# MICHAEL A. GOLDSTEIN, Ph.D.

Finance Division Babson College Babson Park, MA 02457-0310 Tel:(781) 239-4402 fax: (781) 239-5004 e-mail: Goldstein@babson.edu

webpage: http://faculty.babson.edu/goldstein

May 2023

# EDUCATION

The Wharton School, University of Pennsylvania, Philadelphia, PA

Ph.D. in Finance, August 1993.

Fellowships: Geewax-Terker Fellow, 1988-91, Rodney L. White Fellow, 1992-93

M.A. in Finance, May 1992.

M.B.A. in Finance and Management, May 1991.

B.S. in Economics, summa cum laude, May 1986. Concentration in Finance.

Honors: Phi Beta Kappa, 1986, Beta Gamma Sigma, 1985

## **RESEARCH INTERESTS**

Market microstructure, climate change, Arctic Economics, corporate finance, international finance, real estate.

### ACADEMIC EXPERIENCE

Professor of Finance, Babson College, September 2007 to present.

- Faculty Director, Master of Science in Finance Program, March 2016 to June 2021.
- Chair, Faculty Workload and Compensation Committee, 2018 to 2020
- Member, Appointments Decision Making Body, Spring 2019
- Babson College Faculty Excellence in Interdisciplinary Scholarship Award, September 2017
- Faculty Design Coordinator, Masters of Science in Finance, August 2015 to March 2016
- Chair, Finance Division September 2012 to August 2015
- Donald P. Babson Chair in Applied Investments 2010-present
- Faculty Director, The Stephen D. Cutler Center for Investments and Finance 2009-2012
- Natalie Taylor Senior Term Chair 2009-2010
- Babson Faculty Scholar 2005 2009
- Babson College Faculty Excellence in Scholarship Award, September 2008, September 2012
- Chair, Faculty Senate, 2009 2010 (co-creator of the Senate and member of the first Senate)
- Undergraduate Dean Search Committee 2012-2013
- Advisory Committee on College Priorities, 2011-2014
- Associate Professor of Finance, Babson College, September 2000 to August 2007.
  - Joseph Winn Term Chair 2000 2005
  - Chair, Faculty Governance Task Force, 2005-2006
  - Elected Member, Undergraduate Decision Making Body, 2005-2008
  - Director, Finance Immersion Program, 2006-2007

Visiting Scholar, Brown University, Environment and Society, July 2019 to June 2021, Sept 2021 to present.

Visiting Professorship Fellow, University of New South Wales (Australia), Faculty of Science, Climate Change Research Centre, April 2016 to March 2022.

Adjunct Lecturer, The University of Rhode Island, Kingston, RI, March 2015 to present

• Co-Chair of Dissertation Committee

Visiting Professor, University of Sydney (Australia), January 2016 to July 2016.

Honorary Professor, The Queen's University of Belfast (Northern Ireland, UK), January 2009 to January 2014

Visiting Professor, Trinity College, Dublin (Ireland), January 2009 to July 2009

<u>Visiting Economist</u>, *New York Stock Exchange*, International and Research Division, 1997 - 1998. One year visiting scholar-in-residence. Have direct access to the trading floor and NYSE data sets and internal documents. Worked on a variety of research projects for the NYSE for eventual publication in academic finance journals. Provide advice to NYSE staff.

Visiting Assistant Professor of Finance, Boston College, Carroll School of Management, 1996-1997.

<u>Assistant Professor of Finance</u>, *University of Colorado at Boulder*, College of Business and Administration, 1993 – 2000

- Recipient, Procter & Gamble Teaching Excellence Award, 2000 Selected by vote of graduating seniors. Received \$3,000 stipend.
- Recipient, Chi Omega Outstanding Educator Award, 1994.
- Burridge Center Research Fellow
- Assistant Director, CU Real Estate Center

University of Pennsylvania, The Wharton School

- The Financial Institutions Center, Senior Fellow, 1993-1995
- Rodney L. White Center for Financial Research, <u>Research Associate</u>, 1990-1992.
- Finance Department, <u>Teaching Assistant</u>, 1991-1992

### **RESEARCH AWARDS**

The Financial Review Reader's Choice Best Paper Award 2015

Babson College Faculty Scholarship Award (2008, 2012, 2017)

Best Paper in Derivatives/Market Microstructure (Eastern Finance Association Meetings 2007)

Best Paper in Market Microstructure (Financial Management Association Meetings 2006)

Best Paper in Market Microstructure (Financial Management Association Meetings 2000)

### **MAJOR GRANTS**

<u>National Science Foundation</u> (NSF), 2020-2025: Principal Investigator on a \$2,999,698 total grant *NNA Track 1: Collaborative Research: Navigating Convergent Pressures on Arctic Development* to study how converging geophysical and socioeconomic pressures will shape Arctic development between now and 2050 and the long-term implications for Arctic communities, environments, and international policy.

<u>National Science Foundation</u> (NSF), 2018-2021: Principal Investigator on a sub-award of a \$624,170 total grant *Modeling Risk from Black Carbon in a Coupled Natural-Human System at the Arctic Ice Edge* to study the interaction between Arctic shipping, black carbon, and sea ice retreat.

<u>Research Council of Norway – Svalbard Strategic Grant</u>: (2019-2020): Co-Investigator on a 240,000 Norwegian Kroner (NOK) (aprox. \$28,000 USD) total grant on "Climate system couplings to shipping policy and investments in Svalbard and the High Arctic" to hold a workshop about management and sharing of research data, held virtually in April-May 2020 due to the Covid-19 crisis.

