



PRINCETON UNIVERSITY



BENDHEIM ANNUAL REPORT 2018

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MESSAGE FROM THE DIRECTOR

Finance is evolving. New technologies, for example in machine learning, statistical methods, and the organization of payment systems, will leave their marks on the field of finance and society. These developments also lead to a reevaluation of the fundamental features of money. After we launched the FinTech@Princeton initiative with a high-level conference in April 2017, we launched a series of industry leader speakers on this topic in Princeton and New York. These lectures enrich our academic environment and provide a glimpse of the financial sector of the future. The flexible and interdisciplinary setup of the Bendheim Center for Finance gives Princeton an edge over other universities. It also allows our students to take classes in various departments across the universities and draw new connections. Several new faculty members with expertise in computer science are now affiliated with the Bendheim Center for Finance. Another highlight of the last academic year was Raghuram Rajan's Princeton Finance Lecture, which focused on the two faces of liquidity.

We are happy to welcome two new Assistant Professors, Natalie Bachas and Mortiz Lenel, who after doing their postdocs at Stanford and at the University of Chicago, respectively, joined Princeton on July 1st, 2018. We also welcome back Rene Carmona as BCF Director of Graduate Studies (DGS) for the Master in Finance Students. Our previous DGS, Ronnie Sircar, is now at the helm of Princeton's ORFE department and will remain close to BCF. Besides numerous other activities and initiatives, let me express special thanks to all involved in BCF's mentorship program and for helping to ease our students' transition from student life to their professional lives with invaluable advice and for the MFin alumni for contributing in the admission of new students.

I invite you to read the rest of the annual report to get a better idea of the many activities in research and teaching at the Bendheim Center for Finance, which will hopefully not only deepen our understanding of the world, but also shape it for the better.

Markus Brunnermeier Edwards S. Sanford Professor Director, Bendheim Center for Finance

FACULTY



MARK AGUIAR is the Walker Professor of Economics and International Finance at Princeton University. Professor Aguiar's research addresses issues in open- and closed-economy macroeconomics. He has studied emerging market business cycles, sovereign debt, the political economy of capital taxation, and growth. His recent research on sovereign debt concerns self-fulfilling debt crises and equilibrium maturity choice. He has also investigated life-cycle consumption, time allocation, and trends in labor supply. He received his Ph.D. in economics from MIT in 1999.



YACINE AIT-SAHALIA is the Otto A. Hack '03 Professor of Finance and Economics. He served as the founding director of the Bendheim Center for Finance from 1998 until 2014. He was previously a professor at the University of Chicago's Graduate School of Business. He was named an outstanding faculty member by BusinessWeek's 1997 Guide to the Best Business Schools and is the recipient of the 1997 Michael Brennan Award, the 2001 FAME Award, and the 2003 Aigner Award. He received fellowships from the Sloan and Guggenheim Foundations. He is a fellow of the Econometric Society, the American Statistical Association, and the Institute of Mathematical Statistics, and a research associate for the National Bureau of Economic Research. He currently serves as a co-editor of the Journal of Econometrics. He edited the Handbook of Financial Econometrics with Lars P. Hansen and recently co-authored High Frequency Financial Econometrics with Jean Jacod. He received his Ph.D. in economics from the Massachusetts Institute of Technology in 1993 and his undergraduate degree from École Polytechnique.



SANJEEV ARORA is a faculty member in Computer Science and a member of the Theoretical Computer Science Group and the Theoretical Machine Learning Group. His research interest include Computational Complexity; developing new theory for machine learning. In 2017 Sanjeev joined the Princeton Institute for Advanced Study. He received his Phd in Computer Science from UC Berkeley and has been a professor at Princeton University since 1994.



ALAN BLINDER is the Gordon S. Rentschler Memorial Professor of Economics. He also founded the Griswold Center for Economic Policy Studies at Princeton in 1990. He is former vice chairman of the Board of Governors of the Federal Reserve System (1994–96) and before that was a member of President Clinton's original Council of Economic Advisers (1993–94). He also served briefly as deputy assistant director of the Congressional Budget Office in 1975. He is the vice chairman of Promontory Interfinancial Network, a director of the Council on Foreign Relations, and a member of the Economic Club of New York. Blinder was elected to the American Philosophical Society and the American Academy of Arts and Sciences. He is the author or coauthor of 18 books, including "After the Music Stopped", which has been lauded as perhaps the best book on the financial crisis. His latest book, published in March 2018, is "Advice and Dissent". Blinder has also written scores of scholarly articles on topics such as fiscal policy, monetary policy, and the distribution of income. He received his Ph.D. from the Massachusetts Institute of Technology.



RENÉ CARMONA is the Paul M. Wythes '55 Professor of Engineering and Finance.. He joined Princeton in 1995. He was elected fellow of the Institute of Mathematical Statistics in 1984, and of the Society for Industrial and Applied Mathematics in 2009. He is also a member of the Bachelier Finance Society. Among his many editorial responsibilities, he was the co-founder and editor in chief of Electronic Journal in Probability, Communications in Probability and SIAM Journal on Financial Mathematics. He works on mathematical models for the commodity and high frequency markets, and computational methods for quantitative finance.





MARYAM FARBOODI joined the Bendhiem Center for Finance as an Assistant Professor in July 2014. Her research interests focus primarily on financial networks. Maryam finished her PhD at the University of Chicago with a joint degree with Booth School of Business and the Department of Economics. Her main research interests are in corporate finance, financial networks, and informational frictions. She was one of the six selected PhD students who toured Europe to present their research as part of the Review of Economic Studies Tour in 2004. She is the recipient of the John Leusner Fellowship, Top Finance Graduate Award and Best Finance Theory paper.



JIANQING FAN is the Frederick L. Moore '18 Professor of Finance. His research interests include financial econometrics, asset pricing, machine learning, high-dimensional statistics, nonparametric modeling, and computational biology. As a specialist in statistics and financial econometrics, Fan received the 2000 Presidents' Award from the Committee of Presidents of Statistical Societies, the 2007 Morningside Gold Medal of Applied Mathematics, the Guggenheim Fellowship in 2009, Academician of Academia Sinica in 2012, Guy Medal in Silver of Royal Statistical Society in 2014, and Noether Senior Scholar Award in 2018. He was the president of the Institute of Mathematical Statistics, is an elected fellow of the American Association for the Advancement of Science, the Society of Financial Econometrics, the American Statistical Association, and the Institute of Mathematical Statistics. He has coauthored three highly regarded books. He serves as the co-editor of the Journal of Econometrics and associate editor Journal of the American Statistical Association. He has served as the co-editor (in-chief) of the Annals of Statistics, Probability Theory and Related Fields, and Econometrics Journal, and associate editor of Econometrica, and Journal of Financial Econometrics. He earned his Ph.D.from the University of California–Berkeley.



HAROLD JAMES holds a joint appointment as a professor of international affairs in the Woodrow Wilson School and a professor in the history department, studies economic and financial history and modern German history. He was educated at the University of Cambridge (Ph.D., 1982) and was a fellow of Peterhouse for eight years before coming to Princeton in 1986. In 2004, he was awarded the Helmut Schmidt Prize for Economic History, and in 2005, the Ludwig Erhard Prize for writing about economics. He is chair of the editorial board of World Politics.



