Throughout my career at Wharton, I have taught Real Estate Investment: Analysis and Financing primarily to MBAs. This class is the introductory course in the real estate major and a popular survey course for non-majors interested in the asset class. My enrollments range between 30 and 60 students and, prior to the 2021-22 academic year, I taught three sections in one semester in the typical academic year.

The focus of the course is commercial real estate. It covers the basics of property valuation, financing, real estate cycles, and securitized real estate markets. There is also a week devoted to real estate usage, in which we apply the frameworks used to analyze commercial real estate to housing and corporate real estate decisions that all students, including non-majors will undertake in the near future.

The course is lecture-based with three classes devoted to case studies and smaller mini-case discussions throughout the semester. At the end of the semester, students know the basic institutional details of real estate markets (taxes, leases, mortgages, real estate investment trusts, and commercial mortgage-backed securities), understand the key sources of risk and return in these markets, and can build pro forma models to analyze property-level real estate investment decisions.

Given the diverse range of backgrounds, interests, and learning styles represented in each class, I strive to provide ample, varied opportunities for students to engage with the material in a way that helps them achieve the learning objectives outlined above and make headway towards their own goals.

I also spend time getting to know students and learning what they are looking to get from the class – both during the semester and as a resource to draw on in future courses, recruiting, and their lives after Wharton. I help students identify where their learning objectives are met in the existing curriculum and draw links with additional material when there is sufficient demand, or in small group discussions otherwise.

Coming from an academic background in economics, rather than finance, I struggled at first to figure out how to teach this material in my own way, with my own voice, and relating to students in a way that worked for me. I have worked hard to develop a dynamic and responsive pedagogical approach that I enjoy. My improved teaching evaluations show that this teaching style also works: students report that they like the class (my teaching ratings are at or near the top of my department in the past two years) and get a lot out of it (including the learning objectives outlined above). In 2020, I received a Wharton Teaching Excellence Award.

Below I highlight three innovations that I have made in my teaching.

1. Mini-Case Discussions  My first innovation has been to incorporate more in-depth discussions of current events. I pair all of the major real estate concepts I teach in class with news excerpts that demon-
strate how the concepts matter in the business world. Then for each broader topic – approximately every second class – I engage the students in a more structured discussion of a real estate business decision. For example, early in the semester I motivate the pro forma approach to investment analysis with a discussion of property valuation. I pick a property that is currently on the market or sold recently and ask students to comment on why it might be worth more or less than the stated price. I then integrate student responses into my explanation of the important factors that contribute to property value from the perspective of a commercial real estate investor. For the remainder of the class, we assess how well different valuation approaches used in the industry capture this perspective (relative to the cash-flow focused approach we teach in the course). To keep students engaged in this material, I draw from their previous comments when asking them to consider what the different valuation approaches capture (and miss) in the context of the motivating valuation example.

As we progress through the semester, these “mini-case” discussions require students to apply skills and concepts we covered earlier in the semester to the material directly related to the topic we are studying. I assign readings, discussion questions, and sometimes a short quantitative prompt ahead of these discussions so that students can prepare in advance. During the discussion, I “warm call” students who have responded to the pre-assigned questions on Canvas. I select the students to call on using random draws without replacement to ensure that the discussion represents a diverse set of opinions and that all students get a chance to participate (except those who request to be excluded in advance for technical or other reasons).

2. Hands-On Practice with Quantitative Material

To promote active learning, I provide students with ample opportunities throughout the semester to practice the quantitative skills that are tested in group case assignments and on exams. In-class worksheets nudge students to practice applying each skill shortly after I have taught it (typically at the start of the next class). The worksheets help students identify questions that they have on the material, which many bring to me during office hours. Identifying and filling gaps in learning is especially important because much of the material we cover cumulative.

