

# Oleksii MOSTOVYI

University of Connecticut  
Department of Mathematics  
U1009  
341 Mansfield Road  
Storrs, CT 06269-1009

E-mail: [oleksii.mostovyi@uconn.edu](mailto:oleksii.mostovyi@uconn.edu)  
Phone: 1(860)486-6322  
Fax: 1(860)486-4238  
Web: <http://www.math.uconn.edu/~mostovyi/>

## ACADEMIC EMPLOYMENT

**University of Connecticut**, Department of Mathematics  
*Associate Professor* (with tenure), August 2020 - present,  
*Assistant Professor*, August 2015 - August 2020.  
*Research Scientist*, July 2015 - August 2015.

**University of Texas at Austin**, Department of Mathematics  
*Instructor and NSF Postdoc*, August 2012 - July 2015.

## EDUCATION

**Carnegie Mellon University**  
Ph.D. in Mathematical Sciences, 2012.

- Advisor: D. Kramkov.
- Dissertation title: “*Necessary and Sufficient Conditions in the Problem of Optimal Investment with Intermediate Consumption.*”

**New York University**  
M.S. in Mathematics, 2004.

**Moscow Institute of Physics and Technology**  
B.S. in Applied Physics and Mathematics, 2000.

## RESEARCH INTERESTS

Mathematical Finance, Applied Probability.

## GRANTS/EXTERNAL FUNDING

- **Current and past continuous support from the NSF will span 9 years (10 with an extension) as a single PI (and, in particular, without co-PIs).**

O. Mostovyi “*CAREER: An Approach to Pricing, Hedging, Stability, and Asymptotic Analysis in Financial Markets.*” National Science Foundation, DMS-1848339, 2019 - 2024.

I. Ben Ari, F. Baudoin, Z. Li, O. Mostovyi “*Research Workshops, UCONN Special Semester in Probability.*” National Science Foundation, DMS-1823060, 2018.

O. Mostovyi “*Utility Based Pricing and Hedging in Incomplete Markets with Stochastic Preferences in a Unifying Framework of Admissibility.*” National Science Foundation, DMS-1600307, 2015 - 2018, ext. 2019.

## PUBLICATIONS AND PREPRINTS

- 8 papers are single-authored

O. Mostovyi (2021) *Stability of the Indirect Utility Process*, arXiv:2002.09445 [math.PR], accepted in SIAM Journal on Financial Mathematics, 34 pages.

J. Koerner, J.S. Lee, and O. Mostovyi (2020) *The Information Premium on a Finite Probability Space*, <https://www2.math.uconn.edu/~mostovyi/infPrem.pdf>, submitted. 14 pages. This paper is a part of an REU project conducted under my supervision.

O. Mostovyi, M. Sirbu, and T. Zariphopoulou (2020) *On the Analyticity of the Value Function in Optimal Investment*, arXiv:2002.01084 [math.PR], submitted, 28 pages.

O. Mostovyi (2020) *Asymptotic Analysis of the Expected Utility Maximization Problem with Respect to Perturbations of the Numéraire*, arXiv:1805.11427 [math.PR], Stochastic Processes and their Applications, 130(7): 4444–4469.

S. Boese, T. Cui, S. Johnston, G. Molino, and O. Mostovyi (2020) *Stability and Asymptotic Analysis of the Föllmer-Schweizer Decomposition on a Finite Probability Space*, arXiv:2002.03286 [q-fin.MF], Involve, 13(4): 607–623. This paper is a part of an REU project conducted under my supervision.

O. Mostovyi and M. Sirbu (2020) *Optimal Investment and Consumption with Labor Income in Incomplete Markets*, arXiv:1806.05901 [math.PR], the Annals of Applied Probability, 30(2): 747–787.

O. Mostovyi and P. Siorpaes (2019) *Differentiation of Measures on a non-Separable Space, and the Radon-Nikodym Theorem*, arXiv:1909.03505 [math.CA], submitted, 12 pages.

