



2018-19 **ANNUAL REPORT**

 **PRINCETON UNIVERSITY**

BENDHEIM ANNUAL REPORT 2019

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MESSAGE FROM THE DIRECTOR

2018-2019 was another eventful Academic Year at Princeton University's Bendheim Center for Finance. As Machine Learning and other quantitative tools take on an ever more prominent role in Finance and Economics, we find ourselves continuously modifying and improving our course offerings for our Undergraduate and Master in Finance students.

One key achievement, beginning from the next academic year onwards, is the arrangement with the Center of Statistics and Machine Learning for our Master in Finance students to obtain a certificate in Machine Learning. This certificate requires students to conduct independent research while attending fundamental courses in this area. Special thanks goes to Peter Ramadge, the director of the Center for Statistics and Machine Learning and Rene Carmona, our Director of Graduate Studies. We are delighted that Caio Almeida, who will be staying as a Lecturer at BCF, took on the task to guide students who conduct independent research at the intersection of Finance and Machine Learning.

For our Ph.D. students, we have started offering an online-live course on "Macro, Money and Finance" that involves Ph.D's. from various top Universities throughout the world.

One of the many highlights during the 2018-2019 Academic Year was the Princeton Lecture in Finance. We were joined by Stefan Nagel, from the University of Chicago, who spoke on the topic "Asset Pricing and Machine Learning." For this upcoming Academic Year, we have planned numerous academic activities with a focus on Digital Money and Fintech.

We have also recruited two additional junior faculty members who will be joining us this fall. Jonathan Payne will join us from NYU, first as Pyewacket Post-Doc Research Fellow and in 2020 as an Assistant Professor. Ernest Liu, who was previously a Post-Doc at the Julis-Rabinowitz Center for Finance and Public Policy, will become an Assistant Professor this fall. We look forward to having both Jonathan and Ernest as a part of the Bendheim Center for Finance.

While there was a lot to celebrate during the year, we also had a year of significant loss for the Bendheim Center. We mourned the deaths of Jack Bogle and Alan Krueger. Jack Bogle was a longtime key member of our Advisory Council. His Princeton senior thesis laid the foundation for his creation of Vanguard Group. Alan Krueger, a brilliant colleague and friend, made the world a better place through his research, teaching and public service.

As always, we are very grateful for all of your continued support throughout the Academic Year.

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 AÏT-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 expert in algorithms and their analysis, with a special interest in machine learning and deep learning. He is a winner of the ACM Prize in Computing and a member of National Academy of Science. Since 2017 Sanjeev has also been visiting Professor at Institute for Advanced Study in Princeton. He received his Phd in Computer Science from UC Berkeley and has been on the faculty at Princeton University since 1994.



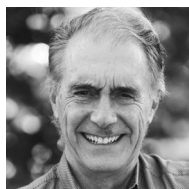
NATALIE BACHAS Natalie Bachas is an assistant professor in the Department of Economics Bendheim Center for Finance. Her research focuses broadly on household finance, industrial organization and public economics. Her current work includes studying the efficiency and equity implications of changes in the \$1.3 trillion student loan market, repayment of student debt, and the impact of federal loan guarantees and credit subsidies. Bachas earned her Ph.D. in Economics from the University of California at Berkeley. She joined Princeton's faculty in 2018.



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 member 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.



MARKUS BRUNNERMEIER is the Edwards S. Sanford Professor of Economics at Princeton University. He is a faculty member of the Department of Economics and director of Princeton's Bendheim Center for Finance. He is the founding and former director of Princeton's Julis Rabinowitz Center for Public Policy and Finance and affiliated with the International Economics Section. He is/was a member of several advisory groups, including to the IMF, the Federal Reserve of New York, the European Systemic Risk Board, the Bundesbank and the U.S. Congressional Budget Office. Brunnermeier was awarded his Ph.D. by the London School of Economics (LSE). His research focuses on international financial markets and the macroeconomy with special emphasis on bubbles, liquidity, financial and monetary price stability. He is a Sloan Research Fellow, Fellow of the Econometric Society, recipient of the Bernácer Prize and Guggenheim Fellowship. He has been awarded several best paper prizes and served on the editorial boards of several leading economics and finance journals. He has tried to establish the concepts: liquidity spirals, CoVaR as systemic co-risk measure, the Volatility Paradox, Paradox of Prudence, ESBies, financial dominance and the redistributive monetary policy. His recent book is titled "The Euro and the Battle of Ideas."



