



# Mortgage Market Research Conference

**May 10–11, 2022**

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# Mortgage Market Research Conference



Since mortgages are the largest component of household debt, the mortgage market influences many aspects of the economy, including homeownership, wealth accumulation, inequality, real estate prices, household balance sheets and consumption, the structure of the financial sector, financial cycles and systemic risk, and the transmission of monetary policy and macroeconomic shocks. The mortgage market has also experienced many changes in recent years, including tighter regulation, the growth of nonbank and fintech lending, and mortgage forbearance and a refinancing wave induced by the pandemic.

To explore today's landscape, the Mortgage Market Research Conference is a forum for the presentation and discussion of new academic research on topics related to mortgages and the mortgage market. The conference includes two panel discussions that examine current issues and trends featuring policymakers, practitioners, and researchers. The first panel will discuss **The Mortgage Market in the Wake of COVID-19**, followed by **New Methods and Data for Mortgage Research and Analytics**.

This hybrid conference, with in-person participation at the Bank as well as virtual participation via Zoom, is jointly organized by the Philadelphia Fed Consumer Finance Institute, the Research Department, and the Supervision, Regulation, and Credit Department.

## Conference Organizers

All organizers are from the Federal Reserve Bank of Philadelphia:

- Xudong (Sean) An
- Ronel Elul
- Lauren Lambie-Hanson
- James Vickery

## Program Committee

Neil Bhutta	Board of Governors of the Federal Reserve System
Lynn Fisher	Formerly with the Federal Housing Finance Agency
Andreas Fuster	École Polytechnique Fédérale de Lausanne
Stuart Gabriel	University of California, Los Angeles
Adam Guren	Boston University
Sasha Indarte	University of Pennsylvania
Ben Keys	University of Pennsylvania
Wenli Li	Federal Reserve Bank of Philadelphia
Christopher Palmer	Massachusetts Institute of Technology
Tomas Piskorski	Columbia University
Stijn Van Nieuwerburgh	Columbia University

# Mortgage Market Research Conference

FEDERAL RESERVE BANK PHILADELPHIA



## Agenda

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### Tuesday, May 10: Mortgage Market Policies and Practices

2:00 p.m.–2:15 p.m.

#### Opening Remarks

Larry Cordell, Federal Reserve Bank of Philadelphia  
Introduced by Sean An, Federal Reserve Bank of Philadelphia

2:15 p.m.–3:15 p.m.

#### Panel 1: The Mortgage Market in the Wake of COVID-19: What Have We Learned and What Lies Ahead?

**Moderator:** Ronel Elul, Federal Reserve Bank of Philadelphia

**Panelists:**

Michael Fratantoni, Mortgage Bankers Association  
Karan Kaul, Urban Institute  
Edward J. Pinto, American Enterprise Institute  
Susan Wachter, The Wharton School of the University of Pennsylvania

3:15 p.m.–3:30 p.m.

#### Break

3:30 p.m.–4:30 p.m.

#### Panel 2: New Methods and Data for Mortgage Research and Analytics

**Moderator:** Lauren Lambie-Hanson, Federal Reserve Bank of Philadelphia

**Panelists:**

Robert B. Avery, Federal Housing Finance Agency  
Neil Bhutta, Board of Governors of the Federal Reserve System  
Andrew Davidson, Andrew Davidson & Co.  
Kay Giesecke, Stanford University

4:30 p.m.–4:35 p.m.

