Curriculum Vitæ

Daniel N. Ostrov
Department of Mathematics and Computer Science
Santa Clara University
Santa Clara, CA 95053
(408) 554-4551
dostrov@scu.edu

1. Academic Positions

Santa Clara University, Professor, 2012–present.

Santa Clara University, Associate Professor, 2001–2012.

Santa Clara University, Assistant Professor, 1995–2001.

Brown University, Visiting Assistant Professor, 1994–5.

Brown University, Teaching Fellow, 1993–4.

2. Education

Ph.D. Applied Mathematics, Brown University, 1994.

M.S. Applied Mathematics, Brown University, 1992.

M.S. Engineering, Brown University, 1992.

B.S. Chemical Engineering, University of Wisconsin–Madison, 1990. (Second major: Mathematics.)

3. Scholarly Work

a. Publications

1. Sanjiv R. Das, Sukrit Mittal, Daniel Ostrov, Anand Radhakrishnan, Deep Srivastav, and Hungjen Wang, "Reinforcement learning for Multiple Goals in Goals-Based Wealth Management," *Artificial Intelligence for Business (AIxB)*, October 2024, pp. 1–8, doi: 10.1109/AIxB62249.2024.00007.

2. Sanjiv R. Das and Daniel Ostrov "Unrealistic Expectations: The Futility Of Precisely Estimating A Stock's Expected Return," *Journal of Investment Management*, **22**, 2024, no. 1, pp. 58–64.

3. Shamil Asgarli, Michael Hartglass, Daniel Ostrov, and Byron Walden, "A Fair Shake: How Close Can The Sum Of n-Sided Dice Be To A Uniform Distribution?" *American Mathematical Monthly*, **131**, 2024, no. 7, pp. 608–617. https://doi.org/10.1080/00029890.2024.2347163

4. Sanjiv R. Das, Daniel Ostrov, Anand Radhakrishnan, and Deep Srivastav, "Lifestyle, Longevity, and Legacy Risks with Annuities in Retirement Portfolio Decumulation," *Journal of Wealth Management*, **26**, 2023, no. 2, https://doi.org/10.3905/jwm.2023.1.214, pp. 9–34.

5. Sanjiv R. Das, Daniel Ostrov, Anand Radhakrishnan, and Deep Srivastav, "Efficient Goal Probabilities: A New Frontier," *Journal of Investment Management*, **21**, 2023, no. 3, pp. 1–25.

6. Sanjiv R. Das, Daniel Ostrov, Anand Radhakrishnan, and Deep Srivastav, "Dynamic Optimization for Multi-Goals Wealth Management," *Journal of Banking and Finance*, **140**, (July) 2022, 106192, https://doi.org/10.1016/j.jbankfin.2021.106192, pp. 1–24.

7. Sanjiv R. Das, Daniel Ostrov, Aviva Casanova, Anand Radhakrishnan, and Deep Srivastav, "Optimal Goals-Based Investment Strategies for Switching between Bull and Bear Markets," *Journal of Wealth Management*, **24**, 2022, no. 4, https://doi.org/10.3905/jwm.2021.1.161, pp. 8–36.

8. Sanjiv R. Das, Daniel Ostrov, Aviva Casanova, Anand Radhakrishnan, and Deep Srivastav, "Combining Investment and Tax Strategies for Optimizing Lifetime Solvency under Uncertain Returns and Mortality," *Journal of Risk and Financial Management*, **14**, 2021, no. 7, https://www.mdpi.com/1911-8074/14/7/285, pp. 1–25.

9. DiLellio, J.A. and Ostrov, D.N., "Constructing Tax Efficient Withdrawal Strategies for Retirees with Traditional 401(k)/IRAs, Roth 401(k)/IRAs, and Taxable Accounts," *Financial Services Review*, **28**, 2020, pp. 67–95.

10. Das, S.R., Ostrov, D.N., Radhakrishnan, A., and Srivastav D., "Dynamic Portfolio Allocation in Goals-Based Wealth Management," *Computational Management Science*, **17**, 2020, pp. 613–640. https://doi.org/10.1007/s10287-019-00351-7

11. Das, S.R., Kim, S., and Ostrov, D.N., "Dynamic Systemic Risk: Networks in Data Science," *The Journal of Financial Data Science*, **1**, No. 1, Winter 2019, pp. 141–158.

12. Sanjiv R. Das, Daniel N. Ostrov, Anand Radhakrishnan, and Deep Srivastav, "A New Approach To Goals-Based Wealth Management," *Journal of Investment Management*, **16**, No. 3, 2018, pp. 1–27.