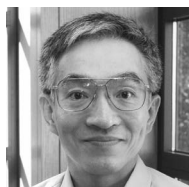
RENÉ CARMONA is the Paul M. Wythes '55 Professor of Engineering and Finance. He joined Princeton in 1995. He was elected fellow of the Institute of Mathematical Statistics in 1984, and of the Society for Industrial and Applied Mathematics in 2009. He is also a member of the Bachelier Finance Society. 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. He is the Director of Graduate Studies for the Bendheim Center for Finance.



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, machine learning, 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 Business and Economics Statistics and associate editor of Management Science. He has served as the co-editor (in-chief) of the Annals of Statistics, Probability Theory and Related Fields, Journal of Econometrics, and Econometrics Journal, and associate editor of Econometrica, Journal of the American Statistical Association, and Journal of Financial Econometrics. He earned his Ph.D. from the University of California–Berkeley.



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.



MORITZ LENEL Moritz Lenel joined the Bendheim Center for Finance as a Pyewacket Research Fellow in 2018 and will be an assistant professor in 2019. His research interests are in macroeconomics and finance. Currently, he is particularly interested in the transmission channels of monetary policy in financial markets. Lenel studied Economics in Germany and Spain, before earning his Ph.D. in Economics from Stanford. Before joining Princeton, he was a research fellow at the Becker Friedman Institute at the University of Chicago.



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.



ULRICH MÜLLER 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 is a member of the Statistics and Machine Learning Center at Princeton, and a senior consultant for Ant Financial (Alibaba) and First Republic Bank in the area of Fintech. He received his Ph.D. in management from the University of California-Los Angeles.



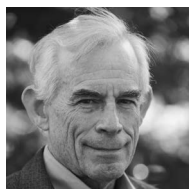
ARVIND NARAYANAN is an Associate Professor of Computer Science at Princeton. He leads the Princeton Web Transparency and Accountability Project to uncover how companies collect and use our personal information. Narayanan also leads a research team investigating the security, anonymity, and stability 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-doctoral work at UC Berkeley.



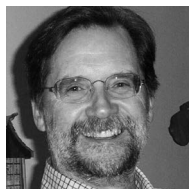
CHRISTOPHER SIMS is the John J. F. Sherrerd '52 University Professor of Economics. He received his Ph.D. from Harvard University in 1968. He taught in the economics department at Harvard from 1967 to 1970, then at the University of Minnesota from 1970 to 1990. In 1990 he moved to Yale, where he taught until 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.



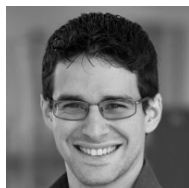
RONNIE SIRCAR is a professor of operations research and financial engineering. He received his doctorate from Stanford University, and taught for three years at the University of Michigan in the Department of Mathematics before coming to Princeton. Ronnie served as the Director of Graduate Studies for the center's MFIN program from 2015-2018, and he started as Chair of the ORFE Department 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 financial crisis, China's financial system, and digital economy. 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. He teaches graduate asset pricing and undergraduate financial investments at Princeton. His research has been financially supported by the National Science Foundation, the National Institute on Aging, and the Social Security Administration. He has received various awards for his work including 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 at 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.



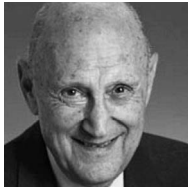
ERHAN CINLAR is the Norman J. Sollenberger Professor of Engineering in the Department of Operations Research and Financial Engineering. He came to Princeton as a visiting professor of statistics in 1979–80. He is a fellow of the Institute of Mathematical Statistics, a fellow of INFORMS, an elected member 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.



