

MIT Center for Real Estate

Founded in 1984, the [MIT Center for Real Estate](#) (CRE) is moving through its third decade strong and re-energized. The center's mission is to identify CRE as a global forum and network for intelligent discussion of issues relating to international real estate development, investment, and finance. The center aspires to be the global leader in research, contributing to the mission of the School of Architecture and Planning by studying spatial issues related to economics, finance, management, business, product design, innovation, marketing, customer and user metrics, market trends, and entrepreneurship in real estate development and the built environment. Additionally, CRE continues to grow a network of global thought leaders and enlightened entrepreneurs shaping the future of the industry, capital markets, and the built environment.

The center's students obtain the best education, preparing them to become future leaders of the real estate industry. Students re-enter the industry from the CRE program as the visionaries who reinvent the built environment and its social, economic, and environmental footprints for years to come. CRE's research and scientific productions have had tremendous social and economic effects. Real estate economics—as a business and a practically oriented academic discipline—was developed at MIT. Intellectual tools developed at CRE have become common staples in real estate valuation, investments, and development. CRE's publications and books are widely used and consulted by students, professionals, and practitioners globally. The center's partner, alumni and industry network—connecting leaders and firms in the real estate industry—has no parallel in the quality and commitment of its members.

Although CRE's educational, research, and outreach efforts are top of the line, the center's intention is to strive to improve what it does and how well it does it.

Highlights

Faculty Appointments, Staff, and Visiting Scholars

Sarah Abrams '85, visiting lecturer: An alumna of the center's first graduating class, Sarah currently serves as senior vice president and head of global real estate at Iron Mountain. Sarah taught a seminar on corporate real estate in the spring of 2016 and will return to CRE as a visiting lecturer in spring 2017 to teach again.

Christa Lee-Chuvala, PhD, postdoctoral research associate: Christa joined CRE in September as a postdoctoral research associate. Christa's research considers the causes and consequences of spatial inequality at a variety of scales with the objective of providing new directions for policy making to address ongoing place-based economic disparities. Across the urban-suburban-rural spectrum, she is interested in the development of concentrated poverty and its intersections with regional housing markets and associated population movements.

Jennifer Cookke '01, lecturer: Another accomplished alumna joined the center as a lecturer in fall 2015. Jennifer Cookke, Class of '01, is president and chief executive officer

of F. H. French Co., Inc. She teaches one of CRE's core courses in the Masters of Science in Real Estate Development (MSRED) Program, Real Estate Products and Process.

Anil Kumar, visiting PhD student: Anil is a visiting PhD student from the University of Navarra's IESE Business School in Barcelona, Spain; he is working with Dr. Albert Saiz. Anil's collaborative research at the center focuses on creating the first-ever developer performance index, which assesses the valuation of real estate developers' assets traded to institutional investors.

Alex van de Minne, PhD, postdoctoral research fellow: Alex joined the CRE team in fall 2015 as a postdoctoral research fellow. He is part of a team working on research sponsored by one of the center's long-time industry partners, Real Capital Analytics. Alex's research develops advanced computational techniques for estimating commercial property price indexes around the globe.

Lucas Moser, visiting graduate student: Lucas is a visiting graduate student from the Swiss Federal Institute of Technology, located in Zurich, Switzerland. He works with Dr. David Geltner on applying the pure-play econometric methodology for developing commercial property price indicators for several Asian countries. Additionally, he is developing a "green building" pure-play index for the US with Dr. Alex van de Minne.

Kairos Shen, visiting lecturer: Kairos Shen, formerly chief planner with the Boston Redevelopment Authority, joined CRE as a visiting lecturer in spring 2016, teaching a seminar, 11.S967 Common Ground for Common Good: Mediating Private Development with Public Planning. He will return to teach in fall 2016.

Isabel Tausendschön, visiting PhD student: Isabel, a visiting PhD student from the University of Gratz, Austria, worked with Dr. Andrea Chegut on the Cities, Places and People Project for the Real Estate Innovation Lab. Her project links firm performance to accelerators around the globe.

