

The Wisconsin Program in Real Estate and Urban Land Economics: A Century of Tradition and Innovation

Fall 2012 Edition

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This note was originally prepared as background reading for Real Estate 420 and 720, Urban Economics. While I write this paper, referred to internally as “T&I,” first and foremost for our students, it has found a number of other audiences. Each year I update bios and so on, but I also try to add or strengthen a section some readers find of interest.

This year I’ve updated the paper mainly around some changes in faculty roles. As most readers will know, our Professor and recent Department Chair François Ortalo-Magné became the Albert O. Nicholas Dean of the Wisconsin School of Business in September 2011. After an interim year with yours truly serving once again as Department Chair, Professor Abdullah Yavaş has taken up that mantle; Professor Morris Davis continues to head the James A. Graaskamp Center for Real Estate. Finally, we are extremely pleased to add Assistant Professor Jaime Luque to our faculty.

Kris Hammargren and Alison Zuba assisted in updating the current draft. Thanks to Wisconsin Historical Society and Wisconsin Archives for several of the photos used below, and other assistance. Thanks to many UW colleagues and alums for comments, especially Tim Riddiough, François Ortalo-Magné, Morris Davis, Elaine Worzala, Kerry Vandell, Jim Curtis, Jim Haft, Max Kummerow, Robert Schwartz, David Shulman, and Rod Matthews. Naturally, they are not responsible for remaining shortcomings.

This teaching note has been through many drafts, but remains – and will remain – a work in progress. Comments and corrections are very welcome.

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This draft: September 3, 2012

Introduction

Real estate and urban land economics have a long and distinguished tradition at the University of Wisconsin. In this handout we introduce you to that tradition.

At the turn of the 20th century, Professors John R. Commons and Richard T. Ely had recognized land use as the product of economics, institutional forces, and physical constraints. The first course in land economics was taught in the 1890s, and a degree in land economics had existed at Wisconsin since 1922. We present a brief introduction to the Wisconsin tradition in Real Estate and Urban Land Economics through brief sketches of some of those who developed the tradition:

- Richard Ely (taught 1892-1925)
- Richard Ratcliff (taught 1944-71)
- Richard Andrews (taught 1950s to 1970s; active until his recent death)
- James Graaskamp (taught 1960s until his death in 1988)

Then we will provide an introduction to the program as it exists currently, but first we will comment briefly on some of the terminology in use regarding this subject and our program.

Real Estate as a Multidisciplinary, Global Endeavor

Real estate as such is not a *discipline*. There is no *theory* of real estate, but real estate is an important *field of study*. Real estate is roughly 70 percent of the world's tangible capital stock, and one of the largest elements of consumption (Malpezzi 2005). Real estate is also the basis of most household net wealth. There is not a single human activity, business or leisure, which does not involve the use of real estate, directly or indirectly.

Those who study and analyze real estate draw on a large number of disciplines, including law, economics, architecture and design, finance, risk management, and marketing, to name a few. Legal studies are particularly important; there can be no functioning real estate market without some system defining and assigning property rights, enforcing contracts, and facilitating transactions (Jaffe and Louziotis 1996).

Real estate is “going global.” It is somewhat ironic that real estate has long been viewed as the ultimate “non-traded good,” in that you can't (say) put it in a box and

ship it across national borders. Nevertheless, investment, finance, property management, and even development ideas, to say nothing of the *people* involved, are increasingly finding their way across borders (Renaud 1997; Woodall, 2003).

Without prejudice to the multidisciplinary nature of real estate analysis, much (not all!) of the Wisconsin Tradition is about the economic analysis of real estate, as you will see below in the discussion of the work of Ely, Ratcliff, Andrews, and Graaskamp. Next we present a short digression on how some elements of this economic analysis fit together.¹

Real Estate and Urban Land Economics

The connection between *real estate* and *land economics* is clear. The classic definition of real estate is “land, and things more or less permanently attached to the land.” Why *urban* land economics? This will become more clear as the course proceeds, but in brief it's largely first because while the majority of U.S. (and global) land (and real estate) by area is rural, the majority of land and real estate by value is urban (densely settled). A second reason is that, within economics, urban economics, and its cousin regional economics, are the branches of economics that explicitly deal with the effects of location. And just as the cliché has it, real estate is about “location, location, location.”

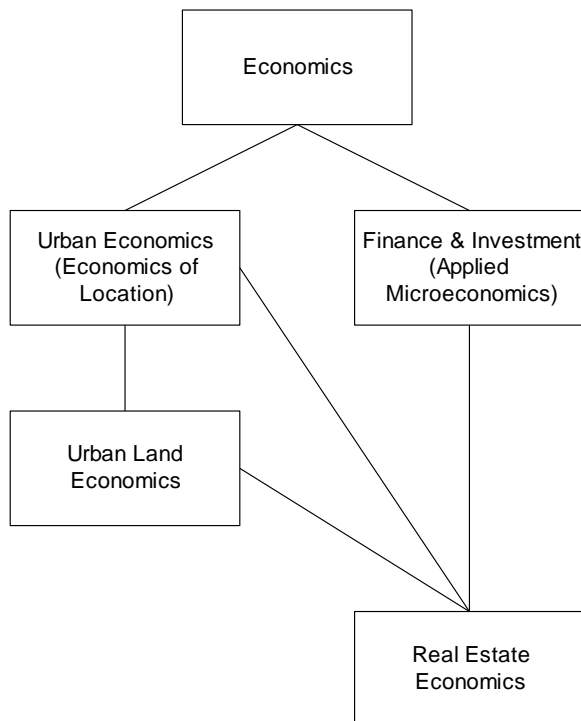
Thus, you can think of urban and regional economics as the economics that tries to understand the fundamental reasons why location matters. Situs, externalities, agglomeration, linkages – these are among the terms that we explore in greater detail throughout the semester as we seek a deeper understanding of the economics of location. Physical geography, transportation networks, government interventions (taxes, subsidies, regulations), and the fundamental durability of real estate investments are among the concrete phenomena we'll study as part of this endeavor.

In recent years, terms like “locational economics” and “economic geography” have come into wider use; for our purposes, we will consider them as synonyms for urban economics (though some authors like to make some distinctions, we won't be so pedantic, at least in this note).² Two distinctions you should understand are the

¹ Note that several of the disciplines mentioned above, like finance, or risk management, are themselves branches of applied economics.

² See, for example, Richardson (1977) and Brulhart (1988) which explores

difference between urban economics (focusing on location within cities) and regional economics (location across cities), though even here the distinction can be blurred; a location-based regional model can sometimes be applied within a city, and an urban model can sometimes be applied across a region. The other distinction you should be aware of is that some UW authors, notably Richard Andrews, define urban land economics as a subset of urban economics; more about this below. Finally, note that students of real estate can and do also apply other microeconomic tools to the study



of real estate decisions, notably finance.³ Figure 1, above, presents a simple schematic of the relationships between some of these categories.

General Approaches to Economics

Traditionally, introductory accounts differentiate three major "schools" of or approaches to economics.⁴ The

distinctions among 'traditional' urban economics, the 'new urban economics', and the 'new economic geography.'

³ Finance is basically a branch of applied microeconomics, albeit a particularly well-developed one.

⁴For our purposes we're going to greatly simplify our discussion of these schools. Lots of the statements in the next few paragraphs would be qualified if we had the time. In particular, other schools of economic thought exist, but these three broad categories are most relevant to our present purpose. Many more detailed reviews of the "history of economic thought" exist. One very readable and lively account is Buccholz (1990). For a more complete but still very readable treatment see Ecklund and Hebert (1990).

Classical school is associated with Adam Smith, David Ricardo, Robert Malthus, Henry George and Karl Marx, among others.⁵ The *Neoclassical* school is associated with Alfred Marshall, and more modern writers such as Paul Samuelson, etc.⁶ The *Institutionalists* include such writers as Thorstein Veblen and at opposite ends of the political spectrum, John Kenneth Galbraith and James Buchanan.⁷

What does each of these (very broad) schools bring to the study of land? The Classicists gave us the first analysis of the link between productivity, rent, and land use, and the notion that land is in some sense a "special" factor of production. More specifically, classical analysts usually assume land is in fixed supply. The Neoclassicists extended the classical model in several important directions. In the neoclassical model, "factors of production" is a "general" concept, and while each (land, labor, and capital)⁸ may have distinguishing and "unique" characteristics the emphasis is on the substitution of one factor for another. Land, labor, and capital are treated essentially the same. To neoclassical land theorists, the classical case (where land is in fixed supply) is treated as a *special case*.

Both the Classicists and Neoclassicists take the definition of goods and their associated property rights for granted. They implicitly assume a legal system and institutions to start with, and these are usually as simple as possible. For example, person A owns so much of goods X and Y, person B owns so much of good X and Y, and they plan to trade. Neoclassicists don't much get into questions like "why does A own what he owns?" or "what if B agrees to trade a certain amount of X and then reneges?" Institutionalists, on the other hand, study things like how property rights evolve, what it means to "own" something, the nature of contracts, what kinds of institutions might define and enforce such contracts, etc. Obviously such legal and institutional features are of great importance in understanding land markets.

⁵Smith (1776), Malthus (1815), Ricardo (1815), George (1879), Marx (1867).

⁶Marshall (1890), Samuelson and Nordhaus (1990).

⁷Many institutionalists would resist being classified together, and they are indeed a very heterogeneous group. For our purposes we just want to note that they are all characterized by a concern with institutions, but the form and consequences of this concern vary a lot. Many early classicists also demonstrated a deep interest in institutions.

⁸The number of factors of production is chosen for convenience depending on the context. The simplest models posit two factors of production, (1) labor and (2) capital (including land). Since this course is about land we need to treat it separately from other capital (machines, structures, etc.). How we define factors would change if we were studying something else, e.g. if this were a course about labor markets, we could divide labor into skilled and unskilled, etc.

None of these schools is strictly mutually exclusive. For example, it's becoming more and more common to study institutions with the formal models neoclassicists use.⁹ Perhaps a higher profile debate today is between economists who operate under the rubric of "behavioral" economics, in contrast to more traditional optimizing models. Traditional models, especially classical and neoclassical variants, emphasize rational choice, and introductory models in particular begin with extremely heroic assumptions, including well defined and logically consistent objective functions (maximize profit, or maximize consumer utility, or maximize social welfare), full information, complete markets, and fully assigned property rights, as well as the rationality assumption.

It is not always fully appreciated among non-economists that much progress has been made in relaxing these heroic assumptions, when necessary, such as decades of advances in modeling the economics of incomplete information, to give just one example.¹⁰ This is especially important in real estate economics as virtually every introductory textbook begins with a litany of how complicated real estate is compared to the simpler commodity markets focused on in a typical "principles of economics" course. That's not to imply that economics is irrelevant to real estate, rather, that sometimes we have to go beyond the "principles" text to get the right answer.¹¹

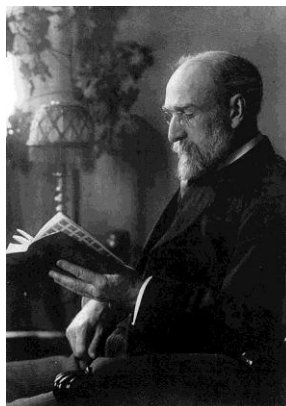
In the event, urban land economics has a long history at this University. While many observers point to the strong institutional roots of real estate (and of economics) at Wisconsin, I would emphasize that the UW tradition is also grounded in neoclassical thinking (sometimes implicitly, as in some of Ratcliff's work, more explicitly in much recent research), but always continuing to demonstrate a strong concern for institutions and application to the "real world."

⁹It might be useful to distinguish between the "old" institutional economics of Thorstein Veblen, John R. Commons and John Kenneth Galbraith, which are mainly descriptive, and the "new" institutionalists who study legal and institutional questions more rigorously. See Bromley (1989) and Eggertsson (1990).

¹⁰ See Simon (1955), Stigler (1961), Stiglitz (1964), Akerlof (1970), and Spence (1973) for example.

¹¹ Part of being a good economist is in fact knowing when the simple principles models will give a "good" answer to the problem at hand, and when we have to use a more complex model. In Albert Einstein's famous phrase, "Everything should be as simple as possible. But not more so." Embedded in this simple epigram is a quite sophisticated view of the nature of *models*.

The "Wisconsin Idea" and the Wisconsin Tradition in Urban Land Economics



The Wisconsin Real Estate Tradition is an *idea*. In fact, it stems from a related concept usually referred to as *The Wisconsin Idea*.¹² First articulated by UW President Charles van Hise (left) in 1904, and further elaborated (and named) by Charles McCarthy (1912), the Wisconsin Idea is often summarized by the notion that "the walls of the University are the boundaries

of the state." In other words, the University is not an ivory tower, divorced from the real world, but rather a place connected, if somewhat set apart. The Idea naturally gives rise to the University's modern mission statement: "To create, integrate, transfer and apply knowledge."

The Wisconsin Idea is, in many respects, a natural outgrowth of the University's history as a land grant institution, that is, a place founded with an eye towards social and economic development.¹³ Other land grant institutions share many elements of the Idea, though it is fair to say that Wisconsin may have gone the farthest to articulate the concepts, and continues to make reference to this founding philosophy.