JAKUB KASTL is a Professor of Economics at Princeton University, Research Associate at the National Bureau of Economic Research and Research Fellow at the Center for Economic Policy Research. His research is in the field of industrial organization, finance and microeconomics. He is a recipient of the Sloan Fellowship and a CAREER grant by the National Science Foundation. His main research interests are in empirical and theoretical analysis of auction markets, with particular emphasis on links with financial markets. He has worked with the European Central Bank, the Bank of Canada, and the US Department of Treasury. He was involved in the design and performance evaluation of various auction markets ranging from treasury bill auctions to spectrum auctions. Jakub received his PhD at Northwestern University.



NOBUHIRO KIYOTAKI is the Harold H. Helm '20 Professor of Economics and Banking. He received his Ph.D. at Harvard University. He has published widely in macroeconomics and monetary economics, including "Monopolistic Competition and the Effects of Aggregate Demand," with Olivier Blanchard in 1987, "On Money as a Medium of Exchange," with Randall Wright in 1989, "Credit Cycles," with John Moore in 1997, and "Banking, Liquidity and Bank Runs in an Infinite Horizon Economy" with Mark Gertler in 2015. Kiyotaki also serves as an academic consultant for the Federal Reserve Banks of New York and Richmond. Among professional honors, Kiyotaki received in 2010 the Stephen A. Ross Prize in Financial Economics and 2014 Banque de France – TSE Senior Prize in Monetary Economics and Finance. He is a Fellow of the Econometric Society and a Fellow of the British Academy.



ADRIEN MATRAY is an assistant professor of Economics and Finance and is affiliated with the Julis-Rabinowitz Center for Public Policy and Finance. Part of his research deals with understanding the frictions affecting entrepreneurship, SME growth and technology adoption and how new technologies affect SME productivity, employment and income growth. In addition, he also studies the determinants and consequences of access to banking services for low-income households. In particular he studies how the supply of bank branches affect financial inclusion and how health risk and the expansion of publicly-provided health insurance affects low-income household debt. His final interest is on behavioral economics and finance where he studies if professional managers of large listed firms display behavioral biases and may have distorted beliefs. He holds a PhD in Finance from HEC-Paris. He received a M.A in Economics from the Paris School of Economics in 2009 and a M.A. in Finance from the Ecole Polytechnique in 2008. He has previously been a Consultant for the French Ministry of Economic and Finance and for the World Bank.



ATIF MIAN holds a bachelors degree in Mathematics and Ph.D. in Economics from MIT. Prior to joining Princeton in 2012 he taught at the University of Chicago Booth School of Business and U.C. Berkeley. His research studies links between financial markets and the macro economy. Professor Mian's work emphasizes the role played by political, governance, and organizational constraints in shaping the effectiveness and scope of financial markets. His more recent work centers on understanding the origins of the global financial crisis, the political economy of government intervention in financial markets, and the link between asset prices, household borrowing, and consumption. Professor Mian's highly profiled book "House of Debt" was released in 2014.



STEPHEN MORRIS is the Alexander Stewart 1886 Professor of Economics, and his work ranges from game theory to applied (microeconomic) theory to topics in financial economics. He joined Princeton in 2005. He taught at the University of Pennsylvania from 1991 to 1998, first as an assistant and then as an associate professor. He joined the Yale University faculty as a professor of economics in 1998. Morris received his Ph.D. in economics from Yale in 1991.



ULRICH MULLER is a professor in the Department of Economics. He received his Ph.D. in economics from the University of St. Gallen, Switzerland. His research interest is in econometrics, and he is currently co-editor of Econometrica. His recent work is on low-frequency variability, heavy tails and Bayesian inference.



JOHN MULVEY is a professor of operations research and financial engineering. His research interests center on designing financial planning systems, primarily for pension plans, hedge funds, and individual investors; developing optimal ALM strategies; combining financial optimization and stochastic models; stochastic optimization algorithms; and decentralized risk management. He is a fellow of the Institute for Operations Research and Management Science.

He received his Ph.D. in management from the University of California-Los Angeles.





ARVIND NARAYANAN is an Associate Professor of Computer Science at Princeton. He leads the Princeton Web Transparency and Accountability Project to uncover how companies collect and use our personal information. Narayanan also leads a research team investigating the security, anonymity, and stability of cryptocurrencies as well as novel applications of blockchains. He co-created a Massive Open Online Course as well as a textbook on Bitcoin and cryptocurrency technologies. His doctoral research showed the fundamental limits of de-identification, for which he received the Privacy Enhancing Technologies Award.

Narayanan is also an affiliated faculty member at the Center for Information Technology Policy at Princeton and an affiliate scholar at Stanford Law School's Center for Internet and Society. He received his Ph.D. from UT Austin and did his post-doctoral work at Stanford University.



DAVID SCHOENHERR joined the Bendheim Center for Finance as an Assistant Professor in July 2016. David finished his PhD in Finance at London Business School. His main research interests are in corporate finance, financial contracting, and the intersection of finance and labor economics. He was the recipient of Top Finance Graduate Award in 2016.



MYKHAYLO SHKOLNIKOV is a professor in the Operations Research and Financial Engineering department. He also held a faculty appointment with Princeton's Math Department. His research interests include studying interacting particle systems arising in mathematical finance, mathematical physics, and neuroscience using tools from stochastic analysis and PDE/SPDE. More broadly he is interested in probability theory and PDEs; random operators, integrable probability, models of random growth, concentration of measure, large deviations, and probabilistic approaches to hyperbolic and parabolic PDEs. Mykhaylo is an associate editor for Applied Mathematical finance. He received his Ph.D from Stanford University and did post-doctorual work at UC Berkeley.



CHRISTOPHER SIMS is the John J. F. Sherrerd '52 University Professor of Economics. He received his Ph.D. from Harvard University in 1968. He taught in the economics department of the University of Minnesota from 1969 to 1990, then moved to Yale University where he taught from 1990 to 1999. He is a member of the National Academy of Sciences and a fellow of the Econometric Society, for which he has served as president and as co-editor of Econometrica. He became president elect of the American Economic Association in 2011 and served as president during 2012. He was with Thomas Sargent, the co-recipient of the 2011 Nobel Prize in Economics. He has intermittently served as an adviser, consultant, and visitor to several regional Federal Reserve banks. He has worked on econometric methods, economic theory, and empirical work, mostly related to macroeconomics and monetary policy.



RONNIE SIRCAR is a professor of operations research and financial engineering. He received his doctorate from Stanford University, and taught for three years at the University of Michigan in the Department of Mathematics before coming to Princeton. Ronnie served as the Director of Graduate Studies for the center's MFIN program from 2015-2018, and will start as the ORFE chair in July 2018. He has received continuing National Science Foundation research grants since 1998. He was a recipient of the E-Council Excellence in Teaching Award for his teaching in 2002, 2005, and 2006 and the Howard B. Wentz Jr. Junior Faculty Award in 2003. His research interests center on financial mathematics, stochastic volatility models, credit risk, asymptotic and computational methods, portfolio optimization and stochastic control problems, stochastic differential games and energy and commodities markets.