<u>National Science Foundation</u> (NSF), 2017: Co-Principal Investigator on a \$50,000 total grant *Collaborative Research: Forging Collaboration and Encouraging Research on the Arctic Economy* to run a workshop on the Arctic Economy and help define an agenda for economic research related to the Arctic.

<u>National Science Foundation</u> (NSF), 2009-2012: Co-Principal Investigator on a \$385,000 total grant *Diamonds from the Tundra: A System Study on the Impact of Changing Seasons on Mining Exploration* to study the economic impact of the change in seasonality on the Arctic economy.

#### PUBLICATIONS

"High Frequency Trading Strategies" (with Amy Kwan and Richard Philip), *Management Science*, 2022 (forthcoming), <u>https://doi.org/10.1287/mnsc.2022.4539</u>.

"Corporate bond liquidity and yield spreads: A review", (with Elmira Shakari Namin), *Research in International Business and Finance*, April 2023, Volume 65, 101925, https://doi.org/10.1016/j.ribaf.2023.101925.

"Trade Price Clustering in the Corporate Bond Market", (with Brittany Cole, Shane M. Moser, and Robert Van Ness), *China Finance Review International*, July 2022, Volume 12, Number 3, 353-377. https://www.emerald.com/insight/content/doi/10.1108/CFRI-02-2022-0013/full/html

• Lead Article

"Sanctions or Sea Ice: Costs of closing the Northern Sea Route", (with Amanda H. Lynch, Xueke Li, and Charles H. Norchi), *Finance Research Letters*, 2022, Volume 50, 103257 https://doi.org/10.1016/j.frl.2022.103257

"Economic Viability and Emissions of Multi-modal Transportation Infrastructure in a Changing Arctic" (with Amanda H. Lynch, Ruitian Yan, Siri Veland, and William Talleri), *Weather, Climate, and Society*, July 2022, Volume 14, Issue 3, 861-879, <u>https://doi.org/10.1175/WCAS-D-21-0151.1</u>.

"Trade Price Clustering in the Corporate Bond Market" (with Brittany Cole, Shane Moser, and Robert Van Ness), *China Finance Review International*, July 2022, Volume 12, Number 3, 353-377, https://doi.org/10.1108/CFRI-02-2022-0013

• Lead Article

"Conflict's impact raises costs for Arctic shipping and the climate" (with Amanda H. Lynch and Charles H. Norchi), *Nature*, June 7, 2022. <u>https://doi.org/10.1038/d41586-022-01538-w</u>

"Arctic Shipping Guidance from the CMIP6 Ensemble on Operational and Infrastructural Timescales" (with Xueke Li, Scott R. Stephenson, Amanda H. Lynch, David A. Bailey, and Siri Veland), *Climatic Change* **167**, 23 (2021). <u>https://doi.org/10.1007/s10584-021-03172-3</u>

"Data Availability Principles and Practice". (with Henry P. Huntington, Emma Archer, Walker S. Ashley, Susan L. Cutter, Carla Roncoli, and Tanya L. Spero) *Weather, Climate, and Society*, August 2020, Volume **12**, pages 647–649, <u>https://doi.org/10.1175/WCAS-D-20-0089.1</u>

"Providing Liquidity in an Illiquid Market: Dealer Behavior in U.S. Corporate Bonds", (with Edith Hotchkiss), *Journal of Financial Economics*, January 2020, Volume 135, Number 1, 16-40. https://doi.org/10.1016/j.jfineco.2019.05.014

"Secondary Market Liquidity and Primary Market Pricing of Corporate Bonds", (with Edith S. Hotchkiss and David J. Pedersen), *Journal of Risk and Financial Management*, May 2019, Volume 12, Number 2, 86; https://doi.org/10.3390/jrfm12020086.

"The Core, Periphery, and Beyond: Stock Market Comovements among EU and non-EU Countries", (with Joseph McCarthy and Alexei Orlov), *The Financial Review*, Vol. 54, No. 1, February 2019, 5-56.

• Lead Article

"The step-like evolution of Arctic open water", (with Amanda H. Lynch, Andras Zsom, Todd Arbetter, Andres Chang, and Florence Fetterer), *Nature -- Scientific Reports*, Vol. 8, Article number 16902. November 15, 2018. DOI: 10.1038/s41598-018-35064-5

"Water and life from snow: A trillion dollar science question", (with Matthew Sturm and Charles Parr), *Water Resources Research*. Vol. 53, Issue 5, May 2017, 3534-3544. DOI: 10.1002/2017WR020840

"Pricing the urban cooling benefits of solar panel deployment in Sydney, Australia", (with Shaoxiu Ma, Andrew J. Pitman, Navid Haghdadi, and Iain Macgill), *Nature -- Scientific Reports*, Vol. 7, Article number 43938, March 6, 2017. DOI: 10.1038/srep43938

"Using an option pricing approach to evaluate strategic decisions in a rapidly changing climate: Black–Scholes and climate change", (with Matthew Sturm, Henry Huntington, and Thomas A. Douglas), *Climatic Change*, 140(3), February 2017, 437-449. DOI:10.1007/s10584-016-1860-5

"The Global Preference for Dividends in Declining Markets", (with Abhinav Goyal, Brian Lucey, and Cal Muckley), *The Financial Review*, Vol. 50, No. 4, November 2015, 575-609.