It is worth noting that the classic statement "the walls of the University are the boundaries of the state" admits of two possible interpretations. In a narrow sense, one could interpret it as placing a limit on, as well as expanding, the boundaries of the UW. Certainly a few Wisconsinites of an insular bent think the state is better off limiting interaction with foreign countries like "Chicago" or "Minnesota" (much less "Mexico" or "France.") But despite the State's cheesehead reputation,¹⁴ we're actually surprisingly connected to the

¹² See <http://www.wisc.edu/wisconsinidea/>, <http://www.library.wisc.edu/etext/WIReader/Contents.html> and Witte (2001).

¹³ The Morrill Act of 1862 granted federal land to each state to support the establishment of colleges/universities, said institutions to teach "agriculture, military studies, and the mechanic arts" as well as "classical studies." There are some 70 universities in the country that were either designated or started as land grant institutions. See <http://www.nasulgc.org/>

¹⁴ Wisconsin is just in the top quartile of the 50 states in the percentage of its economy connected to agriculture, but that still means less than 2 percent of employment or gross state product is derived from ag. With

outside world.¹⁵ In today's global environment, most of us at the University, and I think most Wisconsinites, find the expansive interpretation of the Wisconsin Idea, with global boundaries, more relevant and fruitful.



Why has Wisconsin, of all the land grant colleges, made this "Idea" such a central part of its identity? I think partly this centrality has its roots in the Progressive movement, associated here with the Republican progressive Robert M. LaFollette ("Fighting Bob"), still a revered figure within the state. As an historian of state politics puts it:

"In the first quarter of the twentieth century, Wisconsin leaders began to seek new answers to problems caused by an increasingly industrial and technological society. To a people born and raised mostly on farms, the explosive growth of cities, rising importance of large-scale industry, transformation of the workforce by new immigrants and rigid class stratification, and the overall speed of daily life brought uncertainty and confusion."¹⁶

While the extent to which some specifics of LaFollette's philosophy and legislative program apply directly to today's issues and circumstances can be debated, his influence clearly remains (Cooper 2004).

Many examples can be given of the University's application of the Wisconsin Idea to specific issues and policies. The University's practical contributions to science and technology, from Stephen Babcock's 1890 test for butterfat that made dairy products a tradable commodity, to today's work on stem cells by James Thomson, are too numerous to list here¹⁷, but the

21 percent of our economy in manufacturing, we're tied with Iowa (!) for the number 2 manufacturing state (Indiana ranks first with 28 percent). See <http://www.bea.gov/bea/regional/gsp>

¹⁵ See http://commerce.wi.gov/sitemap/international_trade/ for some data. Also, "For each of the last 10 years, the University of Wisconsin has supplied the most entrants to the Peace Corps of any college or university." (Freedman 2006).

¹⁶ http://www.wisconsinhistory.org/turningpoints/tp-036/?action=more_essay Unger (2000) provides a thorough biography of La Follette.

¹⁷ But we have to note at least a few. Vitamin D – and dozens of derivatives and therapies that stem from it. Warfarin (named for WARF, Google it) better known as Coumadin to the millions of cardiac patients who take it. Key parts of the Hubble space telescope. When universities are ranked by size or productivity of research program we're always in the top 5.

University's contributions to social science and business are also legion. For example, the University and its faculty are well known for their contributions to the enactment and design of policies like unemployment insurance and social security (see the work of John R. Commons, and Edwin Witte, among others, circa 1935), and this line of work continues today with the multidisciplinary Institute for Research on Poverty, as well as the Center on Business and Poverty which performs outreach and financial education.

As I write the 2011 draft of this teaching note, it is a happy coincidence that we are celebrating the centennial of the Wisconsin Idea on campus. A nice review can be found at <http://www.madisonmagazine.com/Madison-Magazine/January-2012/Wisconsins-Great-Idea/> and for the official UW site devoted to the centennial, see <http://wisconsinidea.wisc.edu/>.

One recent innovation of note is the new Wisconsin Institutes for Discovery.¹⁸ The plural is grammatically correct, as it refers to twinned public and private entities that bring UW researchers from units across campus (engineering, biology, mathematics, business, etc.) in order to tackle cross-disciplinary problems in areas like epigenetics (how genes are activated or inactivated), tissue engineering (using artificial structures called "scaffolds" to grow cells into substitutes for biological material – maybe that piece of my knee I lost in a long-ago basketball game), improvements in therapeutic technologies, the application of recent advances in the mathematics of optimization to biology and medicine, and a broad look at the "systems level" of biological organisms.

The Wisconsin Tradition in Real Estate

Within the Real Estate Program, we usually refer to the Wisconsin Tradition. The Wisconsin Tradition in Real Estate and Urban Land Economics is first and foremost a set of values that stem from and elaborate on the Wisconsin Idea. Certainly the Program is about knowledge, the study and understanding of real estate markets and the economies in which they are embedded. In fact, part of the program's reputation stems from learning a lot about real estate and the skills needed to work it. You'll often hear alums and others who hire our students talk about their ability to "hit the ground

¹⁸ See <http://www.discovery.wisc.edu/>. The building in which the Discovery Institutes are housed is itself very innovative as a real estate solution; a detailed description of the real estate is available at the website.

running”, but the Tradition is first and foremost about values; the values come from people. First, what values?

Ethical dealing. The Wisconsin approach is based on a “Golden Rule,” treating other market participants as we ourselves would wish to and expect to be treated. Honest dealing and personal integrity are required. Economists have long understood that it is impossible to write complete contracts; thus a well-functioning market requires some level of trust, which ethical behavior engenders.¹⁹

Real estate is a social enterprise as well as a private business. Good real estate developments and decisions generate external as well as private benefits. (And bad decisions can adversely affect the broader society as well as those who took the original risks). Sustainability, carefully and properly defined, is an important criterion for real estate decisions, along with traditional measures of profitability.

Examine investments from alternative points of view. Buyers need to learn to put themselves in investors’ shoes, and vice versa; equity partners and lenders; all need to learn to see a project from the perspective of neighbors, planners, and others with an interest in the built environment.

Decisions are holistic. We are serious about the technical side of our business, but analytics are not mechanical. Avoid the “fallacy of misplaced concreteness,” or “I know the answer’s right, it came from a spreadsheet.”²⁰

Multidisciplinary approach. The depth and breadth of the curriculum is one of our major comparative advantages, mirroring the complexity of the decisions.

Development and finance are connected. We aim to turn out developers who understand finance, and don’t view real estate finance as merely financial engineering. Know

the underlying assets. (Apparently much of Wall Street forgot this latter requirement circa 2000-2008, but the Wisconsin-trained should not.)

Prudent, informed risk-taking. There’s no reward without risk, but risks need to be analyzed, quantified where possible, and appropriately managed.

Outward- and forward-looking orientation. Real estate is in many respects a local endeavor – no one buys a property in the U.S., you buy a building in Madison, Chicago, London, or some other market – but it does not operate in a vacuum. Today’s real estate professional has to understand the world beyond the boundaries of her metro area, and must be thinking about the market’s needs and constraints next year, next decade, and beyond.

Lifelong learning. The B.A. or MBA in Real Estate and Urban Land Economics is the beginning, not the end, of your education in the field. Read.²¹ Think.²² Discuss.²³

Sifting and winnowing, by which alone the truth shall be found. This UW adage stems from UW Real Estate “founding father” Richard Ely’s famous “trial,” about which more below. “Sifting and winnowing” doesn’t mean that “all ideas are equal,” but rather that all ideas have to withstand rigorous scrutiny. Corollary: at Wisconsin we scrutinize, we argue, even passionately at times; but we do not shout down or demonize those with whom we differ.

Giving back. Public service as well as private value creation is a defining characteristic of the Wisconsin graduate.

Real estate is not merely a job, it’s a passion. In real estate we have the privilege of working in an industry that offers many kinds of jobs for people with very different skill sets and different predilections. Left brain, right brain, find what you want to do within real estate and embrace it. Enthusiasm is a hallmark of the Wisconsin tradition.

The entering student, or another reader encountering the Wisconsin Real Estate Program for the first time, might – indeed, *should* – ask, whence these values and principles? Are they really practiced, or only so much verbiage from a professor? In fact, I offer the list above as my personal

¹⁹ See Anderson and Escher (2010). Anderson and Escher are among the leaders of a movement to have MBA students adopt a sort of Hippocratic Oath for business. You might find the oath idea itself speaks to you, or not; but either way this little book, written by MBA students, frames some very timely issues, and provides a useful guide to additional reading and reflection.

²⁰ You will find out, if you do not already know, that I am a spreadsheet freak. True spreadsheet freaks never forget that the spreadsheet itself is merely a tool, an organizing framework for information. Remember three things: (1) Spreadsheets do not make decisions, people do. (2) There’s no such thing as “the” rate of return or “the” value of a property. All interesting real-world problems are answered with *ranges*, not a single number, and their associated probabilities. (3) Garbage in, garbage out.

²¹ See Malpezzi’s recurrent *Urban Economics: Reading for Life*, updated annually.

²² McNerny (2004).

²³ The WREAA is one convenient vehicle for discussion.

summary of the values I've observed over the past two decades I've been affiliated with the Program. As an entering student, grad or undergrad, you will spend the next two years, and thereafter your career, making your own observations, and your own judgments, on these values.

The values are aspirational. It would be arrogant and patently untrue to claim that any or all of us connected to the Program fully embody all these values every day. Rather these are the values against which we benchmark our performance, and our progress.

The values exist in no small part because of the influence of a number of teachers and others who have shaped the tradition. Who are the people who formed these values? The next section provides a brief introduction.

Key Biographies

Richard T. Ely: "Under all, the land."



Richard Ely (born 1854, died 1943) is generally credited as the founder of land economics and real estate studies at Wisconsin. Ely taught here from 1892 to 1925 (when he went to Northwestern). After Ely left, from 1925-44, Urban Land Economics was taught in the agricultural economics department. Ely's first course in "Landed Property and the Rent of Land" was first taught in the

1890s. Ely established the Institute for Research in Land Economics and Public Utilities in 1920, and the forerunner of today's journal *Land Economics* started in 1925.²⁴

In addition to pioneering the study of urban land markets, Ely was a founder and president of the American Economics Association,²⁵ and author of one of the leading economics principles text of his day. His work reflected

UW's "institutional economics" flavor. According to Groves (1969),

The school was distinguished as much by its attitudes and methods of investigations as by its doctrine. It was imbued with a moral purpose and aimed at improving the quality of American life. It had a strong empirical bent, rating experience above abstract theory, favoring first-hand investigations and starting with the concrete, practical, important and near-at-hand.

The focus on moral purpose derives from Ely's strong interest in ethics and distributional issues, as well as efficiency. He shares this with an even greater father figure. Adam Smith is best known today for *The Wealth of Nations*, primarily focused on efficiency, but he wrote a companion volume, *The Theory of Moral Sentiments*, that explores ethical issues more thoroughly.²⁶

Richard Ely not only began the study of land economics and real estate at Wisconsin, but he spearheaded a team of academics and practitioners who in the early 1920s collectively constructed the nation's first real estate curriculum, with support from the National Real Estate Board (now the National Association of Realtors). Ely and Morehouse wrote the text on *Elements of Land Economics* (1924) and Phillip Benson and Nelson North wrote the first edition of *Real Estate Principles and Practices* (1922; with intervening authors Alfred Ring and Jerome Dasso, this is the longest continuously published real estate text, currently authored by former UW Professor Jim Shilling). Robert Bingham and Elmore Andrews furnished a book on real estate finance (1924), Nathan MacChesney wrote on real estate law, and Ernest Fisher wrote an applied text on *Principles of Real Estate Practice*.²⁷

Ely and George Wehrwein's *Land Economics* (1940), the elaboration of the ideas in Ely and Morehouse, became "the single most influential book in a field strongly oriented to social problems." While some of the prose is florid and now seems archaic, and his writing often contains a little more assertion and "argument by resource to authority" than solid evidence, Ely's methodology, or lack thereof, has to be seen in the

²⁴ *Land Economics* is currently edited by Professor Daniel Bromley of UW's Department of Applied and Agricultural Economics (and Fellow of the Center for Real Estate). See <http://www.wisc.edu/wisconsinpress/journals/journals/le.html>

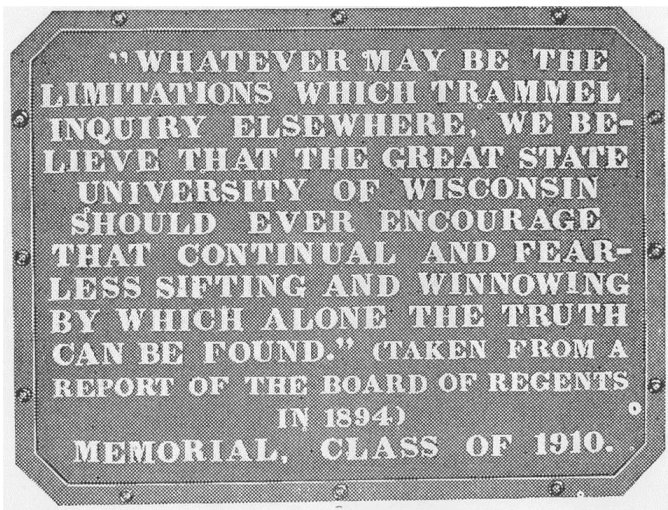
²⁵ One way Ely's contribution to the foundation of the AEA has been memorialized is that every year the President of AEA publishes his or her "Richard T. Ely Memorial Lecture." See <http://www.vanderbilt.edu/AEA/elylecturers.htm>

²⁶ It is a common misconception that economics is only about efficiency. See Young (1994) and Zajac (1995) for approaches to distributional issues in economics, and see Kummerow (2005) for a longer discussion of Ely's ethics.