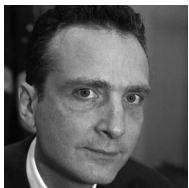
DANIEL KAHNEMAN is a senior scholar and professor of psychology and public affairs, emeritus, at the Woodrow Wilson School, the Eugene Higgins Professor of Psychology Emeritus at Princeton, and a fellow of the Center for Rationality at the Hebrew University in Jerusalem. Kahneman has held the position 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 Psychological Association, the American Psychological Society, the Society of Experimental 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.



JOSÉ 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:



CAIO ALMEIDA has recently become a lecturer in the Department of Economics at Princeton University where he teaches risk management, fixed income, and applications of machine learning in asset pricing. He holds a MS and a PhD in Electrical Engineering from Pontifical Catholic University in Rio de Janeiro and has been an Associate Professor of Finance at Getulio Vargas Foundation during the last 13 years. His research interests lie in the intersection of financial economics, econometrics and machine learning and include proposing and testing pricing models and creating alternative metrics to analyze asset pricing models. He was the president of the Brazilian Society of Finance (2013-2015), an Associate Editor of the Journal of Banking and Finance and is an Associate Editor of the Journal of Financial Econometrics.



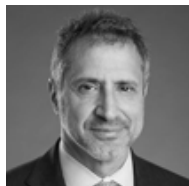
JEAN-CHRISTOPHE DE SWAAN has been teaching at Princeton since the Spring of 2009 as a Lecturer. He teaches a joint undergraduate and graduate course, Asian Capital Markets, and a Freshman seminar, Ethics in Finance. He also teaches at the University of Cambridge and has taught at Yale University, Cheung Kong Business School and Renmin University in Beijing. He is a partner 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 is the author of a forthcoming book on virtue in finance (Cambridge University Press). 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).



STEPHAN LUCK works as a financial economist in the Research and Statistics Division of the Federal Reserve Bank of New York and is interested in financial and monetary economics as well as economic history. Before moving to New York he worked as an economist at the Federal Reserve Board of Governors in Washington D.C.. He holds a diploma and PhD in economics from University of Bonn and was 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.



MARCELO C. MEDEIROS is an associate professor at the Department of Economics at the Pontifical Catholic University of Rio de Janeiro (PUC-Rio), Brazil. Marcelo holds a BA, MSc. and PhD. degrees in Electrical Engineering (Statistics, Optimization and Control Theory) from PUC-Rio. Marcelo's main research interests are High-Dimensional Econometrics/Machine Learning, Financial Econometrics and causal inference. He has been publishing papers on top journals like the Journal of the American Statistical Association, Journal of Econometrics, Econometric Theory, Journal of Business and Economic Statistics, among others. Marcelo serves as an associate editor for the Journal of Business and Economic Statistics, Econometric Reviews and the International Journal of Forecasting.



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.

POSTDOCS



CHEN XU LI is a postdoctoral research associate and a lecturer of the Bendheim Center for Finance, Princeton University. He obtained his Ph.D. from Peking University in July, 2018. His research interests include but are not limited to financial econometrics, financial engineering, stochastic modeling, applied probability, and statistics. His current work centers on the inference of models underlying financial derivatives and the estimation of models with latent factors.



SEBASTIAN MERKEL is a Postdoctoral Research Associate at the Bendheim Center for Finance. His research interests are in the intersection of macroeconomics and finance with a focus on theoretical work. His current work centers on the interaction between stock markets and business cycles, and on the macro implications of narrow banking. He received his PhD in economics from the University of Mannheim, Germany, in 2018.

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.



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.



JESSICA HB ROETHEL is the Center Manager for Administration and Finance for the Center. In that role she oversees the day to day functions of the Center including its facility in the Julis Romo Rabinowitz Building. Jessica has over 20 years of experience at Princeton and holds a Bachelors in Management from Rider University.