13. James A. DiLellio and Daniel N. Ostrov, "Optimal Strategies for Traditional versus Roth IRA/401(k) Consumption During Retirement," *Decision Sciences*, **48**, 2017, pp. 356-384.

14. Sanjiv R. Das, Yi D. Ding, Vincent Newell, and Daniel N. Ostrov, "Efficient Trading in Taxable Portfolios," *Journal of Investment Strategies*, **7**, no. 1, 2017, pp. 1-40.

15. Daniel Friedman and Daniel N. Ostrov, "Evolutionary Dynamics over Continuous Action Spaces for Population Games that Arise from Symmetric Two-player Games," *Journal of Economic Theory*, **148**, 2013, pp. 743–777.

16. Jonathan Goodman and Daniel N. Ostrov, "An Option to Reduce Transaction Costs," *SIAM Journal on Financial Mathematics*, **2**, 2011, no. 1, pp. 512–537.

17. Daniel N. Ostrov and Thomas G. Wong, "Optimal Asset Allocation for Passive Investing with Capital Loss Harvesting," *Applied Mathematical Finance*, **18**, 2011, no. 4, pp. 291–329.

18. Daniel Friedman and Daniel N. Ostrov, "Gradient Dynamics in Population Games: Some Basic Results," *Journal of Mathematical Economics*, **46**, 2010, no. 5, pp. 691–707.

19. Jonathan Goodman and Daniel N. Ostrov, "Balancing Small Transaction Costs With Loss Of Optimal Allocation In Dynamic Stock Trading Strategies," *SIAM Journal of Applied Mathematics*, **70**, no. 6, 2010, pp. 1977–1998.

20. Daniel Friedman and Daniel N. Ostrov, "Conspicuous Consumption Dynamics," *Games and Economic Behavior*, **64**, 2008, pp. 121–145.

21. Daniel N. Ostrov, "Nonuniqueness for the Vanishing Viscosity Solution with Fixed Initial Condition in a Nonstrictly Hyperbolic System of Conservation Laws," *Journal of Mathematical Analysis and Applications*, **335**, 2007, pp. 996–1012.

22. Daniel N. Ostrov, "An Example of Nonuniqueness for the Viscous Limit of a Nonstrictly Hyperbolic System of Equations," *Hyperbolic Problems, Theory, Numerics and Applications*, Yokohama Publishers, 2006, pp. 213–218.

23. Daniel N. Ostrov, "Nonuniqueness in Systems of Hamilton-Jacobi Equations," *Optimal control, stabilization and nonsmooth analysis*, pp. 49–59, Lecture Notes in Control and Inform. Sci., 301, Springer, Berlin, 2004.

24. Jonathan Goodman and Daniel N. Ostrov, "On the Early Exercise Boundary of the American Put Option," *SIAM Journal of Applied Mathematics*, **62**, 2002, no. 5, pp. 1823–1835.

25. Daniel N. Ostrov, "Solutions of Hamilton-Jacobi Equations and Scalar Conservation Laws with Discontinuous Space-time Dependence," *Journal of Differential Equations*, **182**, 2002, no. 1, pp. 51–77.

26. Joseph Kain and Daniel N. Ostrov, "Numerical Shape From Shading for Discontinuous Photographic Images," *International Journal of Computer Vision*, **44**, 2001, no. 3, pp. 163–173.

27. Daniel N. Ostrov, "Solutions to Scalar Conservation Laws where the Flux is Discontinuous in Space and Time," Hyperbolic problems: theory, numerics, applications (Magdeburg, 2000), *Internat. Ser. Numer. Math., 140, 141*, Birkhäuser, Basel, 2001, pp. 785–790.

28. Daniel N. Ostrov, "Extending Viscosity Solutions to Eikonal Equations with Discontinuous Spatial Dependence," *Nonlinear Analysis*, **42**, no. 4, Aug. 2000, pp. 709–736.

29. Daniel N. Ostrov, "Viscosity Solutions and Convergence of Monotone Schemes for Synthetic Aperture Radar Shape-From-Shading Equations with Discontinuous Intensities," *SIAM Journal of Applied Mathematics*, **59**, no. 6, 1999, pp. 2060–2085.

30. Daniel N. Ostrov, "Boundary Conditions and Fast Algorithms for Surface Reconstructions from Synthetic Aperture Radar Data," *IEEE Transactions on Geoscience and Remote Sensing*, **37**, no. 1, 1999, pp. 335–346.

