# Bendheim Annual Report 2016

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MESSAGE FROM THE DIRECTOR

The academic year 2015-16 was full of great academic achievements but also confronted us with new challenges. Yuliy Sannikov won the John Bates Clark Medal, which is awarded by the American Economic Association to the best economist under 40. This was the third time (also 1987 and 1995) that a young Princeton economist has received this award and the first time an economist has received both the Clark Medal and the Fischer Black Prize from the American Finance Association. Yuliy is not only a great researcher who has pushed the frontier of the profession but he also has impacted many students. He taught the core corporate finance class with a large enrollment of students who want to receive the BCF finance certificate or simply attend one of the core finance classes.

Many other BCF faculty members also received awards and honors. These faculty successes attracted the attention of competing universities. Sadly, Yuliy Sannikov will leave us for Stanford, Harrison Hong for Columbia University and Valentin Haddad for UCLA. In addition, Hyun Shin decided to resign from Princeton and will remain Economic Adviser and Head of Research at the Bank for International Settlements in Basel, Switzerland. On the positive side, we are happy to report that David Schönherr will be joining the Bendheim Center for Finance as Assistant Professor. In AY 2016-2017 David finished his PhD at the London Business School and specializes in empirical corporate finance.

Another highlight of the past year was Ben Bernanke’s Princeton Lecture in Finance, in which he outlined the main lessons of the financial crisis and important parallels in history. In addition, we also launched the “Trinity of Stability Initiative” bringing together researchers from several central banks to share new insights about the interaction of financial stability, price stability, and fiscal debt sustainability. The “China Initiative,” headed by Wei Xiong, organized a popular conference that contrasted the US and Chinese stock market design. In addition, the Center remains engaged in several other research-related initiatives – listed at the end of this report -- in an effort to broaden our visibility, as well as continue to provide our faculty and students with the best possible research opportunities.

As always we are grateful for all your support throughout the academic year.

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

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. Professor Aguiar is currently co-editor of the American Economic Review. 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.

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 17 books, the latest being “After the Music Stopped”, lauded by the New York Times as one of the five best nonfiction books of 2013. 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 K. 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 a member of several advisory groups for 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 co-risk measure, the volatility paradox, and the I Theory of Money.

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.

PATRICK CHERIDITO is an associate professor of operations research and financial engineering. His research interests lie in probability, optimization and their applications to finance and insurance. He has worked on stochastic models for interest rates, dynamically consistent methods to measure risk, systemic risk, risk allocation problems, backward stochastic differential equations, variable annuities with embedded options and robust methods in mathematical finance.

MARYAM FARBOODI joined the Bendheim 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, statistical learning, 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, Guys Medal in Silver of Royal Statistical Society in 2014. He was the president of the Institute of Mathematical Statistics, is an elected fellow of the American Association for the Advancement of Science, 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.
MIKHAIL GOLOSOV is a professor of economics at Princeton University. Dr. Golosov has also held positions at Yale University and the Massachusetts Institute of Technology. He is the associate editor of Econometrica and Journal of Public Economics. Dr. Golosov was awarded the Sloan Research Fellowship in 2008 as well as the National Science Foundation CAREER Grant. His research covers topics in macroeconomics, public finance and political economy.

VALENTIN HADDAD joined the faculty at the Department of Economics at Princeton University in 2012 and teaches courses in finance for the undergraduate and the Ph.D. programs. He received his B.S. in applied mathematics and economics from École Polytechnique in 2008 and his Ph.D. in finance and economics from the University of Chicago in 2012. His research covers topics such as: the role of concentrated ownership for aggregate asset pricing dynamics; the impact of macroeconomic conditions for buyout activity.

HARRISON HONG is the John Scully '66 Professor of Economics and Finance and the Undergraduate Representative for the Bendheim Center for Finance. Before joining Princeton in 2002, he was on the faculty of the Graduate School of Business at Stanford University. He received his B.A. in economics and statistics with highest distinction from the University of California–Berkeley in 1992 and his Ph.D. in economics from the Massachusetts Institute of Technology in 1997. His research has covered such topics as: behavioral finance and stock market efficiency; asset pricing and trading under market imperfections; social interaction and investor behavior; security analyst incentives and forecast biases; organizational form and mutual fund performance; and destabilizing arbitrage, socially responsible investing, and commodities pricing. His work has received numerous awards and grants. He is on the editorial boards of the Journal of Finance and the Journal of International Central Banking. He was awarded the 2009 Fischer Black Prize by the American Finance Association, given bi-annually to the best financial economist under the age of 40.

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.