#### Closing Remarks

James Vickery, Federal Reserve Bank of Philadelphia

## Wednesday, May 11: Mortgage Market Research

- 9:10 a.m.–9:15 a.m. **Opening Remarks**  
Robert M. Hunt, Federal Reserve Bank of Philadelphia
- 9:15 a.m.–10:45 a.m. **Session 1: Climate Change and the Mortgage Market**  
“Who Bears Flood Risk? Evidence from Mortgage Markets in Florida”  
Parinitha Sastry, MIT Sloan School of Management  
**Discussant:** Amine Ouazad, HEC Montreal  
“Underwater: The Effect of Federal Policies on Households’ Exposure to Climate Change Risk”  
Ahyan Panjwani, Yale University  
**Discussant:** Benjamin Keys, The Wharton School of the University of Pennsylvania
- 10:45 a.m.–11:00 a.m. **Break**
- 11:00 a.m.–12:30 p.m. **Session 2: Mortgage Contract Choice and Funding Markets**  
“The Demand for Long-Term Mortgage Contracts and the Role of Collateral”  
Lu Liu, Imperial College London  
**Discussant:** Alexei Tchisty, Cornell University  
“Shadow Bank and Fintech Mortgage Securitization”  
Yu An, Johns Hopkins University  
Lei Li, Board of Governors of the Federal Reserve System  
Zhaogang Song (Presenter), Johns Hopkins Carey Business School  
**Discussant:** Nancy Wallace, University of California, Berkeley Haas School of Business
- 12:30 p.m.–1:15 p.m. **Lunch**
- 1:15 p.m.–2:45 p.m. **Session 3: Access to Mortgage Credit**  
“Political Voice and (Mortgage) Market Participation: Evidence from Minority Disenfranchisement”  
Seongjin Park, University of Chicago Booth School of Business  
Arkodipta Sarkar (Presenter), Hong Kong University of Science and Technology  
Nishant Vats, University of Chicago Booth School of Business  
**Discussant:** Stephen L. Ross, University of Connecticut  
“Collateral Value Uncertainty and Mortgage Credit Provision”  
Erica Jiang (Presenter), University of Southern California, Marshall School of Business  
Anthony Zhang, University of Chicago Booth School of Business  
**Discussant:** Anthony DeFusco, Northwestern University
- 2:45 p.m.–3:00 p.m. **Break**
- 3:00 p.m.–4:30 p.m. **Session 4: Macroeconomic and Labor Market Implications**  
“Housing Markets and the Heterogeneous Effects of Monetary Policy Across the Euro Area”  
Stefano Pica (Presenter), Boston University  
**Discussant:** Daniel L. Greenwald, MIT Sloan School of Management  
“Household Leverage and Labor Market Outcomes: Evidence from a Macroprudential Mortgage Restriction”  
Gazi Kabas, University of Zurich and Swiss Finance Institute  
Kasper Roszbach (Presenter), Norges Bank and University of Groningen  
**Discussant:** Asaf Bernstein, University of Colorado Boulder
- 4:30 p.m.–4:35 p.m. **Closing Remarks**

## Biographies

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### Robert B. Avery

Project Director, National Mortgage Database

*Federal Housing Finance Agency*

Robert B. Avery is the project director of the National Mortgage Database at the Federal Housing Finance Agency (FHFA). He leads an interagency effort at the FHFA, which developed and maintains the most comprehensive loan-level residential mortgage database in the U.S. to better serve supervisory and policy concerns. The database is constructed by merging information from the credit bureaus with administrative data for all government-backed mortgage programs. The project team has also fielded a quarterly survey of new mortgagees each quarter since 2013, which is released annually as a public-use database. Avery joined the FHFA after retiring from the Board of Governors of the Federal Reserve System in fall 2012. Previously, he was a professor at Cornell University and an assistant professor at Carnegie Mellon University. Avery has a Ph.D. in economics from the University of Wisconsin–Madison and a B.A. from the University of Pennsylvania.

### Asaf Bernstein

Assistant Professor of Finance

*University of Colorado Boulder's Leeds School of Business, and*

Faculty Research Fellow

*National Bureau of Economic Research*

Asaf Bernstein is an assistant professor of finance at the University of Colorado Boulder's Leeds School of Business and a faculty research fellow at the National Bureau of Economic Research. For 2021–2022, he is serving as a senior advisor on climate issues for the Securities and Exchange Commission. His interests focus on the intersection of policy and finance and include economic history, household finance, real estate, corporate finance, and asset pricing. His research has examined the effect of financial regulations and institutions, including the Federal Reserve, rating agencies, centralized clearing, and mortgage assistance programs. His work, which has been published in the *Journal of Political Economy*, *The Journal of Finance*, and the *Journal of Financial Economics*, has received numerous awards, including the 2019 AQR Insight Distinguished Paper Award. Based on his graduate work, he received the 2016 AQR Top Finance Graduate Award by Copenhagen Business School, which recognizes the six most promising finance Ph.D. graduates in the world. Bernstein has a Ph.D. in financial economics from the Massachusetts Institute of Technology and a B.S. in economics and mathematics from Harvey Mudd College.