Naming and Endowment

The naming and endowment of the center continued to be a major effort during FY2016. In the interest of the long-term stability of the center, CRE staff worked closely with the Dean's Office and other School of Architecture and Planning staff (i.e., resource development and communications staff) to identify and cultivate key donors.

CRE also identified student fellowships as a key initiative. One of the center's industry partners, Prologis, funds a graduate fellowship for students with a specific interest in industrial real estate and logistics. This fellowship was first offered in academic year 2016 for the amount of \$50,000. Prologis is offering this fellowship again in the 2017 academic year.

The center has also been active in raising funds to support the new William Wheaton Fellowship to support future students. CRE received a significant gift of \$431,327 from the proceeds from the sale of land in Oakridge, California. This land had been donated in December 2010 by CRE's long-time supporter and friend, Gerald Blakeley. The center

has capitalized \$300,000 of this gift into the new Gerald W. Blakeley Jr. Graduate Student Fellowship Fund to support students in the program.

CRE anticipates one to three significant donations in FY2017.

Professional Education Certificate Program

Together with MIT Professional Education, the center ran another successful Professional Education Certificate Program in June 2015. Participation was impressive, with 63 attendees, of whom 35 completed the Certificate in Real Estate Development and Finance. Sixteen countries around the globe were represented, including Chile, Lebanon, Nigeria, Peru, India, Japan, the United Kingdom, The Netherlands, Panama, Saudi Arabia, Mexico, Brazil, Zambia, South Africa, Senegal, and more.



Figure 1. 2016 CRE Professional Education Certificate Program Group at the Samberg Center, overlooking downtown Boston and the Charles River.

Executive Education

In April 2016, Professors Dennis Frenchman and David Geltner visited Lima, Peru, to teach 21 Urbanova executives. Their week-long classes on real estate finance fundamentals (Geltner) and innovative city design and development (Frenchman) were very successful.

Industry Partners Program

During FY2016, 23 real estate firms with both domestic and international offices were listed as partners and friends of the center. CRE staff cultivated and secured four new partners this year: QuietStream Financial (Charlotte, North Carolina); Skanska and Jones Lang LaSalle (Boston, Massachusetts); and Terranum (Bogotá, Colombia).

The center held its annual partners meeting, with 144 industry leaders, alumni, faculty, and students on May 18, 2016. The keynote speaker for the evening was Joseph A. Paradiso, Alexander W. Dreyfoos (1954) Professor in Media Arts and Sciences,

co-director of the Things That Think Consortium, and director of the Responsive Environments Group. He delivered an enthralling presentation on Beyond IoT – Ubiquitous Sensing and Human Experience.

The industry partners enjoyed a two-day World Real Estate Forum on May 18–19, 2016, which was held at the Media Lab. This year’s forum featured five panels and three edge sessions covering myriad current topics and events affecting the real estate industry. Highlighting the center’s global reach, the forum’s 55 speakers, 255 attendees, and industry partners represented 22 countries.

Marketing and Student Recruitment

The center continues to strengthen the CRE brand and to increase the visibility of the Industry Partners Program, the MSRED Program, and the Professional Education Certificate Program. CRE hosted a live-feed Open House this fall with 134 potential applicants streaming globally and another 30 attending in person.

The center’s online and social media presence has been enhanced and expanded to serve CRE’s industry partners and students and to support CRE’s student recruitment strategy. For example, industry partners can share ideas and obtain news and materials through the Intelligent Real Estate Connections LinkedIn forum. The center reinvigorated its Twitter and Facebook pages and leveraged these media sources to reach constituents effectively. This strategy has also enabled the center to engage in conversations across and among School of Architecture and Planning departments, laboratories, and centers.

