After many years of planning and discussion, and with the enthusiastic support of MIT’s leadership, a top-to-bottom renovation project for E52 was launched in August 2013. Economics faculty, staff, and students are now housed in “swing space” in buildings E17/E18/E19. This will be the home of the Economics Department until the E52 renovations are completed in 2016, and the department relocates to new, 21st-century space on the third, fourth, and fifth floors of E52.

The students and faculty in the Economics Department are deeply grateful to the many donors who have already supported this transformative project. There are still a number of opportunities for major gifts, including named conference rooms and other common spaces, associated with the E52 renovation. For more information on supporting this project, please contact Anne Marie Michel, the Assistant Dean for Development in the MIT School of Humanities, Arts, and Social Sciences, at ammichel@mit.edu.
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*The ROTC programs at MIT are operated under Department of Defense (DoD) policies and regulations, and do not comply fully with MIT’s policy of nondiscrimination with regard to gender identity. MIT continues to advocate for a change in DoD policies and regulations concerning gender identity, and will replace scholarships of students who lose ROTC financial aid because of these DoD policies and regulations.

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HE DEPARTMENT continues to prosper in the recently renovated swing space in E17/18/19. Faculty and students were thrilled with the award to Institute Professor Emeritus Professor Robert M. Solow of the Presidential Medal of Freedom, the USA's highest civilian honor, and with Annual Visiting Professor Jean Tirole (PhD 1981) for the receipt of the 2014 Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel “for his analysis of market power and regulation.”

Whitney Newey continues service as Department Head and David Autor as Associate Department Head. Alexander Wolitzky, PhD 2011, joined the department as the Pentti J. K. Kouri Career Development Assistant Professor of Economics. Arnaud Costinot and Parag Pathak were promoted to the rank of Professor. Silverman (1968) Family Career Development Assistant Professor of Economics Mihai Manea, Rudi Dornbusch Career Development Assistant Professor of Economics Alp Simsek, and Gary Loveman Career Development Assistant Professor of Economics Juuso Toikka were each promoted to the rank of untenured Associate Professor.

Our faculty members have added to the many recognitions of their research and teaching contributions. Some highlights of the past year include:

- Elizabeth and James Killian Professor Daron Acemoglu was named to the National Academy of Sciences.

- Professor David Autor was elected a Fellow of the Econometric Society.

- Ford International Professor Abhijit Banerjee received the Gabarron International Award and also the Bernhard Harms Prize from the Kiel-based Institute for the World Economy (I IW).

- Professor Victor Chernozhukov gave the Plenary Lecture “Program Evaluation with High-Dimensional Data” at the Northern American Summer Meeting of the Econometric Society.

- Abdul Latif Jameel Professor of Poverty Alleviation and Development Economics Esther Duflo received the Infosys Prize 2014 in Social Sciences. Abhijit Banerjee and Esther Duflo also received the 2014 Albert O. Hirschman Prize in connection with the Abdul Latif Jameel Poverty Action Lab (J-PAL) at MIT.

- Gregory K. Palm (1970) Professor Glenn Ellison received the MIT Graduate Student Council Graduate Teaching Award.

- Ford Professor Amy Finkelstein received the Medal of the American Society of Health Economists and the Arrow Award for Best Paper in Health Economics from the International Health Economics Association.

- Ford Professor Jonathan Gruber received the 2013 American Public Health Association Kenneth Arrow Award for the Outstanding Health Economics Paper of 2012.

- Professor Parag Pathak gave the Condorect Lecture at the Social Choice and Welfare Conference.

- Mitsui Professor James Poterba received the Daniel M. Holland Medal from the National Tax Association. He also gave the Richard T. Ely Lecture at the 2014 American Economic Association meetings.

- Elizabeth and James Killian Professor Robert M. Townsend was named a Fellow of the Society for Economic Measurement and an Economic Theory Fellow of the Society for the Advancement of Economic Theory.

- Robert M. Solow Professor Ivan Werning was elected a Fellow of the Econometric Society. He was also the recipient of the Young Research in Economics Prize awarded by the Banque de France Foundation and Toulouse School of Economics.
MIT Economics students continue to be recognized. Isaiah Andrews and Stefanie Stancheva (both PhD 2014) were invited to participate in the prestigious Review of Economic Studies tour. MIT is the only department to be represented on each of the last six tours, with MIT students comprising fifteen of the forty-two new PhDs invited on the tour over that time period. Both Isaiah and Stefanie were also selected as Harvard Junior Fellows. Undergraduate and graduate alumni, a sampling of whom are featured throughout this brochure, also make major contributions to research, policy, and commerce.