## Biographies

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### Neil Bhutta

Economist

*Board of Governors of the Federal Reserve System*

Neil Bhutta is an economist at the Board of Governors of the Federal Reserve System in Washington, D.C., and is currently the chief of the Real Estate Finance Section in the Division of Research and Statistics. His group is responsible for tracking and forecasting the prices of residential and commercial real estate, monitoring mortgage credit conditions, and assessing threats to financial stability from housing and mortgage markets. A primary focus of his research has been on the mortgage market, including research on negative equity and mortgage default, the effect of interest rates on home equity extraction, and how the Community Reinvestment Act has impacted mortgage credit availability. He has published papers in *The American Economic Review*, *The Journal of Finance*, and *The Review of Financial Studies*, among others. He is now studying racial discrimination in mortgage lending and mortgage rate dispersion across households. Bhutta has a Ph.D. in economics from the Massachusetts Institute of Technology.

### Andrew Davidson

President and Founder

*Andrew Davidson & Co., Inc.*

Andrew Davidson, president and founder of Andrew Davidson & Co., Inc., is a financial innovator and leader in the development of financial research and analytics. He has worked extensively on mortgage-backed securities product development, valuation, and hedging. His firm, based in New York, specializes in applying analytical tools to investment management and created VECTORS® Analytics, proprietary tools including the LoanDynamics Model for credit-sensitive mortgage securities, prepayment and option-adjusted spread models for fixed-rate mortgages, adjustable-rate mortgages, collateralized mortgage obligations, and asset-backed securities.

Davidson was instrumental in creating the Freddie Mac and Fannie Mae risk-sharing transactions — STACR and CAS — which allow Freddie Mac and Fannie Mae to attract private capital to bear credit risk. He is also active in GSE reform, has testified before the Senate Banking Committee on multiple occasions, and helped establish the Structured Finance Industry Group. Previously, Davidson was a financial analyst in Exxon's Treasurer's Department and worked at Merrill Lynch, where he was a managing director producing research reports and analytical tools to develop trading and risk management systems for the mortgage desk. He has coauthored several books including *Mortgage Valuation Models: Embedded Options, Risk and Uncertainty*; *Securitization: Structuring and Investment Analysis*; and *Mortgage-Backed Securities: Investment Analysis and Valuation Techniques*. Davidson has an M.B.A. in finance from the University of Chicago and a B.A. in mathematics and physics from Harvard University.

## Biographies

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### Anthony DeFusco

Associate Professor of Finance

*Northwestern University–Kellogg School of Management, and  
Faculty Research Fellow*

*National Bureau of Economic Research*

Anthony DeFusco is an associate professor of finance at the Kellogg School of Management at Northwestern University and a faculty research fellow at the National Bureau of Economic Research. He is an applied microeconomist who studies empirical questions in household finance with an emphasis on household behaviors and public policies affecting the housing and residential mortgage markets. DeFusco's work is regularly published in leading academic journals in economics and finance, including *The Review of Economic Studies* and *The Journal of Finance*. He was the first-prize recipient of the 2016 American Real Estate and Urban Economics Association Dissertation Award; in 2018, he received the Brattle Group Award for the best paper in Corporate Finance published by *The Journal of Finance*. He is also an associate editor at the *Journal of Financial Economics* and is on the editorial board of the *Journal of Housing Economics*. DeFusco has a Ph.D. in applied economics from the Wharton School of the University of Pennsylvania and a B.A. in economics and mathematics from Temple University.