ROBERT VANDERBEI has been a professor in the Department of Operations Research and Financial Engineering since its creation in 1999 and was the chair from 2005-2012. His research interests focus on algorithms for nonlinear optimization and their application to problems arising in engineering and science. Application areas of interest focus mainly on inverse Fourier transform optimization problems and action minimization problems with a special interest in applying these techniques to the design of NASA's terrestrial planet finder space telescope. He is an associate editor for Optimization in Engineering, Optimization Methods and Software and Mathematical Programming. He is a member of numerous professional societies and is a Fellow of three of them: the American Mathematical Society (AMS), the Society for Industrial and Applied Mathematics (SIAM) and the Institute for Operations Research and Management Science (INFORMS). He received his Ph.D. in applied mathematics from Cornell University in 1981.



MARK WATSON is the Howard Harrison and Gabrielle Snyder Beck Professor of Economics and Public Affairs in the Department of Economics and the Woodrow Wilson School. His research interests include econometrics, macroeconomics, and forecasting. He is a research associate at the National Bureau of Economic Research and a fellow of the Econometric Society. He holds a Ph.D. in economics from the University of California–San Diego, and his past credentials include posts at Northwestern University and Harvard University.



MATT WEINBERG is assistant professor in the Department of Computer Science. Matt's primary research interest is in Algorithmic Mechanism Design: algorithm design in settings where users have their own incentives. He is also interested more broadly in Algorithmic Game Theory, Algorithms Under Uncertainty, and Theoretical Computer Science in general. Before joining the faculty at Princeton, Matt spent two years as a postdoc in Princeton's CS Theory group, and was a research fellow at the Simons Institute during the Fall 2015 (Economics and Computation) and Fall 2016 (Algorithms and Uncertainty) semesters. He completed his PhD in 2014 at MIT.



WEI XIONG is Trumbull-Adams Professor of Finance and professor of economics in the Department of Economics. His research interests center on capital market imperfections. His earlier work covers speculative bubbles, asset market contagion, limited investor attention, non-standard investor preferences, asset pricing with heterogeneous beliefs, rollover risk, and financialization of commodities markets. His current research focuses on China's financial system and distorted beliefs in financial crises. He received his Ph.D. from Duke University in 2001. He is a research associate of the National Bureau of Economic Research and currently serves as Co-Editor of Journal of Finance.



MOTOHIRO YOGO is a professor of economics at Princeton University. He is also a research associate of the NBER and a co-director of the NBER Insurance Working Group. Prior to joining Princeton in 2015, he held research and teaching positions at the Federal Reserve Bank of Minneapolis and Wharton. He earned a Ph.D. in economics from Harvard in 2004 and an A.B. summa cum laude from Princeton in 2000. His fields of expertise are financial economics, insurance, and econometrics. His current research is on the impact of institutional investors on asset prices and on the importance of risk and regulation in insurance markets. His research has been supported by grants from the National Science Foundation, the National Institute on Aging, and the Social Security Administration. He has received various awards for his work including the Richard A. Crowell Memorial Prize, the Roger F. Murray Prize, Swiss Finance Institute Outstanding Paper Award, and the Zellner Thesis Award in Business and Economic Statistics.



EMERITUS FACULTY



DILIP ABREU is the Edward E. Matthews, Class of 1953, Professor of Finance and Professor of Economics. His research interests include behavioral economics and finance, economic theory, and game theory. In these areas he has made particular contributions to the theory of dynamic games, implementation, reputational bargaining, and bubbles and crashes. He is a fellow of the Econometric Society and a fellow of the American Academy of Arts and Sciences. He received a B.A. from Bombay University, an M.A. from the Delhi School of Economics, an M.Phil. from the University of Oxford, and a Ph.D. in economics from Princeton.



GREGORY CHOW is the Class of 1913 Professor of Political Economy, Emeritus. He received his Ph.D. from the University of Chicago in 1955. He taught a MIT, Cornell, Harvard and Columbia universities and was manager of economic research at the I.B.M. Thomas J. Watson Research Center before joining Princeton as director of the Econometric Research Program, renamed the Gregory C. Chow Econometric Research Program in 2001. He is a Distinguished Fellow of the American Economic Association, a member of the American Philosophical Society and of Academia Sinica and a fellow of the American Statistical Association and of the Econometric Society. His contributions to economics cover three main areas: 1) econometrics, including the often used "Chow test" for parameter stability, the estimation of simultaneous stochastic equations, and criteria for model selection; 2) dynamic economics, including spectral methods and optimal control methods for the analysis of econometric models and dynamic optimization under uncertainty to be solved by the method of Lagrange multipliers (in lieu of dynamic programming); and 3) the Chinese economy. He writes a column in three major newspapers in China, one in Taiwan and one in Hong Kong. He is editor of the Routledge Handbook of the Chinese Economy, 2015.



ERHAN CINLAR is the Norman J. Sollenberger Professor of Engineering in the Department of Operations Research and Financial Engineering. He came to Princeton as a visiting professor of statistics in 1979–80. He is a fellow of the Institute of Mathematical Statistics, a fellow of INFORMS, an elected member of the International Statistical Institute, and the recipient of the Science Prize of TUBITAK. He has served as editor or associate editor of more than 12 journals on probability theory and its applications. His research interests center on martingales, Markov processes, stochastic differential equations, dynamic point processes, mass transport by stochastic flows, and their applications to mathematics of insurance and finance, reliability of complex systems, and modeling and estimation of natural hazards. He received the President's Award for Distinguished Teaching during the June 2010 Princeton Commencement ceremonies. He received the Lifetime Achievement Award for Excellence in Teaching for the Engineering School Student Council in 2011.



DANIEL KAHNEMAN is a senior scholar and professor of psychology and public affairs, emeritus, at the Woodrow Wilson School, the Eugene Higgins Professor of Psychology Emeritus at Princeton, and a fellow of the Center for Rationality at the Hebrew University in Jerusalem. Kahneman has held the position of professor of psychology at the Hebrew University in Jerusalem (1970–78), the University of British Columbia (1978–86), and the University of California–Berkeley (1986–94). He is a member of the National Academy of Science, the Philosophical Society, and the American Academy of Arts and Sciences, and a fellow of the American Psychologists, and the Econometric Society. He has been the recipient of many awards, among them the Nobel Prize in Economic Sciences (2002); the Lifetime Contribution Award

of the American Psychological Association (2007) and the Grawemeyer Prize (2002), both jointly with Amos Tversky; the Warren Medal of the Society of Experimental Psychologists (1995); the Distinguished Scientific Contribution Award of the American Psychological Association (1982); and the Hilgard Award for Career Contributions to General Psychology (1995). Kahneman holds honorary degrees from numerous universities.



PAUL KRUGMAN is the author or editor of dozens of books and several hundred articles, primarily about international trade and international finance. He is also internationally known for his twice-weekly columns in The New York Times. He was the Ford International Professor of International Economics at the Massachusetts Institute of Technology and has served on the staff of the U.S. Council of Economic Advisers. In 2008, Krugman received the Nobel Prize in Economic Sciences. He was the recipient of the 1991 John Bates Clark Medal, an award given every two years by the American Economic Association to an economist under 40. He received his Ph.D. from the Massachusetts Institute of Technology. He holds a joint appointment with the economics department and the Woodrow Wilson School of Public and International Affairs.