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

- Princeton alumni and guests heard from an expert panel on how artificial intelligence and alt data are playing an increasingly large role in fintech at TigerTalks in the City: AI, Alt Data and the FinTech Frontier on May 9, co-sponsored by BCF and PEC
- BCF deeply mourns the unduly passing of our brilliant colleague and friend, [Alan Krueger](#), who through his research, teaching and public service made the world a better place.
- The Bendheim Center for Finance and the entire Princeton community mourns the death of [John Clifton](#) “Jack” Bogle ’51, founder of Vanguard and a longtime member of the BCF Advisory Council. Jack was a friend, mentor and hero to us all.
- Princeton BCF’s MFIN program #1 in inaugural Risk.net Quant Master’s Programs Ranking and Quantnet in its 2019 rankings
- On October 4, [Carolyn A. Wilkins](#), Senior Deputy Governor of the Bank of Canada shared her perspective on crypto asset and digital currencies.
- First-year Master in Finance students [Elisabetta Cavallo](#), [Amy Qin](#) and [Kayla Zhang](#) won 3rd place in the second annual Princeton Data Open Datathon, sponsored by Citadel Investments, one of BCF’s Corporate Affiliates.
- BCF Director [Markus Brunnermeier](#) moderated the Reunions panel, Ten Years after the Financial Crisis: How Are Markets, Investors, Regulators, and the Public Faring.
- [Markus Brunnermeier](#) @SHouseofFinance “Banks may be micro prudent and macro imprudent”
- [Markus Brunnermeier](#) was appointed MAS Term Professor at NUS Business School

UNDERGRADUATE CERTIFICATE IN FINANCE

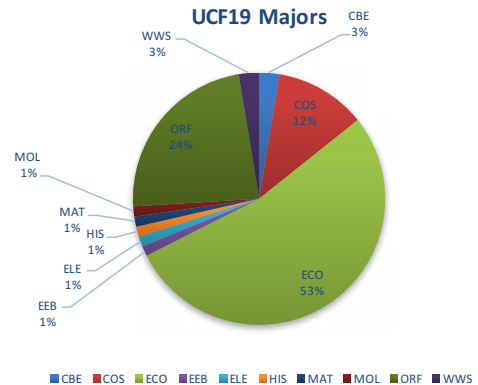
In 1999, the Bendheim Center for Finance began offering an Undergraduate Certificate in Finance (UCF) to Princeton undergraduates. Now in its 20th year, the UCF continues to do extremely well. Currently, we have 89 enrolled from the class of 2020 and will enroll 60 juniors from the class of 2021. This will bring our total number of undergraduate students in the program (juniors and seniors) to 149 for the 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 2019

Total number of certificates awarded to the class on 2019:
77 (to 29 women, or 38 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

UCF students continue to be high achievers among the Princeton population and receive a high proportion of the prizes awarded by their respective departments. This year, of the 77 seniors, 6 received departmental prizes (one received two prizes); 7 UCF were elected to Pi Beta Kappa Society; 11 UCF students were elected to membership in Society Sigma XI; 7 UCF students were elected to membership in Tau Beta Pi National Engineering Society; while 4 UCF juniors received the Shapiro Prize for Academic Excellence; and 35 UCF students received academic honors (14 Cum Laude, 13 Magna Cum Laude and 8 Summa cum Laude).

The Bendheim Center for Finance Birch Family Prizes was awarded to Reed Melchionda, ECO Major.

The Kathleen Traynor '83 Prize was awarded to Caroline Lippman, 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

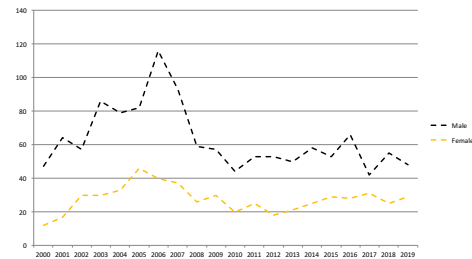
The Bendheim Center for Finance provides extensive career assistance to students, including help with internships and job placement. Our program has continued to enjoy excellent success with 100 percent of our 2019 graduates being placed in finance industry jobs and 100 percent internship placement.