### Michael Fratantoni

Chief Economist, Senior Vice President

Research and Industry Technology

*Mortgage Bankers Association*

Michael Fratantoni is the Mortgage Bankers Association (MBA)'s chief economist and senior vice president of Research and Industry Technology. In this role, he is responsible for overseeing MBA's industry surveys and benchmarking studies, economic and mortgage originations forecasts, industry technology efforts, and policy development research for both single-family and commercial/multifamily markets. He is also a member of the board of directors of the Mortgage Industry Standards Maintenance Organization and the Membership Committee of MERS. He was an adjunct professor at the University of Washington, Johns Hopkins University, George Washington University, and Georgetown University. Before joining MBA, Fratantoni worked in risk management and held senior economist roles at Washington Mutual and Fannie Mae. He has a Ph.D. in economics from Johns Hopkins University and a B.A. in economics from the College of William and Mary.

## Biographies

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### Kay Giesecke

Professor of Management Science and Engineering

*Stanford University*

Kay Giesecke is professor of management science and engineering at Stanford University. He is the director of the Advanced Financial Technologies Laboratory and director of the Mathematical and Computational Finance Program. He is also a member of the Institute for Computational and Mathematical Engineering, is on the Governing Board and Scientific Advisory Board of the Consortium for Data Analytics in Risk, and is a member of the Council of the Bachelier Finance Society. In addition, he is the founder, executive chair, and chief scientist of Infima Technologies, a capital markets technology company.

As a financial technologist and engineer, Giesecke develops stochastic financial models, designs statistical methods for analyzing financial data, examines simulation and other numerical algorithms for solving the associated computational problems, and performs empirical analyses. Much of his work is driven by applications in credit risk management, investment management, and most recently, housing finance. Giesecke has published articles in many journals and has coauthored five U.S. patents. He is also an editor of *Management Science* and an associate editor at *Mathematical Finance*, *Operations Research*, *SIAM Journal on Financial Mathematics*, *Finance and Stochastics*, *Mathematics and Financial Economics*, *Journal of Credit Risk*, and others. He has won numerous awards, including the JP Morgan AI Faculty Research Award, the SIAM Financial Mathematics and Engineering Conference Paper Prize, the Fama/DFA Prize for the Best Asset Pricing Paper in the *Journal of Financial Economics*. Giesecke has a Ph.D. in economics from Humboldt University Berlin.

### Daniel L. Greenwald

Judy C. Lewent and Mark Shapiro Career Development Professor of Finance

*MIT Sloan School of Management*

Daniel L. Greenwald is the Judy C. Lewent and Mark Shapiro Career Development Professor of Finance at the MIT Sloan School of Management. His research focuses on the connections between financial markets and the macroeconomy. His recent work studies how institutional features of mortgage markets can amplify the effects of interest rate movements on debt, house prices, and economic activity, in addition to helping explain the recent boom and bust in housing markets. He has also investigated how inequality between workers and capital owners can affect the stock market, finding that shocks that redistribute between these factors of production are a central driver of long-horizon movements in stock prices. Greenwald has a Ph.D. in economics from New York University and an A.B. in economics from Harvard College.

## Biographies

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### Erica Jiang

Assistant Professor

Finance and Business Economics

*USC Marshall School of Business*

Erica Jiang is an assistant professor in finance and business economics at the University of Southern California Marshall School of Business. Her research focuses on financial intermediation, household finance, and financial regulation. Highlights of her recent work include the financing and liquidity issues of nonbank lenders in the U.S. residential mortgage market. Jiang has a Ph.D. in finance from the University of Texas–Austin.

### Karan Kaul

Principal Research Associate

Housing Finance Policy Center

*Urban Institute*

Karan Kaul is a principal research associate in the Housing Finance Policy Center at the Urban Institute. He publishes innovative, data-driven research on complex, high-impact policy issues to improve the U.S. mortgage finance system. With 13 years of experience in mortgage capital markets, Kaul has published more than 100 research articles on topics that include the housing supply crisis, mortgage servicing reforms, efficient access to credit, benefits of alternative credit scoring, industry safety and soundness, and institutional single-family rentals. He has advocated for efficient industry practices, regulation, and legislation to make the mortgage market work better for all Americans. At the Urban Institute, Kaul has led the Mortgage Servicing Collaborative and the Mortgage Markets COVID-19 Collaborative. He speaks frequently with members of the media and presents at housing conferences. Before joining the Urban Institute, he spent five years at Freddie Mac as a senior strategist analyzing the business impact of postcrisis regulatory reforms. Kaul has a master's degree in business administration and a bachelor's degree in electrical engineering from the University of Maryland, College Park.