BURTON MALKIEL has been the Chemical Bank Chairman's Professor of Economics at Princeton since 1988. He entered emeritus status in 2011. His research interests center on financial markets, asset pricing, and investment strategies. He is a regular op-ed writer for The Wall Street Journal. He also serves on the boards of several financial and non-financial corporations. He has been awarded an Honorary Doctor of Humane Letters from the University of Hartford (1971), Phi Beta Kappa, and the Harvard Business School Alumni Achievement Award for 1984. He has served as the president of the American Finance Association. He received his Ph.D. from Princeton.



JOSE A.SCHEINKMAN joined emeritus status in 2013 and joined Princeton as the Theodore Wells '29 Professor of Economics in 1999. He received an M.S. in mathematics from the Instituto de Matemática Pura e Aplicada, Brazil, and an M.A. and a Ph.D. in economics from the University of Rochester. Scheinkman is a research associate of the National Bureau of Economic Research, a member of the National Academy of Sciences, a fellow of the American Academy of Arts and Sciences and of the Econometric Society, a corresponding member of the Brazilian Academy of Sciences, and a "docteur honoris causa" of the University of Paris-Dauphine. He was named a fellow of the John Simon Guggenheim Memorial Foundation in 2007. From 1973 to 1998, Scheinkman taught at the University of Chicago, where he was from 1995 to 1998 the chair of the economics department, and beginning in 1997 the Alvin H. Baum Distinguished Service Professor of Economics. From 1987–88, he was vice president of the Financial Strategies Group at Goldman, Sachs & Co. During 2002, he held a Blaise Pascal Research Chair (France). His current research interests are the determinants of the size of the financial industry, asset-price bubbles, and developing tools for empirical studies of asset markets. José is currently the Charles and Lynn Zhang Professor of economics at Columbia University.



KENNETH STEIGLITZ is Eugene Higgins Professor of Computer Science emeritus and senior scholar. He received his doctorate in 1963 from New York University and has been at Princeton ever since. He is a fellow of the Institute of Electrical and Electronics Engineers (1981), a fellow of the Association for Computing Machinery (1997), and a recipient of the Technical Achievement Award of the Signal Processing Society (1981), the Signal Processing Society Award (1986), the IEEE Centennial Medal (1984), the School of Engineering Distinguished Teacher Award (1997), and the IEEE Third Millennium Medal (2000). He is currently working on a monetary flow macroeconomic model. Steiglitz's new book "The Discrete Charm of the Machine: Why the World Became Digital" (Princeton University Press) will appear January 2019.





ERIK VANMARCKE is a professor of civil and environmental engineering. He received his doctorate from the Massachusetts Institute of Technology in 1970 and joined the faculty, remaining there until 1985. At MIT, he was the Gilbert W. Winslow Career Development Professor and served as director of the Civil Engineering Systems Methodology Group. He has held visiting appointments at Harvard University, Technical University of Delft (the Netherlands), and University of Leuven (Belgium), his undergraduate alma mater, and was the Shimizu Corporation Visiting Professor at Stanford University. He presently holds the Kwang-Hua Chair Visiting Professorship at Tongji University in Shanghai, China. His principal expertise is in risk assessment and applied systems science. He authored Random Fields: Analysis and Synthesis, originally published by MIT Press; the second (revised and expanded) was published in 2010 by World Scientific Company. He won several research prizes of the American Society of Civil Engineers and chaired its Council on Disaster Risk Management. He was awarded a Senior Scientist Fellowship from the Japanese Society for the Promotion of Science and is a foreign member of the Royal Academy of Arts and Sciences of Belgium.

VISITING FACULTY

During the academic year the Bendheim Center for Finance welcomed the following visiting faculty:



MARTIN CHERKES has been teaching at Princeton (on and off) since 1997. In Fall of academic 2017-18 he teaches a course in Investment management, a course that serves as a "gatekeeping class" for UCF. The course is open to graduate as well as undergraduate students and provides a broad introduction to Finance and Financial Markets. In Spring of academic 2017-18 he taught a course in Venture Capital-to introduce students to financing and valuation techniques as they are employed by a venture capitalist. Martin's research interest is in the area of financial theory (IPOs Mutual Funds etc.). He holds a PhD in economics from UPenn and an MSc in mathematics from Novosibirsk State. In 1986-1994 he worked in research and management roles on Wall Street.



JEAN-CHRISTOPHE DE SWAAN has been teaching at Princeton since the Spring of 2009 as a Lecturer. He teaches a joint undergraduate and graduate course, The Rise of Asian Capital Markets, and a Freshman seminar, Ethics in Financial Markets. He also teaches at the University of Cambridge and has taught at Yale University, Cheung Kong Business School and Renmin University in Beijing. He is also a Principal at Cornwall Capital, a multi-strategy hedge fund based in New York. Prior to that, he was a special adviser on China at a global macro hedge fund, a Principal at an Asia-dedicated hedge fund, and a consultant at McKinsey & Company. He received his B.A. from Yale University, an MPhil in International Relations from the University of Cambridge, and a Masters in Public Policy from Harvard University's Kennedy School of Government. He is a Member of the Council on Foreign Relations. He is a faculty advisor in Rockefeller College (Princeton University) and an Associate Fellow of Ezra Stiles College (Yale University).



AMIN JAFARIAN works in quantatative trading and asset management and graduated from the Master in Finance program at Princeton University. Prior to that he received his PhD at University of Texas at Austin, on Lattice Coding and Structure Codes (in dept use of Additive Combinatorics and optimizations with "Gaussian" like constraints). During his PhD he worked on areas such as distributed resource allocation, Entropy region characterization (in depth use of Matroids and Convex optimization), and the capacity region of Broadcast channel (in depth use of Optimization, information theoretical inequalities).



STEPHAN LUCK works as an economist in the Division of Financial Stability at the Federal Reserve Board of Governors in Washington D.C.. He holds a diploma and PhD in economics from University of Bonn and a research fellow of the Max Planck Institute for Research on Collective Goods. He has been teaching the course "Institutional Finance, Trading, and Markets" at Princeton since Fall of 2014. The course is open to graduate as well as undergraduate students and covers a wide range of topics such as Market Microstructure, Behavioral Finance, and Banking. In his course, Stephan uses an interactive trading software that allows to simulate market outcomes in real-time during class. Stephan's research interest are in the area of financial stability.





GUSTAVO SCHWED is a Professor of Management Practice at NYU Stern. He teaches private equity courses to MBA students and is currently the Faculty Advisor for the Stern Private Equity Club and the Latin American Business Association. Professor Schwed was named NYU Stern's Professor of the Year by the 2015 MBA graduating class. Prior to joining Stern, he was an investment professional in the private equity industry. During his twenty-five year career, he worked at venture capital and large buy-out firms and lived in and practiced private equity in the US, Europe, and Latin America. Gustavo currently serves on the Board of Managers of Swarthmore College, where he is Chairman of the Finance Committee and is a member of the Executive, Nominations & Governance, Compensation, and Investment Committees. As part of the Investment Committee, he is responsible for the oversight of the college's \$2 Billion endowment, focusing on the endowment's investments in private equity. He received a BA with High Honors from Swarthmore College in 1984 and an MBA from the Stanford University Graduate School of Business in 1988. He is a US, UK and Argentine citizen and speaks English, Spanish, and Portuguese.