MIT Economics faculty members continue to provide leadership and service to the economics profession. James Poterba serves as President of the National Bureau of Economic Research (NBER) and Past President of the Eastern Economic Association. David Autor and Amy Finkelstein serve as members of the Executive Committee of the American Economic Association. Whitney Newey and Robert Townsend serve on the Council of the Econometric Society.

MIT faculty also direct a number of profession-wide research programs. At the National Bureau of Economic Research, Amy Finkelstein is co-director of the Public Economics program. Jonathan Gruber directs the program on Health Care; Robert Gibbons directs the working group on Organizational Economics, and Parag Pathak continues as the founding co-director of the Market Design working group. Esther Duflo is director of the Development Program at the Center for Economic Policy Research (CEPR).

MIT faculty members populate the editorial boards of leading economics journals. For example: Daron Acemoglu serves as Editor of Econometrica and Esther Duflo continues as the founding Editor of American Economic Journal: Applied Economics. Victor Chernozhukov is co-editor of both Econometric Theory and Economic Theory. Arnaud Costinot serves as a Foreign Editor for the Review of Economic Studies. Ben Olken serves on the Board of Reviewing Editors of Science Magazine. Parag Pathak serves on the editorial board of the American Economic Review and is an Associate Editor of Econometrica.

Economics faculty also continue the department’s tradition of broader public service. Charles P. Kindleberger Professor of Applied Economics Nancy Rose is serving at the U.S. Department of Justice (DOJ) as deputy assistant attorney general for economic analysis. Olivier Blanchard, the Robert M. Solow Professor of Economics, Emeritus, is the Economic Counsellor and Director, Research Department, at the International Monetary Fund.
OR OVER A CENTURY, the Department of Economics at MIT has played a leading role in economics education, research, and public service. Francis Amasa Walker, MIT’s third president, introduced undergraduate studies in economics more than one hundred years ago. Walker, who rose to the rank of Brigadier General in the Civil War and directed the 1870 U.S. Census, was a leading economist of his day. He was a founder and president of the American Economic Association. In the early part of the twentieth century, Davis R. Dewey, the editor of the American Economic Review for twenty years and a longtime chairman of the MIT Economics Department, played a major role in preserving and expanding economics at MIT. In 1937, the Department added graduate courses leading to a master’s degree. Four years later, in 1941, it inaugurated the PhD program that is renowned worldwide. MIT’s approach to graduate training in economics has been widely emulated at other leading institutions.

MIT established its School of Humanities, Arts, and Social Sciences (SHASS) in 1950, with the Economics Department playing a central role within the School. The Economics Department expanded significantly in the years following World War II with entrepreneurial leadership from Rupert MacLaurin and a supportive university administration. By the 1950s, it was established as one of the world’s leading centers for economic research. Graduates of the MIT Economics Department’s doctoral program are now well-represented on the faculties of virtually all leading economics departments.

The MIT Economics Department today is a vibrant collection of faculty and students. The Department’s scholars have received numerous awards, including four Nobel Prizes (the late Paul Samuelson, Robert Solow, the late Franco Modigliani, and Peter Diamond). Many faculty members

Jean Tirole, who received his PhD in Economics from MIT in 1981, served on the Economics faculty from 1984 until 1991. He was awarded the 2014 Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel for his path-breaking work on regulation and the competitive behavior of firms. Tirole has been a visiting professor in the department for the last two decades, making several visits each year to deliver a series of graduate lectures and to provide advice to PhD students. When he visited MIT in November 2014, several weeks after the Nobel Prize announcement, Tirole also delivered the Undergraduate Economics Association Lecture on "Intellectual Property and Public Policy." The lecture, delivered to an overflow crowd in Bartos Theater, explored various strategies for encouraging innovative activities, and described the importance of industry-specific circumstances in crafting optimal regulatory policy.

In 2013, Economics Visiting Committee member Hal R. Varian (1969) endowed a Fund for Economics which supports visiting faculty. In 2014, Thomas Fujiwara of Princeton University, whose research focuses on political economy and the determinants of voting behavior, served as the inaugural Hal Varian Visiting Professor. The opportunity to invite leading scholars to spend a year at MIT contributes to the intellectual vitality of the Economics Department and also provides diversity in the course offerings available to graduate students and undergraduates.