In fall 2015, CRE launched a robust and international student recruitment campaign. To achieve the center’s goal, a public relations firm, Ball Consulting, was hired to promote the MSRED Program, CRE’s faculty, and CRE’s research initiatives. The campaign was a great success and resulted in press exposure worldwide, including Zawya, AME.com, UAE News, the New York Times, Business Intelligence, Construction Business News, Property Weekly, Boston.com, and the Boston Globe.

Master of Science in Real Estate Development

MIT’s MSRED is the most concentrated science-based graduate degree in real estate available. Launched in 1983 by the MIT Center for Real Estate, the MSRED is the first degree of its kind, fulfilling a need for real estate-specific education beyond the scope of the traditional master’s of business administration.

Enrollment

Twenty-five students matriculated in the fall of 2015, including one dual-degree student from the Department of Urban Studies and Planning (DUSP). The Class of 2016 included 10 women and 15 men. Of these 25 men and women, 15 are international students and 10 are domestic students. Ten of the 25 students of the Class of 2016 are women, members of minority groups, or both.



Figure 2. MSRED Class of 2016 at the Great Dome on Massachusetts Avenue, Cambridge.

In March 2016, the 33rd class of the MSRED Program was admitted from an applicant pool that had increased 62% from fiscal year 2015. This increase was because of the program's marketing initiatives, CRE community outreach, and key enhancements to admissions process and requirements. For example, CRE made a strategic decision to accept applicants' Graduate Record Examination scores as well as Graduate Management Admissions Test scores.

The incoming class comprises 10 women and 20 men. Thirteen of the students are from the US. Seventeen incoming students are international; they come from China, Mexico, India, Colombia, Chile, Belgium, and South Korea. Of the Class of 2017's 30 students, 12 are women, members of minority groups, or both, and two are dual-degree students from DUSP.

Connecting Our Students with Industry

CRE's students are offered numerous opportunities to network with and learn from industry professionals. Many MSRED courses are visited by guest lecturers, many of whom are leaders in the real estate sector. CRE also offers a Thought Leader Speaker Series that highlights innovations in the field and cutting-edge projects and significant trends in the industry. In addition, CRE's expanding alumni base includes prominent industry leaders and practitioners in professional roles at all levels.

As a professional graduate degree program, CRE is mindful of its responsibility to help students achieve their career goals. The center co-hosts a biannual Real Estate Career Day in partnership with Harvard University. This event introduces students to different career paths in the real estate sector and provides networking opportunities. In addition, CRE organizes a number of project site and office visits, allowing students the opportunity to observe different corporate cultures and business models.



Figure 3. MIT/Harvard Real Estate Career Day at the MIT Media Lab: Students with Industry Leaders.

Students are active participants in CRE’s annual World Real Estate Forum and are offered the opportunity to be ambassadors to the forum’s many speakers. By acting as volunteer ambassadors and panel captains at this event, CRE students are offered unique proximity to industry leaders. Industry networking events and alumni events offer other opportunities for students to engage with industry.



Figure 4. MSRED student Marine Potikyan (center) listens to and industry partner Samuel Sidiqi, chief executive officer of National Real Estate Co. (right), at the World Real Estate Forum in May 2016.

Figure 5. MSRED students Ladd Thorne, James Scott, Marine Potikyan, Ya Gao, Jason Tilley, and Stacey Spurr, Samuel Tak Lee Fellow, with panel speakers at the World Real Estate Forum in May 2016.



CRE has expanded internship opportunities during Independent Activities Period and the summer. This has become a hallmark of the program and many MSRED students participated. Placements were made throughout the US and internationally in Panama, the UK, China, Mexico, and the United Arab Emirates. Industry participants included Investbridge, Hines, Skanska, MITIMCo, the Davis Companies, Campanelli, Conservatorio, Prologis, Related, LaSalle Investment Management, Alexandria Real Estate Equities, Taurus Investments, and China Everbright, among others.

A new Career Services initiative this year was the “job shadow” program. Students were offered the opportunity to spend time with professionals working in specific roles aligned with the students’ career interests. The majority of the class took advantage of this opportunity. Students were “job shadows” at Boston-based firms including National Development, Boston Capital, Berkshire Group, King Street Properties, and others.