O. Mostovyi and M. Sirbu (2019) *Sensitivity Analysis of the Utility Maximization Problem with Respect to Model Perturbations*, arXiv:1705.08291 [q-fin.PM], Finance and Stochastics, 23(3): 595–640.

O. Mostovyi (2018) *Optimal Consumption of Multiple Goods in Incomplete Markets*, arXiv:1705.02291 [q-fin.MF], Journal of Applied Probability, 55(3): 810–822.

K. Larsen, O. Mostovyi, and G. Žitković (2018) *An Expansion in the Model Space in the Context of Utility Maximization*, arXiv:1410.0946 [q-fin.PM], Finance and Stochastics, 22(2): 297–326.

O. Mostovyi (2018) *Utility Maximization in a Large Market*, arXiv:1403.6175 [q-fin.PM], Mathematical Finance, 28(1): 106–118.

H. Chau, A. Cosso, C. Fontana, and O. Mostovyi (2017) *Optimal Investment with Intermediate Consumption under No Unbounded Profit with Bounded Risk*, arXiv:1509.01672 [q-fin.PM], Journal of Applied Probability, 54(3): 710–719.

O. Mostovyi (2017) *Optimal Investment with Intermediate Consumption and Random Endowment*, arXiv:1110.2573v2 [q-fin.PM], Mathematical Finance, 27(1): 96–114.

O. Mostovyi (2015) *Necessary and Sufficient Conditions in the Problem of Optimal Investment with Intermediate Consumption*, arXiv:1107.5852v3 [q-fin.PM], Finance and Stochastics, 19(1): 135-159.

O. Mostovyi, O. Prokopyev, and O. Shylo (2013) *On Maximum Speedup Ratio of Restart Algorithms Portfolios*, INFORMS Journal on Computing, 25(2): 222-229.

O. Mostovyi (2013) *On the Stability of the Least Squares Monte Carlo*, Optimization Letters, 7(2): 259-265.

O. Mostovyi (2005) *Signal Processing under Active Monitoring*, Information Theories and Applications, 12: 49-56.

### CONFERENCE/SEMINAR PRESENTATIONS, INVITED TALKS

(online) 2021 AMS Joint Mathematics Meetings, January 2021.

(online) SIAM/CAIMS Annual Meeting, Toronto, July 2020.

(postponed due to COVID) Actuarial and Financial Mathematics Seminar, UQAM, Montreal, March 2020.

Stamford Financial Technology Meetup, Stamford, CT, February 2020.

Colloquium, Department of Mathematics, UCLA, January 2020.

Canadian Mathematical Society Winter Meeting, Toronto, December 2019.

Colloquium, Department of Mathematics, University of Miami, December 2019.

Mathematical Finance Seminar, Dublin City University, November 2019.

Mathematical and Computational Finance Seminar, Oxford University, November 2019.

4th Eastern Conference on Mathematical Finance, Boston University, October 2019.

Mathematical Finance and Stochastic Analysis Seminar, Illinois Institute of Technology, September 2019.

SIAM conference on Financial Mathematics and Engineering, University of Toronto, June 2019.

The 33rd New England Statistics Symposium, University of Connecticut, Hartford, May 2019.

Joint Risk & Stochastics and Financial Mathematics Seminar, London School of Economics, March 2019.

London Mathematical Finance Seminar, Imperial College London, March 2019.

Financial/Actuarial Mathematics Seminar, University of Michigan, Ann Arbor, February 2019.

Quantitative Finance Workshop, ETH Zurich, January 2019.

AMS Joint Mathematics Meeting, Baltimore, MD, January 2019.

Probability and Mathematical Finance Seminar, Carnegie Mellon University, January 2019.

Quantitative Methods in Finance Conference, University of Technology Sydney, December 2018.

10th World Congress of the Bachelier Finance Society, Dublin, July 2018.

Mathematical Finance Seminar, Paris Diderot University, June 2018.

Paris Bachelier Seminar, Henri Poincaré Institute, June 2018.