## Biographies

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### Benjamin Keys

Rowan Family Foundation Professor of Real Estate and Finance

*The Wharton School of the University of Pennsylvania*

Benjamin Keys is the Rowan Family Foundation Professor of Real Estate and Finance at the Wharton School of the University of Pennsylvania. He studies issues related to household finance, mortgage finance, real estate, applied econometrics, labor economics, and urban economics. Before joining the faculty of the Wharton School's Department of Real Estate, Keys was an assistant professor at the Harris School of Public Policy and codirector of the Kreisman Initiative on Housing Law and Policy at the University of Chicago. Previously, he worked as a staff economist at the Board of Governors of the Federal Reserve System in the Division of Research and Statistics.

Keys is an associate editor at the *Journal of Financial Economics* and is on the editorial boards of *Real Estate Economics* and the *Journal of Housing Economics*. Keys is also a faculty research fellow at the National Bureau of Economic Research (NBER), a faculty fellow at the Center for Financial Security at the University of Wisconsin–Madison, and a member of the Academic Research Council of the Housing Finance Policy Center at the Urban Institute.

His research has been published in the *Quarterly Journal of Economics*, *The American Economic Review*, *Journal of Financial Economics*, and *The Review of Financial Studies*, among others; his work has also been profiled in the *Economist*, *Wall Street Journal*, *New York Times*, and *Washington Post*. Previously, he worked at the Brookings Institution as a senior research assistant. Keys has a Ph.D. and M.A. in economics from the University of Michigan and a B.A. in economics and political science from Swarthmore College.

### Lu Liu

Ph.D. Candidate in Finance

*Imperial College Business School*

Lu Liu is a Ph.D. candidate in finance at the Imperial College Business School. Her research interests focus on household finance, real estate, financial intermediation, and behavioral economics. In her paper, "The Demand for Long-Term Mortgage Contracts and the Role of Collateral," she examines the insurance value of long-term mortgage contracts against changes in aggregate interest rates and credit risk.

## Biographies

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### Amine Ouazad

Associate Professor of Economics

*HEC Montreal*

Amine Ouazad is associate professor of economics at HEC Montreal, where he is the endowed research professor in Urban and Real Estate Economics. His research interests span urban economics, real estate, finance, climate risk, and social justice. He is also a senior fellow at the 21st Century Cities Initiative at Johns Hopkins University and a member of the First Street Foundation Lab. Ouazad was DLA Piper Distinguished Visiting Professor of Economics at Johns Hopkins University in April 2020 and a fellow of the Royal Society of Arts. He has a Ph.D. in economics from the School for Advanced Studies in the Social Sciences, a master's degree in statistics and economics from ENSAE Paris, and a diplôme d'ingénieur from École Polytechnique.

### Ahyan Panjwani

Ph.D. Candidate in Economics

*Yale University*

Ahyan Panjwani is a Ph.D. candidate in economics at Yale University. His research interests are in macrofinance and climate change; his current work focuses on the effects of climate change on various asset classes, households, and communities. His recent paper, "Underwater: The Effect of Federal Policies on Households' Exposure to Climate Change Risk," shows how reversing existing government policies can reduce the number of low- and moderate-income homeowners exposed to flood risk. He also contributes to ESG for Investors, a collaborative platform of investment tools that promotes sustainable finance designed by Arvella Investments.

### Stefano Pica

Ph.D. Candidate in Economics

*Boston University*

Stefano Pica is a Ph.D. candidate in the Boston University Economics Department. His research focuses on macroeconomics, specifically in monetary policy, household finance, and real estate. In September 2022, he will be joining DG Economics, Statistics, and Research at the Bank of Italy as a research fellow.