Graduate Student Trips

South Africa

Now in its fourth year, the Cultural, Research, Entrepreneurship, and Technology Exchange (CREATE) is an MIT workshop that explores the connections between the built environment and the informal economy. Through classes and ongoing research conducted in collaboration with practitioners and informal vendors, CREATE is developing new tools and research to help reframe the dialogue between governmental institutions and informal vendors. The goal is to attain knowledge that will help shape public policy, architectural design, and investments in the physical spaces that contribute to the social and economic strength of communities in South Africa.

As part of the CREATE program, in June 2016 in KwaZulu Natal, South Africa, three CRE students, one DUSP student, and two University of KwaZulu Natal doctoral students collaborated with Siyavuna, a nonprofit organization whose mission is to reduce poverty, eliminate food insecurity, and increase economic development through small-scale organic farming. Working with local farmers and Siyavuna’s staff, the students conducted research that contributed to the development of a strategy for a distributed farmers’ cooperative, a tool-sharing mechanism, and a marketing strategy for the organic food brand run by the organization. This process gave students an opportunity to learn about the factors that shape small-scale entrepreneurship in the KwaZulu Natal area, including tribal land ownership, environmental conditions, and market access.

Over the 2017 academic year, CRE lecturer John Kennedy, Campbell Mayer (MCP ’11), and Kate Mytty (MCP ’15 and D-Lab instructor) will deepen the CREATE workshop by integrating a longer field experience over Independent Activities Period and the summer of 2017. They intend to teach a half-semester class on the subject in spring 2017. The CREATE team will work with local practitioners and vendors to develop a mechanism to measure and document the social, economic, and infrastructural value of informal marketplaces. The team will begin its work in the KwaZulu Natal area and is open to opportunities in other areas with similar themes.



Figure 6. From left, MSRED students James Mayo-Smith, Francesca Cooke, Kevin Murphy, and incoming dual-degree MSRED/DUSP student Ronette Seeney with CREATE in KwaZulu Natal, South Africa.

Samuel Tak Lee MIT Real Estate Entrepreneurship Laboratory

Case Studies: Panama City, Panama and Beijing, China

Under the direction of Professor Albert Saiz (CRE director), the Samuel Tak Lee MIT Real Estate Entrepreneurship Laboratory (STL Lab) is creating multimedia case studies to serve as supplements to the massive open online courses (MOOCs) that the STL Lab is developing. Case studies will pilot an innovative, multimedia form of case method delivery and dissemination developed by the STL Lab. The intent is to provide engaging content with an emphasis on global education with high potential for societal impact.

The STL Lab's case studies are designed to be multimedia (using audio, video, and data); immersive (allowing students to become immersed deeply in the social situation); and thought-provoking. The case studies will also feature crowd-sourced material, allowing users to create content and cases to evolve over time. The case studies will be used via three channels worldwide: in MOOCs; in undergraduate, graduate, and community college courses in real estate, urban planning, policy, design, business, and related fields; and in MIT's own courses, particularly those of CRE, DUSP, the Department of Architecture, the Department of Civil and Environmental Engineering, and the Sloan School of Management.

Currently, Danya Sherman is leading the initiative from the STL Lab and CRE with the support of MIT's Office of Digital Learning (ODL), Creative Director Jeff Soyk, and a team of video producers and designers. The first two pilot cases focus on developers in Panama City, Panama, and Beijing, China.

The team is creating and developing a new and innovative software program using OpenEdx with the firm Extension Engine under the guidance of ODL. It will be finished for user testing in the next few months.

In June, the initiative solicited case study proposals from the School of Architecture and Planning, the Sloan School of Management, and the Department of Civil and Environmental Engineering. Six proposals were selected out of the 11 that were received; they will begin production in the fall.