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, and “Credit Cycles,” with John Moore in 1997. 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.
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 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. His recent work focuses on Bayesian inference, low frequency variability, and the development of econometric tools that are robust to correlations of largely unknown form. He is the Associate Chair of the Department of Economics and a member of the Association of Econometrics.

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 family offices; developing optimal hedge fund strategies; combining financial optimization and stochastic models; stochastic optimization algorithms; and decentralized risk management. He was a finalist for the Edelman Prize for the Towers Perrin-Tillinghast investment system in 1999. He received his Ph.D. in management from the University of California–Los Angeles.

YULIY SANNIKOV is a professor of economics whose research interests include economic theory, corporate finance, macroeconomics with financial frictions and market microstructure. Yuliy earned his B.A. from Princeton and a Ph.D. from Stanford GSB. Yuliy was a Sloan Fellow in 2009-2011, and he was also invited to give the annual Schultz lecture at the University of Chicago Economics Department in 2008. He participated in the Review of Economic Studies tour as one of the top six Economics Ph.D. graduates in the U.S. in 2004, and he won three gold medals at International Mathematical Olympiads in 1996, 1995, and 1994. In 2015, Yuliy was selected by the American Finance Association to receive the 2015 Fischer Black Prize given once every two years to a top financial economist under 40. Besides Princeton, Yuliy Sannikov has taught at MIT, NYU, Harvard, Stanford and UC Berkeley.
HYUN SONG SHIN is the Hughes-Rogers Professor of Economics at Princeton University. His recent research has covered international finance, especially on global liquidity and its consequences. His broader research interests are in financial economics, especially in issues related to disclosures, financial regulation, crises, and financial stability, issues on which he has advised central banks and policy institutions. He is a fellow of the Econometric Society and the British Academy. He received his Ph.D. from the University of Oxford in 1988. He was on leave during the academic year 2009–10, serving as an adviser to President Lee Myung-bak of South Korea. He is currently on leave and is an Economic Advisory and Head of Research at the Bank for International Settlements in Basel, Switzerland.

CHRISTOPHER SIMS is the John 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 also sits as the Director of Graduate Studies for the center’s MFIN program. 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.

WEI XIONG is the Hugh Leander and Mary Trumbull Adams Professor in Finance and professor of economics in the Department of Economics. His research interests center on capital market imperfections. His earlier work covers speculative bubbles induced by heterogeneous beliefs and short-sales constraints, effects of stock price bubbles on managerial incentives and firm investment, asset market contagion, limited investor attention, non-standard investor preferences, asset pricing with heterogeneous beliefs and rollover risk and dynamic coordination problems between creditors. He is currently focusing on financialization of commodities markets, belief distortions in the recent financial crisis, and China’s financial system. He received his Ph.D. from Duke University in 2001. He is a research associate of the National Bureau of Economic Research and had been the finance editor of Management Science in 2009-2011.

MOTOHIRO YOGO is a professor of economics at Princeton University and a research associate of the NBER. Prior to joining Princeton in 2015, he was a research economist at the Federal Reserve Bank of Minneapolis and taught finance at 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 risk and regulation of the insurance industry. He has published in various economics and finance journals including American Economic Review, Econometrica, Journal of Political Economy, Journal of Finance, Journal of Financial Economics, and Review of Financial Studies. 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

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.

KENNETH STEIGLITZ is the Eugene Higgins Professor of Computer Science, 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). His current research interests are in agent-based modeling of markets, auctions, and computing using soliton collisions. Kenneth Steiglitz has transferred to emeritus status and continues to work on emergent behavior in agent-based macroeconomic models.
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 2015-2016, the Bendheim Center for Finance welcomed the following visiting faculty:

DONG BOEM CHOI is an Economist in the Financial Intermediation Function at the Federal Reserve Bank of New York. His research interests are in financial intermediation and macroeconomics, topics including liquidity, financial stability, financial intermediary and monetary policy transmission. He received his Ph.D. in Economics from Princeton University in 2012, and B.A in Economics from Seoul National University in 2005.

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).

STEPHAN LUCK 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, and he 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 is a research fellow of the Max Planck Institute for Research on Collective Goods.

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.

MIN WEI is a deputy associate director in the Monetary Affairs division of the Federal Reserve Board of Governors. Wei graduated from Fudan University in 1996 and received her PhD in finance from Columbia Business School in 2004. While at the Federal Reserve Board, she was involved in a broad range of market monitoring, policy advisory, and research activities related to fixed income markets. In 2014, she became a visiting lecturer at Princeton.
STAFF

WENDELL COLLINS is the director of corporate relations for the Bendheim Center for Finance. Her responsibilities include i) 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, ii) advising undergraduates and Master in Finance candidates on career issues, iii) facilitating the recruiting activities of corporate affiliates, and iv) 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.