31. Daniel N. Ostrov, "Unique Solutions to Discontinuous Hamilton-Jacobi Equations in Shape-From-Shading," Proceedings from the Seventh International Conference in Zurich on Hyperbolic Problems: Theory, Numerics, Applications, *International Series of Numerical Mathematics*, **130**, 1999, pp. 767–772.

32. Daniel N. Ostrov and Rudy Rucker, "Continuous Valued Cellular Automata for Nonlinear Wave Equations," *Complex Systems*, **10**, 1996, pp. 91–119.

33. Daniel N. Ostrov, "Asymptotic Behavior of Two Interreacting Chemicals in a Chromatography Reactor," *SIAM Journal of Mathematical Analysis*, **27**, No. 6, Nov. 1996, pp. 1559–1596.

34. Daniel N. Ostrov, "Boundary Conditions for Chromatography Reactors in a State of Maximum Mixedness," *Quarterly of Applied Mathematics*, **55**, No. 3, Sept. 1996, pp. 571–582.

35. Lewis Wedgewood, Daniel N. Ostrov, and Robert B. Bird, "A Finitely Extensible Bead-Spring Chain Model for Dilute Polymer Solutions," *Journal of Non-Newtonian Fluid Mechanics*, **40**, 1991, pp. 119–139.

b. Working Papers

1. James DiLellio and Daniel N. Ostrov, "Constructing Tax Efficient Withdrawal Strategies for Retirees with Traditional 401(k)/IRAs, Roth 401(k)/IRAs, and Taxable Accounts," Proceedings of the Academy of Financial Services 2018 Annual Conference. Chicago, IL. Available at `https://tinyurl.com/ybvc8ekt` or `https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3374590`, 40 pp., 2018

2. Daniel Friedman and Daniel N. Ostrov, "Gradient Dynamics and Evolving Landscapes in Population Games," 85 pp., 2009

3. Jonathan Goodman and Daniel N. Ostrov, "Balancing Small Transaction Costs with Loss of Optimal Allocation in Single and Multiple Stock Portfolios," Mathematics in Finance Working Paper Series, Courant Institute, 2007, `http://www.math.nyu.edu/financial_mathematics/content/02_financial/Working_Paper_Series.html`, (2007-1).

c. Presentations

1. "A Meta Reinforcement Learning Approach to Goals-Based Wealth Management" (with Sanjiv Das, Sukrit Mittal, and Harshad Khadikar), invited keynote academic presentation at the Center for Analytics and Transformative Technologies Global Analytics Conference, UT-Austin (McCombs School of Business), Nov. 2024.

2. "A Fair Shake: Finding Dice Sums Closest To The Uniform Distribution" (with Mike Hartglass and Byron Walden), SCU Math and CS Colloquium, Oct. 2023.

3. "Goals, Death, and Taxes: New Frontiers in Retirement Optimization" (with Deep Srivastav and Anand Radhakrishnan), Santa Clara, CA, JOIM (Journal Of Investment Management) Conference, May 2022.

4. "Goals Based Wealth Management" (with Sanjiv Das), Colloquium at HEC Montreal (Graduate Business School at the University of Montreal), May 2021.

5. "Optimal Decisions For Multiple Financial Goals," SJSU Mathematics Department Colloquium, Nov. 2019.

6. "Optimal Decisions For Multiple Financial Goals," SCU Mathematics and Computer Science Department Colloquium, Nov. 2019.

7. "Goals-Based Wealth Management (GBWM) with Multiple Goals," MIT, Cambridge MA, JOIM (Journal Of Investment Management) Conference, Sept. 2019.

8. "Minimizing Taxes in Retirement Spending", SCU Finance Department Colloquium, Jan. 2019.

9. "Goals Based Wealth Management" (with Sanjiv Das), Cambridge, MA, JOIM (Journal Of Investment Management) Conference, Oct. 2018.

10. "Efficient Rebalancing of Taxable Portfolios" (with Sanjiv Das), San Diego, CA, JOIM (Journal Of Investment Management) Conference, April 2015.

11. "Using Mathematics to Optimally Balance Between Stock and Cash in a Portfolio," UC-Santa Cruz Mathematics Colloquium Series, Nov. 2012.

12. "The Optimal Use of Options to Reduce the Effect of Transaction Costs in a Portfolio," Minneapolis, MN, SIAM Conference on Financial Math, July 2012.

13. "Optimal Investing with Reaping Losses in a Taxable Portfolio," San Francisco, CA, SIAM Conference on Financial Math, Nov. 2010.