O. GRIFFITH SEXTON was, until 1995, a managing director of Morgan Stanley and director of the corporate restructuring group within the firm's financing and advisory services department. Sexton graduated from Princeton in 1965. Following six years of service as an aviator in the U.S. Navy, he attended the Stanford Graduate School of Business, where he received his MBA. He joined Morgan Stanley in 1973 and spent his career there involved in a broad range of the firm's financing and advisory activities. In 1995, he became an active advisory director of Morgan Stanley. Also in 1995, he became an adjunct professor at Columbia University's Graduate School of Business, teaching two courses in the subject of corporate finance. In 2000, he became a visiting lecturer at Princeton. Sexton is a member of the board of directors of Morgan Stanley, and he is a director of Investor AB, a publicly traded company based in Stockholm, Sweden, and of one other privately held company.



MICHAEL SOTIROPOULOS is the global head of quant research for equities trading at Deutsche Bank. Prior to his current role, Michael was a Managing Director at Bank of America Merrill Lynch, where he headed the algorithmic trading quant group. He has also worked for nine years in equity structured products and derivatives pricing at Bank of America and at Bear Stearns.

Michael has a Ph.D. in theoretical physics from Stony Brook University. Before joining the finance industry he taught and worked in quantum field theory and particle physics at the University of Southampton, England and at the University of Michigan.



GUOFENG SUN is the Director General of the Research Institute of the People's Bank of China. He holds a PhD degree in Economics from Chinese Academy of Social Sciences. Dr. Sun is visiting professor of Economics Department at Princeton University. He was visiting fellow of BIS and visiting fellow of Stanford University. Dr. Sun is professor at the People's Bank of China, part-time professor and PhD tutor at Tsinghua University, Chinese Academy of Social Sciences, University of International Business and Economics and Southwestern University of Finance and Economics, and the vice president of Banking Accounting Society of China, founding member and academic committee member of China Financial Forum (CFF), member of China Finance 40 Forum (CF40).



XAVIER VIVES is professor of Economics and Finance, Abertis Chair of Regulation, Competition and Public Policy, and academic director of the Public-Private Research Center at IESE Business School. He is Research Fellow of CESifo, and was member of its European Economic Advisory Group; Research Fellow of the Center for Economic Policy Research, where he served as Director of the Industrial Organization Program. Fellow of the Econometric Society since 1992 and elected member of its Council in 2006-2008; of the European Economic Association since 2004 and elected member of its Council 1991-1995; and Research Associate of the European Corporate Governance Institute. He was Professor of Economics and Finance and The Portuguese Council Chaired Professor of European Studies at INSEAD, and Director of the Institut d'Anàlisi Econòmica, CSIC.). From 2003 until 2013, he was member of the Economic Advisory Group on Competition Policy at the European Commission. He has received several research awards: King Juan Carlos I Prize in 1988; the Catalan Society for Economics Prize in 1996; the Narcís Monturiol Medal in 2002; the Catalonia Economics Prize in 2005; an European Research Council Advanced Grant in 2008, and the Jaime I Prize in Economics in 2013. He is member of the Institut d?Estudis Catalans since 2011 and of the Academia Europaea since 2012. Dr. Vives has been an advisor and consultant on competition, regulation, and corporate governance issues for the World Bank, the Inter-American Development Bank, the European Commission, the Federal Reserve Bank of New York, as well as for major international corporations. He is a member of the board of CaixaBank. He is a columnist for La Vanguardia and occasionally for El País, Project Syndicate, Vox, Financial Times and The Wall Street Journal. He holds a Ph.D. in Economics from UC Berkeley.



STAFF



WENDELL COLLINS is the director of corporate relations for the Bendheim Center for Finance. Her responsibilities include managing the Corporate Affiliates Program, which seeks support for the center from firms interested in finance and which works with corporations to build partnerships investigating financial topics of mutual interest, advising undergraduates and Master in Finance candidates on career issues, facilitating the recruiting activities of corporate affiliates, and promoting and organizing special events involving alumni and advisory council members.



KAREN NEUKIRCHEN is the Center Administrator for the Bendheim Center for Finance. In her role as Center Administrator, Karen oversees and supports the events and people of the Center.



JESSICA H. B. O'LEARY is the Center Manager for the Bendheim Center for Finance. In that role she oversees the day to day functions of the Bendheim Center for Finance including its facility in the Old Dial Lodge.



MATTHEW PARKER is the SCAD for both the Center and Economics. In his role as SCAD he serves as the first point of contact for all things technology related.



MELANIE HEANEY-SCOTT is the Academic Administrator for the Bendheim Center for Finance. In her role as Academic Administrator, Mel oversees the day to day functions of the Undergraduate Certificate Program and the Master in Finance Program.

BCF IN THE NEWS

Raising the visibility of the research and teaching of the Bendheim Center for Finance is a new initiative for director Markus Brunnermeier. In addition, the @PrincetonBCF twitter feed publishes news of the center and promotes center events on a daily basis.

- MFIN Alumni, Anne-Victoire Auriault named to Forbes' "30 Under 30"
- Julis Romo Rabinowitz and Louis A. Simpson International Buildings win Architecture award
- Princeton alumni panelists, including MFIN alum Santiago Barona, drew a full crowd at the Feb. 22 TigerTalks in the City, held in Brooklyn, on the topic of cryptocurrencies, blockchain, ICOs, and more, cosponsored by BCF and PEC.
- Alumni Profile: Bryton Shang '12 and Aquabyte
- Money Matters: Markus Brunnermeier on the Fed, the banks and the future
- Danny Wilson, BCF certificate in finance student, helped run the Innovation Conference at the Ivy League Summit Nov 10 Featured in Huffington Post
- For anyone who lived through the early 1980s and early 1990s, the Great Recession two decades later should not have been a surprise, according to a working paper published by BCF Faculty member Atif Mian and others.
- Director Markus Brunnermeier interviewed in Financial Times: European leaders aim to seize the moment for reform
- Director Markus Brunnermeier interviewed in Wall Street Journal: *What We Know About Financial Bubbles*
- Japan Is Counting on Shareholder Activism to Improve Its Economy by JC de Swaan
- Ulrich Mueller Named to Endowed Professorship, the Stanley G. Ivins '34 and Henrietta Baurer Ivins Professor in Economics
- Atif Mian Named to Endowed Professorship, the John H. Laporte, Jr Class of 1967 Professor in Public Policy and Finance



UNDERGRADUATE CERTIFICATE IN FINANCE

In 1999, the Bendheim Center for Finance started offering an Undergraduate Certificate in Finance (UCF) to Princeton undergraduates. Now in its 19th year, the UCF continues to do extremely well. We currently have 95 enrolled students in the Class of 2019 and will enroll 65 juniors from the Class of 2020. This will bring our total number of undergraduate students in the program (juniors and seniors) to 160 for the coming academic year, despite our grade-based admission cap in place. UCF students are drawn to the program from a wide variety of departments.

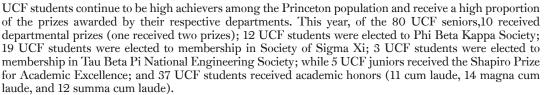
CLASS OF 2018

Total number of certificates awarded to the class of 2018: 80 (to 25 women, or 31 percent)

TRACKS

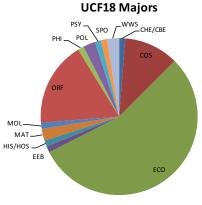
- Corporate Finance Track
- · Derivatives Pricing and Risk Management Track
- Investment Management Track
- Information Technologies for Finance Track
- Behavioral Finance
- Finance and Public Policy
- Mathematical Finance

DEPARTMENTAL PRIZES



The Bendheim Center for Finance Birch Prize was awarded to Sung Won Chang, COS Major.