3. Opportunities to Develop Modeling Skills

The group case assignments ask students to assess real estate investment decisions on the basis of the quantitative cash flow modeling and qualitative analysis. Students who enter the class with previous modeling experience often take the lead in these areas, leaving students with less experience handling the qualitative analysis and write-up (or, worse, contributing very little at all). This allocation might be efficient in the short run but blunts the pedagogical effectiveness of the assignments.

In an effort to level the playing field and encourage full participation among teammates, I have introduced ways for students with less modeling experience to catch up on these skills. In Spring 2019 and 2020, I required students to complete part of the modeling required for the first case assignment for individual credit. The stakes were low, as this individual case component was graded on a pass/fail
basis, but the exercise was sufficient to encourage many students to get the training they needed to feel empowered to work alongside their more experienced teammates on the remainder of the case work. In place of the individual component during the shortened Spring 2021, I offered excel recitations for each case assignment. In these recitations, the teaching assistant (TA) who would be assisting me with student advising and grading on a given case would walk through putting together a similar quantitative cash flow model to the model assigned on the case. Students who attended these sessions found them to be a useful way to connect with the TA who would be an important resource for help on the case and to build confidence in the functions and modeling methods required to complete the case.

Connecting with Students during COVID  I find teaching to be a rewarding experience and enjoy interacting with students both in and out of class. Beyond my efforts to make class time more engaging, I invest significant time outside the classroom to get to know my students. During a typical semester, I regularly attend lunches with students, hold extra review sessions, and help them prepare for interviews. During the pandemic, I found alternate ways to continue to connect with, engage, and support students.

In my first semester of remote teaching from home during Spring 2020, I experimented with various technologies for annotations and problem solving, such as a whiteboard camera, iPad, and real-time PowerPoint editing and excel modeling. I held frequent office hours at various times to accommodate student schedules and maintained my regular practice of answering emails and responding to students on discussion boards. In Spring 2021, I chose to teach in a “hybrid” format, so that students in Philadelphia could get a chance to attend class in person. In spite of technical challenges and low in-person attendance, students elected to continue with this format through the semester. This gave me a chance to meet some students in person, getting to know some of them in pre- or post-class walks, which were a welcome change from virtual office hours.

Throughout both semesters, I frequently polled students anonymously to gauge their opinions of the new technologies, the speed and mix of lecture and discussion in the class, and the course workload. I also ensured that students knew that I was available to discuss issues that they were having with the course and open to finding accommodations that would enable them to achieve the course objectives in spite of unforeseen personal circumstances.

Teaching during the pandemic has been one of the most challenging experiences in my career. It has also been incredibly rewarding. I am proud of the skills and intuition that my students developed under the circumstances and of the role that I played supporting their academic and professional development more generally over this period.

Ph.D. and Research Supervision  I regularly mentor Ph.D. students and have served as a member of four doctoral committees, as follows (along with first placement): Ben Hyman (Federal Reserve Bank of New York), Lindsay Relihan (London School of Economics), Hongyu Xiao (Bank of Canada), and
Caitlin Gorback (NBER post-doc, University of Texas Austin). I also started a new urban-real estate workshop in collaboration with a recent graduate, where faculty and Ph.D. students present early-stage work. This workshop gives students an opportunity to get feedback in an environment designed to be lower-stakes than their required program-wide seminar, and a window into early-stage faculty projects.

To encourage undergraduates and MBAs interested in research, I have presented my research in several guest lectures and have supervised senior research theses and independent studies. Moreover, I regularly hire both undergraduates and doctoral students to work with me as research assistants.

**Future Teaching** In the future, I hope to bring my research expertise more formally into the classroom. At the Ph.D. level, I would be particularly interested in teaching a course covering structural and quantitative methods in the context of urban economics. I am also in the early stages of developing a real estate data analytics course for undergraduates and MBAs. This course would cover how data analytics is and can be applied to the questions that are central to the real estate business, using a mix of conceptual lectures, guest speakers, and hands-on exercises.