14. "Landscape Dynamics for Population Games," UC-Santa Cruz Mathematics Colloquium Series (with Daniel Friedman), May 2009.

15. "Towards Optimizing A Passive Investment Portfolio in the Presence of Taxes," New Brunswick, NJ, SIAM Conference on Financial Math, Nov. 2008.

16. "Using Options to Lower Transaction Costs," San Francisco, CA, SIAM Conference on Control and its Applications, June 2007.

17. "PDEs in Financial Math," UC-Berkeley Applied Mathematics seminar, Feb. 2007.

18. "Mathematics of the Rich," SCU Colloquium series, Oct. 2006.

19. "Using Options to Lower Transaction Costs," Boston, MA, SIAM Conference on Financial Math, July 2006.

20. "Optimal Investment Strategies for Single and Multi-Stock Portfolios," Palo Alto, CA, AIM workshop on Numerical Methods for Optimal Control in High Dimensions, Sept. 2005.

21. "Applying Stochastic Control to find the Viscous Limit of Hyperbolic Systems," Houston, TX, SIAM Conference on PDEs, Dec. 2004.

22. "An Example of Nonuniqueness for the Viscous Limit of a Nonstrictly Hyperbolic System of Equations," Osaka, Japan at the 10th International Conference on Hyperbolic Problems, Sept. 2004.

23. "Nonuniqueness in Systems of Hamilton-Jacobi Equations," Louisiana State University at the Conference on Mathematical Control Theory, April 2003.

24. "A Comparison of Photographic vs. Radar Methods To Determine Shapes," UC-Berkeley Applied Mathematics seminar, Oct. 2001.

25. "Optimal Control and Hamilton-Jacobi Equatioins with Discontinuous Data Dependence," The University of Kansas at the Conference on Control Theory in Partial Differential Equations, March 2001.

26. "Shape-From-Shading and Conservation Laws with Discontinuous Data Dependence," University of Houston, Sept. 2000.

27. "Determining a 3-D Nonsmooth Surface Using a (2-D) Photograph," SCU Colloquium series, May 2000.

28. "Solving First Order Partial Differential Equations Using Control Theory," Sonoma State University, May 2000.

29. "Determining a 3-D Nonsmooth Surface Using a (2-D) Photograph," Pomona College, April 2000.

30. "Shape-From-Shading and Conservation Laws with Discontinuous Flux," Stanford University Geometric Analysis Seminar, April 2000.

31. "Dealing With Discontinuous Data in Shape-From-Shading and Related Problems," Brown University Pattern Recognition Seminar, March 2000.

32. "Solutions to Scalar Conservation Laws Where the Flux Is Discontinuous in Space and Time," Magdeburg, Germany at the Eighth International Conference on Hyperbolic Problems, Feb. 2000.

33. "Solving Scalar Conservation Laws Where the Flux is Discontinuous in Space and Time," Stanford University Applied Mathematics Seminar, Aug. 1999.

34. "Shape-From-Shading and Conservation Laws with Discontinuous Flux," New York University's Courant Institute, April 1999.

35. "Determining 3-D Surfaces from 2-D Radar Data," UC-Davis at the Western Regional Meeting of the American Mathematical Society, April 1998.

36. "Extending Viscosity Solutions to Discontinuous Hamilton-Jacobi Equations in Radar Shape-From-Shading," Zurich, Switzerland at the Seventh International Conference on Hyperbolic Problems, Feb. 1997.

37. "Reconstructing Land Surfaces from Optical or Radar Data," Stanford University at the 45th annual SIAM (Society for Industrial and Applied Mathematics) conference, July 1997.

38. "Unique Solutions for Synthetic Aperture Radar and Related Shape-From-Shading Equations," UC-Berkeley Applied Mathematics seminar, Oct. 1996.

39. "Behavior of the Inhomogeneous Nonlinear System That Describes the Chromatographic Separation of Two Interreacting Chemical Species," Hong Kong at the Sixth International Conference on Hyperbolic Problems, June 1996.

40. "Reconstructing Land Surfaces from 2-D Images," San Jose State University, March 1996.

4. Grants/Awards

GOE (Goals Optimization Engine, which is the product coming from Sanjiv Das's and my work with Franklin Templeton investments) was selected into the Wealthtech100 list for 2024 by Fintech Global. See `https://fintech.global/wealthtech100/` for more details. Apr. 2024.