²⁷ Much of this activity was encouraged by the National Association of Real Estate Boards, which had a strong interest in professionalizing the real estate industry. This foreshadowed the Wisconsin Realtors Association support of UW's Center for Real Estate.

context of his times. Certainly he had the ability to ferret out and articulate problems that still engage us today. For example, the chapter on "Urbanization and Urban Land," from his textbook with Wehrwein, discusses historical vs. economic approaches to urbanization, urbanization and economic development, alternative land uses, public regulation of land.

In perhaps the (locally) best known episode of his life, Ely also found time to be accused -- and acquitted -- of "sedition."²⁸ It's this famous episode that gave rise to the "sifting and winnowing" quote above. The full quotation follows:



The plaque above is a campus landmark, on the front of Bascom Hall. In 1894, Ely was accused by Regent Oliver Wells of supporting a local printer's strike, and of fomenting unrest and violence generally; specifically he was accused of threatening to withdraw campus business from a local printer. As this was the time of the Haymarket Riot and other violent strikes and lockouts, such charges were weighty ones. To make a long story short, the Regents formed a committee to investigate, and Ely was exonerated.²⁹ The Regents' Committee report on the case included the felicitous "sifting and winnowing" phrase, which is now memorialized on the plaque. In addition to inspiring a campus landmark, the Ely event is widely heralded as a landmark of academic freedom generally. In fact, in the televised version of John F.

Kennedy's³⁰ *Profiles in Courage* after they ran out of episodes based on the original book, they dramatized the Ely Story. (A young Leonard Nimoy played a supporting part).

In an interesting coda, the Class of 1910 cast the famous plaque and presented it to the University as a memorial. The Regents initially refused the gift -- comprising a plaque quoting their own report!

Richard U. Ratcliff

Richard Ratcliff (taught 1944 - 71) was a student of Ely's who circa 1945 transformed Ely's program in land economics into a formal department, the current Department of Real Estate and Urban Land Economics. He undertook pioneering work in housing markets (both U.S. and international), land, real estate investment analysis and appraisal. His text *Urban Land Economics* is a classic.

Ratcliff was a Madison native, who actually found his way to the study of real estate shortly after college, through employment with legendary Madison real estate broker Paul Stark. At the time, during the onset of the Depression, UW was not offering graduate courses in real estate, so Ratcliff undertook his graduate study at Michigan, under Ely's student Ernest Fisher. As the Depression deepened, Fisher and Ratcliff decamped to Washington, where they became the analytical center of the newly formed Federal Housing Administration, along with Frederick Babcock, Homer Hoyt, and Arthur Weimer, among others.



His "Foreword" to Goldberg and Chinloy's *Urban Land Economics* emphasized "land as a joint product:" productivity requires the application of other factors of production. Analyzing land for particular uses is quite different than analyzing land in the abstract. This is where urban land economics departs from the earlier classical tradition, and moves towards a neoclassical conception. (Ratcliff's exposition is often more verbal

²⁸ The terms "trial" and "sedition" are sometimes loosely applied in campus discussions, but of course Ely's "trial" wasn't really a "trial" but an administrative hearing; and he was not formally charged with sedition or any other crime.

²⁹ A detailed review of the events and a number of essays on the implications of the "trial" and the concept of sifting and winnowing can be found in Hansen (1998).

³⁰ Much of the actual writing is thought by some to be by Kennedy aide Theodore Sorenson.

and less mathematical than other neoclassicists, but much of his work is clearly in that tradition, albeit with a lot of attention to institutions as well).

Ratcliff, and those who follow, also emphasize dynamics of land markets, and the related institutions society develops. Their approach is heavily inductive, but provided a useful counterpoint to the classical models of David Ricardo, Karl Marx and Henry George. While the classical land economists, notably George, emphasized land as in fixed supply, Ratcliff pointed out that while this is true in the aggregate, *land for a particular use* is often in elastic supply. This is a point we will refer to at several junctures in the course.

Ratcliff also made fundamental contributions to real estate valuation. Prior to Ratcliff, professional practice was that appraisals were based on “highest and best use.” But how do we interpret this in a world where the HBU is uncertain, and open to regulation? Ratcliff began to analyze uses subject to constraints; and since constraints are not immutable, he began to analyze value in a probabilistic way, leading to the concept of “most probable use,” which can be thought of as a constrained optimization and hence a much more realistic notion (Vandell and Carter 2000).

Richard B. Andrews



Richard Andrews (who taught from 1948 through 1981) was more or less a contemporary of Ratcliff. Andrews' focus was on the subject of urban land economics. He chaired the Department for a few years after Ratcliff, but chose to concentrate on research. Given his focus on urban land issues, he also spent considerable time within the

UW's Department of Urban and Regional Planning. Dick Andrews was active as an Emeritus Professor until his death in the mid 1990s.

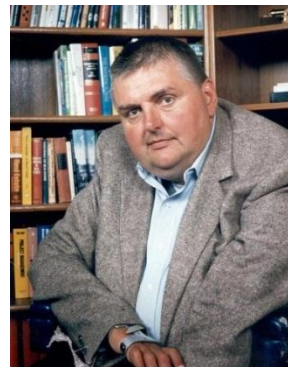
Andrews pioneered economic base analysis, and undertook other important public policy analyses, but was especially well known for refining and extending the concepts of *land use succession* and *situs*. In brief, land use succession is about the dynamics of land markets, and how the use of a given parcel or neighborhood evolves over time. Many recent articles on the subject use the

synonymous term “filtering.” *Situs* is about how the relationship of a site to other parcels and features of the land affects its value – what today is more commonly termed an “externality.”

Andrews also wrote extensively on how “urban land economics,” as the tradition has evolved at Wisconsin, fit in to a broader view of related disciplines. His major writings include *Urban Growth and Development* (1962) and *Urban Land Economics and Urban Policy* (1971). He was greatly concerned about the apparent inability of some urban societies to control the characteristics of a developing environment.

Andrews also headed the Center for Urban Land Economics Research (CULER), a vehicle for much of his research. CULER was later revived under Kerry Vandell's leadership, with key contributions by Richard Green, Rod Matthews and others, and it eventually morphed into the James A. Graaskamp Center for Real Estate, described below. Next we discuss the Center's namesake.

James A. Graaskamp



James Graaskamp taught 1964-1988; in 1971, the chairmanship devolved to him. A student of Ratcliff, Graaskamp built the teaching side of the program into national prominence, and was noted for his holistic intellectual approach, his iconoclasm and his extraordinary efforts on behalf of students. He chaired the department until his untimely

death in 1988.

His most enduring written work is *Fundamentals of Real Estate Development*, published by the Urban Land Institute. Among other important concepts in “Fundamentals” is Graaskamp's view that real estate professionals should routinely analyze a project from three points of view: the ‘Space Consumer's Group’ (Consumers), the ‘Space Producer's Group’ (Suppliers), and the ‘Public Infrastructure Group’ (Government). This foreshadowed the “incentives analysis” later adopted by the World Bank and others as a framework for improving public policy decisions related to real estate, as in Malpezzi and Mayo (1997).

Fundamentals is also noteworthy for its explication of an approach to real estate feasibility, including “front door analysis” and “back door analysis,” a companion pair of single-period analyses still used by many developers. Front Door Analysis is a quick calculation to estimate the rent (PGI) required to cover known costs (including a required return on the project). Back Door Analysis estimates how much investment cost can we incur and still make our required return, given the rents this property is estimated to command. Graaskamp 1981 and Shilling 2002 provide details. Front door analysis and back door analysis were especially useful at a time when multi-period discounted cash flows were less commonly used. Even with the rise of “bigger” models readily implemented in spreadsheets,³¹ Front Door and Back Door are still used, and are especially useful as a screening tool and a “reality check” on more elaborate models. Shilling (2002), Miles *et al.* (1991) and Peiser *et al.* (1992) are examples of widely used texts that incorporate Graaskamp’s frameworks for feasibility analysis.

Graaskamp was also interested in important public policy questions, from the local (where should the Monona Terrace Convention Center be located?) to the national. He was fearless and scathing in his denunciation of the conflicts of interest that led many in the appraisal industry to support valuations that ranged from unfounded to fraudulent, that underpinned the S&L crisis of the 1980’s and the severe real estate downturn of the 1990’s.

Graaskamp was first and foremost a master teacher, and developed many of the concepts he imparted to students in the applied research he undertook as part of his consulting practice. Thus, while Graaskamp published less than most other well-known academics (and very little in refereed journals), in addition to *Fundamentals*, many ideas can be gleaned from his unpublished notes etc. as edited by Steve Jarchow, and by Jean Davis and Elaine Worzala. For example, his class notes on “Real Estate Economics -- the Next 25 Years” discuss how real

estate markets are affected by urbanization, population changes, technological change, and fiscal constraints.

Clapp and Myers (2000) provide a nice overview of Graaskamp’s approach to research. Much of Graaskamp’s written work was undertaken in connection with his consulting firm, Landmark Research.³² While some of these works are available in the aforementioned Graaskamp on CD-ROM, many are not. With support from a number of alums and Faculty Associate Sharon McCabe, recently the UW Library digitized these documents and recently set up a web portal making these much more widely available.³³

Graaskamp was eminently quotable, if sometimes just a little wordy; here we relay his view that:

Real estate is not a number crunching exercise but is a series of problem solving opportunities which interface practical tools of applied social science with every major issue of our time in terms of the conservation of both our people and our natural resources.

That’s a good summary of a number of the important values comprising the Wisconsin approach to real estate. Put in more day-to-day terms, Graaskamp often remarked that:

The successful real estate deal is nothing more than a series of crises tied together by a critical path.

Recently Professor Tim Riddiough was able to obtain a high quality DVD of a half-hour lecture Graaskamp gave to students at Massey University, New Zealand, in 1968 on the relationship between urban land economics and real estate development. You may view this through the course website. Here we summarize some of the main elements of that lecture.

Graaskamp discussed how the real estate process is a dynamic negotiation between space consumers, space producers, and the public infrastructure group, as we have already discussed above. He also discusses his strong interest in decision theory and voices his hope that real estate analytics will become both more rigorous and more realistic in future decades.

³¹ Graaskamp was also a leader in the computerization of real estate analysis, including the (in)famous “MR. CAP” mainframe program developed with Michael Robbins and bravely tackled by a generation of UW students in the 1980s. See DeLisle (2000) and see Graaskamp (1969) in particular. History lesson: spreadsheets have only been widely used for about two decades; the first user-friendly spreadsheet, Visicalc, dates from 1978, and Lotus 1-2-3 from 1983. Spreadsheets only became really widely used in real estate in the late 1980s, although some computerized approaches using mainframes had been around longer. One of the ancillary benefits of this course is that you will learn something about the state of the world in the previous millennium.

³² After Graaskamp’s death, Landmark Research was continued for over a decade by the late Jean Davis, his business and life partner.

³³ See: <http://digicoll.library.wisc.edu/RealEstate/subcollections/GraaskampAbout.html>

Other points Graaskamp made include the following. He defines real estate in terms of what he often called “space-time units” (which yield cash flows, income) and “money-time units” (debt service). One of Graaskamp’s focal points was to constantly prod to see how the rent per square foot that different uses might generate would cover the opportunity cost of capital, or not. He often referred to real estate as a “cash cycle enterprise”, that is, both profit-making firms *and* nonprofit entities are engaged in the production and management of real estate. Government agencies, social services, churches, and schools all require real estate, just as profit-making firms do, and all have to cover costs.³⁴ Graaskamp highlighted that such nonprofit entities can also benefit from cash flow surpluses, even though by convention we don’t call these profits. Graaskamp also highlighted the fact that profit/surplus in real estate comes above the NOI line, as well as below it. In today’s world, financial engineering and tax accounting, i.e. items below the NOI line, are the focus of many real estate programs. While we do concern ourselves with finance and tax and deal structure, at Wisconsin we also concern ourselves with efficient management of the property, i.e. things that can bring in more rent above the line, or lower costs.

Graaskamp also discussed one of his favorite themes, how the concept of highest and best use in valuation must be modified to reflect governmental, social, physical, and other constraints. In the presentation he elaborates on his preference for terms most fitting use and most probable use, following Ratcliff, to replace highest and best use under constraints. Like Ratcliff, he argues for considering the outcome of a valuation as a range with associated probabilities, rather than a single number.