AMS Joint Mathematics Meetings, San Diego, CA, January 2018.

Stochastics Seminar, University of Colorado Boulder, October 2017.

The International Conference on Computational Finance 2017, ISEG - Lisbon School of Economics and Management, September 2017.

Mathematical Finance and Probability Seminar, Rutgers University, April 2017.

The 31st New England Statistics Symposium, University of Connecticut, April 2017.

Mathematical Finance and Applied Probability Seminar, University of Connecticut, April 2017.

Mathematical Finance and Applied Probability Seminar, University of Connecticut, April 2017.

Mathematical Finance and Applied Probability Seminar, University of Connecticut, March 2017.

SIAM Conference on Financial Mathematics, Austin, TX, November 2016.

Probability Seminar, University of Minnesota, Minneapolis, MN, October 2016.

AMS Sectional Meeting at Bowdoin College, Brunswick, ME, September 2016.

Stochastic Processes Seminar, Institute of Mathematics, Kyiv, Ukraine, August 2016.

9th World Congress of the Bachelier Finance Society, New York, NY, July 2016.

Minisymposium in Financial Mathematics at the 2016 SIAM Annual Meeting, Boston, MA, July 2016.

Sixth IMS-FIPS Workshop, University of Alberta, Edmonton, Canada, July 2016.

Colloquium, Hong Kong Polytechnic University, May 2016.

Mathematical Finance / Applied Probability seminar, University of Texas at Austin, January 2016.

Stochastic Analysis and Financial Mathematics Seminar, Worcester Polytechnic Institute, November 2015.

Fifth International IMS-FIPS Workshop, Rutgers University, June 2015.

Poster Presentation at “Methods of Mathematical Finance, a conference in honor of Steve Shreve,” Carnegie Mellon University, June, 2015.

Conference on Mathematical Finance and Partial Differential Equations at Rutgers University, May

2015.

Mathematics Colloquium, University of Connecticut, March 2015.

SIAM Conference on Financial Mathematics & Engineering, Chicago, November 2014.

Conference on Mathematical Finance and Partial Differential Equations at Rutgers University, November 2013.

Mathematical Finance / Applied Probability seminar, University of Texas at Austin, October 2013.

Frontiers in Financial Mathematics, Dublin, Ireland, June 2013.

The Fifth Western Conference on Mathematical Finance, Stanford University, May 2013.

Mathematical Finance Seminar, University of Texas at Austin, October 2012.

7th Oxford-Princeton Workshop on Financial Mathematics and Stochastic Analysis, Princeton University, April 2012.

Computational Finance Seminar, University of Pittsburgh, April, 2012.

ORIE Colloquium, Cornell University, February 2012.

Mathematical Finance and Probability Seminar, Rutgers University, January 2012.

Mathematical Finance Seminar, University of Texas at Austin, November 2011.

INFORMS Annual Meeting, Charlotte, NC, November 2011.

INFORMS Annual Meeting, Charlotte, NC, November 2011.

Conference on Mathematical Finance and Partial Differential Equations at Rutgers University, November 2011.

Center for Computational Finance Seminar, Carnegie Mellon University, September 2011.

Institute of Applied System Analysis, Kyiv, Ukraine, August 2011.

Conference “Stochastic Analysis in Finance and Insurance,” University of Michigan, May 2011.

Center for Computational Finance Seminar, Carnegie Mellon University, February 2011.

3rd Yalta Optimization Conference “Network Science,” Yalta, Ukraine, August 2010.

Center for Computational Finance Seminar, Carnegie Mellon University, November 2007.

#### **ACADEMIC SERVICES (THE KEY ONES)**

- **One of the core/instrumental developers of the mathematical finance group** at the mathematics department of the University of Connecticut (as one of the 11 core research groups within the department on par with Applied Mathematics, for example).
- **One of the core/instrumental developers of the concentration in data science** within the master’s program in applied financial mathematics at the University of Connecticut, Spring

2019 - Spring 2020.