## Biographies

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### Edward J. Pinto

Senior Fellow and Director of the AEI Housing Center

*American Enterprise Institute*

Edward J. Pinto is a senior fellow and director of the AEI Housing Center at the American Enterprise Institute (AEI). He is currently researching how to increase the entry-level housing supply for first-time buyers and renters who earn hourly wages, as well as examining the current house price boom that began in 2012. This continues his previous work on the role of federal housing policy in the 2008 mortgage and financial crisis. Pinto created Wealth Building Home Mortgage with AEI Resident Scholar Stephen Oliner, which is a new approach to home finance designed to provide a more effective way of building wealth than available under existing policies. This mortgage allows home buyers to maintain a buying power similar to a 30-year loan for low-income, minority, and first-time buyers. Before joining AEI, Pinto was an executive vice president and chief credit officer at Fannie Mae until the late 1980s. He is frequently interviewed on radio and television and often testifies before Congress. His research has been published in trade publications and the popular press, including *American Banker*, *The Hill*, *RealClearPolitics*, and the *Wall Street Journal*. As the director of the AEI Housing Center, he also oversees the monthly publication of the AEI Housing Market Indicators. Pinto has a J.D. from Indiana University Maurer School of Law and a B.A. from the University of Illinois at Urbana-Champaign.

### Stephen L. Ross

Professor of Economics

*University of Connecticut*

Stephen L. Ross is a professor of economics at the University of Connecticut. His research has focused on housing and mortgage lending discrimination, residential and school segregation, neighborhood and peer effects, and state and local governments. He has published his research in the *Journal of Political Economy*, *The Review of Economics and Statistics*, *The Economic Journal*, the *American Economic Journal: Economic Policy*, and the *Journal of Urban Economics*; he also published the *Color of Credit* with MIT Press in 2002. Ross has consulted for Abt Associates, Fannie Mae, the National Consumer Law Center, the New York State Attorney General's office, and the Urban Institute, in addition to editing the Urban and Real Estate Economics working paper announcement service for New Papers in Economics. He has a Ph.D. in economics from Syracuse University.

## Biographies

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### Kasper Roszbach

Research Director

*Norges Bank*

Kasper Roszbach is the research director of Norges Bank, the central bank of Norway. He is also a part-time professor of banking and finance at the University of Groningen and associate editor at the *Journal of International Money and Finance* and the *Journal of Financial Stability*. His research interests are in empirical banking, financial intermediation, and household finance. Previously, Roszbach was director of financial stability, deputy director of monetary policy, and a researcher at Sveriges Riksbank, a member of the BIS Committee on the Global Financial System, and a scientific advisor to the Czech National Bank. He was also a visiting scholar at the Federal Reserve Bank of Philadelphia and worked for De Nederlandsche Bank, ABN Amro Bank, Sweden's Ministry of Finance, and the Netherlands' Competition Authority. Roszbach has a Ph.D. in economics from the Stockholm School of Economics.

### Arkodipta Sarkar

Assistant Professor of Finance

*Hong Kong University of Science and Technology*

Arkodipta Sarkar is an assistant professor of finance at the Hong Kong University of Science and Technology. His primary research interest lies in the intersection of politics, culture, and finance, particularly the way political and/or cultural frictions can impact financial decision-making. He has a Ph.D. in finance from London Business School and a master's degree in economics from the Delhi School of Economics.

### Parinitha Sastry

Ph.D. Candidate in Finance

*MIT Sloan School of Management*

Parinitha (Pari) Sastry is a Ph.D. candidate in finance at the MIT Sloan School of Management. Her research interests focus on household finance, corporate finance, real estate, and climate risks. Pari will join Columbia Business School as an assistant professor of finance after a one-year postdoctoral fellowship at the U.S. Department of the Treasury. She has a B.A. in economics–mathematics from Columbia University.

### Zhaogang Song

Associate Professor of Finance

*Johns Hopkins Carey Business School*

Zhaogang Song is an associate professor of finance at the Johns Hopkins Carey Business School, which he joined in 2015. His expertise is in the areas of asset pricing, financial econometrics, financial market structure and design, and financial intermediation. He has a Ph.D. in economics from Cornell University.