Graaskamp was also ahead of his time in tackling the issue of NIMBYs (Not In My Back Yard) and how land use regulations and other public actions can shut out new residents, what we often today refer to as the “insider-outsider problem.” He was one of the first to focus on local government’s perception of commercial properties as yielding higher tax revenues and making lower demands on services. He decries using this argument to justify barriers to less fiscally favored residential development, which necessary on both efficiency and equity grounds.

In addition to his intellectual and pedagogical contributions, Graaskamp offered a compelling and inspirational personal story. A top high school athlete,

with a college scholarship on offer, Graaskamp contracted polio in his senior year. The disease left him quadriplegic. Despite the obstacle, he completed his undergraduate and graduate education, and eventually took a faculty position in UW’s School of Business.

Refusing to accept his situation as disabling, Graaskamp not only fulfilled his normal faculty duties, but he undertook numerous far flung consulting assignments and other professional engagements, going so far as to personally inspect wilderness areas of Alaska that he agreed to appraise. At any given time, he hired several students to live with him at his Breese Terrace house, a stone’s throw from Camp Randall’s football stadium, to assist him with what he wryly termed the “materials handling problems” of daily life and work. His hobbies included deep sea fishing, which he undertook with tackle he designed that could be controlled with a little help and his teeth. Many anecdotes of his courage and tenacity abound, but probably none more telling than many who have told me how once having known Graaskamp for a while they found periods of time when they essentially forgot his condition. That’s the context for the highly treasured telegram Graaskamp received once after receiving an award, from one of his former “materials handlers:” “Congratulations on receiving Wisconsin Handicapped Person of the Year Award. When did you become handicapped?”

While Graaskamp made few concessions to his medical problems in his personal and professional life, he was active in improving the quality of life for others facing such difficulties. Another way in which Graaskamp was ahead of his time was in his work with friend and law professor Mike McBurney in the development of pre-ADA improvements in accessibility for disabled students.³⁵ In recognition of his accomplishments and contributions, today the McBurney Center’s conference room is named in Graaskamp’s honor.³⁶

Today’s Innovation is Tomorrow’s Tradition

The – so far unspoken – message of the past several pages is that we have a *tradition* today because we were *innovative* in the past. Ely’s vision of a true real estate curriculum, the land market and valuation research of Ratcliff and Andrews, Graaskamp’s innovations in

³⁴ For most firms, labor is the largest “cost center,” followed by the enterprise’s real estate.

³⁵ ADA: the Americans with Disabilities Act (1990) governs, among other things, accessibility standards for real estate. See <http://www.ada.gov/> for details.

³⁶ See <http://www.mcburney.wisc.edu/>.

teaching and analytic methods are the bedrock of our program's success.

As we've noted, it's important to think about the links between innovations in real estate markets, and innovations in real estate education. Graaskamp himself famously summarized the original innovation in the real estate "market:"

Someone rolled a rock to the entrance of a cave and created an enclosed space for his family – a warmer, more defensible shelter, distinct from the surrounding environment. This can be called the first real estate development. Since then, real estate activity has evolved and taken many forms to meet the needs of man and his society. Once based on need and custom, real estate is now based on social economics and statute.

Economists make a distinction between *invention* and *innovation*. Invention is about the original construction of ideas, while innovation is about making widespread and practical use of the ideas. An oft-cited example is electricity. Benjamin Franklin's iconic experiments with kites and lightening were undertaken in 1752. In 1831, Michael Faraday invented the dynamo, and over the next 50 years virtually all the major inventions of an electricity-based economy were completed. By 1882, Thomas Edison electrified the first entire neighborhood, in New York City, and the electrification of America was off and running. Nevertheless, it wasn't until the 1920s that much of U.S. industry electrified in the aftermath of World War I. It took a good 50 years for the fruits of these inventions to be widely dispersed in the economy.³⁷ Neither is this a one-off example. In recent decades economists have puzzled over why during the 1980s and 1990s, in the famous 1987 words of Robert Solow, "computers show up everywhere except in the productivity statistics." By the end of the 1980s personal computers were nearly ubiquitous in the office, and many were networked. But it took another two decades, and the process is still underway, for workers and households to learn how to use computers effectively in business.

Peter Drucker's classic text on *Innovation and Entrepreneurship* makes a number of cogent points about

innovation that are worth considering here. First of all, he notes that innovation and entrepreneurship are inextricably linked, and are not accidents, but practices and choices. The framework for the book comprises a list Drucker provides of the sources of innovation. As Drucker acknowledges, the list is not clean and neat, as there is much overlap among these sources. These include:

The unexpected – what economists call "shocks" such as the current rapid increases in oil and energy prices, and the (temporary) collapse of important parts of the real estate financial system.

Incongruity – when conventional wisdom and the established order diverge from today's realities. A good example might be the October 1987 stock market crash that rattled efficient market financial theory.

Process needs – For example, the rise of the commercial mortgage-backed securities market in order to facilitate the disposition of surplus real estate from the 1980s savings and loan crisis.

Changes in market structure – For example, how the internet and other technical changes have facilitated what some call the "death of distance" and facilitate dispersal of productive activities and outsourcing.

Demographics – In today's world including immigration, the impending retirement of the baby boomers, and the rise of the millennials (you *are* rising, aren't you?)

Changes in perception, mood, and meaning – what the economic world calls changes in expectations, which are particularly important for the prices of real estate and other assets.

New knowledge, both scientific and unscientific – which is a special province for the University. Our goal is to prepare you to analyze and respond effectively to the other six sources of innovation.

Innovation in real estate *markets* since Graaskamp's cavemen are far too many to enumerate here. The invention of the indoor flush toilet by Sir Thomas Crapper, Otis' elevator, the long history of technical improvements in concrete construction (although the Roman Parthenon constructed in 500 B.C. still remains a marvel), and that thing that makes cities like Atlanta and Phoenix (barely) livable – the air conditioner – are some other examples. Other innovations in real estate have more to do with legal and financial innovations – among

³⁷ Even to this day worldwide there are parts of the world where the supply of electricity is nonexistent and surprisingly many where the supply of reliable electricity is only a forlorn hope See McKinsey 2008 for discussion of the current state of power generation in India, for example. Note that India's problems in this regard are not technical, or especially related to low incomes; rather it's a perverse effect of badly designed public policies.

many examples the concept of condominium ownership or the long history of the rise of the modern U.S. financial market. From the perspective of U.S.-based real estate practitioners, we are currently still in the throes of at least three revolutions in the real estate market:

1. The continuing revolution in real estate finance, much of it stemming from the “unbundling” of mortgage transactions, the rise of private as well as government-sponsored secondary markets, CMBS and REITs; a revolution that has taken a sharp turn in the aftermath of the recent “Great Recession.”
2. The globalization of real estate, as the past two decades has seen real estate move from the ultimate “non-traded good” to a world in which buildings still rarely cross international borders, but everything else – debt and equity investment, and especially talent – has moved towards a world-wide market.
3. Green real estate, as both supply side and demand side agents increasingly focus on issues of environmental sustainability as well as more narrow issues of private profitability.

We’ve come a long way in innovations in real estate *education* since Richard Ely and his team of North American academics developed the first comprehensive real estate curriculum about 90 years ago. Graaskamp, aided by Mike Robbins and Craig Manske and others, was among the pioneers in the development of applying then new computing technology to the financial analysis of project feasibility. Graaskamp’s dissertation on pension reserves came out of a consulting arrangement with Professor Richard Heinz on loss reserves for mortgage insurance. Heinz and Graaskamp moved the industry to the still current 20 percent threshold for mortgage insurance as a stop loss for other investors, and also developed the idea of loan loss profiles and seasoning of loans.

Even after that, it wasn’t until the 1980s that real estate investment was based on a solid analytical footing. Our contribution in finance range from Graaskamp’s aforementioned contributions to Vandell’s and Lacour-Little and Malpezzi’s research on mortgage default, Riddiough’s work on how firms’ strategic considerations might change their foreclosure decisions as they seek to send signals to potential defaulters, and research by Davis and Ortalo-Magné on how house prices underlie the current subprime real estate crisis. On global real estate

issues, first Matthews and later Ortalo-Magné (with support from other faculty and alumni and staff) have made many innovations in international real estate. In many respects the events that kicked these curricular improvements off were the international field trips that Rod Matthews began to champion and assemble in the early 1980s to Asia, Europe, and occasionally Latin America. The Global Real Estate Masters (GREM), discussed below, spearheaded by Ortalo-Magné, is the culmination of our international efforts. On environmental issues, it is worth noting that much of the current environmental movement draws heavily on work many decades ago by UW’s John Muir and Aldo Leopold.

Graaskamp and his associate Mike Robbins were among the first to combine concern with environmental issues and modern analytics; well before readily available software made it a reasonable task, they undertook “a computerized appraisal analysis for the appraisal of large area wilderness tracts,” a project also noteworthy for the fact that it took Graaskamp, wheelchair and all, to remote areas of Alaska for site visits.

Some Recent History

After Graaskamp’s death in 1988, the department was kept going by the dedicated efforts of faculty like Rod Matthews, Mike Robbins, and Dowall Myers, with critical contributions by then-Ph.D. students including Charles Carter, Tony Ciochetti, Mark Eppli, Dan Knox, Tim Riddiough, and Elaine Worzala. In 1989, Kerry Vandell was hired, and the following year joined by Richard Green, Steve Malpezzi, and Jim Shilling. Green, Malpezzi, Shilling, and Vandell, and long-time senior lecturer Rod Matthews, served as the core of the Department for the next decade or so, joined in 2000 by returning UW Ph.D. Tim Riddiough, brought back to the fold from MIT. In 2003, Green retired to take a position as a senior economist at Freddie Mac followed by academic positions at George Washington University and now the University of Southern California; and François Ortalo-Magné was hired away from London School of Economics. In 2006, Kerry Vandell retired to take up a position at the University of California-Irvine, and Assistant Professor Morris Davis was hired from the Board of Governors of the Federal Reserve. In 2007 Jim Shilling took up a new position at DePaul University.

In addition to the “tenure track” faculty, the department also benefits from a group of dedicated Lecturers, Senior Lecturers and Faculty Associates, currently Michael

Dubis, Mike Hershberger, Tom Landgraf, Michael Johnson, Sharon McCabe, Peter Ritz, Arif Qureshi, Robert Schwarz and David Shulman.

Over the years, the UW Real Estate Program has influenced the field by “teaching teachers,” i.e. by sending out “embodied human capital” as well as writing papers. Former PhD students currently active in academia include Yongqiang Chu (South Carolina), Gregory Chun (Kimpco College), Tony Ciochetti (MIT), James DeLisle (Washington), Mark Eppli (Marquette), Terry Grissom (Georgia State), Tom Hamilton (St. Thomas), Ruslan Koesman (University of Indonesia), Crocker Liu (Cornell), Jay Sa-Aadu (Iowa), Atef Sharkawy (Texas A&M), Elaine Worzala (Clemson), and Zhonghua Wu (Florida International).

Faculty who eventually moved from UW to other universities in the “classical” period included Richard Ely (Northwestern), George Wendt (Michigan), and Richard Ratcliff (University of British Columbia). In the past decade, several of our faculty stalwarts of the 1980s and 1990s have retired or otherwise moved on for personal and/or professional reasons. Here we note several who have made substantial contributions to the Program.

Kerry Vandell



Kerry Vandell was Professor and Tiefenthaler Chair of Real Estate from 1989 to 2006. Vandell joined the UW faculty from Southern Methodist University, and had also served on the faculties at Berkeley and Harvard. Kerry Vandell led the evolution from a Program based on one (or occasionally two, e.g. Graaskamp and Andrews) key

faculty, to a team approach. He also revived and directed the Center for Urban Land Economics Research (now, of course, the Graaskamp Center for Real Estate) and chaired the Department for the critical transition years of the early 1990s. One of the country’s leading real estate academics, Professor Vandell is a Past President of the American Real Estate and Urban Economics Association (AREUEA) and past Co-Editor of Real Estate Economics. Professor Vandell has researched and consulted widely in areas of the economics of urban amenities, real estate market dynamics, credit rationing, and mortgage default risk. Like Ratcliff before him, the lure of the Pacific Ocean proved too great; in 2006, Kerry and his wife

Professor Deborah Vandell (a leading academic in educational psychology) took new positions at the University of California-Irvine.

Among Vandell’s widely cited research we can point to his early work on the economics of neighborhood, his careful analysis of many public policy issues such as the Federal Housing Administration and the section 42 tax credit program, and his research on the role of business value in commercial real estate taxation.

Richard K. Green



Richard Green came to the Program from a position as chief economist of the Wisconsin Realtors Association. In fact Green had recently completed a PhD in international trade under renowned UW economist Robert Baldwin, and had taken the WRA job while his wife Patty Harris completed her medical studies. Vandell managed to convince Green

of the opportunities in real estate economics in general and at UW’s program in particular, and Green joined in 1990. Professor Green served as Department Chair from 1999 to 2002, and also served as Acting Director of the Center from time to time. After a decade and a half of dedicated teaching and service, as well as first rate research in valuation, housing economics, and the connections between real estate and the aggregate economy, Green moved to Freddie Mac when Patty Harris found a great academic opportunity at Georgetown/Washington Hospital Center. After several years as Oliver Carr Chair of Real Estate, and Dean of MBA programs, at The George Washington University, Green moved in summer of 2008 to the University of Southern California, where he directs the Lusk Center for Real Estate.