- **Co-organizer** of the mathematics department colloquium, University of Connecticut, Fall 2016 - Spring 2018.
- **Associate graduate director** of the master's program in applied financial mathematics, University of Connecticut, Spring 2017 - Fall 2019.
- **Co-organizer** of the seminar series "Special Semester in Actuarial and Financial Mathematics," University of Connecticut, Fall 2016. The list of the speakers includes Ioannis Karatzas, Dmitry Kramkov, Robert C. Merton, and Steven E. Shreve.
- **Co-organizer** of the seminar series "Special Semester in Probability," University of Connecticut, Fall 2018. The list of the speakers includes Srinivasa Varadhan, Ofer Zeitouni, Elizabeth Meckes, Van Vu, Walter Schachermayer, Rodrigo Banuelos, David Nualart, Kavita Ramanan, and Rene Carmona.
- **Supervisor of the REU project on mathematical finance** at the mathematics department at the University of Connecticut, Summer 2019 and Summer 2020.
- **Organizer** of the Workshop on Mathematical Finance, University of Connecticut, Fall 2018. The list of the speakers includes Christa Cuchiero, Paolo Guasoni, Jan Kallsen, Martin Larsson, Johannes Muhle-Karbe, Sergio Pulido, Scott Robertson, Mihai Sîrbu, and Hao Xing.
- **Open source textbook in probability co-author**, Spring 2018, <https://probability.oer.math.uconn.edu/3160-oer/>

## STUDENT SUPERVISION

**Ph.D. student** at the University of Connecticut: Oleksandr Pavlenko, who has passed the oral exam in December 2018.

### REU advisees:

(2020) Jake Koerner (Rochester Institute of Technology), Joo Seung Lee (Northwestern University); (2019) Sarah Boese (Vassar College), Tracy Cui (Carnegie Mellon University), Samuel Johnston (Willamette University).

## ACADEMIC SERVICES (THE OTHER ONES)

- **Referee for** *Finance and Stochastics*, *Mathematical Finance*, *SIAM Journal on Financial Mathematics*, *Applied Mathematical Finance*, *Mathematics and Financial Economics*, *the Annals of Applied Probability*, *Electronic Journal of Probability*, *Stochastic Processes and their Applications*, *Journal of Applied Probability*, *Communications on Stochastic Analysis*, *Theory of Stochastic Processes*, *Statistics and Probability Letters*, *Applied Mathematics and Optimization*, *Journal of Dynamical and Control Systems*, *Bulletin of Economic Research*, *Journal of Global Optimization*, *Operations Research Letters*, *AMMCS-CAIMS Congress Proceedings*.
- **Ph.D. dissertation committee member** for Berend Coster, University of Connecticut, June 2019.
- **Asymptotic Methods in Portfolio Optimization Session organizer** at SIAM/CAIMS Annual Meeting, Toronto, July 2020 (online).
- **Mathematical Finance Session organizer** at the 33rd New England Statistics Symposium (NESS), University of Connecticut, Hartford, May 2019.
- **IBM Student Paper committee member** at the 33rd New England Statistics Symposium, University of Connecticut, Hartford, May 2019.
- **The Neumann Award committee member** (the Neumann award is given annually to a Ph.D. student with the best dissertation in the mathematics department), University of Connecticut, Spring 2019.
- **Mathematical Finance Session co-organizer** at AMS Sectional Meeting at the University of Connecticut, Hartford, April 2019.

- **Research paper discussant** at Quantitative Finance Workshop, ETH Zurich, January 2019.
- **Organizer** of the Mathematical Finance and Applied Probability Seminar, University of Connecticut, Spring 2017 - Spring 2020.
- **Co-organizer** of the Probability and Analysis Seminar, University of Connecticut, Fall 2016 - Spring 2018.
- **Minisymposium organizer** at SIAM Conference on Financial Mathematics, Austin, TX, November 17-19, 2016.
- **Selection committee member** for Bernard Sippin '52 scholarship, University of Connecticut, Spring 2016 and Spring 2017.
- **Session organizer** at Sixth IMS-FIPS Workshop at the University of Alberta, Edmonton, Canada, July 7-9, 2016.
- **Research paper discussant** at 2016 Eastern Conference on Mathematical Finance, Worcester Polytechnic Institute, Worcester, MA.