• Won The Financial Review Reader's Choice Best Paper Award 2015

"Circuit Breakers, Trading Collars, and Volatility Transmission Across Markets: Evidence from NYSE Rule 80A", *The Financial Review*, Vol. 50, No. 3, August 2015, 459–479.

"Review of <u>Arctic Economics in the 21st Century: The Benefits and Costs of Cold</u> by Heather A. Conley", *The Journal of Economic Literature*, Vol. 52, No.2, June 2014, 565-567.

"Computerized and High Frequency Trading", (with P. Kumar and F. Graves), *The Financial Review*, Vol. 49, No. 2, May 2014, 177-202.

"Special Issue on Computerized and High-Frequency Trading: Guest Editor's Note", *The Financial Review*, Vol. 49, No. 2, May 2014, 173-175.

"Purchasing IPOs with commissions: Theoretical predictions and empirical results", (with P. Irvine and W. A. Puckett), *The Journal of Financial and Quantitative Analysis*, Vol. 46, No. 5, Oct. 2011, pp. 1193–1225

"Do Dividends Matter More in Declining Markets?" (with K. Fuller). *The Journal of Corporate Finance*, Vol. 17, No. 3, June 2011, 457-473.

"Inter-Market Competition for NYSE-listed Securities" (with A. Shkilko, B. Van Ness, and R. Van Ness), *The Review of Quantitative Finance and Accounting*, Vol. 35, No. 4, November 2010, 371-391.

• Lead article of the November 2010 issue

"InterCon Travel Health: Case B," (with G. Truman and D. Pachamanova), *Journal of Information Systems Education*, Vol. 21, Number 1, Spring 2010, 27-32.

"An Analysis of Liquidity across Markets: Execution Costs on the NYSE Versus Electronic Markets" (with G. Hu and J. Ginger Meng), <u>Liquidity, Interest Rates, and Banking</u>, 2009, Jeffrey Morrey and Alexander Guyton (editors), Nova Publishers, Chapter 7, 139-167.

"Brokerage Commissions and Institutional Trading Patterns" (with P. Irvine, E. Kandel and Z. Wiener), *The Review of Financial Studies*, December 2009, Vol. 22, No. 12, 5175-5212.

"Competition in the Market for NASDAQ Securities" (with A. Shkilko, B. Van Ness, and R. Van Ness), *Journal of Financial Markets*, Vol 11, No 2, May 2008, 113-143.

- Lead article of the May 2008 issue
- Won Best Paper in Derivatives/Market Microstructure at the 2007 Eastern Finance Association Annual Meeting.

"InterCon Travel Health Teaching Note and Case Study" (with G. Truman and D. Pachamanova), *Journal of the Academy of Business Education*, Vol 8, Summer 2007, 17-32.

"Transparency and Liquidity: A Controlled Experiment on Corporate Bonds" (with E. Hotchkiss and E. Sirri), *The Review of Financial Studies*, Vol. 20, No. 2, March 2007, 235-273.

- Lead article of the March 2007 issue
- Won Best Paper in Market Microstructure at the 2006 Financial Management Association Annual Meeting. (Top 10% Session)

"The Intraday Probability of Informed Trading on the NYSE" (with B. F. Van Ness and R. A. Van Ness), <u>Advances in Quantitative Analysis of Finance and Accounting</u>, 2006, Ivan Brick, Tavy Ronen, and Chen-Few Lee (editors), World Scientific Press, Vol. 3, Chapter 7, 139-158.

"Trading Strategies during Circuit Breakers and Extreme Market Movements" (with K. Kavajecz), *Journal of Financial Markets*, Vol. 7, No. 3, June 2004, 301-333.

- Won Best Paper in Market Microstructure at the 2000 Financial Management Association Annual Meeting.
- In the top ten most downloaded papers on the Financial Economics Network (Market Microstructure) within 60 days of submission.

"Eighths, Sixteenths, and Market Depth: Changes in Tick Size and Liquidity Provision on the NYSE" (with K. Kavajecz), *Journal of Financial Economics*, Vol. 56, No. 1, April 2000, 125-149.

"Market Making and Trading in NASDAQ Stocks" (with E. Nelling), *The Financial Review*, February 1999, Vol. 34, No.1.

"REIT Return Behavior In Advancing and Declining Stock Markets" (with E. Nelling), *Real Estate Finance*, Winter 1999, Vol. 15, No.4, 68-77.

"Privatization in Post-Communist Economies" (with B. Gultekin), in <u>Financial Sector Reform and Privatization</u> in <u>Transition Economies</u>, John Doukas, Victor Murinde and Clas Wihlborg (editors), *Advances in Finance*, *Investment and Banking*, North-Holland, Vol. 7, 283-327, 1998.

"Privatization Success and Failure: Finance Theory and Regulation in the Transitional Economies of Albania and the Czech Republic", *Managerial and Decision Economics*, November-December 1997, Vol. 18, No.7&8, 529-544.

"Quotes, Order Flow, and Price Discovery" (with M. Blume), *The Journal of Finance*, March 1997, Vol. 52, No.1, 221 - 244. Abstract appeared in *Journal of Finance*, July 1997.

"Pratiquer les meilleurs prix permet-il d'attirer les transactions? Cotations et flux d'Ordres sur les bourses américaines" (with Marshall Blume), *Organisation et qualité des marchés financiers*, (Chapitre XIII), Presses Universitaires de France, ed. Biasis, Davydoff and Jacquillat, 1997.