The cases cover the following topics in development and land use education:

- Real estate economics and finance
- Urban development and planning
- Environmentally sustainable urban development
- Ecosystem integration in development
- Innovative technology in building and infrastructure
- Health and well-being in architecture and development projects
- Real estate entrepreneurship
- Social responsibility in real estate and urban growth management
- Real estate practice in China
- Urban growth and planning in China

Alumni Association of the Center for Real Estate

There are more than 1,000 graduates of the MSRED program. Approximately 20% live outside the US in more than 14 countries. There are significant concentrations of alumni in Boston and New England; in New York City, Washington, DC, and San Francisco, CA; and in Toronto, Canada; Beijing, China; Seoul, South Korea; Tokyo, Japan; and Hong Kong. The alumni group is an all-volunteer organization represented by the Alumni Association of the Center for Real Estate (AACRE).

Annual Case Competition

The Seventh Annual AACRE Case Competition was based on a development site in Miami, FL. Thirty-two teams from 22 graduate schools analyzed and underwrote the redevelopment of a mixed-use site owned by the Port of Miami. The preliminary and semi-final rounds were held in Boston, MA. Final rounds were held in Miami, FL, sponsored by the National Association of Real Estate Investment Managers (NAREIM) Spring Executive Officers Meeting. The top three teams in order were from Georgetown University, the University of California, Los Angeles, and Cornell University.

Events Moving to the MIT Center for Real Estate

AACRE introduced a series of breakfast conferences called [Real Disruption: The Big Ideas Disrupting Real Estate](#), focusing on the recent wave of real estate technology and its impact on the industry (2014). After holding four successful events, AACRE passed the program to CRE this past winter. CRE hosted the first conference on April 24, 2016, called [Real Disruption: Fin\\$Tech meets RE®Tech](#), which featured a panel of start-up founders active in the real estate finance space. The Real Estate Finance Association and

the Real Reporter were partners in the event, which was sponsored by the law firm Saul Ewing LLP. Following the conference, the Real Disruption panel gave a well-received lunch 'n' learn lecture for MSRED students.



Figure 7. CRE Lecturer Tod McGrath moderates panel at Real Disruption, Atlantic Wharf, Boston, April 2016.

Thesis Award

Each year, AACRE selects a student to receive the association's Outstanding Thesis Award. [STAG Industrial](#) was the 2015 sponsor. Thesis advisors nominate the submissions that best represent excellence in academic achievement and the practical application of advanced techniques and analysis to the field of real estate. A panel of AACRE members reviews the submissions, selects the recipient, and presents the award during CRE's graduation dinner. In August 2015, Peter Owusu-Opoku received the award for his thesis, "Commercial Real Estate Operating Expenses: An Analysis of Office Operating Expenses Using NCREIF Property Level Data."

Faculty and Research Staff

Awards

Dr. Andrea Chegut was named the 2016 Postdoctoral Homer Hoyt Fellow by the Homer Hoyt Institute of the Weimer School of Advanced Studies. Postdoctoral honorees are recognized for both their recent contributions and for the expectation of continued productivity. The postdoctoral honorees are nominated by Weimer School fellows and faculty. The ultimate decision on selection is made by the Weimer School faculty.

Lectures, Presentations, and Research

Professor David Geltner

- ["Navigating Unpredictable Waters: Negotiating the Joint Venture Waterfall,"](#) Urban Land Institute, San Francisco, CA, October 2015
- ["What Will the Next Downturn Look Like?"](#) (two-part interview), Real Estate Crowdfunding Review, October 2015
- ["Incorporating Life-Cycle Cost, Environmental Impacts, and Hazard Resistance into Building Design,"](#) NAREIM, October 2015