- Director **Markus Brunnermeier** and Faculty Member Harold James react to Brexit.
- What Does the Vote for “Brexit” Mean for Britain and the EU?
- BCF Faculty **Yuliy Sannikov** wins Clark Medal.
- BCF Faculty **Harold James** appointed as the new International Monetary Fund Historian.
- Graduate Students Share their Experiences at Princeton.
- UCF student **Tyler Rudolph** named inaugural Schwarzman Scholars.
- **Alan Blinder** answered questions about the Fed’s decision to raise interest rates, what it will mean throughout the economy and the legacy of the record-low rates.
- **Wei Xiong** to be a co-editor of the Journal of Finance.
- **Markus Brunnermeier** Baffi Lecture at the Bank of Italy on Financial Dominance.
- **Wei Xiong** was recently featured for his research, “What’s the significance of the IMF elevating China’s currency?”.
- **Olivier Darmouni**, PhD Job market candidate, has been named a finalist for the BlackRock Applied Research Award.
- **Markus Brunnermeier** recently quoted in BDLive, The knotty madness of regulatory exuberance.
- Former Chairmen of the Federal Reserve Bank, **Ben Bernanke** visits The Bendheim Center for Finance.
- BCF Congratulates Nobel Prize Winner **Angus Deaton**.
- **Markus Brunnermeier** recently quoted in 4-Traders, *The New Bond Market: How One Manager Doubles Down on Danger*.
- Advisory Council Member, **Bill Janeway** establishes a fund to deepen connections between study of finance and other fields of economics.
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 17th year, the Undergraduate Certificate in Finance (UCF) continues to do extremely well. We currently have 100 enrolled students in the Class of 2017 and will enroll 91 juniors from the Class of 2018. This will bring our total number of undergraduate students in the program (juniors and seniors) to 191 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 2016
Total number of certificates awarded to the class of 2016:
94 (to 28 women, or 30 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

The Behavioral Finance track allows students to study how human psychology, including many documented behavioral biases, influence financial decision-making and ultimately asset prices. The Finance and Public Policy track allows students study the interaction between finance and policy, including public finance, response to financial crisis, central banking, and securities law.

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 94 UCF seniors, 13 received departmental prizes (two receiving two prizes); 12 UCF students were elected to Phi Beta Kappa Society; 26 UCF students were elected to membership in Society of Sigma Xi; 11 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 43 UCF students received academic honors (17 cum laude, 8 magna cum laude, and 18 summa cum laude).

The Bendheim Center for Finance Birch Prize was awarded to Kevin Tang, ECO Major.

The Kathleen Traynor Prize was awarded to Sinan Zhang, ORF Major.
MASTER IN FINANCE
The distinctive feature of our Master in Finance program is its strong emphasis on financial economics in addition 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 2016 graduates being placed in finance industry jobs and 100 percent internship placement.

CAREERS UPON GRADUATION:

SUMMER INTERNSHIPS FOR FIRST YEAR STUDENTS:
Alphadyne Asset Management, BNPP Sales & Trading, Citi Sales & Trading, GIC, JPMorgan, Kensho, Massar Capital Management, MS Quant Finance, Nomura OMERS, Penso Advisors, PIMCO, Stevens Capital Management.
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 2016 and accepted a mixture of academic and industry positions (the institution is in parenthesis):

- Olivier Darmouni (Columbia Business School)
- John (Jeong Ho) Kim (Emory University)
- Jason Ravit (Citigroup)
SEMINARS, CONFERENCES
AND CENTER EVENTS

2016 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 2015 Princeton Lectures in Finance were given by Ben Bernanke. The topic of the series was “A Historical Perspective on the Financial Crisis”.

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. 2015-2016 Speakers included:

- Viswanathan, S “VIsh”, Duke University, “Risk Management in Financial Institutions”
- Shai Bernstein, Stanford University, “Asset Allocation in Bankruptcy”
- Douglas Diamond, Chicago Booth, “Pledgeability, Industry Liquidity, and Financing Cycles”
- Stavros Panageas, Chicago Booth, “What to Expect when Everyone is Expecting: Self-fulfilling Expectations and Asset-pricing Puzzles” (with Nicolae Garleanu)
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. 2015-2016 speakers included:

- Weikai Li, “The Information Content of Insider Sudden Silence”
- Zongbo Huang, “The Impact of Dual Bank Liquidity Risk”
- Yu Zhang, “The Savings Origin of a Housing Boom”
• Matthieu Gomez, “Portfolio Returns Across the Wealth Distribution”

• Ioannis Branikas, “Stock Market Participation and Expectational Error in Background Risk” (with Constantinos Kalfarantzos)