The Kathleen Traynor '83 Prize was awarded to Elaine Fang, ECO Major.



MASTER IN FINANCE

The distinctive feature of our Master in Finance program is its strong emphasis on financial economics next to financial engineering and computational methods. Graduates of our program have a solid understanding of the fundamental quantitative tools from economic theory, probability, statistics, optimization, and computer science, all of which are becoming increasingly vital in the financial industry. There now exists a body of knowledge that is widely agreed to be essential for the proper analysis and management of financial securities, portfolios, and the financial decisions of firms. A driving force behind these developments is a lively exchange of ideas between academia and the financial industry, a collaboration that is the closest parallel in the social sciences to the academic-private sector interactions routinely seen in engineering and the applied sciences. The Master in Finance program prepares students for a wide spectrum of careers in the financial industry, ranging from quantitative trading strategies, risk management, and financial engineering, to quantitative asset management and macroeconomic and financial forecasting.

MFIN COURSE TRACKS

Elective courses can be chosen according to either individual needs and preferences, or to conform to one of the suggested tracks, listed below.

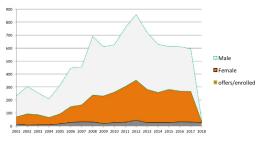
- Financial Engineering and Risk Management
- Quantitative Asset Management and Macroeconomic Forecasting
- Data Science and Financial Technologies

MFIN PLACEMENT

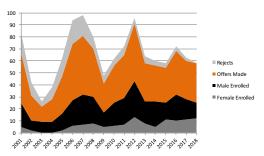
The Bendheim Center for Finance provides extensive career assistance to students, including help with internships and job placement. Our program has continued to enjoy excellent success with 100 percent of our 2018 graduates being placed in finance industry jobs and 100 percent internship placement.

CAREERS UPON GRADUATION:

MFIN students who graduated in 2018 started their careers at AQR, Bank of America Merrill Lynch, Barclays, Belvedere Trading, BlackRock, Bloomberg, BNPP, Bridgewater Associates, Citadel, Citi, Federal Reserve Bank of New York, HAP Capital, JP Morgan, Morgan Stanley, Nomura,



MFin Students: Male, Female



MFin Applicants: Male, Female

Quantitative Brokers, Strike Protocols Inc., Singapore MAS, and Squarepoint.

SUMMER INTERNSHIPS FOR FIRST YEAR STUDENTS:

Class of 2019 students will have summer internships at Arrowstreet Capital, BlackRock, BNPP, Citadel, Citi, Ellington Management Group, Ergoteles Capital, Goldman Sachs, JP Morgan Asset Management, JP Morgan, Morgan Stanley, Quantedge, and Stevens Capital Management.



PH.D STUDENTS

Ph.D. students in the Bendheim Center for Finance are admitted through the Department of Economics, the Department of Operations Research and Financial Engineering, or the Program in Applied and Computational Mathematics. Five students with finance interests received their Ph.D. in 2018 and accepted a mixture of academic and industry positions (the institution is in parenthesis):



IOANNIS BRANIKAS

(Lundquist College of Business, University of Oregon)



GRAHAM MCKEE (Cornerstone Reasearch)



EMIL VERNER (Massachusetts Institute of Technology Sloan)



ZIWEI ZHU (University of Michigan)

SEMINARS, CONFERENCES AND CENTER EVENTS

2017-2018 PRINCETON LECTURES IN FINANCE

Each year, the Bendheim Center invites a leading figure in the field of finance to deliver a set of lectures at Princeton on a topic of major significance to researchers and professionals.

The 2017-2018 Princeton Lectures in Finance were given by Raghuran Rajan. The topic of the series was "The Costs of Anticipated Illiquidity and Liquidity and their Implications."

CIVITAS FOUNDATION FINANCE SEMINAR

Each week, Bendheim Center for Finance organizes a seminar in which academic experts are invited to present their latest research to the faculty and graduate students of the center. 2016-2017 Speakers included:

- Monica Piazzesi, "Money and Banking in a New Keynesian Model"
- Collin-Dufresne Pierre, EPFL, "Liquidity Regimes and Optimal Dynamic Asset Allocation"
- Guillermo Ordonnez, University of Pennsylvania, "A Walrasian Theory of Sovereign Debt Auctions with Asymmetric Information"
- Danielle Li, MIT, "Developing Novel Drugs"
- Rob Richmond, NYU, "Gravity in FX R-Squared: Understanding the Factor Structure in Exchange Rates"
- Dana Foarta, Stanford University, "The Cost of a Bad Hire: On the Optimality of Pay to Quit Programs"
- Ing-Haw Cheng, Dartmouth, "Debt Collection and Settlement: Do Borrowers Under-Utilize the Court System?"
- Stijn Van Nieuwerburgh, NYU, "Financial Fragility with SAM"
- Ricardo Caballero, MIT, "Risk-centric Model of Demand Recessions and Macroprudential Policy"
- David Matsa, Northwestern University, "Locked in by Leverage: Job Search during the Housing Crisis"
- Daniel Greenwald, MIT, "The Mortgage Credit Channel of Macroeconomic Transmission"
- Effi Benmelech, Northwestern University, "Financial Frictions and Employment During the Great Depression"
- Will Cong, University of Chicago, "Insider Investor and Information"
- Guillaume Roussellet, NYU, "Affine Term Structure Modeling and Macroeconomic Risks at the Zero Lower Bound"
- Emil Verner, Princeton University, "Household Debt Revaluation and the Real Economy: Evidence from a Foreign Currency Debt Crisis"
- · Ioannis Branikas, Princeton University, "Product Market Advertising and Investor Portfolios"



- Mark Egan, University of Minnesota, "When Harry Fired Sally: The Double Standard in Punishing Misconduc"t
- Victoria Vanasco, Stanford University, "Securitization, Ratings, and Credit Supply"
- · Pablo Kurlat, Stanford University, "Why are Banks Exposed to Monetary Policy?"

FINANCE PH.D. STUDENT WORKSHOPS

Each week, the Bendheim Center for Finance organizes a seminar for its Ph.D. students and faculty in which preliminary research ideas are presented internally. 2017-2018 speakers included:

- · Christian Wolf, "Monetary Policy and the Banking System"
- Zhiguo He, "Decentralized Mining in Centralized Pools"
- Donghwa Shin, "Why did complex retail financial products become so popular? Evidence from big data analysis"
- Caio Ibsen, "Nonparametric Assessment of Hedge Fund Performance"
- · Fernando Mendo, "A macroeconomic model of financial instability"
- Paul Ho, "Efficient Bubbles?"
- Giorgia Barboni, "Cultural Proximity and Relationship Lending: Complements or Substitutes?"
- Yann Koby, "The Reversal Interest Rate (in General Equilibrium!)"
- · Joseph Abadi, "Blockchain Economics"
- Nicola Limodio, "Deposit Volatility, Liquidity and Long-Term Investment: Evidence from a Natural Experiment in Pakistan"
- Maryam Farboodi, "Neglected Information: What is in the Shape of Return Distribution?"
- Lin Peng, "Investor Attention: Endogenous Allocations, Clientele Effects, and Asset Pricing Implications"
- Yifan Yu, "The impact of risk based capital regulation in the insurance industry on corporate bond market"
- Donghwa Shin, "Why did complex structured financial products become so popular?"
- Giulia Brancaccio, "Learning by Trading: the case of the US market for municipal bonds"
- Christian Wolf, "Instrumental Variable Identification of Dynamic Variance Decompositions"
- Terry Moon, Capital Gains Tax, Investments, and CEO Incentives
- Julia Fonseca, "The Impact of Corporate Credit on Labor Markets Outcomes: Evidence from Brazil"
- Graham McKee, "Understanding the Rise in Corporate Payouts"
- Dan Herbst, "Liquidity and Insurance in Student Loan Contracts: The Effects of Income-Driven Repayment on Default and Consumption"
- Martin Cherkes, "An alternative theory of IPO underpricing"
- Yann Koby, "Limits of Aggregation: Why Firm Heterogeneity Matters for Macro Dynamics."
- Emil Verner, "Household Debt Revaluation and the Real Economy: Evidence from a Foreign Currency Debt Crisis
- Ioannis Branikas, "Product Market Advertising and Investor Portfolios"

MFIN WEEKLY LUNCH AND LEARN SPEAKER SERIES

A number of guest speakers from a variety of areas of finance visited the Bendheim Center in 2017-2018 to address Master in Finance, undergraduate, and PhD students.

- MFin alumni Boot Camp Panelists: JC Alvarez, Anne-Victoire Auriault, Ben Beugnies, Jun Wei Ho, Cedric Lommaert, Nestor Macias, Chad Shampine, Lilian Schulz, Dennis Walsh, & Livia Wu, "Best Practices for your Career Development"
- Boot Camp Alumni speakers Norm Champ '85, Anne Lester '86, Anna Raytcheva '94, Stella Zhang *16, Jean Boyer *09, John Naud, Isaac Chang.
- Stuart Spodek, Blackrock Obsidian Fund
- Michael Novogratz '87, The Future of Cryptocurrencise
- Santhanam Nagarajan, Tudor Investments
- Women in Finance Alumni/Student Workshop
- Saurabh Srivastava
- SEC Chairman Jay Clayton Lunch talk
- Alejandro Werner, IMF Latin American Outlook
- Rick Grove '79, Rutter Associates Derivatives Valuation & Trends
- · George A. Lentzas, Springfield Capital Management
- Loretta Mester, Pres/CEO, Federal Reserve Bank of Cleveland
- Kaiser Fung '95 How Data Science has changed careers landscape
- Brad Smith '81, President and CLO, Microsoft Rise of Artificial Intelligence
- Chris Long '97, Palmer Square Asset Mgmt From Sellside to Buyside Career Conversation
- Arvind Narayanan- Cryptocurrencies
- JC de Swaan Social Value of Investing
- Santiago Barona, Bloomberg- Cryptocurrencies: The Internet of Value,
- Doug Herrington, Amazon, Senior Vice President, Retail -Ten Rules of Innovating at Amazon,
- Peter Hoeppe, Munich Re Economics of Climate Change
- · Jamil Nazarali, Senior Advisor, Citadel Securities Automated Market Making,
- Michael Catalano-Johnson, Susquehanna International Group ETFs
- Elena Kessler, St Gallen
- · Caroline Dorsa, ex CFO, PSEG, former Merck Treasurer
- Sharon Aranoff, former Chair, U.S. International Trade Commission
- Montano Nissotti Capula
- Chris Kuenne, Author Built for Growth
- Mihir Wohra, Ravi Mattu PIMCO
- David Zhang MSCI
- · Women in Finance, Technology, Academia & Arts Panel
- · Antoine Chiche, Valuation Workshop
- AQR Portfolio Management Talk



SPECIAL LECTURES AND CENTER EVENTS

The Center hosts and sponsors several guest lectures and special events throughout the year

- Insurance Initiative
- Financial Innovation & Money in the Digital Age
- 8th annual Princeton Fintech and Quant Conference
- JRC Conference, The Future of Globalization: trade, finance and politics

RESEARCH INITIATIVES

The Center engages in several research related initiatives.

PRINCETON INITIATIVE: MACRO, MONEY AND FINANCE

Following the Princeton tradition of incorporating financial frictions in macroeconomic models the Princeton Initiative Camp brings together top 2nd year Ph.D. students from various Universities, who wish to write a Ph.D. thesis at the intersection between macroeconomics, monetary economics, and finance. The recent experience starting with the run-up of imbalances and bubbles in the first decade of the 21st century, followed by a severe financial crisis that ultimately led to the Great Recession, calls for new frameworks to study macro-prudential policy tools and to design a new international financial architecture. The aim of this meeting is to bridge the gap between modern finance, monetary and macroeconomics and expose the best students from across the country to macroeconomic models with financial frictions and/or non-standard expectations. Yuliy Sannikov and Markus Brunnermeier lead this effort. BCF is grateful for the generous support of the SLOAN Foundation.

FINTECH@PRINCETON

Bridging domain and technology expertise in finance together on campus. Topics included Blockchains, Roboadvising, Payments, Insurance, and VC funding. Invited speakers spanned alumni and leaders in industry and academia from such firms as Wealthfront, Sultant, Alipay, MasterCard, Clearmatics, Fluent, Washington Square Tech, Predata, Ayasdi, Bain Capital, Tudor and featuring high-profile speakers Larry Summers, former U.S. treasury secretary, and Michael Evans, president of Alibaba.

BCF CHINA INITIATIVE

The Princeton-BCF China initiative aims to develop an interface for facilitating collaborative research and academic exchanges between faculty and students in Princeton and China. This initiative serves the quickly growing demands from academic and policy communities across the world to systematically study the Chinese economy and its financial system and the risks and opportunities it presents to the global economy. Despite having the 2nd largest economy in the world, China has a very different institutional structure from most western countries. Princeton economists can substantially benefit from interacting with local scholars and researchers in China, who tend to have better institutional knowledge about the Chinese economy and better access to Chinese economic data. At the same time, local academics can also learn from Princeton economists, who tend to have a better understanding of fundamental economic concepts and a more rigorous training in the methods of modern western economic analysis. The initiative tries to bridge these gaps and provide an intellectual interface between researchers in China and top academics at Princeton. It also aims to provide a platform for both graduate and undergraduate students in Princeton to visit and study China. BCF is also supporting the new webpage *www.VoxChina.org.* The Princeton-BCF China initiative will be coordinated by Wei Xiong, Hugh Leander and Mary Trumbull Adams Professor in Finance and Professor of Economics, together with the director of BCF.

NEW MONEY & BANKING VIDEO SERIES ON YOUTUBE

Markus Brunnermeier and Yuliy Sannikov have launched an educational video series on YouTube called "Money and Banking" based on their research papers "The I Theory of Money" and "Redistributive Monetary Policy." The series, created in partnership with Princeton's McGraw Learning Center and the Julis Rabinowitz Center for Public Policy & Finance, is both a teaching tool for a reversed class room experience and designed to allow interested alumni to keep up with new developments in research.



JANEWAY FUND FOR BRIDGING FINANCE, MONETARY ECONOMICS AND THE REAL ECONOMY

This initiative supports the interaction between the Bendheim Center for Finance and the economics department in order to nurture a closer collaboration in research, the PhD program and teaching. The initiative focuses on research of faculty and students whose work is on the boundaries of economics and finance, in particular related to finance but beyond the core mission of the Bendheim Center.