Money Management Institute/Barron's 2021 Award for Disruption Technology. This award (see `https://tinyurl.com/2hpm5rsx`) was for the Goals Optimization Engine (GOE) coming from Sanjiv Das's and my work with Franklin Templeton investments. Nov. 2021.

The Louis and Dorina Brutocao Award for Teaching Excellence. This award (see https://tinyurl.com/4m37apn5) is SCU's top teaching award, given to one or two faculty in a year. Sept. 2021.

2019-20 Faculty Senate Professor. This award (see https://www.scu.edu/faculty-senate/about/faculty-senate-professor-award/) is for "outstanding professional achievement over a sustained period" and is "the highest honor we bestow upon our peers at SCU." Sept. 2019.

Harry M. Markowitz Award for best paper published in JOIM in 2018 ("A New Approach To Goals-Based Wealth Management"). The final selection panel was four Nobel laureates: Harry Markowitz, Robert Merton, Myron Scholes, and William Sharpe. (See https://www.joim.com/markowitz-award/) Jan. 2019.

Best paper award (with Jim DiLellio) at the Academy of Financial Services conference for "Constructing Tax Efficient Withdrawal Strategies for Retirees with Traditional 401(k)/IRAs, Roth 401(k)/IRAs, and Taxable Accounts." Oct. 2018.

Brutocao Family Foundation Award for Curriculum Innovation. Sept. 2016.

Best paper award (with Jim DiLellio) in retirement income planning at the Academy of Financial Services conference for "Optimal Strategies for Traditional vs. Roth IRA/401(k) Consumption During Retirement." Oct. 2015.

Dean's Grants for conference presentations: 2008, 2010, 2012, and 2015.

University Research Grant for Sabbatical research, April 2014.

Course release through the Faculty Research Initiative Pilot Program for the proposal "Solving Financial and Economic Models with Partial Differential Equations," 2011

Invitation to IMA (Institute for Mathematics and Its Applications) week long workshop on "Image Processing and Low Level Vision" with all expenses paid by the IMA, Fall 2000.

Junior Faculty Fellowship awarded to study at New York University during Junior Faculty leave in Spring 1999.

National Science Foundation RUI Grant for "Discontinuous Data and Media in Physical Phenomena Modeled by Hamilton-Jacobi Equations and Conservation Laws," 1997–2000.

National Science Foundation Fellowship, 1990–93.

5. Service

a. University Service

1. Elected by College or University Faculty to serve on:
   (a) Sciences Grievance Committee, 2021–24.
   (b) Faculty Senate Professor Selection Committee, 2020–present.
   (c) Core Curriculum Committee for Natural Sciences, 2020–23, 2023–27.
   (d) Core Curriculum Committee for Mathematics, 2013–16 (chair for final two years). Re-elected for 2018–19. Re-elected for 2024–28 (chair).
   (e) AAUP Executive Committee, 2018–20.
   (f) College Rank and Tenure Committee, 2014–16.
   (g) Faculty Judicial Board, 2011–13.
   (h) Assessment Advisory Committee, 2009–10.
   (i) University Coordinating Committee, 2006–08 (chair for final year).
2. Appointed by the University Coordinating Committee (SCU's governance committee) to serve on:
   (a) Tenure Track Salary and Rental Assistance Task Force, 2024–present.
   (b) Enhancing Consultation and Transparency in Governance Task Force (Chair), 2020–21.
   (c) Faculty Advisory Committee to the Provost on Budget Priorities, 2017–18.
   (d) Faculty Affairs Committee, 2015–18.
   (e) Periodic Study of Faculty Salaries Working Group (PSFSWG), 2015–17.
   (f) University Coordinating Committee, Summer 2011 and Winter 2014 (temporary fill-ins).
   (g) Benefits Committee, 2008–11, reappointed for 2011–14.
3. Appointed by SCU administration to serve on:
   (a) Selection committee for the annual Faculty Senate Professor award, 2020–present.
   (b) Selection committee for the Brutocao Award for Teaching Excellence and the Brutocao Award for Teaching Innovation, 2022.
   (c) Retirement Savings Committee (formerly Pension Committee), 2013–18.
   (d) The WASC Interim Report Working Group on Governance and Communication, 2013–14.
   (e) Core Curriculum Committee for Mathematics, 2007–10.
4. Appointed by Faculty Senate Council to serve on:
   (a) Faculty Senate Bylaws Committee, 2021–22.
   (b) Parking Committee, 2008–09 and 2025–26.

(c) Advisory group to SCU's Vice President of Finance and Administration, 2014–15.