CAREERS UPON GRADUATION:

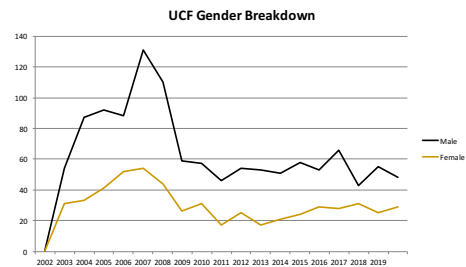
MFIN students who graduated in 2019 started their careers at Akuna Capital, Arrowstreet Capital, Bank of America Merrill Lynch, BNPP, Citadel, Citi, Deutsche Bank, Ergoteles Capital, Goldman Sachs, JP Morgan Asset Management, JP Morgan, Monetary Authority of Singapore, Tower Research, & Canadian Pension Plan Investment Board HK.

SUMMER INTERNSHIPS FOR FIRST YEAR STUDENTS:

Class of 2020 students will have internships at Alliance Bernstein, AQR, Arrowstreet, Bank of America Merrill, Barclays, BNPP, Capula, Citi, Cubist Systematic Strategies, Ergoteles Capital, Goldman Sachs, Morgan Stanley, Shogun, Strike Protocols, Susquehanna International Group & UBS.



MFIn Students: Male, Female



MFIn Applicants: Male, Female

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. Three students with finance interests received their Ph.D. in 2019 and accepted a mixture of academic and industry positions (the institution is in parenthesis):



JULIA FONCESCA
(University of Illinois - Urbana Champagin)



FERNANDO MENDO
(Central Bank of Chile)



DONGWHA SHIN
(University of North Carolina)

SEMINARS, CONFERENCES AND CENTER EVENTS

2018-2019 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 2018-2019 Princeton Lectures in Finance were given by Stefan Nagel. The topic of the series was “Asset Pricing and Machine Learning”.

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. 2018-2019 Speakers included:

- Julia Fonseca, Princeton University, “Financial Development, Labor Markets, and Aggregate Productivity: Evidence from Brazil”
- Fernando Mendo, Princeton University, “Risk to Control Risk”
- Scott Nelson, Chicago Booth, “Private Information and Price Regulation in the US Credit Card Market”
- Quentin Vandeweyer, Institut d’Etudes Politiques de Paris (Sciences Po), “A Macro-Financial Model of Monetary Policies with Leveraged Intermediaries” (joint with Matthieu Darracq-Paries, ECB)
- Yiming Ma, Columbia, “Intermediation in the Interbank Lending Markets”
- Chris Palmer, MIT, “The Capitalization of Consumer Financing into Durable Goods Prices”
- Bronson Argyley, Taylor Nadauldz, Christopher Palmer, Ryan Pratt, Donghwa Shin, Princeton University, “Extrapolation and Complexity”
- Chaojun Wang, Wharton, “Why Trade Over-the-Counter? When Investors Want Price Discrimination”
- Simone Lenzu, NYU, “Sources and Implications of Resource Misallocation: New Evidence from Firm-Level Marginal Products and User Costs”
- Peter Ganong, University of Chicago, “Why Do Borrowers Default on Mortgages? A New Test Using High-Frequency Data”
- Stefano Giglio, Yale, “Five Facts About Beliefs and Portfolios”
- Paolo Zafferoni, Imperial College of London, “Beyond the Bound: Pricing Assets with Misspecified Stochastic Discount Factors”
- Adam Szeidl, Central European University, “Direct and Indirect Effects of Financial Access on SMEs”
- Itamar Drechsler, “How Monetary Policy Shaped the Housing Boom”
- Andres Liberman, NYU, “The Equilibrium Effects of Information Deletion: Evidence from Consumer Credit Markets”