## TEACHING

### At the University of Connecticut:

- Received two letters from the office of provost with congratulations on my teaching performance. These letters are based on teaching (master's level) **Fundamentals of Financial Mathematics**, (Ph.D.-level) **Probability Theory and Stochastic Processes I**, and (master's level) **Advanced Financial Mathematics**.
  - **Fundamentals of Financial Mathematics** and **Advanced Financial Mathematics** are the core/central courses in master's program in applied financial mathematics at the University of Connecticut.
  - **Probability Theory and Stochastic Processes I** is the core/prelim course in the Ph.D. program at the University of Connecticut.
1. *Elementary Stochastic Processes*, Spring 2020 - Spring 2021.
  2. *Advanced Financial Mathematics* (Master's level course), Spring 2016 - Spring 2019, **re-structured this course to make it a more smooth continuation of the Fundamentals of Financial Mathematics**,
  3. *Probability Theory and Stochastic Processes I* (Ph.D.-level course), Fall 2017 - Fall 2018,
  4. *Fundamentals of Financial Mathematics* (Master's level course), Fall 2016 - Fall 2020, **designed (and taught) this course**.
  5. *Probability* (undergraduate level course), Fall 2015 - Spring 2016.

### At the University of Texas at Austin:

1. *Integral Calculus*, Spring 2015,
2. *Differential and Integral Calculus*, Fall 2014,
3. *Matrices and Matrix Calculations*, Spring 2013 and Spring 2014,
4. *Probability*, Fall 2012 and Fall 2013.

### As an instructor at Carnegie Mellon University:

1. *Matrix Algebra*, Summer 2010,
2. *Calculus in Three Dimensions*, Summer 2009,
3. *Differential Equations*, Summer 2008.

### **As an assistant at Carnegie Mellon University:**

1. Taught the following core courses in the Masters in Computational Finance Program (MSCF) simultaneously in New York and Pittsburgh campuses by means of remote teaching:
  - (a) *Financial Computing IV* (Master's level course at MSCF program),
  - (b) *Financial Computing with C++* (Master's level course at MSCF program),
  - (c) *Multi-Period Asset Pricing* (Master's level course at MSCF program).
2. Taught multiple standard undergraduate courses in mathematics.

### **Invited short courses at summer schools:**

1. *Optimal Investment in Incomplete Markets*.  
Prepared for summer school "Achievements and Applications of Contemporary Informatics, Mathematics, and Physics," Summer 2013, Kyiv Polytechnic Institute, Kyiv, Ukraine.
2. *Several Fundamental Problems of Mathematical Finance*.  
Prepared for summer school "Achievements and Applications of Contemporary Informatics, Mathematics, and Physics," Summer 2014, Kyiv Polytechnic Institute, Kyiv, Ukraine.

### **SHORT-TERM RESEARCH VISITS**

- Department of Mathematics, Université d'Évry-Val-d'Essonne, May 30 - June 8, 2018.
- Department of Applied Mathematics, Hong Kong Polytechnic University, May 11 - 21, 2016.
- Department of Mathematics, The University of Texas at Austin, January 10 - 17, 2016.

### **NON-ACADEMIC EMPLOYMENT**

- **Bank of America Securities**, New York  
*Associate with MBS Analytics Team*, 2005 - 2006.
- **BNP Paribas**, New York  
*Intern with Fixed Income Strategies and Research Team*, 2004 - 2005.
- **PNN** (now PNN Soft), Kyiv, Ukraine  
*Developer*, 2001 - 2002.

### **PROFESSIONAL SOCIETY MEMBERSHIPS**

- American Mathematical Society (AMS),
- International Association for Quantitative Finance (IAQF),
- Bachelier Finance Society (BFS).