"Real Estate Investment Trusts, Small Stocks, and Bid-Ask Spreads" (with E. Nelling, J. Mahoney, and T. Hildebrand), *Real Estate Economics*, Spring 1995, Vol. 23, No. 1, 45-63.

### REPORTS

"Knowledge needs in sea ice forecasting for navigation in Svalbard and the High Arctic", Veland, S., Wagner, P., Bailey, D., Everett, A., Goldstein, M., Hermann, R., Hjort-Larsen, T., Hovelsrud, G., Hughes, N., Kjøl, A., Li, X., Lynch, A., Müller, M., Olsen, J., C. Palerme, Pedersen, J.L., Rinaldo, Ø., Stephenson, S., Storelvmo, T. (2021). Svalbard Strategic Grant, Svalbard Science Forum. NF-rapport 4/2021

### PUBLISHED PROCEEDINGS

"Circuit Breakers, Volatility, and U.S. Equity Markets: Evidence from NYSE Rule 80A" (with J. Mahoney and J. Evans), October 1998. *Proceedings of the Second Joint Central Bank Research Conference on Risk Measurement and Systematic Risk*, Bank of Tokyo, Japan.

"On the Integration of the U.S. Equity Markets" (with Marshall Blume), (also a working paper; see below).

- Proceedings of the Competition for Order Flow: A Market Microstructure Conference, October 1995
- Proceedings of the Indiana University Conference on Market Microstructure, August 1995.

"A Comparison of Spreads and Volatilities on U.S. Exchanges," *Proceedings of the Competition for Order Flow: A Market Microstructure Conference*, March 1994. (Similar to the Competitive Specialist vs. Dealer Markets working paper; see below).

"The Liquidity of Real Estate Investment Trusts" (with T. Hildebrand, J. Mahoney and E. Nelling), *Proceedings of the Wharton Real Estate Center's Fifth Annual Student Research Competition*, 1992.

"Differences in Execution Prices on the Regionals and the NYSE" (with M. Blume), *AFFI (French Finance Association) Proceedings 1992.* Also appeared as *Rodney L. White Center for Financial Research* Working Paper 4-92, The Wharton School, December 1992. (See below)

"Eastern European Privatization: A Theoretical Analysis" (with B. Gultekin), AFFI Proceedings 1991.

### WORKING PAPER SERIES

"Trading at the Speed of Light: The Impact of High-Frequency Trading on Market Performance, Regulatory Oversight, and Securities Litigation" (with Pavitra Kumar, Frank Graves, and Lynda Borucki), *Finance: Current Topics in Corporate Finance and Litigation,* 2011, Issue 2, The Brattle Group.

"Liquidity Provision during Circuit Breakers and Extreme Market Movements" (with K. Kavajecz), in *NYSE Working Paper* 00-02 and *Rodney White Center for Financial Research* Working Paper 01-00.

"Eighths, Sixteenths, and Market Depth: Changes in Tick Size and Liquidity Provision on the NYSE" (with K. Kavajecz), *NYSE Working Paper* 98-01 and *Rodney White Center for Financial Research* Working Paper 14-98. (After changes, published in the *Journal of Financial Economics*.)

"On the Integration of the U.S. Equity Markets" (with Marshall Blume), *Rodney White Center for Financial Research* Working Paper 1-95, The Wharton School, January 1995.

"Competitive Specialist vs. Dealer Markets: Effective and Displayed Spreads on NASDAQ NMS and the U.S. Stock Exchange System", *Faculty Working Paper Series* Working Paper 94-5, University of Colorado, March 1994.

- Cited in the Journal of Business and the Journal of Finance.
- It is the first and most oft-cited paper in the famous Christie and Schultz Nasdaq collusion paper in the *JF*.

"Displayed and Effective Spreads by Market" (with M. Blume), *Rodney L. White Center for Financial Research* Working Paper 27-92, The Wharton School, December 1992.

Cited over ten times, including in Journal of Finance, Journal of Financial Economics, Journal of Financial and Quantitative Analysis, Journal of Financial Intermediation

"Differences in Execution Prices on the Regionals and the NYSE" (with M. Blume), *Rodney L. White Center for Financial Research* Working Paper 4-92, The Wharton School, December 1992.

- Discussed in New York Times (March 2, 1992, p. D1.) and Barron's (January 20, 1992).
- Cited over ten times, including in Journal of Finance, Journal of Financial Economics, Journal of Financial and Quantitative Analysis, Journal of Financial Intermediation, Journal of Business

### WORKING PAPERS

"Do Firms Set Pension Discount Rates Strategically?", with Li-Ping Chu, Xin Li, and Tong Yu

- "The Value of a Millisecond: Harnessing Information in Fast, Fragmented Markets", with Haoming Chen, Sean Foley, and Thomas Ruf
- "Dealer Behavior and the Trading of Newly Issued Corporate Bonds", with Edith Hotchkiss and Stanislava Nikolova
  - Presented at the 2009 American Finance Association Annual Meetings
  - Presented at the 2009 Financial Management Association Meetings (top 10% session)
  - SSRN's Top Ten download list for Behavioral & Experimental Accounting
- "Splitting Orders, Serial Correlation, and Spurious Asymmetric Information", with Lynn Doran, Evgenia Golubeva, and Eric Hughson.
  - Presented at the 2008 Finance Management Association Annual Meetings

#### **U.S. GOVERNMENT ROUNDTABLES**

U.S. Securities and Exchange Commission:

- Roundtable on Fixed Income Markets, Presenter, Panel Two -- Current Market Structure for Corporate Bonds and Asset-Backed Securities (April 16, 2013)
- Market Structure Roundtable, Panelist, Panel Two High Frequency Trading (June 2, 2010)
- Decimalization Roundtable, Division of Market Regulation (December 11, 2000)

#### Michael A. Goldstein, Ph.D. EDITOR, EDITORIAL BOARD, SAMPLE REFEREE, AND GRANT REVIEW EXPERIENCE

Co-Editor-in-Chief, *Financial Management*, January 2023 to present Editor-in-Chief, *The Financial Review*, May 2021 to December 2022 Editor, *Weather, Climate, and Society*, 2020 to present

Associate Editor, *Journal of Financial Markets*, 2019 to present Associate Editor, *International Review of Financial Analysis*, 2018 to present Associate Editor, *Finance Research Letters*, 2015 to present Associate Editor, *China Finance Review International*, 2021 to present Associate Editor, *The Financial Review*, 2009 to 2021 Associate Editor, *Weather, Climate, and Society*, 2019 to 2020 Associate Editor, *Financial Management*, 2011 to 2016

Guest Editor, Special Issue on Computerized/High Frequency Trading, *The Financial Review*, Vol 49, No. 2, May 2014

Editorial Board, International Review of Applied Financial Issues and Economics, 2009 to 2013

#### Finance:

Journal of Finance
Review of Financial Studies
Journal of Financial Economics
Journal of Financial and Quantitative Analysis
Journal of Banking and Finance
Journal of Financial Markets
Journal of Financial Intermediation
Journal of Empirical Finance
Journal of International Money & Finance
Journal of Economics and International Finance
International Review of Economics and Finance
International Review of Applied Financial Issues and Economics
International Review of Financial Analysis

Financial Management Management Science Review of Finance Real Estate Economics Journal of Business and Economics Financial Review Journal of Futures Markets European Financial Review European Journal of Finance Journal of Economic Literature Southern Economic Journal Global Finance Journal Journal of Economic Surveys

#### Science:

Water Resources Research AMBIO: A Journal of the Human Environment Journal of Oceans and Coastal Economics Public Library of Science (PLOS) One Weather, Climate, and Society Ecological Applications Energy Strategy Reviews

National Science Foundation, United States Swiss National Science Foundation, Switzerland UK Department for Business, Innovation, and Skills, Government Office of Science, United Kingdom

#### **PROFESSIONAL EXPERIENCE**

Julex Capital Management, LLC, Board of Advisors, 2020-present The Brattle Group, Senior Advisor 2006 – present Financial Industry Regulatory Authority (FINRA) Economic Advisory Board/Committee, <u>Chair</u>, 2011 to 2021, <u>Member</u>, 2007 to 2022 Wellesley Investment Partners, Board of Advisors, 2009-2015 Issuer Advisory Group, Board of Advisors 2006-2011 National Association of Securities Dealers, Independent Economist, 2002 to 2012 Appointed "Independent Economist" by the NASD to examine the effects of transparency on fixed income market liquidity.

The Kellogg Group (Performance/Kellogg Specialists), Independent (Compliance) Consultant, 2005.

Appointed independent consultant to review/recommend compliance procedures approved by the NYSE and the SEC as per consent decree.

NASDAQ Economic Advisory Board. Chair 2005, Member 2003 to 2005

Consultant: Various

Consultant for MetLife to help with creating international strategy and growth strategy. Also consultant to other major financial services companies, and arbitration/litigation regarding valuation, intellectual property, mutual funds, trading, commissions, and execution quality.

TheBuyersPage.com, Board of Advisors 2000-2001.

IPing.com, Board of Advisors 1999-2001

JD.com, Co-CEO, President, and Secretary 1999-2001

Created, run and advise Internet start-up. Intimately involved with writing patent application and business plan. Supervising interactions with venture capitalists.

National Association of Graduate-Professional Student Services, Inc., 1991-1993

President and member of Board of Directors.

Officer in nationwide student health insurance not-for-profit broker. Brokered \$5 million contract.

Ministry of Ownership Changes (Warsaw, Poland), Summer 1990

Advisor, Office of the Minister

Helped formulate privatization program for Poland. Supervised team of MBA students. Analyzed various privatization proposals. Presented results to Deputy Prime Minister of Poland.

Merrill Lynch Capital Markets (New York, NY), 1986 - 1988

Financial Analyst, Investment Banking Division

- *Financial Institutions Group*: Assisted on various proposals, financings and M&A transactions including initial public offerings for thrift institutions, a \$100 million Preferred Stock offering for a major New York commercial bank and many debt and interest rate financings for thrifts, banks, and REITs.
- *Japan Banking Group*: Marketed every type of financing to Japanese corporations, including real estate transactions, joint ventures, private placements, commercial paper, interest rate swaps and M&A analyses.