Richard Green is co-author (with Malpezzi) of *A Primer on U.S. Housing Markets and Housing Policy*, published by the American Real Estate and Urban Economics Association, and currently the standard textbook for U.S. housing economics.

James Shilling



Jim Shilling was Professor from 1990 to 2006, and the first holder of the James D. Graaskamp Chair, joined Wisconsin after becoming known as one of the country's leading experts in real estate finance at LSU. Jim served as Department Chair from 1992 to 1998 and is a past president of the American Real Estate and Urban Economic Association. A recognized national authority on real

estate investment trusts, among other finance topics, and author of the well-known textbook *Real Estate*, Jim recently took up a Chair in Real Estate Finance at DePaul University.

Among Shilling's many research accomplishments, we point to his early work on the user cost of housing capital, and how tax and other public policies drive a wedge between the costs for housing of different tenures; the documentation and partial explanation of some puzzles on the differences between *ex ante* expected returns going into real estate investments and *ex post* results; and (with Malpezzi) the construction of new fundamental metropolitan level data on real estate capital stocks.

Rod Matthews



Rod Matthews served the Program for 32 years as Senior Lecturer and Wisconsin Real Estate Alumni Distinguished Scholar, retiring in 2004. In the recent past Rod has taught real estate law and real estate finance. He regularly taught the Program's signature "Real Estate Process" course to over 250 undergraduates from all across the University. Mr. Matthews was the driving force behind the Department's

first international real estate courses, which during his tenure took students and faculty on intensive tours of real estate developments in (among other places) France, Germany, the United Kingdom, Japan, Korea, Hong Kong, China, Brazil, Hungary, Russia, Indonesia, and Thailand, as well as a series of international tele-courses with

students in such far-flung locations as Vladivostok and Kyrgyzstan. A lawyer, in addition to his professional practice Matthews has served as Dane County Executive, and Deputy Director of the Russian Privatization Center, with responsibility for Land and Real Estate.

Institutions of the Wisconsin Real Estate Program

Today's UW Real Estate Program is made up of four main institutions:

The Department of Real Estate and Urban Land Economics. (Hereafter, the Department). This is the administrative home of the faculty, lecturers, and staff that run the academic Program. The Department also takes special responsibility for undergraduate and Ph.D. programs. See www.bus.wisc.edu/realestate/about/departments.asp

The James A. Graaskamp Center for Real Estate, (formerly the Center for Urban Land Economics Research or CULER) has recently, and very appropriately, been named for our master teacher of the 1970s and 80s. The Graaskamp Center focuses on applied research, and outreach to the business world and the community. It takes on a central role in the delivery of our MBA program.

The Graaskamp Center's Board of Advisors plays an important role in connecting the Madison-based elements of the Program to the wider real estate profession. Comprised of about 70 top real estate professionals from around the world, including both alumni and non-alumni, the Board of Advisors helps connect students, faculty and staff to the business of real estate and, in turn, is one of the mechanisms by which we disseminate our research, our innovations in business and public policy, and the Wisconsin Idea to practitioners.

The Center's many dissemination activities include hosting the Department/Center [website](http://www.bus.wisc.edu/realestate/about/departments.asp), our [Facebook page](https://www.facebook.com/wiscucler), our blog the [Wisconsin Real Estate Viewpoint](http://www.bus.wisc.edu/realestate/about/departments.asp), and running our electronic [newsletter](http://www.bus.wisc.edu/realestate/about/departments.asp) and [Twitter feed](https://twitter.com/wiscucler). You can learn more about the Graaskamp Center at www.bus.wisc.edu/realestate/about/graaskampcenter.asp

The Wisconsin Real Estate Alumni Association (WREAA) is an organization of some 1,600 alumni and friends of the Program. Talk to anyone involved in real estate practice and education about the strength of the Program, and before long they will mention our remarkable alumni

network. As we mentioned above, your time in Madison as a student is only the beginning of your Wisconsin real estate education. Lifelong learning continues, and the WREAA is one of the main vehicles for delivery of that continuing education. See <http://www.wreaa.org/>

The WREAA was started in 1976 at the encouragement of Professor Graaskamp by a group of recent graduates, dubbed the “Magnificent Seven” by their peers, who were the first master’s students to graduate under Graaskamp in 1964, and the late Diane Orbison. From modest beginnings, it has grown to a force in the real estate industry with some 2,000 members. Every other year about 500 members descend upon Madison to join current students, faculty and staff for the Biennial Reunion, a signature event to celebrate each other’s accomplishments, renew friendships and make new ones, and to take the pulse of the real estate markets in every corner of the globe. The program incorporates speakers, alumni and non-alums, as well as networking events.

In the alternate year, a slightly smaller group assembles for the WREAA Trends Conference in Chicago, another great learning opportunity. The WREAA provides numerous educational and networking opportunities through (for example) local chapter events and its growing Internet presence.

The WREAA’s other *raison d’être* is the support of the core educational and research program in Madison, by (for example) providing scholarships; linking students to individual alumni mentors; and supporting the communication faculty who provide feedback on students’ memos, papers and projects in the valuation and urban classes.

The Real Estate Club is the student organization, currently comprising well over 100 active graduate and undergraduate students. See <http://realestateclub.org>.

The student-run Real Estate Club is one way students form the bonds that they will extend and renew as alumni. (In fact this is a good place to remind current real estate major students that they have the privilege of also joining the WREAA at no cost while a student; and the free membership is extended for a year upon graduation.)

Among its many activities, the REC holds 4-5 meetings each semester that combine a social event with an industry speaker presenting an important case study or other topic. One signature event is that each semester the REC co-presidents link up with alums in a city of their choosing for a three-day field trip (often held in

conjunction with a WREAA board meeting to provide additional opportunities to interact with leading industry professionals.)

To summarize our organization, these four elements, and the people that comprise them – faculty, lecturers, staff, alumni, students, Center board members, and other friends of the Program – are the main assets of the Wisconsin Real Estate Program. Like the four legs of a chair, the elements must each hold their own, but no matter how finely crafted each “leg” in isolation, ultimately it is how they come together to support the “chair” (the Program) that matters.

Throughout the nation, most existing real estate centers have been named for generous individual donors, such as Berkeley’s Fisher Center for Real Estate, Wharton’s Zell-Lurie Center, or USC’s Lusk Center. Other unnamed centers are mostly seeking such an individual donor. Another way in which our program has innovated is in fundraising for the Center. In April 2007, nearly 700 donors contributed \$1M to name the Center not for themselves, but for our esteemed teacher James Graaskamp.³⁸

How do the Department and the Center work together?

The Department of Real Estate and Urban Land Economics and the James A. Graaskamp Center for Real Estate are two complementary institutions housed within the Wisconsin School of Business that deliver the core educational, research and service “products” of the Wisconsin Real Estate Program. They have some similarities in structure as well as complementary missions. In the University’s long tradition, both are governed by the faculty; in faculty meetings the Department Chair leads discussion of Departmental matters and the Academic Director leads discussions of Center affairs.

Broadly the Department is responsible for managing faculty and other instructional staff, for example hiring new faculty or considering tenure and promotion cases are Department functions. The Department has primary responsibility for delivery of the undergraduate and PhD

³⁸ This generosity of spirit foreshadowed the \$85 M 2008 “no-name naming gift” directed by a dozen UW alums, including Real Estate’s Jon Hammes, to name the *Wisconsin School of Business* as such for 20 years, in order to provide the resources of a naming gift while focusing the community on the institution and its values rather than on the individual presenting the gift. See (web link).

programs as well as supporting the basic research function of the faculty. The Department is ultimately the Program's direct point of contact with the academic institutions of the university.

The Center is responsible for the MBA program, Executive Education/lifelong learning, and outreach to industry, most directly through the Board of Advisors and associated events, notably the biannual board meetings. The Center's outreach also functions like our annual Wisconsin Conference on Real Estate and the Economy, which we organize with our co-sponsors the Wisconsin Department of Commerce, the Wisconsin Housing and Economic Development Authority and the Wisconsin Realtors Association.

Some version of the Department/Center structure can be found at other leading real estate programs like Wharton; more commonly there is a center but no department, e.g. at Berkeley, USC or MIT. (In the latter cases, faculty are housed in finance or planning departments, sometimes both.) While our Department is not large relative to, say, the Finance or Accounting Departments within the Wisconsin School of Business, the tradition of a separate Department provides an important advantage in delivering the best real estate education and research possible.

The Center can then be thought of as a "wholly owned subsidiary" of the Department. There are several important advantages of this structure. For example, the bulk of the Program's budget is provided to the Department by UW through tuition and state appropriations; among other things these funds pay the salaries and benefits of the faculty and instructional staff, which make up the majority of the Program budget.

Recently the Department has attracted significant resources from the *Wisconsin Naming Partnership*, a school-wide initiative to provide a large naming gift to *not* name the school for an individual but rather to retain its identity. (See links.) Funds from the Partnership are not to fund general operations but rather to attract top faculty to move the School forward; these funds allowed us to expand the core faculty from 4 to 6 in recent years. But many of our activities such as partially funding field trips (domestic and international) or case study competitions or financing our share of our biannual research conferences with a revolving cast of regional Federal Reserve Banks and other scholars or the AREIT program cannot be financed without the additional funds we raise through Center memberships, the generous support of Wisconsin's real estate brokerage community

(spearheaded by the Wisconsin Realtors Association) and the many individual contributors, large and small, that form the basis for the Center's endowment.

Don't let the slightly complex Department-Center organization mislead you into thinking that we're more complicated than we really are. In particular, all faculty, lecturers and staff fully participate in the shape and delivery of both graduate and undergraduate curricula.

Responsibilities, Expectations, and Benefits of the Program

The University, the School of Business, and the Department strive to ensure that the program obtains the best possible faculty. In today's competitive environment the program finds itself best served by a team approach. Each faculty member is expected to exhibit leadership, both directly and indirectly, internal and external to the program, at a level appropriate to their experience and seniority.³⁹ Our faculty will aim for broad leadership in research and service, which benefits those inside the program as well as the broader community; but a central part of our culture is state-of-the-art teaching, and a strong connection between faculty and students.

Students can expect a world-class education in real estate and in the broader business and economic environment. In return, students are expected to participate actively in their educational experience, and not only take advantage of but contribute to the extracurriculars, such as field trips, Real Estate Club activities, and special workshops and presentations that the program offers.

Alumni can expect to participate in an alumni network without peer, which includes alumni of successive generations, as well as broader connections to current students, faculty, and other friends and supports of the program. In return, they are expected to participate actively in the WREAA, to do their best to live up to the program's values and ethics, and to support the program as their talent and resources permit.

³⁹ Gardner (1995) provides a good exposition of the features of direct leadership, i.e. if influencing people through a personal connection and/or direct example, versus indirect leadership, through intellectual discourse and participation in the world of ideas.

Current Faculty

The faculty is comprised of a full-time group of six professors (and our Dean!), and a committed group of lecturers and other instructional staff. The current faculty is comprised of the following.



Abdullah Yavaş, University of Wisconsin-Madison Real Estate Program Distinguished Professor, recently took on our top leadership position, as Chair of the Department of Real Estate and Urban Land Economics.

Abdullah joined us in 2009 from Pennsylvania State University, where he had been a faculty member since 1992. His most recent positions there were as Elliott Professor of Business Administration and the Research Director of the Institute for Real Estate Studies. At Penn State's Smeal College of Business, he was involved in the undergraduate and graduate programs in real estate where he has taught Real Estate Fundamentals, Valuation of Real Property, Real Estate Finance and Investments, and Advanced Real Estate. Yavaş received the Fred Brand Award for Outstanding Teaching, Smeal College's highest undergraduate teaching award.

Currently, his research focuses on the economics of intermediation broadly defined with a special focus on real estate brokerage. He also uses laboratory experiments to advance our understanding of market players' deviations from the predictions generated by rational models. Professor Yavaş has authored or co-authored numerous articles in real estate, finance and economics journals. The results of his research have been cited in some of the nationally known papers, including *The Wall Street Journal*, *Time*, *Money*, *BusinessWeek*, *The Philadelphia Inquirer*, and *Boston Sunday Globe*. He has consulted for mortgage companies and real estate investment trusts.

Professor Yavaş also brings a unique international perspective to the Wisconsin Real Estate Program. In March 2007, he was appointed as a member of the Monetary Policy Committee of the Central Bank of the Republic of Turkey, which is the Turkish equivalent of the U.S. Federal Reserve's Federal Open Market Committee.

During calendar year 2011, Professor Yavaş served as the founding president of Antalya International University in

its eponymous city in Turkey. The goal of Antalya University is to provide Turkey with a world-class institution of higher level teaching and research, that can hold its own with comparable European and North American universities.



Morris Davis, Associate Professor and Academic Director of the James A. Graaskamp Center for Real Estate, joined our faculty in 2006. Before coming to UW-Madison, he worked for six years at the Federal Reserve Board, where he was responsible for briefing Chairman Greenspan on the state of housing markets. He was also responsible for developing new ways of thinking about the relationship of house

prices, housing investment, and the macroeconomy for the purpose of enabling FRB staff to better understand the role of monetary policy on housing markets. Morris also worked as the Vice President of Yield Optimization for ReturnBuy Inc., a venture capital firm funded by Draper-Atlantic and eBay. He also dedicates research time to his side interest in health economics, especially the health of the elderly and the health of children.