- Nicolae Garleanu, Berkeley, “Finance in a Time of Disruptive Growth”
- David Sraer, UC Berkeley, “Do Managerial Forecasting Biases Matter?”
- Song Ma, Yale, “Young Firms, Old Capital”

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. 2018-2019 speakers included:

- Donghwa Shin, “Why did complex retail financial products become so popular? - Evidence from big data analysis”
- Terry Moon, “Capital Gains Tax and Real Corporate Investment”
- Christian Wolf, “From Micro Elasticities to Macro Counterfactuals”
- Julia Fonseca, “Financial Development, Labor Markets, and Aggregate Productivity: Evidence from Brazil”
- Sebastian Merkel, “Financial Development, Labor Markets, and Aggregate Productivity: Evidence from Brazil Stock Price Cycles and Business Cycles” (joint with Klaus Adam, University of Oxford)
- Yann Koby, “Banks, Market Power, and Monetary Policy”
- Moritz Lenel, “The short rate disconnect in a monetary economy”
- Simon Schmickler, “Government Bond Supply Shocks and Asset Prices”
- Fernando Lopez, “Risk to Control Risk”
- Federico Huneus, “The Internal Labor Markets of Business Groups”
- Karsten Mueller, “Busy Bankruptcy Courts and the Cost of Credit”
- Natalie Bachas, “Market Power and Policy Pass-Through in Small Business Lending”
- Yifan Yu, “Institutional demand for corporate bonds”
- Julius Vutz, “Monetary Policy and risk-based deviations from uncovered interest parity”
- Christian Wolf, “The Missing Intercept: A Semi-Structural Approach to General Equilibrium Effects”
- Joseph Abadi, “Commitment Cycles”
- Simon Schmickler, “Machine Learning Demand System Asset Pricing”
- Yann Koby, “Pricing and Hedging Climate Risk”
- Motohiro Yogo, “Exchange Rates and Asset Prices in a Global Demand System”
- Thomas Kroen, “Distributional Implications of Capital Regulation”
- Markus Brunnermeier, “International Monetary Theory: A Risk Perspective”

MFIN WEEKLY LUNCH AND LEARN SPEAKER SERIES

A number of guest speakers from a variety of areas of finance visited the Bendheim Center in 2018-2019 to address Master in Finance, undergraduate, and PhD students.

- MFIN Alumni Boot Camp Speakers: Norm Champ '85, former Director, SEC Investment Management; Anne Lester '86, JPM Asset Management; MFIN Alumni Panel: Anne-Victoire Auriault, Santiago Barona, Ariele Galle, Nestor Macias, Luana Majdalani, Sarah Nagy, Chad Shampine, Dennis Walsh, Livia Wu
- MFIN Corp Affiliate & Alumni Boot Camp Speakers: Isaac Chang, AQR; Michael Bos, Ergoteles Capital; Stella Zhang, GSAM QIS; Ipek Ozil & Josh Younger, JP Morgan; Ross Garon, Cubist Systematic Strategies; Susanne Killian, Career Services; Richard Hu, Goldman Sachs Strats; Jamil Nazarali, Citadel.
- UCF Careers Boot Camp Speakers: Dixon Hayes '04, JP Morgan; Powell Fraser, Deutsche Bank; Greg Ruiz '05, Altamont Capital, Stefan Glebke, BMW US Capital; Eric Czervionke, Oliver Wyman.
- Chris Long '97, CEO, Palmer Square Capital Mgmt
- Avi Rosenbluth, AQR Global Asset Allocation
- Santiago Barona, Bloomberg - CryptoAssets
- Sebastian Litta, Quant Co
- Steven Burnett *17, Capula
- She Roars Women In Finance Alumni/Student Roundtable
- Digital Currency -Carolyn Wilkins-Bank of Canada,
- Valuation Seminar with Antoine Chiche *06
- Roland Villacorta '94, BlackRock Financial Markets Advisory
- Neuberger Berman Talk
- Aditi Jain *17, Nomura Global Markets, Singapore
- Carlo Didonna talk on Goldman Sachs trading
- Joceline Zheng, Droit FinTechnologies
- Ajay Shroff '98, head of Ridgeleigh Capital
- Bill Janeway '65 Innovation Economy Talk
- Andrew Lawrence, Strike Protocols
- NY Fed visit w Barbara Coffey
- B. Ben Baldanza *86, ex CEO, Spirit Airways
- SIG Lunch talk on Elections and Data with Jerrod Ankelman
- Investment panel with JPM Anne Lester and BlackRock CIO Jim Keenan
- Lori Fouche '91, President, TIAA-CREF Retail Services and Princeton Trustee
- John Wirth, Fintech VP, Transunion Lunch Talk
- Norm Champ '85, former SEC Investment Management Director
- The Princeton Finance Lecture - Stefan Nagel (Chicago Booth) "Asset Pricing and Machine Learning".
- Financial Literacy Fair and Dollars & Sense author Jeff Kreisler
- NYC BCF/PEC TigerTalks - Fintech/AI panel with Hamid Biglari *87, Ben Connault *15, Kathleen DeRose '83, Margaret Holen *95, Laura Kornhauser '03