#### ACADEMIC AND PROFESSIONAL AFFILIATIONS

Eastern Finance Association:

Chair, Board of Trustees (2020-2021), President (2019-20), Vice President – Planning (2018-19), Vice President – Program (2017-18), Vice President – Program Elect (2016-2017) Board of Directors (2010-2011, 2012 - 2015), Executive Committee (2013-2015, 2018-20)

Financial Management Association Secretary/Treasurer (2022-2027)

Phi Beta KappaAmerican Finance AssociationBeta Gamma SigmaWestern Finance AssociationDelta Sigma PiFinancial Management AssociationMarquis Who's Who in AmericaNorthern Finance AssociationAmerican Real Estate and Urban Economics Association

#### **INVITED RESEARCH PRESENTATIONS**

- 2023 Université Laval (Québec City, Québec, Canada) Florida International University University of Reading (UK) – Virtual University of Massachusetts – Lowell
- 2022 Keynote: Conference on International Finance, Sustainable and Climate Finance and Growth (Naples, Italy)
  - University of Rhode Island
- 2021 U.S. Navy Military Sealift Command
- 2020 Nord University (Bodo, Norway)
- 2019 Cornell University (Ithaca, NY), University of Nebraska
- 2018 University of Tennessee (Knoxville, TN)
- 2017 Rochester Institute of Technology (Rochester, NY)
- 2016 University of New South Wales (Sydney, Australia), University of Sydney, Macquarie University (Sydney), University of South Australia (Adelaide, Australia), University of Auckland (New Zealand), University of Melbourne (Australia)
- 2015 Wake Forest University, Auburn University, Syracuse University
- 2013 University of Mississippi, University of Rhode Island, Hebrew University (Jerusalem, Israel)
- 2012 National Science Foundation, (Arlington, VA)
- 2010 Bank of International Settlements (Basel, Switzerland)
- 2009 Queen's University (Belfast); Instituto de Empresa (Madrid)
- 2008 University of Wisconsin (Madison), University of Virginia (Darden)
- 2007 Bentley College, Drexel University, State Street Global Advisors
- 2006 Suffolk University
- 2005 University of Mississippi, Queen's University (Canada), Bank of Canada
- 2004 University of Colorado at Boulder (Burridge Center Conference)
- 2002 Brandeis University
- 2000 U.S. Securities and Exchange Commission; Georgetown University
- Prior to 2000: University of Miami, University of Georgia

#### **CONFERENCE SERVICE**

Eastern Finance Association, Program Committee (2001, 2011)

- Western Finance Association, Program Committee (2018)
- Northern Finance Association, Program Committee (2017)
- Financial Management Association:

Co-Chair -- Financial Management Association – European Conference: (2022) Program Track Chair – Investments (2006)

Program Committee (1997 – 2007, 2009, 2010, 2012-2015)

Best Paper in Microstructure Committee (2001, 2007, 2010 -- Chair)

Southern Finance Association: Program Track Chair, Best Paper Committee, Program Committee (2001) Northern Finance Association, Program Committee (2017) American Real Estate and Urban Economics Association, Program Committee (1997-1999)

### SAMPLE OF RESEARCH-RELATED CONFERENCES

#### Keynote:

"Finance, Sustainability, and Climate", Conference on International Finance, Sustainable and Climate Finance and Growth, Naples, Italy, 2022

#### Finance and Economics:

Paper/Presenter: PhD Project, New Orleans, LA, 2023 Financial Management Association Conference: 1995 (x3), 1996, 1998 (x2), 1999, 2000, 2001, 2002, 2003, 2004 (x2), 2006 (x2), 2007, 2008, 2009 (x2), 2011, 2013, 2014, 2022 Fintech Exchange, Boston, MA 2022 Financial Management Association European Conference, Lyon, France 2022 Eastern Finance Association Meetings, 2011, 2012, 2022 China Finance Review International Conference, Shanghai, China 2021 (by video) Allied Social Sciences Association Conference, 1996, 1997, 2000, 2001, 2006, 2007, 2009, 2018 National Bureau of Economic Research Market Microstructure Conference, 2016 Northern Finance Conference, Mont Tremblant, Canada, 2016 FINRA/Columbia Conference on Corporate Debt Market Structure, Liquidity and Volatility, NY, NY, 2015 The Design and Regulation of Securities Markets, Center for International Finance and Regulation, Sydney, Australia, 2015 INFINITI Conference, Dublin, Ireland, 2010 Financial Management Association Conference, Special Panel Member: 2007 Harvard Business School Entrepreneurship, Venture Capital, and IPO Conference, Cambridge, MA, 2006 International Industrial Organization Conference, 2006 Western Finance Association Meetings, 1999, 2000, 2005 Financial Management Association-European Conference, 2003, 2004, 2005 NYSE Buy-side Institutional Equity Desks Conference, Palm Beach, FL, December 2003. NYSE Practices and Concerns of Buy-side Institutional Equity Desks Conference, Palm Beach, FL, December 2001 Southern Finance Conference, Savannah, GA, 2001 Utah Winter Finance Conference, 2000 Global Risk Measurement and Systematic Risk Research Conference, Tokyo, Japan, November 1998 Hofstra Conference on Securities Markets, Hofstra, NY, October 1998 INFORMS International Meeting, Tel Aviv, Israel, July 1998 SBF-Paris Bourse Conference on the Organization of Equity Markets, Paris, France, December 1996 National Bureau of Economic Research Market Microstructure Conference, 1999 Symposium on the Organization of Financial Trade and Exchange Mechanisms, Indiana University, Bloomington, IN, August 1995. The Competition for Order Flow: A Market Microstructure Conference, 1994, 1995 Front Range Seminar Series, University of Colorado at Colorado Springs, CO, November 1994. AFFI (French Finance Association) International Conference in Finance, 1991, 1992 Second Annual Conference on Finance and Accounting, Buffalo, September 1991. Discussant: Allied Social Sciences Association Conference, 2007, 2019 Financial Management Association Conference: 1994, 1995, 1998 (x2), 2002, 2003, 2004, 2007, 2011, 2015, 2020 The Microstructure Exchange, 2020 The Design and Regulation of Securities Markets, Center for International Finance and Regulation, Sydney, Australia, 2015 Eastern Finance Association Meetings, 2011 INFINITI Conference, Dublin, Ireland, 2010 Financial Management Association-European Conference, 2003, 2004 Western Finance Association Meetings, 2000 AFFI (French Finance Association) International Conference in Finance, 1992