Morris completed his undergraduate training at the University of Pennsylvania and graduated as a Phi Beta Kappa. He stayed at Penn to earn his Ph. D. in Economics in 1998, and was awarded the Alfred P. Sloan Dissertation Fellowship in 1997. Morris teaches graduate urban economics, and MBA macroeconomics. In the past he's taught undergraduate urban economics as well as the introductory real estate finance and investments course to MBAs.

Morris is currently on the academic advisory council to the Federal Reserve Bank of Chicago, and is an independent director of two publicly traded mortgage REITs. Much of Morris' research focuses on measuring and studying the determinants of land and housing prices, and he is much in demand by the press and business groups as a speaker on these topics. In his spare time, Morris plays guitar with a band of economists known (somewhat unfortunately) as "The Contractions" as well as a number of other bands including Madison's popular band "Pilot"



Stephen Malpezzi is Lorin and Marjorie Tiefenthaler Professor of Real Estate. Malpezzi recently served as Department Chair for academic year 2011-2, as we transitioned to then-Chair François Ortalo-Magné's Deanship of the Wisconsin School of Business. This followed two years as the Academic Director of the James A. Graaskamp Center for Real Estate, and six years as

Department Chair.

Malpezzi joined Wisconsin in 1990 from the World Bank, where he analyzed real estate markets and urban economies around the world. He also spent five years as a researcher at the Urban Institute. Steve currently teaches the graduate and undergraduate urban economics courses. He has taught a wide range of other courses including the Real Estate Process, housing economics, international real estate, real estate finance, and computer applications. Malpezzi's research interests include measuring and modeling housing prices, the role of regulation and other government interactions on real estate markets, and local as well as international economic development. He is a past President of the American Real Estate and Urban Economics Association, a member of the Urban Land Institute, a member of Columbia University's Center for Homelessness Prevention Studies, and served for six years as a NAIOP Distinguished Academic Fellow. Malpezzi is also an associate member of UW's Department of Urban and Regional Planning, an affiliate of the Institute for Research on Poverty, and a faculty associate of the Robert M. La Follette School of Public Affairs.

Professor Malpezzi helped design the Wisconsin Business School's recent undergraduate curriculum, which among other things strengthens communications and Excel skills, moves admission to the Business School from the junior to the sophomore year with a more holistic admissions process, and increases international offerings across the Business School curriculum. As noted above, he is currently completing the second edition of the *Primer on U.S. Housing Markets and Housing Policy* with Richard Green and Paul Carrillo; and completing a book on local economic development. With Law School Professor Thomas Mitchell, the project director, Malpezzi and Green are also involved in a Ford Foundation research project on black land loss in the rural south.

Malpezzi recently completed a study of the links between urbanization and economic development for the Rockefeller Foundation, and with former World Bank colleague Alain Bertaud is analyzing the patterns of urban forum around the world and the relative roles of market and public policy forces on shaping the forms of real estate markets and their associated transportation systems.



Tim Riddiough, Professor and E.J. Plesko Chair of Real Estate, is Director of the Applied Real Estate Investment Track (AREIT) and also directs our PhD program. He served previously as Academic Director of the Graaskamp Center, during which time he spearheaded our successful fundraising campaign, oversaw the restructuring and strengthening of the MBA curriculum, and strengthened the

Center's staffing. Tim received degrees up through and including his Ph.D. in real estate from UW-Madison. He joined the faculty here after teaching at Cincinnati and progressing to a tenured position at MIT. He is widely published, with research interests in financial intermediation and debt contracting, investment theory, option pricing, law and economy, and regulation-all as they apply to real estate issues. Tim has served on the boards of several organizations, including LaSalle Investment Management (a REIT mutual fund), OCWEN Asset Investment Corporation (a publicly traded REIT), the Massachusetts State College Building Authority and the Real Estate Research Institute. He is a Designated Counselor of Real Estate (CRE), a founding Fellow of the Real Estate Research Institute, an elected Real Estate Roundtable Scholar also active with the Pension Real Estate Association.

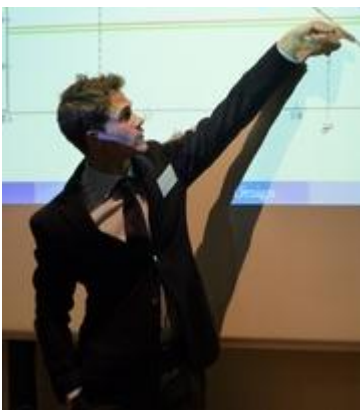
Professor Riddiough research and teaching focuses on real estate and finance and investments. His papers on pricing risky assets, and applying options frameworks to land development are widely cited, and his paper with Wyatt on the optimal strategy for a lender facing a decision to foreclose or undertake a workout is particularly timely. His research with Steven Ott and Steven Holland has received the prestigious Edwin S. Mills prize for best paper of the year by the American Real Estate and Urban Economics Association.



Erwan Quintin, joined us as an Assistant Professor in January 2010. He holds an M.B.A. from Case Western Reserve University and a Ph.D. in economics from the University of Minnesota. Quintin joined the Federal Reserve Bank of Dallas in September 2000, where he served until joining us at Wisconsin. His research interests include growth and development economics, financial economics and macroeconomics, with an emphasis on Latin American issues. Professor Quintin has taught economics at Southern Methodist University, the University of Texas at Austin, the University of Minnesota and the St. Thomas Graduate School of Business. He also served as visiting scholar to the European Central Bank's research department, where he studied financial convergence in the euro area.

His published research spans a range of macroeconomic and financial topics, including real estate finance, for example his recent Dallas Fed working paper with Dean Corbae on "Mortgage Innovation and the Foreclosure Boom." He has also undertaken significant work in Mexico, and has coauthored an influential (2008) chapter on "The Informal Sector in Developing Countries."

Professor Quintin has taken on several challenging teaching assignments, most notably a major revamping of our undergraduate real estate finance course. His new course challenges students in several directions, including a deeper integration of Excel and Visual Basic in the class, another way our students can "hit the ground running" once they leave Madison.



Our newest faculty member, Assistant Professor **Jaime Luque**, joins us in Fall 2012, from Carlos III University of Madrid. He earned a Ph.D. in economics from the New University of Lisbon in Portugal, supervised by Mario Páscoa, a bachelor's degree in Economics

from the University of Salamanca in Spain. And, as an undergraduate, he studied for one year as a visiting

Erasmus Student at the National University of Ireland in Galway.

His research includes innovative models of the "repo" (re-hypothecation) market that underlies the process of securitization, the optimal form of local governments, bubbles, and Ponzi schemes. Recently he coauthored research on the design of fiscal unions that has engendered particular interest given the ongoing Euro crisis. Professor Luque and coauthors develop a model that explains the optimal voting weights of countries in such a union, based on their income, size, and the correlation of their economies to regional shocks.

In academic year 2012-3, Professor Luque will teach urban economics, and real estate finance.



In September 2011, **François Ortalo-Magné** was named the Albert O. Nicholas Dean of the Wisconsin School of Business. At Wisconsin, every Dean is required to also be a tenured full Professor, and so Dean Ortalo-Magné remains a Professor of Real Estate, although naturally as Dean he does not take part in the normal day-to-day activities of our Department. He served as Chair of our Department

from 2009 until taking up his decanal duties in September 2011. He was one of the driving forces behind the continuing internationalization of the curriculum, including the development of the Global Real Estate Masters (GREM) described elsewhere in this note. We present more biographical details on Dean Ortalo-Magné in the section on the Wisconsin School of Business, below.

The Program also benefits from a cadre of committed **lecturers**. The current lineup includes:



Sharon McCabe, BA 1989, MS 1992, Faculty Associate, teaches valuation, and currently advises the Real Estate Club. Sharon is also the Associate Director of the Graaskamp Center for Real Estate, with particular responsibility for MBA recruitment and placement. Sharon has taught a range of courses including the Real Estate Process class which is the introduction to the program for all our undergraduates,

and is our lead instructor in the areas of valuation, appraisal, and feasibility analysis. Formerly the lead commercial real estate appraiser with the City of Madison, Sharon is a fee appraiser and consultant. In that capacity, she is involved with a variety of complex real estate assignments including subsidized housing, environmentally sensitive lands and large commercial properties.



Peter Ritz, Senior Lecturer, teaches real estate law. Peter is an attorney with the firm of Ritz & Caffisch in Madison specializing in business and real estate law. He earned his bachelor's degree in Economics from the University of Wisconsin-Madison and his J.D. from Harvard Law School in 1976. He is a member of the State of Wisconsin and the American Bar Association.



Tom Landgraf, Senior Lecturer, teaches residential development. Tom is President of Tom Landgraf Consulting, LLC, Madison, Wisconsin. Previously Mr. Landgraf was founder and President of Heartland Properties, Inc. He works primarily with communities, non-profit organizations, developers, corporations and financial institutions on the structuring and financing of

affordable and market rate rental housing and older adult assisted living units offering substantial services. He has participated in the development or financing of over \$500 million of housing providing homes for over 5000 families. He serves as senior housing and redevelopment consultant to the National Trust for Historic Preservation



Joe Walsh, Faculty Associate. After obtaining a 1986 BS in mechanical engineering and a 1992 MS in Real Estate at UW, Joe taught in the program from 1999 to 2004, after which he turned his attention more completely to the "real side" of the business, as Senior Director of Development

for Great Wolf Resorts, LLC, Madison, Wisconsin, 2004-2008. Site selection, land acquisition, joint venture negotiations and structuring, pre-development and project feasibility underwriting for \$120 million resort hotels featuring large indoor waterparks. Other real estate experience included managing a real estate consulting team for Arthur Anderson, and as a Principal in his own real estate consulting firm specializing in valuation and litigation support.

Mr. Walsh has taught a wide range of courses, including computer applications (ARGUS, advanced Excel, VBA, GIS and document processing and retrieval); real estate finance, international real estate, valuation, and urban economics. He's worked in Central/Eastern Europe as well as the United States, has led international field trips with our students, and is an active Academic Circle member of the Association of Foreign Investors in Real Estate (AFIRE). Joe is also a past Director of the Wisconsin Real Estate Alumni Association. In addition to his teaching responsibilities, Mr. Walsh takes special responsibility for extracurricular aspects of our undergraduate program, including mentoring and placement; and is responsible for coordination of many aspects of the Global Real Estate Masters.



Michael Johnson, Lecturer, received an MS from the Program in 1995. Michael has taught the computer applications course, and helps organize ARGUS and Excel seminars. He teaches the Real Estate Process, and is teaching a survey course in real estate for UW's Law School. Mr. Johnson also teaches real estate and finance at Madison Area Technical College.



Arif Qureshi, Lecturer, received a UW BS in Chemical Engineering in 1994, and an MS in Real Estate in 2004. His broad business experience runs the gamut from large scale process engineering and human resources management responsibilities with Intel Corporation, to development analysis for Great Wolf Resorts, to entrepreneurial roles as a real estate asset manager and commodity trader. Arif co-teaches the commercial

development course with Robert Schwarz. Mr. Qureshi took on this role shortly after graduation, but has recently expanded his role within the program, including the development of new IT-related curricula, and coaching student teams for national real estate competitions.



Michael A. Dubis, Lecturer, is an alum of the program and is also founder and President of Michael A. Dubis Financial Planning. Dubis teaches courses in Real Estate Investment Trusts and other public real estate vehicles to graduates and undergraduates. A frequent contributor to the

professional literature in financial planning, Michael is also a sought-after guest by local and national media such as CNBC.



David Shulman, Ph.D., is Adjunct Professor, and advisor to our MBA Program's Applied Real Estate Investment Track (AREIT), in which students manage an actual portfolio of REITs and other securities, currently valued at about \$650,000. Recently retired from Lehman Brothers where he was Managing Director and head

REIT analyst, Dr. Shulman is currently managing member of his own LLC and is engaged in educational and charitable activities including being an Executive-on-Campus at Baruch College a Visiting Scholar at the UCLA Anderson Forecast and a Visiting Professor at the University of Wisconsin. David was the recipient of the first annual Graaskamp Award for Excellence in Real Estate Research from the Pension Real Estate Association, in 1990.

Earlier in his career, Dr. Shulman was an academic, serving as an Associate Professor of Management and Economics at the University of California at Riverside and Financial Economist at the UCLA Business Forecasting Project. A graduate of Baruch College (1964), he received his Ph.D. (1975) with a specialization in Finance and a M.B.A. (1966) from the UCLA Graduate School of Management.



Michael Hershberger, Lecturer, is also a Senior Manager at Baker Tilly Virchow Krause, LLP. As the Director of Housing Market Analysis Services for Baker Tilly, Mr. Hershberger works with a network of offices in Wisconsin, Minnesota, Michigan, and Illinois to provide consulting services to clients nationwide. Mr. Hershberger has authored in excess of 600 housing and

commercial market studies throughout the United States during the past decade or so.