- [“Commercial Building Capital Consumptions in the US”](#) US Treasury Department, Office of Tax Policy; US Commerce Department, Bureau of Economic Analysis; US Congress, Joint Committee on Taxation; US Congressional Budget Office (presented with Dr. Sheharyar Bokhari, Visiting Scholar), Washington DC, January 2016
- [“Real Estate Price Indices and Price Dynamics: An Overview from an Investments Perspective,”](#) Banco de Mexico, Mexico City, Mexico, April 2016
- [“Commercial Buildings Capital Consumption and the United States National Accounts,”](#) Homer Hoyt Institute, Weimer School, North Palm Beach, FL, May 2016
- [“Thriving on Risk in Real Estate,”](#) MIT News, May 2016
- [“Valuing Real Estate Innovation,”](#) World Real Estate Forum, Cambridge, MA, May 2016

Chris Gordon

- [“Innovative Project Delivery Challenges and Opportunities,”](#) NAREIM, Cambridge, MA, October 2015
- [“Mega Projects,”](#) Harvard Graduate School of Design, Cambridge, MA, April 2016
- [“Wynn Casino Case Study,”](#) keynote speaker, NAIOP’s Developing Leaders, San Diego, CA, May 2016

John Kennedy

- [“Exploring Innovation in Construction and Project Delivery Leader,”](#)
- NAREIM, October 2015

Professor Albert Saiz

- [The Evolution of CRE U,”](#) GlobeSt.com, August 2015
- [“National Indices for New Home Construction and Existing Home Remodeling”](#) in collaboration with [BuildZoom](#), August 2015
- [“Urban Development with a Long-term Provision of Housing and Social and Cultural Infrastructure,”](#) Congress of the Colombian Construction Industry, August 2015
- [“MIT Professor Skeptical of Airbnb’s Impact on New Orleans Housing Prices,”](#)
- The Times-Picayune, September 22, 2015
- [“Needle in the Haystack,”](#) Magazinedigital.com, October 2015
- [“Leveraging Science and Developing Innovation: Education, Research and Global Outreach in Real Estate Development,”](#) NAREIM, Cambridge, MA, October 2015

- [“What Would Happen to Boston If All of the Students Suddenly Left?”](#) Boston.com, November 2015
- [“Regional and Urban Issues in Latin America: Informality and Development,”](#) NARSC, November 2015
- [“How Particular Cities Emerge and Grow, as well as How Macroeconomic Factors Influence the Flow of Capital to These Gateways,”](#) keynote speech at PERE Growth Forum, Dubai, United Arab Emirates, December 2015
- [“The World’s Languages, in Seven Maps and Charts,”](#) The Independent, December 2015
- Discussant and session chair, AEAM Conference, January 2016
- [“Are Women Really Making Progress in the Commercial Real Estate Industry?”](#) National Real Estate Investor, March 2016
- [“Blame Geography for High Housing Prices?”](#) The Atlantic, City Lab, April 18, 2016
- [“Why New Balance Wanted the Bruins and Celtics Nearby,”](#) Boston.com, May 2016
- [“Unlocking the Power of Big Data,”](#) panel chair, World Real Estate Forum, May 2016
- [“On Student Loans, Proceed with Extreme Caution,”](#) Boston Globe, June 2016
- Discussant and session chair, RUSE Conference, June 2016

Dr. Walter Torous

- [“Reading the Tea Leaves: Model Uncertainty, Robust Forecasts, and the Autocorrelation of Analysts’ Forecast Errors,”](#) Journal of Financial Economics, 2016
- [“Complexity in Structured Financial Products,”](#) American Real Estate and Urban Economics Association, Washington, DC, January 2016
- [“Using Cash Flow Information to Price Thinly Traded Assets,”](#) with Walter I. Boudry (Cornell University), Crocker H. Liu (Cornell University), Tobias Muhlhofer (University of Miami), Social Science Research Network, October 2015

Professor William Wheaton

- [“Real Estate Special Report: Rising Home Prices Aren’t All Good News,”](#) CNN Money, September 2015
- [“Will A Fed Interest Rate Hike Slow the Housing Recovery?”](#) National Public Radio, December 2015
- [“2016’s Cities Where People Are Most Overleveraged on Their Homes,”](#) WalletHub, March 2016
- [“Resilience and Adaptation in the Age of Climate Change,”](#) panel chair, World Real Estate Forum, Cambridge, MA, May 2016