### Session Chair:

Northern Finance Conference, Mont Tremblant, Canada, 2016 Financial Management Association Conference: 1997, 1998, 2000, 2003, 2006, 2007, 2012, 2013, 2014, 2015 Eastern Finance Association Meetings, 2011, 2012 Southern Finance Conference, Savannah, GA, 2001 Allied Social Sciences Association Conference, 1998

#### Program/Track Chair:

Eastern Finance Association, VP-Program, 2018 Financial Management Association Conference, Program Track Chair – Investments 2006 Southern Finance Conference, Savannah, GA, 2001

Other Finance Conferences:

Olsen High Frequency Data Conference II, Zurich, Switzerland, March 1998. Global Equity Conference, Cancun, Mexico, May 1997.

#### Climate Change Science:

Arctic Circle Assembly, Reykjavik, Iceland, October 2022

American Meteorological Society, 101st Meeting, (virtual), January 2021

American Meteorological Society, 97th Meeting, New Orleans, LA, January 2016

Poster, "Variability, Predictability, and Risk in the Alaskan Arctic Waters

Arctic Research Consortium of the US Conference, Changing Seasonality in the Arctic System Project Meeting, Burlington, VT, October 2010.

Presenter, "Diamonds and Oil from the Tundra: A System Study on the Impact of Changing Seasons on Mining and Oil Exploration"

International Congress of Arctic Social Sciences (ICASS VII), Akureyri, Iceland, (2011)

Presenter, "Cold Hard Cash: The Economic Importance of Ice in the Arctic" and "Grateful Dettah: The Value of an Ice Road to a Small Community in the Northwest Territories of Canada"

#### OTHER PRESENTATIONS/CONFERENCES/ROUNDTABLES

US Navy Military Sealift Command Waypoints Speaker Series, "Climate Change and Arctic Shipping," United States Navy, Virtual, September 30, 2021

Milken Institute Future of Health Summit, "Building Community Health to Advance Climate Solutions," Milken Institute, Virtual, June 23 2021

Society of Environmental Journalists, *Post-Election Reality Check — A Green Recovery for All?*, webinar, November 24, 2020

Actuarial Research Conference, Climate Finance Special Session, virtual, August 11, 2020

Security Traders Association (STA) 14<sup>th</sup> Annual Congressional Conference, Willard Hotel, Washington, DC, April 2011

Moderator, "Transparency: Where is the Tipping Point?"

BTIG Global Exchange Forum : Current Trends for Global Exchanges & Liquidity Providers, Waldorf Astoria, New York, NY, March 2011

Moderator, Market Structure Discussion

Panelist, The Future of Exchanges

Financial Industry Regulatory Authority (FINRA):

Academic Roundtable, New York, NY, November 2010, Panelist

Economic Advisory Board/Committee, Washington, DC, Presenter 2008, 2009, 2012, 2013

Boston Bar Association, Investment Companies & Advisers Committee, Boston, MA, Presenter 2009 The Brattle Group, Cambridge, MA

> Presenter, "Trading at the Speed of Light: The Impact of High-Frequency Trading on Market Performance, Regulatory Oversight, and Securities Litigation", Everest Restaurant, Chicago Stock Exchange, March 2011

Presenter, "Trading at the Speed of Light: High-Frequency Trading and the Role of Regulation", Le Bernadin, New York, NY, October 2010

Presenter, "From trading once a month to trading at the speed of light -- corporate bonds to fast equity trading", Cambridge, MA, December 2009

National Investor Relations Institute (NIRI)

Annual Conference, Grand Lakes Resort, JW Marriott, Orlando, FL, June 3, 2007

Presenter, "Capital Market Fundamentals"

Boston Regional Meeting (multiple years)

Presenter, "Capital Markets"

Brazil Securities and Exchanges Commission (CVM – Comissão de Valores Mobiliários), joint with the Getulio Vargas Foundation - Rio de Janeiro Law School (FGV-Direito Rio)

Financial and Capital Markets Regulation at Crossroads: Lessons, Prescriptions, Predictions, for Brazil and the US

Panelist, Liquidity, risk assessment and debt (December 14, 2009)

Presenter, "Dealer Behavior, Transparency, and Liquidity in US Corporate Bonds"

### SAMPLE PROFESSIONAL MEDIA APPEARANCES

#### Television:

Radio:

New England Cable News (NECN), The Take (with Sue O'Connell), January 18, 2018 New England Cable News (NECN), This Week in Business, June 5, 2011 WCVB-TV (Channel 5), Boston, November 19, 2009. Bloomberg TV, Evening Edition (Live), September 18, 2008 WHDH-TV (Channel 7), September 18, 2008 Fox 25, Boston, Fox Affiliate, January 21, 2008 News Hour with Jim Leher, Public Broadcasting System, October 18, 2006 Tech TV, Cable (Nationwide), September 13, 2001 WCVB-TV (Channel 5), Boston, ABC Affiliate, September 12, 2001 News Hour with Jim Lehrer (Lead Story), Public Broadcasting System, August 31, 2001. New England Cable News, (7:30 pm, 9:00 pm, 10:00 pm Broadcasts), August 30, 2001. Tech TV, Cable (Nationwide), July 6, 2001 BBC World, World Business News from New York, British Broadcasting Company (Worldwide, 150+ countries), March 13, 1998 BBC One, Business Breakfast, British Broadcasting Company (UK), March 13, 1998 Moneyline, CNN News, March 12, 1998 CNNfn, March 12, 1998 NewsHour with Jim Lehrer (Live National Telecast, Lead Story), Public Broadcasting System, October 27, 1997 NewsHour with Jim Lehrer (Live National Telecast), Public Broadcasting System, March 17, 1997 Channel 7 (Denver), Morning Edition, Business Report, March 1994 Marketplace, National Public Radio, November 30, 2020 Marketplace, National Public Radio, May 6, 2019 Marketplace, National Public Radio, April 1, 2019 Marketplace, National Public Radio, May 4, 2017 Marketplace, National Public Radio, July 24, 2015 Marketplace, National Public Radio, September 2, 2014 Marketplace, National Public Radio, August 23, 2013 Marketplace, National Public Radio, April 26, 2013 Marketplace, National Public Radio, May 21, 2012 Marketplace, National Public Radio, May 3, 2012

Marketplace, National Public Radio, January 5, 2011

Marketplace, National Public Radio, July 6, 2006

Marketplace, National Public Radio, July 26, 2005

National Public Radio (Nationwide), Special Coverage, (hour long call -in) September 18, 2001

WBIX 1060 AM (Boston), All Business Station, September 13, 2001

WBIX 1060 AM (Boston), All Business Station, September 11, 2001

British Broadcasting Company (England), Radio 4, "Today" program, October 29, 1997

Print Media:

Includes international, national, and local press including:

New York Times, The Wall Street Journal, Washington Post, Barron's, Christian Science Monitor, Boston Globe, Boston Herald, Newsday, Forbes.com, Mass High Tech, Business 2.0, Boston Business Journal, Detroit Free Press, Dallas Morning News, Dow Jones News Service, Denver Post, Cincinnati Enquirer, New York Post, Dallas Business Journal, U.S. News and World Report, Plain Dealer (Cleveland, OH), Cincinnati (Ohio), Congressional Quarterly, Asahi Shimbam (Tokyo,Japan), International Herald-Tribune, and many ohhthers.

## CIVIC ACTIVITIES

Board of Directors, National Volunteer Fire Council, 2022 to present President, Massachusetts Call and Volunteer Firefighters Association, 2023 to present Firefighter, Fire Department, Town of Sherborn (MA), 2016 to present Emergency Medical Technician (EMT-B), Fire Department, Town of Sherborn (MA), 2017 to present Admiral/Captain, 1620s-era Shallop Elizabeth Tillev, The Pilgrim John Howland Society, 2011-present Chair, Sherborn Democratic Town Committee, 2018 to present Vice President - Region 3, Massachusetts Call and Volunteer Firefighters Association, 2018 to 2022 Member, Board of Assessors (elected), Town of Sherborn (MA), 2016 to 2021 Clerk, Board of Assessors (elected), Town of Sherborn (MA), 2018-2020 Chair, Board of Assessors (elected), Town of Sherborn (MA), 2017 to 2018 Chair, Public Safety Committee, Town of Sherborn (MA), 2018-2020 Member, Public Safety Committee, Town of Sherborn (MA) 2017-2020 Treasurer, The Pilgrim John Howland Society, 2016 to 2020 Board of Directors, The Pilgrim John Howland Society, 2012 to 2020 Investment Committee, The Pilgrim John Howland Society, 2009 to 2020 Treasurer, Sherborn Fire and Rescue Association, 2017 Treasurer, Sherborn Democratic Town Committee 2006-2008. Chair, Sherborn Housing Partnership, 2004-2008 Chair, Elderly Tax Relief Committee (Town of Sherborn), 2003-2004 Board of Directors, Wellesley Community Children's Center, 2001-2003 Fundraiser, Dana Farber Cancer Institute, Marathon Challenge 1998-9. Chief Financial Officer and Treasurer, Boulder County Democrats, 1996-00. Controller, Boulder County Clinton/Gore, 1995-6. Board of Directors, Hillel of Colorado, 1994-6. Board of Advisors, AIESEC of Colorado, 1994-6. Council of Recent Graduates, University of Pennsylvania, 1994-6. Faculty Advisor, CU-Financial Management Association Student Chapter, 1993-5. Member, Campus Task Force, Allied Jewish Federation of Colorado, 1994-5. Chair, Graduate and Professional Student Assembly, University of Pennsylvania, 1991-2. Represented 11,000 graduate and professional students. Liaison, Trustee Committee on Student Life, University of Pennsylvania, 1990-2. Member, Provost's Academic Planning and Budget Committee, University of Pennsylvania, 1990-1. Reviewed budget of \$1 billion on highest university planning committee. Columnist, The Daily Pennsylvanian, Philadelphia, PA, Spring 1990. Producer, The Wall, Godspell, Master Harold...and the Boys, U. of Penn., 1989-1991.

#### OTHER

Eagle Scout Licensed Instrument Rated Private Pilot Certified SCUBA diver Marathon Runner (NYC 1996, 1997; Boston 1998, 1999), Triathlete Captain of *The Elizabeth Tilley*, a replica of a five ton 1620s Pilgrim era Shallop