A core purpose of the initiative is to facilitate teaching at the PhD level that does not fall within narrow definitions of existing "field" categories, such as "finance", "macroeconomics" and "economic theory." Funds could be used to hire visiting faculty or postdoctoral fellows to teach such courses or (more likely) to teach other courses in order to free up time for permanent faculty to teach in the graduate program. Postdoctoral positions also help recruit young faculty by delaying the start of the tenure clock and providing time to publish.

Funds can support general research expenses, summer salaries and could also be used in support of short and long term visitors, who can help with research by participating in discussion and interaction, participate in collaborative research, and act as co-authors. In addition the Bill Janeway Initiative provides additional resources for graduate students, especially for those whose research is interdisciplinary and at the intersection of finance and economics. BCF is grateful for the generous donation given by William H. Janeway in 2015. In 2016-17 Ricardo Lagos, Professor at NYU, visited and taught a Ph.D. class on Financial and Monetary Economics.

TRINITY OF STABILITY INITIATIVE

The network "Macroeconomic Policy Trinity"studies interactions among monetary, financial, and fiscal stabilization policies. The overarching objective of the network is to bring together a diverse set of researchers from finance, banking and macroeconomics—who approach issues with different methodologies, different questions and different data—with the aim to learn from each other and to focus on a common set of questions. The "trinity network" is run jointly by the Federal Reserve Bank of New York, the Swedish Riksbank, the Bank of Canada and the Bundesbank. The network will also draw on researchers from other central banks and from a variety of academic institutions. Its main coordinators are Eric Leeper and Markus Brunnermeier.

More specifically, the aim is to develop a suite of theoretical models that shed light on how the trinity of aggregate policies jointly determine macroeconomic outcomes, and then to use time series data to estimate or calibrate the models to deliver quantitative predictions. Only by studying the trio jointly can we understand their interactions, accurately interpret data, and ultimately arrive at policy conclusions. The network shall pursue the two prongs of teaching and research to achieve this objective. The teaching prong exposes a wide range of established and developing researchers to the variety of tools, analytical approaches and empirical techniques being used to study the trinity of policies. A research prong encourages and nurtures frontier research that focuses on a common set of questions with the goals of publishing the output in professional outlets and bringing fresh research insights to policy makers. The Trinity Network started recently to have regular seminar presentations via video conferences.

2017-2018 ADVISORY COUNCIL

The Advisory Council for the Bendheim Center is comprised of distinguished leaders in the financial industry.

Curtis Arledge, Former Vice Chairman and CEO of Investment Management, BNY Mellon

Ben Bernanke, Former Chairman, Federal Reserve

Frank Brosens, Co-Founder, Taconic Capital

Hamid Biglari, Senior Management, Point72

John Bogle, President, Bogle Financial Markets Research Center, The Vanguard Group

Richard Bott, Former Vice Chairman, Morgan Stanley Investment Banking Division

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Jeremy Diamond, Guggenheim Investments

J. Michael Evans, President, Alibaba

John Hepburn, Advisory Vice Chairman, Morgan Stanley & Co.

William H. Heyman, Vice Chairman and Chief Investment Officer, The Travelers Companies

Alfred F. Hurley, Jr., Corporate Director and Consultant, Emigrant Bank

William H. Janeway, Senior Advisor, Warburg Pincus

Hugh E. McGee III, Chief Executive Officer, Intrepid Financial Partners

Michele Kreisler Rubenstein, Independent Investment Manager and Consultant

Charles Schorin, Portfolio Manager, Elliott Management Corporation

Lynn Thoman, Co-President, Leon Lowenstein Foundation



CORPORATE AFFILIATES PROGRAM

The Corporate Affiliates Program offers companies an opportunity to build a significant relationship with the Center. Corporate affiliates gain a strong presence and visibility, interact with faculty and students, learn about important faculty research, and secure a competitive recruiting advantage.

2017-2018 Affiliates

- Altamont Capital Partners
- AQR
- Bank of America Merrill Lynch
- Barclays
- BMW North America
- Citadel
- Cubist Systematic Strategies
- Deutsche Bank
- Sandpointe LLC
- Goldman Sachs
- Stevens Capital Management LP

Benefits of Corporate Affiliation

- Opportunity to advertise internships and employment opportunities to both Undergraduate Certificate in Finance and Master in Finance students
- Opportunity to use the Bendheim Center for Finance facilities to host recruiting events
- · Access to the Bendheim Center for Finance director of corporate relations as a resource for recruiting
- Recognition in the publicly disseminated materials of the Bendheim Center for Finance, including the center's reports and website, which both list corporate affiliates, as well as a hyperlink to each member's website
- Access to new research authored by the center's affiliated faculty
- Access to Bendheim Center for Finance faculty for internal or client presentations or for sponsored research
- Opportunity to work with the center's faculty and staff to create customized training programs and to design and access distance-learning courses and events such as special lectures and conferences
- Invitation to deliver a guest lecture on campus or to participate as a presenter at Bendheim Center for Finance-sponsored conferences
- Invitation and two reserved seats for all public events hosted by the center

GIFT OPPORTUNITIES

Early in 1998, a \$10 million gift from the Leon Lowenstein Foundation enabled Princeton to launch the Bendheim Center for Finance. To establish the University as a national resource for innovative thinking on finance and finance-related topics, the Center brings together leading experts in teaching and scholarship. Significant support beyond the generous Bendheim gift is needed for faculty, visitors, and curriculum development, in order to realize this vision, therefore in 2015 the University initiated a \$6 million campaign in an effort to support true excellence in financial economics which requires a critical mass of finance researchers, approaching the size of a finance department in a leading business school, as well as important educational initiatives in a state-of-the-art setting. The campaign seeks support in the following areas:

ACADEMIC PERSONNEL

Endowed Visiting Professorship To support a distinguished senior visitor who provides expertise in a particular area of study \$2,000,000

FELLOWSHIPS

Graduate Fellowships To support a new generation of scholars concentrating in finance \$500,000

FINANCIAL RESEARCH AND TEACHING

Research and Course Development Funds Endowed funds to support research and course development \$100,000 minimum

China Initiative

Term support to foster better links between Asia and Princeton in finance research \$250,000 annually

ACKNOWLEDGEMENTS

Princeton University gratefully acknowledges those whose generosity continues to make the Center possible.

INDIVIDUAL SPONSORS

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In compliance with Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and other federal, state, and local laws, Princeton University does not discriminate on the basisof age, race, color, sex, sexual orientation, gender identity, religion, national or ethnic origin, disability, or veteran status in any phase of its employment process, in any phase of its admission or financial aid programs, or other aspects of its educational programs or activities. The vice provost for institutional equity and diversity is the individual designated by the University to coordinate its efforts to comply with Title IX, Section 504 and other equal opportunity and affirmative action regulations and laws. Questions or concerns regarding Title IX, Section 504 or other aspects of Princeton's equal opportunity or affirmative action programs should be directed to the Office of the Vice Provost for Institutional Equity and Diversity, Princeton University, 205 Nassau Hall, Princeton, NJ 08544 or (609) 258-6110.

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In the Nation's Service and the Service of Humanity