(d) Google Business Practices Committee, 2013.

(e) Committee on Faculty Action, 2013.

5. Appointed by Faculty Senate President to serve as:

(a) Faculty Senate Parliamentarian, 2006–22.

b. Departmental Service

1. Departmental activities:

(a) Departmental Representative to the Faculty Senate Council, 2002–10 and 2014–22.

(b) Official mentor for all first year teachers, 2017–18.

(c) Chair of Departmental Quarterly Meetings, 2006–07.

(d) Head of Departmental Program Review for WASC Accreditation, including coordinating the department's creation of its program to Assess Student Learning Outcomes and coordinating and creating the department's assessment for the Core Curriculum, Fall 2003–Spring 2006.

(e) Chair, Weekly Mathematics Colloquium Series, Fall and Winter 1998–99, Fall 2003, Winter 2010.

(f) Faculty Advisor for the Math Society. Co-Advisor with Bob Bekes: 1997–98; Sole Advisor: 1998–2003; Co-Advisor with Mary Long: 2005–06. Co-advisor with Natalie Linnell: Winter 2014.

(g) Calculus Textbook Syllabi, 1995–present.

2. Chair of Departmental Committees:

(a) Search Committee for Tenure Track Position, 2023–24.

(b) MATH 11–14 Calculus Textbook Selection Committee, 2023.

(c) Department Policies Committee, 2016–22.

(d) Search Committee for Tenure Track Position, 2018–19.

(e) STEM Calculus Committee, 2015–16.

(f) Colloquium Improvements Committee, 2010.

(g) Math 13 and 21 Topics Committee, 2008.

(h) Portfolio Requirement Committee, 1999–2000.

(i) Computer Science Service Course Committee, 1999–2000.

3. Member of Departmental Committees:

(a) Evaluation of Teaching Committee, 2023–2025.

(b) Scholarship Standards Revision Committee, 2022.

(c) Scholarship Standards Committee, 2022.

(d) Search Committee for Tenure Track Position, 2017 and 2019.

(e) Annual Year Adjunct Lecturer Hiring Committee, 2016.

(f) Annotated Syllabus Committee, 2016.

(g) Evaluation of Teaching Committee, 2016–17.

(h) Scholarship Standards Committee, 2015–16.

(i) First Year Curriculum Committee, 2014.

(j) Department Action Plan Committee, 2014.

(k) Business Calculus Committee, 2012–2014.

(l) Department Chair Selection Process Committee, 2013 (for College's new rules).

(m) Department Chair Selection Process Committee, 2011–12.

(n) Calculus Textbook Selection Committee, 2012–13.

(o) Statistics Textbook Selection Committee, 2012.

(p) Cheaper Calculus Textbook Committee, 2011–12.

(q) AP Calculus Committee, 2011–12.

(r) Upper Division Requirements and Offerings Committee, 2008.

(s) Hiring Committee, 1998–99.

(t) Sophomore Course Committee, 1997–8.

(u) Applied Mathematics Emphasis Committee, 1996–97.

(v) Actuarial Emphasis Committee, 1996–97.

(w) Calculus Textbook Selection Committee, 1995–96.

c. Professional Service

1. Invited Guest Editor for Special Issue in the Journal of Risk and Financial Management on "Optimization in Wealth Management," 2021.

2. External Reviewer for CSU-Monterey Bay Mathematics Program Review, Spring 2007 and again in Spring 2013.

3. Grader (and, generally, Regrader) of Putnam Exam, 1995–2011, 2014.

4. Referee for National Science Foundation funding proposals (3 times).

5. Referee for *KDD 2024 Conference in Data Science*, *Management Science*, *Finance Research Letters*, *Economic Theory*, *Journal of Behavioral Finance*, *Journal of Risk and Financial Management*, *Risks*, *Electronic Journal of Differential Equations*, *Journal of Wealth Management*, *SIAM Journal of Applied Mathematics*, *Transactions on PAMI (Pattern Analysis and Machine Intelligence* (twice), *Journal of Financial Services Research*, *Quantitative Finance*, *Games and Economic Behavior*, *Canadian Applied Mathematics Quarterly*, *Mathematics Magazine* (5 times), *The Royal Society of Edinburgh Proceedings A*, *Zeitschrift fuer Angewandte Mathematik und Physik (ZAMP)*, *Physica A*.

Memberships In Professional Organizations

Member of: SIAM (Society for Industrial and Applied Mathematics), 1993–present. AMS (American Mathematical Society), 1990–present, Bachelier Society, 2008–2016.