Mr. Hershberger was appointed to Wisconsin Governor Doyle's Taskforce for the Preservation of Affordable Housing and authored the final report to Governor Doyle in 2004, serves on the City of Middleton Workforce Housing Committee (as appointed by the Middleton Mayor) and serves on the T Wall Properties investment advisory board. Mr. Hershberger received a master's degree in Urban Land Economics from the University of Wisconsin – Madison (1988), is a CPA, licensed real estate broker in Illinois and Wisconsin, is a member of International Council of Shopping Centers and Appraisal Institute, and chairs the market study standards committee for the National Council of Affordable Housing Market Analysts. He currently teaches graduate and undergraduate valuation.



Robert Schwarz has been a real estate finance and development professional for over twenty years. His work experience covers market and feasibility analysis, lending, equity investment, construction loan management and development. He has held a variety of senior positions in the private, public and non-profit sectors, and has run his own

development and consulting businesses since 2005. He holds a B.A. in Urban Studies from the State University of New York and an M.S. in Real Estate Investment Analysis from the University of Wisconsin-Madison. He currently co-teaches commercial development with Arif Qureshi.

This is only a partial list of lecturers who have taught recently. Many others, like Terrence Wall, Jon Hammes, Barry Perkel, and Norman Perlmutter, have given

generously of their time teaching other courses in recent years. Others like Dick Heymann, Nino Pedrelli, Tony Ciochetti, and Jay Sa-Aadu have taught in the Center's Executive Education series. The list of alums and others who have taught one or more guest lecturers or given talks to the real estate club is simply too long to even provide a partial list. Others serve on the Board of the Applied Real Estate Securities Program.

The Program also relies heavily on several superb and committed **staff members**.



Michael Brennan, Center Executive Director. Joining us in 2009, Mr. Brennan has more than 25 years experience in real estate investment and analysis. He is co-founder and the former president and CEO of First Industrial Realty Trust, and former president and partner of The Shidler Group. Often sought as an industry expert on industrial real estate, he has appeared on CNBC, CNN and

Bloomberg Television.

He is a member of the President's Circle Real Estate Roundtable, the National Association of Real Estate Investment Trusts, and the Young Presidents' Organization. He also serves on three boards: Strategic Hotel and Resorts, Pacific Office Properties, and The Chicago Public Library Foundation.

As executive director, Brennan's goal is to take the Graaskamp Center to a new level. His mission is to represent the Center in the real estate community and to lead its quest to provide best-in-class lifelong learning opportunities to real estate professionals. Among other accomplishments in his first year on the job, Michael has instituted the Innovator's Award, that brings the best of new professional thinking to campus, as recipients present to the Real Estate Club and hold other sessions with students and faculty; and Graaskamp On The Road, a series of luncheon seminars in major markets, in which we bring together faculty, staff, Board members, and leading real estate professionals.



Kris Hammargren, Senior Associate Director. Kris joined the Graaskamp Center in 2008. She manages Center operations and marketing initiatives and works with the Center's Board of Advisors. Kris has worked in marketing strategy and analysis for 15 years in a range of industries including travel, publishing and financial services. She earned a BS degree from Minnesota State University-Mankato and an MBA from Georgetown University.



Lee Gottschalk, Center Associate Director of Education. Lee has been working for the Graaskamp Center since 2001. She assists with Center operations and works on a variety of outreach and marketing projects, including the Center's newsletter, annual Housing Conference and board meetings. Prior to her position with the Graaskamp Center, she managed a revenue-generating outreach department for the UW-Madison College of Agricultural and Life Sciences and worked in the software industry in Boston, MA. Lee received BA degrees in economics and strategic communication from UW-Madison and is currently working towards a certificate in religious studies at UW-Madison.



Mary Brost, Department Coordinator. Mary joined the Department of Real Estate in November 2008 as the Department Coordinator. Her responsibilities include managing overall expenses and financials for the Department, coordinating real estate course curriculum and a variety of other duties that support the objectives of the department. Mary has 23 years experience in the private sector in wholesale residential lending in a variety of positions and most recently worked for Wells Fargo Home Mortgage and Countrywide now Bank of America. Mary earned her bachelor degree in business administration at Edgewood College in Madison.



Alison Zuba, Student Services Coordinator for the Graaskamp Center. Alison graduated from the University of Wisconsin–Eau Claire in May 2008 with a bachelor's degree in business administration with a comprehensive management focus. She was born and raised in Madison, attended Madison West High School and returned to Madison after receiving her

undergraduate degree. Both her parents are currently employed by the University and have been for over 30 years. Alison enjoys working at the University in the school atmosphere and is glad to be working in such a well-respected area of study at the Wisconsin School of Business. She enjoys spending time outdoors in the gorgeous city and all over Wisconsin.



Chris Dicks has led the Wisconsin Real Estate Alumni Association, the leading industry alumni network of commercial real estate professionals, as Executive Director since 1991. She is responsible for overseeing all operations of the association as well as implementing new initiatives adopted by the Board of

Directors. Prior to joining the alumni association, Chris served as Managing Director for Pi Sigma Epsilon, a national professional fraternal organization specializing in sales, marketing and management. She also held a position on staff as a Congressional Caseworker for a Wisconsin member of Congress. She earned a BBA with an emphasis in management from the University of Illinois-Springfield. Chris resides in Pewaukee, Wisconsin with her husband and children. She enjoys spending time with her family, the outdoors, and cooking.

Tracy Wundrow, a native of Brookfield, Wisconsin, joined the WREAA as Administrative Assistant in early 2009. Her responsibilities focus on member services, coordinating chapter events, and website development. Tracy attended the University of Wisconsin-Stevens Point where she earned a BA Degree in communications, with an emphasis in broadcasting and advertising. She and her husband reside in Waukesha, Wisconsin.

Teaching

In the teaching product line, UW is one of the few true full service programs that comprise undergraduate, Master's level, and Ph.D. programs.

The undergraduate program is based on the School of Business BBA. Undergraduates begin with a two year pre-business program in liberal arts as well as selected courses in accounting and other business prerequisites. Then at the beginning of their junior year they apply for admission to the School of Business. Admission is very competitive. Once in the School of Business they choose a major. Currently about 200 of the 1300 undergraduate Business students major in real estate. We also teach many "service students" who desire one or more courses in real estate although they choose not to major; many of these are business students in other fields like accounting or finance, but many come to us from programs like economics, urban planning, geography, public policy, and ultimately almost any major within the University. While servicing our own majors is our main responsibility, we believe any opportunity to teach students the Wisconsin approach to real estate is important and worthwhile.

Wisconsin undergraduates now typically apply to the Wisconsin School of Business in their sophomore year, after a preparatory curriculum that includes mathematics, communication (what those of us of a certain age knew as English Composition but now a broader endeavor!), economics, psychology, and basic accounting. Admission to the Wisconsin School of Business remains highly competitive. After admission, successful students take a set of core courses in management, finance, accounting, and marketing. Their real estate education begins with the Real Estate Process, the survey course pioneered by Graaskamp that gives students the overview of our field and prepares them for advances courses. Another distinguishing feature of the Wisconsin approach to real estate in the requirement of the urban (land) economics course pioneered by Ely, Ratcliff and Andrews, that provides the conceptual underpinnings of real estate practice, just as physics underpins engineering or biology and chemistry underpin medicine.

Real estate markets function only in so far as a social and legal framework for rights in real property, and their transfer and enforcement, work well, so a course in Real Estate gives students a firm grounding in this area. Every real estate transaction, indeed all real estate activity, requires the valuation of a very complex and heterogeneous assets; while he had his hand in many sides of real estate, Graaskamp the master teacher most

often referred to himself professionally as an appraiser, so it is no surprise our valuation course is also central to the required curriculum.

Real estate is a very long lived and expensive asset, so its financing is another key element of any real estate education. The required course in real estate finance builds on the basics learned in Real Estate Process and Finance 300 to give students a firm grasp of both the conceptual underpinnings of the time value of money, the process of intermediation and risk management, and the practical side of mortgage, construction finance, and capital sources, as well as the institutions and regulatory frameworks that govern them.

Just as the real estate major begins with a Real Estate Process course that gives the *tour d'horizon*, the required curriculum is capped with a course in Real Estate Development that takes students through an actual commercial residential development from concept through design and approvals, construction, financing and marketing.

Thus, six courses are required, though undergraduates with the strongest interest and performance often take additional electives. The set on offer changes from time to time but among the most popular recurrent classes are International Real Estate, which combines classroom work with a field trip to EXPO REAL, a major high-level real estate investment conference that attracts about 30,000 real estate professionals to Munich, Germany each fall. Another elective is an undergraduate course in real estate capital markets that builds on the required course in Real Estate Finance and gives students a deeper understanding of public and private capital structures like REITs and other real estate securities and investment vehicles. They also learn about teamwork by matching up with the MBAs in the AREIT Program (below) as analysts. Other offerings include short courses that prepare students for undergraduate case study competitions. (Currently undergraduates participate in USC and other competitions under the guidance of lecturer Arif Qureshi. Participation in some of these events is selective.)

It also bears repeating that an important part of a UW real estate undergraduate education comes outside of the classroom, for example in the professional presentations offered at the Real Estate Club meetings, the REC field trips and participation in WREAA events. Real estate requires a strong analytical background but it is also a “people” business and another important goal of our program is to give students ample opportunity to form strong bonds with their classmates, other peers, and

brother and sister alumni and other real estate professionals through our “extracurriculars.” Mentorship pairings and internships are key activities recommended to all undergraduates.

Graduate studies in real estate comprise two programs: the MBA and the Doctoral program. Our longstanding MS program, at one time the flagship degree, has been supplanted by the MBA degree because of changes in the real estate market and concomitant changes in student demand. The new MBA offers the opportunity to marry the best of both worlds: a strong education in core business skills, from an improved MBA core, and a greatly strengthened real estate curriculum; the new MBA includes a larger number of real estate courses (typically 8 or so real estate related courses, compared to 5 under the old MBA), and courses have been redesigned to incorporate more focus on higher level managerial and decision making skills, while retaining the solid training in fundamentals that enable new graduates to “hit the ground running.”

MBA students begin with a short “Real Estate Process” review during the pre-semester bootcamp, then take a course in Real Estate Finance and Investments that is structured somewhat more broadly than the similarly titled undergrad course discussed above, and includes more case study material. Second semester students take a second course in real estate finance (capital markets) and the course in valuation, as well as attending Friday morning group meetings to prepare for the March trip to MIPIM in Cannes, France. (Attendance at extra credit events like MIPIM is predicated on satisfactory performance in other elements of the Program.)

All second year all MBA students take the required course in urban economics pioneered by Ely, Ratcliff and Andrews. Students who have applied for and been selected into the Applied Real Estate Investment Track (AREIT) begin their second year working with Professor Riddiough, our advisor Dr. David Shulman and the AREIT Board, on their year of managing a \$1 million portfolio of REITs and other real estate securities. Other students take courses in real estate law, commercial real estate development, and prepare for the second year international field trip (generally about 10 days in January).

As with undergraduates, MBAs are expected to actively participate in Real Estate Club, and participate in field trips (consistent with their other academic

responsibilities),⁴⁰ We also present several “modules” as one-off sessions, online or in person, on tools like advanced excel or presentation skills.

Every MBA student is assigned a mentor and among other things they can help you think through a good internship strategy between your first and second years. MBAs also benefit from attending WREAA events (Reunion and Trends Conference), the E.J. Plesko series, and Graaskamp Center Board meetings which offer unparalleled opportunities to learn and network.

The Ph.D. program trains a small number of students to take academic positions in real estate teaching and research. The program is highly selective – in a typical year we take in 1 or 2 students, and typically there are about 4-6 Ph.D.’s in residence. Graduates of this program have taken on successful careers at a variety of schools including Iowa, the University of North Carolina, MIT, and (of course) Wisconsin. Other graduates have taken top research positions at a range of private and public institutions, including Citigroup, Wells Fargo, Fannie Mae, and Freddie Mac.



While the faculty and lecturers are the backbone of the teaching infrastructure, each semester a number of guest faculty and dozens of real estate practitioners present to our students in and out of class. Particularly important are the **field trips**, arranged each semester by the Real Estate Club and alums in the target city. (Pictured above: Faculty Associate Sharon McCabe, Professors Malpezzi and Riddiough, and undergraduate and MBA students on a recent field trip to New York. Background is, of course,

the gothic masterpiece Woolworth Building, tallest in the world from its completion in 1913 until the Chrysler Building and then the Empire State Building eclipsed it).

One of the newest innovations is the Global Real Estate Master (GREM). GREM is a partnership with three top business schools, each often ranked number one in its region: HEC Paris in France, INCAE in Central America, and Hong Kong Institute of Science and Technology in China.

GREM students are admitted jointly to both their “home” institution and UW-Madison; they take a semester (or two) of general business and a course in real estate finance and investments, designed in concert with our Madison faculty, then in the spring semester, students from each of the three partners join UW faculty and students for a semester of intensive real estate coursework.

Among the many benefits of GREM are the opportunities it provides our two-year MBA and undergraduate student bodies to connect to at least two cohorts of top international students. The GREM pathway is a complement to, rather than a substitute for, our older programs; we plan to continue to welcome top international students who choose our two-year MBA in Madison (as well as our international undergraduate students).