- “Do House Price Levels Anticipate Subsequent Price Changes within Metropolitan Areas?”, *Real Estate Economics*, May 2016
- “The Volatility of Real Estate Markets: A Decomposition,” *Journal of Portfolio Management*, Summer 2016

Dr. Andrea Chegut

Speaking Engagements

- “The Real Estate Innovation Lab: Research and Development for the Built Environment,” World Urban Regeneration Forum Organic Growth and Heritage Preservation in Shanghai, China, June 2016
- “The Value of Sustainability: The Economic Outcomes of Green Buildings,” 30th Anniversary of the MIT & Tsinghua Architecture Studio in Beijing, China, June 2016
- “The Value of Sustainability: The Economic Outcomes of Green Buildings”, Mongolian Ministry of Energy in Cambridge, MA, May 2016
- “Valuing Real Estate Innovation,” panel chair, World Real Estate Forum, May 2016
- “Real Estate Innovation,” Schindlers Elevators, Cambridge, MA, 2016
- “Real Estate Innovation,” Unibail Rodamco, Cambridge, MA, 2016
- “Innovation in Commercial Real Estate,” 2016 keynote speaker—Hoyt Group Weimer School of Advanced Studies in Real Estate and Land Economics, Miami, FL
- “Innovation in Commercial Real Estate,” CoreNet, Cambridge, MA
- “Technology Value in Commercial Real Estate,” Homer Hoyt Weimer School, North Palm Beach, FL, May 2016
- “Leveraging Science and Developing Innovation: Education, Research and Global Outreach in Real Estate Development,” NAREIM, Chicago, IL, October 2015
- “The Price of Innovation,” October 2015
- “Bricks and Mortar v. The Cloud,” panel chair, NARSC, November 2015

Publications

- On the Cost of Building Green, *Dialogues: A Supplement to Institutional Real Estate Americas*, 2016, with Piet Eichholtz (Maastricht University) and Nils Kok (Maastricht University)

Working Papers

- The Price of Innovation: An Analysis of the Marginal Cost of Green Buildings, with Piet Eichholtz (Maastricht University) and Nils Kok (Maastricht University). Revised and resubmitted: *American Economic Review*

- Simultaneous and Solitary Spikes: Investment in Equipment and Buildings, with Jasper Brinkerink (Maastricht University) and Wilco Letterie (Maastricht University). Under review: Research Policy.
- The Energy Performance of Investment Spikes, with Jasper Brinkerink (Maastricht University) and Wilco Letterie (Maastricht University). Under review: Journal of Environmental Economics and Management.
- The Economics of Big Data: The Value of Real Estate Capital in the Digital Economy.
- Cost-Effective and High Performance Renovation of Existing Residential Multi-Family Buildings in Three European Countries, with Holger Wallbaum (Chalmers University of Technology), York Ostermeyer (Chalmers University of Technology) and Rolf Bastiaanssen (Delft University of Technology).

Kairos Shen

- [“How Does Development in Boston Really Work? Ask MIT Prof. Kairos Shen,”](#) Boston Globe, January 2016

Tod McGrath

- [“Navigating Unpredictable Waters: Negotiating the Joint Venture Waterfall,”](#) Urban Land Institute, San Francisco, CA, October 2015
- Commercial Real Estate Finance Seminar, CREW, Boston, November 2015

The MIT Center for Real Estate builds bridges between the challenges and opportunities of technology and the environment as they relate to real estate development and investments. The solutions to current economic, social, and environmental challenges may very well come from the real estate industry and its innovative entrepreneurs. CRE serves to connect the existing brainpower and entrepreneurship in the industry with research communities devoted to these issues.

Albert Saiz

Director, Center for Real Estate

Daniel Rose Associate Professor of Urban Economics and Real Estate