• Xiaoyang Sean Dong, “Institutional Demand Based VIX Futures Liquidity Premium”

• Evan Soltas, “Spanish Housing Boom and Bust”

• Alejandro Van der Ghote, “Monetary Policy in an Economy with Nominal Rigidities and Financing Constraints”

• Koby Yann, “The Low/Negative Interest Rate Fallacy” (with Markus Brunnermeier)

• Dejanir Henrique Silva, (MIT) “The Risk Channel of Unconventional Monetary Policy” (Job Market Paper)

• Matthieu Gomez, “Wealth Distribution and Asset Prices”

• Yu Zhang, “The Savings Origin of a Housing Boom”

• Zongbo Huang, “Runs on Bank Lines of Credit”

• Emil Verner; Falk Mazelis, “Household Balance Sheets and the Real Economy: Evidence from Liability Dollarization in an Emerging Market”

• Sean Dong, “Price Impact of ETP Demand on Underlying”

• Simas Kucinskas, “Dividends in the Time of Crisis”

MFIN WEEKLY LUNCH AND LEARN SPEAKER SERIES
A number of guest speakers from a variety of areas of finance visited the Bendheim Center in 2015-2016 to address Master in Finance, undergraduate, and PhD students.

• Dr. Brad Betts, BlackRock Scientific Active Equity
• Nicole Barberis, Bloomberg Global Data
• Mary Anne Citrino, ‘81, BlackStone Group & Wake Smith, New State Capital Partners -- Private Equity Workshop Series
• Visiting Lecturer JC de Swaan
• Fall Alumni Talks: Class of ‘15: Swapnil Sharma & Arthur Rodier, BNP Paribas; Alex Wu, Valkyrie Trading; Santiago Barona ‘14, Bloomberg
• John Cunniff ‘86, TIAA-CREF
• Mike Thaman ‘86, CEO, Owens Corning
• Adam Bryant, New York Times Reporter, Corner Office
SPECIAL LECTURES AND CENTER EVENTS

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

- Program in Stock Trading: China vs US Comparison
- Princeton Quant Trading Conference
- Europe and the Challenges of Brexit
- 9th Oxford-Princeton Workshop
- Markus Brunnermeier and Harold James discuss “The Euro Crisis as a Battle of Ideas” written with Jean-Pierre Landau
- Trinity of Stability Workshop
- Princeton-Cambridge INET Conference
- 2015 Princeton Initiative Conference
- Third Symposium on China’s Emerging Financial Markets
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 - scholars like Ben Bernanke come to mind - the Princeton Initiative Camp brings together top 2nd year Ph.D. students who wish to write a Ph.D. thesis at the intersection between macroeconomics 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.

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 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. 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.

INET RESEARCH GRANT
The Princeton - INET Research agreement supports five different areas of research at the intersection between economic policy and finance. The five areas are representative of the interdisciplinary research which will be conducted in finance at Princeton, and represent a combination of theoretical and empirical research:

- Merging Macro and Finance (PIs: Markus K. Brunnermeier and Yuliy Sannikov)
- Macropoultential and Monetary Policy: The Risk Taking and the Portfolio Rebalancing Channel (PIs: Hyun Song Shin and Motohiro Yogo)
- Robust Contracting and Strategic Analysis (PIs: Stephen Morris and Sylvain Chassang)
- High Frequency Trading and Its Implications (PI: Yacine Aït-Sahalia)
- The Financialization of Commodity Markets (PI: Wei Xiong)
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 of $5.6 million given by William H. Janeway.

TRINITY OF STABILITY NETWORK INITIATIVE

Network for the Study of the “Macroeconomic Policy Trinity”–Monetary, Financial and Fiscal Stability is the development of a research network to study 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.
2015-2016 ADVISORY COUNCIL

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Hamid Biglari, Former Vice Chairman, Citicorp

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Lynn Bendheim Thoman, Co-chair, 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.

2015-2016 Affiliates

- Altamont Capital Partners
- Bank of America Merrill Lynch
- Barclays
- Bank of New York Mellon
- Bloomberg
- Citadel
- Credit Suisse
- Deutsche Bank
- Edelman & Associates
- Sandpointe LLC
- Goldman Sachs
- Stevens Capital Management LP

Benefits of Corporate Affiliation

- Annual Report of the Bendheim Center for Finance
- 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 research authored by the center’s affiliated faculty within the academic year
- 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 Bendheim Center for Finance brings together leading experts in teaching and scholarship in financial economics. But to realize this vision, significant support beyond the generous Bendheim gift is needed for faculty, curriculum development, and facilities. 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
$250,000

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
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INDIVIDUAL SPONSORS

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