## Biographies

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### Alexei Tchisty

Associate Professor of Real Estate, and  
Richard J. and Monene P. Bradley Director of Graduate Studies  
*Cornell University*

Alexei Tchisty is an associate professor of real estate and the Richard J. and Monene P. Bradley director of graduate studies at Cornell University. Before joining Cornell, he was an assistant professor of finance at the NYU Stern School of Business; an assistant professor of real estate at the UC Berkeley Haas School of Business, where he also served as a cochair of the Fisher Center for Real Estate and Urban Economics; and an associate professor of finance and director of the Office of Real Estate Research at the University of Illinois at Urbana–Champaign. Tchisty’s research focuses on various topics related to real estate finance and corporate finance: mortgage design, asset-backed securities, banking regulations, dynamic contracting, and executive compensation. His papers have been published in *The Review of Financial Studies*, *Journal of Financial Economics*, *The Journal of Finance*, and *The Journal of Financial and Quantitative Analysis*. He has a Ph.D. in business from the Stanford Graduate School of Business.

### Susan Wachter

Sussman Professor and Professor of Real Estate and Finance  
*The Wharton School of the University of Pennsylvania*

Susan Wachter is the Sussman Professor and Professor of Real Estate and Finance at the Wharton School of the University of Pennsylvania. From 1998 to 2001, she was assistant secretary for Policy Development and Research, U.S. Department of Housing and Urban Development (HUD), the senior urban policy official, and principal advisor to the Secretary. During her tenure at HUD, Wachter’s office was responsible for the New Markets Tax Credit, the major legislative initiative for urban revitalization, with the goal of attracting private capital into low-income communities. At the Wharton School, she was chair of the Real Estate Department and professor of Real Estate and Finance from July 1997 until her 1998 appointment to HUD. At Penn, she cofounded and currently is codirector of the Penn Institute for Urban Research. She also founded and is director of Wharton’s Geographical Information Systems Lab. She was the editor of *Real Estate Economics* and is on the editorial boards of several real estate journals.

Wachter is also the author of more than 200 scholarly publications and the recipient of several awards for teaching excellence at the Wharton School. Her forthcoming edited volume, *Fair Housing*, will be published by Penn Press. Previous volumes include *Shared Prosperity in America’s Communities and Neighborhoods* and *Life Chances*. Wachter has been on multiple for-profit and not-for-profit boards and is on the Affordable Housing Advisory Committee of Fannie Mae and the Office of Financial Research Advisory Committee of the U.S. Treasury. She frequently comments on national media and testifies to Congress on U.S. housing policy.

## Biographies

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### Nancy Wallace

Professor of Finance and Real Estate

Lisle and Roslyn Payne Chair in Real Estate and Capital Markets

Haas School of Business

*University of California, Berkeley*

Nancy Wallace is a professor of finance and real estate and is the Lisle and Roslyn Payne Chair in Real Estate and Capital Markets at the Haas School of Business at the University of California, Berkeley. She is chair of the Real Estate Group, cochair of the Fisher Center for Real Estate and Urban Economics, and directs the Real Estate and Financial Markets Laboratory. She teaches asset-backed securitization, real estate investment analysis, real estate strategy, and real estate finance at Haas. Her research focus includes residential house price dynamics, mortgage contract design and pricing, securitization and asset-backed security pricing and hedging, lease contract design and pricing, methods to underwrite energy efficiency in commercial mortgages, and valuation models for executive stock options. She has been a visiting scholar at the Federal Reserve Banks of New York and San Francisco, the Université de Cergy Pointoise, Centre de Recherche THEMA (Théorie Economique, Modélisation, et Applications), and the Stockholm School of Economics.

Wallace is a past president of the American Real Estate and Urban Economics Association and a past member of the AREUEA board of directors. She has served on the Financial Research Advisory Committee, Office of Financial Research, U.S. Department of the Treasury, and the Model Validation Council (MVC) of the Federal Reserve System; she was chair of the MVC (2015–2016). Wallace has a Ph.D. in urban and regional planning from the University of Michigan; license Maitrisse, The University of Paris VIII, from the Institute of Urbanism; and a B.A. in political science from the University of Michigan.