois (INRIA Sophia-Antipolis), L. Campi (LSE/Milano), A. Charpentier (U Quebec a Montreal), T. Chen (U Michigan), I. Duncan (UCSB), R. Gramacy (Virginia Tech), Q. Guo (Ball State U), M. Heleno (Lawrence Berkeley National Lab), J. Hespanha (UCSB), T. Ichiba (UCSB), T. Leung (U of Washington), J. Palczewski (Leeds), J. Risk (Cal Poly Pomona), Y. Saporito (FGV Rio de Janeiro), A. Sarantsev (U Nevada Reno), R. Sircar (Princeton), G. Swindle (Scoville Risk Partners), R. Targino (FGV Rio de Janeiro), M. Voss (UCLA), H. Zail (Elucidor, LLC).
- **Graduate and Postdoctoral History:** R. Carmona (graduate advisor, Princeton); V.R. Young (post-doctoral mentor, U Michigan); JP Fouque (junior faculty mentor, UCSB).

(Updated Aug 2024)