Graduates of the GREM will obtain degrees from both home institutions as well as UW, which puts us in the position of furthering the Wisconsin School of Business and the University of Wisconsin strategies for widening their global reach. Much of the credit for GREM’s conception and execution is due Department Chair François Ortalo-Magné, who also credits the strong support and encouragement for this innovative program received from our Wisconsin School of Business and other units on campus. Clearly, others outside real estate see GREM as a model for new extensions of the Wisconsin Idea.

The GREM will also benefit the members of the WREAA as GREM graduates join that organization, furthering its global reach.

Research

The faculty and students of the Program are active in both basic and applied research. Our real estate research reaches both academic and professional audiences. For example, a recent book by Richard Green and Stephen

⁴⁰ Because first year MBAs generally miss a week of class for MIPIM, we ask that they forgo that semester’s domestic field trip.

Malpezzi, *A Primer on US Housing Markets and Policy*, incorporates elements of research (e.g. new findings on topics like affordability, and the effects of regulation on housing markets), teaching (it is the text for Real Estate 641, our elective course in Housing Economics, and similar courses at Penn, Berkeley and other schools), and service (the book is also used by public officials who require an accessible yet rigorous introduction to the economics of housing markets).

Faculty are often presenting research at the National Bureau of Economic Research, the American Real Estate and Urban Economics Association, the American Economic Association, the Econometric Society, and top departments at schools including Penn, MIT, Berkeley, and others.

A good way to begin a review the Program's recent research is to review each faculty member's individual web page, and to examine recent working papers downloadable from the Program website, www.bus.wisc.edu/realestate/publications/workingpapers.asp.

A few select examples give the flavor of our varied research program:

Tim Riddiough, with colleagues Paul Childs (Kentucky), and Steven Ott (UNC-Charlotte), have tackled fundamental problems of real estate valuation in their paper "Optimal Valuation of Noisy Real Assets" (*Real Estate Economics*, Fall 2002). Anyone involved in the real estate industry is familiar with the difficulty in establishing the exact value of a property, even with a recent sale – did a particular transaction really take place at the market price, or did a purchaser pay over the odds, or receive an especially good deal? Riddiough and his coauthors show how current valuations can be improved by incorporating three pieces of information, appropriately weighted: the (option-adjusted) value of expected future cash flows; data from previous sales; and the variance of that information set. The model not only offers a way to improve current valuations of particular assets, but provides a framework for improved valuation of property-based financial derivatives and oft-used benchmarks like the NCREIF property index. The paper received the prestigious Edwin S. Mills award as the best paper in *Real Estate Economics* for the year.

François Ortalo-Magné, with his University of Munich colleague Sven Rady, has an active program of research in housing tenure choice. For example, their recent paper "Homeownership: Low Household Mobility, Volatile

Housing Prices, and High Income Dispersion" extends earlier research on the homeownership decision to include locational choice as well as the "usual suspects" like income and demographic determinants. The authors demonstrate, *inter alia*, how the existence of homeownership can add to the volatility of housing prices, and how homeownership can impose cost on later-period "outsiders" but may increase neighborhood heterogeneity.

Stephen Malpezzi, with internationally-renowned planner Alain Bertaud, recently published a World Bank research monograph on *The Spatial Distribution of Population in 48 World Cities: The Role of Markets, Planning, and Topography*. They analyze the distribution of population density in cities around the world, demonstrating how urban form, or "sprawl," is affected by traditional economics variables like income, transportation costs, and population growth. But some of the paper's most interesting results are on the way government intersections can affect urban forms, including such extreme examples as apartheid (South Africa) and the central planning regimes in Russia and other formerly communist countries. Steve is also well known for his work on the measurement of housing prices, the effects of regulatory environments on cities, and international housing and urbanization issues.

Morris Davis' research on the relationship between house prices, housing investments and the macroeconomy helped Federal Reserve Board staff and policy-makers better understand the role of housing markets on the macroeconomy, and the impact of monetary policy on housing markets. Davis is perhaps best known for his papers "Housing and the Business Cycle" and "The Price and Quantity of Land in the United States," both co-authored with Jonathan Heathcote of Georgetown University. In *Housing and the Business Cycle*, Davis and Heathcote ask what fraction of the well-known volatility of building activity (residential activity) and house prices can be explained by observable shocks to the relative productivity and costs of builders; and, in the *Price and Quantity of Land in the United States*, Davis and Heathcote derive a system for measuring the capital stock of land in residential use in the United States, and in addition, derive a price index for this stock of land. Davis, with Federal Reserve coauthors, has written papers on the risk and return to housing; in these papers, Davis and co-authors quantify the extent to which the enormous boom to housing prices experienced in many areas in the United States since the late 1990s reflects changes in fundamentals (such as interest rates or rents) or reflected changes in investor views about the perceived riskiness of housing.

As a perusal of the Department website will confirm, these few examples are only the tip of the iceberg. Furthermore, in addition to such “hardcore” academic research projects (rigorous and scholarly, albeit with powerful real world applications in business and public policy), the faculty also produce a wide range of research-related products that are more directly accessible to the broader real estate community. In addition to regular articles on research findings in the Center newsletter, examples include Kerry Vandell’s recent article on the future of real estate education in the Counselors of Real Estate’s *Real Estate Issues*; Jim Shilling’s bestselling textbook *Real Estate*; François Ortalo-Magné’s policy publications on reforms to European agricultural policy, and real estate brokerage; Morris Davis’s draft monograph on *Macroeconomics for MBAs*; and Richard Green and Stephen Malpezzi’s previously mentioned *Primer on U.S. Housing Markets and Housing Policies*.

In addition to informing better business decisions and public policy, the Program’s research provides the cutting-edge material that distinguishes a top-ranked teaching program from one that simply reviews the received wisdom through a textbook. It is not a coincidence that when School of Business Faculty were asked to rank other Departments on the basis of teaching and research, the Real Estate Department came in first in both categories.

Service and Outreach

Another hallmark of the Program is its devotion to service and outreach, one of the core values from Ely’s time (Weiss 1989). This has three main audiences.

One important audience comprises UW alumni and the Center for Real Estate community. For example, faculty make regular research presentations at the Alumni Trends Conference, Alumni Reunions, and Center Board meetings. But of course these presentations are not limited to faculty research – in fact the breadth of presentations at such events by individual alumni and Center board members as well as academics and leading practitioners from outside the Program is one of their main attractions. Students also make presentations, e.g. regular presentations by AREIT students on their fund management approach and results. All Program members benefit from this “open shop” approach that leads to “sifting and winnowing” of a wide range of views.

A second audience is similar but broader, namely industry and professional associations. For example

faculty have written sponsored research and policy reviews for the Real Estate Research Institute, the Mortgage Bankers Association, the National Realtors Association, the Wisconsin Realtors Association, and numerous local groups. The Program has also helped institutions like CCIM, IREM and ICSC develop course materials for their own professional instructional programs. The faculty, alums and students also have varied relationships with leading practitioner organizations such as the Urban Land Institute, the National Association of Industrial and Office Properties, the Association of Foreign Investors in Real Estate, and the Pension Real Estate Association.

Examples of professional presentations include Malpezzi’s to NAIOP’s Outlook Committee on trends, cycles, and noise in the economy and the real estate markets; Ortalo-Magné’s reports (based on field work by our MBA students) on current real estate issues through the lens of the MIPIM meeting, and his reports with MBA students on the outlook of AFIRE members. Tim Riddiough often gives presentations on the state of the real estate markets to the Pension Real Estate Association, and other such groups.

A third audience for service and outreach are those engaged in government and public policy. One important recurring example is our annual Wisconsin Housing Conference, which the Center for Real Estate arranges with help from WHEDA and the Department of Housing. Faculty have testified before Congress as well as provided input for numerous commissions like the Millennial Housing Commission and the Real Estate Roundtable. In addition to the U.S. public sector, at state, local and federal levels, our service extends to nations as diverse as Mexico, Canada, the United Kingdom, Russia, and Tanzania, to name but a few, as well as the United Nations, the World Bank, the Inter-American Development Bank, and other multinational organizations.

Other examples of public service and outreach include a series of presentations on housing markets and policy recently presented by Malpezzi to the World Bank, to the Development Research Center of the China’s State Council, and to the Commission on Growth and Development headed by Nobel laureate Michael Spence. One of the most notable efforts in this field recently has been Morris Davis’ testimony to the Senate Banking Committee on the state of the housing markets. Senior Lecturer Emeritus Rod Matthews has organized a series of advanced training courses in real estate valuation and management for public officials of Russia and China.

Given the state of today's volatile housing market and "subprime crisis," all the faculty have recently been called on to give presentations on these developments, from the Indian School of Business in Hyderabad, to the U.S. Senate and Wisconsin's Department of Administration, from top academic and policy groups in France to Madison groups like the Rotary Club and Kiwanis. Selections of these presentations can be found online at:

<http://www.bus.wisc.edu/realestate/>

<http://www.bus.wisc.edu/realestate/wi-fur/>

The Wisconsin School of Business

No discussion of the Real Estate Program's assets would be complete without mention of the institutions within which the Program is embedded, namely The University of Wisconsin, and the Wisconsin School of Business.

The Wisconsin School of Business aims to provide an educational experience that transforms the lives of our students. Tracing its history back over a century, UW was one of the first five university-based Commerce (later Business) programs in the country. UW's undergraduate program has ranked among the top programs in the nation by *U.S. News and World Report* since 1996. At the Master's level, the School is now offering a revamped MBA focusing on career specializations that is in many respects modeled on the Real Estate Program. In addition to well-established programs like Real Estate, the Applied Securities Analysis Program (with which we partner in delivering the Applied Real Estate Securities Program), Supply Chain Management, and Risk Management and Insurance, the School is developing new offerings, such as those presented by two newly endowed centers, the Center for Product Management and the Nicholas Center for Applied Corporate Finance. Learn much more at <http://www.bus.wisc.edu>



As we mentioned above, Professor François Ortalo-Magné (pictured above at far right) is the Albert O. Nicholas Dean of the Wisconsin School of Business.

A member of the real estate faculty since 2003, and Department Chair from 2009 to 2011, Dean Ortalo-Magné's research interests include housing, agricultural land markets and policies, and international real estate.

Ortalo-Magné has contributed to the understanding of the housing market through his theoretical work on dynamic equilibrium housing models and through the collection and analysis of novel data sets that provide unique insights into the housing transaction process. He is also interested in the drivers of farmland prices and has written extensively on agricultural policy. He is called upon regularly by policymakers for contributions to housing and agricultural policy debates.

His research has been published in the *Review of Economic Studies*, the *European Economic Review*, the *Journal of Urban Economics*, *Economic Policy*, the *American Journal of Agricultural Economics*, the *Journal of Real Estate Finance and Economics*, and the *Journal of Housing Economics*. He has also written a book on agricultural policy reform that was published both in French and Japanese.

At Wisconsin, formerly as a faculty member and now as Dean, he leads efforts to expose students to the world of international real estate both through his teaching and international field trips. In 2010, he led the creation of the innovative Global Real Estate Master (GREM) that combines the strengths of three top-ranked international business schools with the real estate expertise at the Wisconsin School of Business.

Prior to joining the University of Wisconsin-Madison,

Ortalo-Magné was in the Department of Economics at the London School of Economics. He holds a Ph.D. in economics from the University of Minnesota.

The University of Wisconsin

The University of Wisconsin-Madison was chartered in 1848, the same year the Badger State joined the Union; the first class of 17 students met a year later. The oldest and largest (40,000+ students) campus in the 27-unit University of Wisconsin system, UW-Madison is widely acknowledged as one of the premier research and teaching universities in the world. In addition to the School of Business and our top-ranked Real Estate program, UW-Madison is known for its world class research in biotechnology, including innovation in stem-cell research; at a time when many in the U.S. point to a need to learn more about other countries and cultures for security as well as business and personal enrichment, UW-Madison offers coursework in 60 different languages, more than any other university in the country, and offers more than 100 programs incorporating study abroad. U.S. News and World Report lists 22 UW-Madison programs among the top 10 in their fields. World-famous research centers range from the Center for Dairy Research (perhaps unsurprisingly), to the Institute for Research on Poverty, to the Space Science and Engineering Center. See <http://www.wisc.edu>

One very positive aspect of the University's culture is the fact that departmental boundaries exist, but are much

more permeable than at many other top universities. Among other units that students and faculty interact with are the following:

Department of Economics:

<http://www.ssc.wisc.edu/econ/>

Department of Agricultural and Applied Economics:

<http://www.aae.wisc.edu/>

Department of Urban and Regional Planning:

<http://www.wisc.edu/urpl/>

Department of Geography:

<http://www.geography.wisc.edu/>

Department of Political Science:

<http://www.polisci.wisc.edu/>

Department of Sociology:

<http://www.ssc.wisc.edu/soc/>

La Follette School of Public Policy:

<http://www.lafollette.wisc.edu/>

Institute for Research on Poverty:

<http://www.irp.wisc.edu/>

Institute for Environmental Studies:

<http://www.ies.wisc.edu/>

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