SPECIAL LECTURES AND CENTER EVENTS

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

- 2nd Annual Workshop on Financial Economics of Insurance
- Financial Innovation & Money in the Digital Age
- 9th annual Princeton Fintech and Quant Conference
- JRCPPF 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, Robo-advising, 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.

2018-2019 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, Global Co-Head, Central Liquidity Group, Point 72 Asset Management

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

David A. DeNunzio, Managing Director & Global Head, Mergers and Acquisitions,
Wells Fargo Securities

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.

2018-2019 Affiliates

- Altamont Capital Partners
- AQR
- Bank of America Merrill Lynch
- Barclays
- BMW North America
- Capula Investment Management
- Citadel
- Cubist Systematic Strategies
- Ergoteles Capital LLC
- Goldman Sachs
- Nomura
- Stevens Capital Management LP
- Strike Protocols Inc.

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

Gerhard R. Andlinger '52, Kwesi Adofo-Mensah '03, Chester Baylis Jr. '29 (D) , Robert M. Baylis '60, Robert Bendheim '37 (D), Hamid Biglari *87, David H. Blair '67, Charles Brodbeck '71, Janice Calloway, David Carlin '60, Howard E. Cox Jr. '64, David A. DeNunzio '78, Kathleen T. DeRose '83, Robert G. Dettmer, Jay Diamond '86 and Alexandra Lebenthal '86, The Family of Carl H. Donner '20, J. Michael Evans '80, Arminio Fraga *85, Edward B. Goodnow '47, Mr. and Mrs. Randall A. Hack '69, Walter Haydock '75, John K. Hepburn '72, Robert R. Hermann Jr. '75, Kenneth Hersh '85, William H. Heyman '70, Alfred F. Hurley Jr. '76, Stanley G. Ivins W34, William H. Janeway '65, Richard Korhammer '88, Oliver M. Langenberg '35, Susan Payne Madole '76, Burton G. Malkiel *64, Edward E. Matthews '53, John Mayer '62, Hugh McGee III *81, Reuben M. Morriss III '58 (D), Sharmin Mossavar-Rahmani '80, Robert B. Payne Jr. '74, Robert B. Payne Sr. '45, Jeffrey M. Peek '69, John G. Quigley, Jonathan F. Schachter PhD '94, Charles Sheedy, Charles Schorin, John H. Scully '66, Lynn Bendheim Thoman '77, Dario Villani *02, Evan A. Wyly '84, Mr. and Mrs. Paul M. Wythes '55 and William T. Young Jr. '70

GROUPS/ORGANIZATIONS

The Civitas Foundation
The Leon Lowenstein Foundation
Princeton Class of 1950
The Starr Foundation
Fayez Sarofim Co.
Pyewacket Foundation



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NONDISCRIMINATION STATEMENT

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 basis of 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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Kelsey Richardson, Jessica HB Roethel, Charles Saltzman

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In the Nation's Service and in the Service of All Nations