Jean Tirole (PhD 1981) Receives Nobel Prize in Economics

Department Overview

For Over a Century, the Department of Economics at MIT has played a leading role in economics education, research, and public service. Francis Amasa Walker, MIT’s third president, introduced undergraduate studies in economics more than one hundred years ago. Walker, who rose to the rank of Brigadier General in the Civil War and directed the 1870 U.S. Census, was a leading economist of his day. He was a founder and president of the American Economic Association. In the early part of the twentieth century, Davis R. Dewey, the editor of the American Economic Review for twenty years and a longtime chairman of the MIT Economics Department, played a major role in preserving and expanding economics at MIT. In 1937, the Department added graduate courses leading to a master’s degree. Four years later, in 1941, it inaugurated the PhD program that is renowned worldwide. MIT’s approach to graduate training in economics has been widely emulated at other leading institutions.

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The Department is consistently ranked among the leading economics departments in the United States. The Department offers the most rigorous undergraduate and graduate programs in economics, and the programs attract students from around the world. During the 2013-2014 academic year, there were 125 graduate students enrolled in the Department's PhD program. As of last count, there are 285 students who took economics as a concentration. Each year, the MIT PhD program enrolls about twenty-four candidates, selected from approximately eight hundred applicants. During the 2013-2014 academic year, there were 125 graduate students enrolled in the Department's PhD program. Student dissertation topics span a wide range of issues in microeconomics and macroeconomics and advance the frontier of economic theory, data analysis, and econometric methodology. An important development of the last two decades has been a growing internationalization in the demand for graduate economics training. Currently about half of admitted students have undergraduate degrees from American universities, while the rest have degrees from elsewhere in the developed and developing world.

Most doctoral candidates spend five years in residence at MIT taking graduate courses and doing research. The first two years of the PhD program are devoted primarily to course work, while the remainder of the program focuses on writing a doctoral dissertation. Graduates of MIT's PhD program pursue diverse careers. While a majority enter academia, MIT economics PhDs are sought after by governments, domestic and international research and policy organizations, and private sector firms. In recent years, major Internet firms have hired top economics talent to design and oversee their market strategies.

As the Internet has enabled electronic dissemination of information to replace traditional print media, the MIT Economics Department has developed a closely followed web presence. The Department's website provides up-to-date information on department courses and seminars. It includes links to the many web pages maintained by faculty, who often post research papers, policy papers, data sets, and computer programs on their sites. Graduate students and economics researchers from around the world visit these web pages to download current research. Faculty's research papers are often widely read and cited months or years before they are published in academic journals.

The majority of classes offered by the Economics department—sixty-nine at last count—are also made freely available online through MIT's heralded OpenCourseWare (OCW) initiative (ocw.mit.edu). An undergraduate economics development course, “World Poverty,” made its debut on the new online course platform, MITx, in spring 2013. This has brought the forefront of MIT economics to audiences all around the world.

MIT Economics and the Nobel Prizes in Economic Sciences

2014
Jean Tirole, MIT, PhD 1981
MIT Professor of Economics, 1984-1991

2013
Robert J. Shiller, MIT, SM 1968, PhD 1972

2010
Peter A. Diamond, MIT, PhD 1963
MIT Institute Professor of Economics, Emeritus

2008
Paul R. Krugman, MIT, PhD 1977

2007
Eric S. Maskin
MIT Professor of Economics, 1977-1984

2003
Robert F. Engle
MIT Professor of Economics, 1969-1977

2001
George A. Akerlof, MIT, PhD 1966
Joseph E. Stiglitz, MIT, PhD 1966

2000
Daniel L. McFadden
MIT Professor of Economics, 1978-1991

1999
Robert A. Mundell, MIT, PhD 1956

1997
Robert C. Merton, MIT, PhD 1969

1987
Robert M. Solow
MIT Institute Professor of Economics, Emeritus

1985
Franco Modigliani
MIT Institute Professor of Finance and Economics (deceased)

1980
Lawrence R. Klein, MIT, PhD 1944
(deceased)

1970
Paul A. Samuelson
MIT Institute Professor of Economics, (deceased)

The Nobel Prize in Economic Sciences was first awarded in 1969.
The John Bates Clark Medal is awarded by the American Economic Association to the American economist under the age of forty judged to have made the most significant contribution to economic thought and knowledge. Named after the American neoclassical economist John Bates Clark (1847-1938), it is considered one of the two most prestigious awards in the field of economics, alongside the Nobel. Approximately 40 percent of Clark Medal winners have (so far) gone on to win the Nobel Prize in Economics.

MIT has had a large role in the production of Clark Medal winners. MIT-trained economists have been honored with seven of the last ten Clark Medals, including, most recently, Amy Finkelstein in 2012. Notably, three of the recent Clark Medal winners—Esther Duflo, Jonathan Levin and Emmanuel Saez—were members of the MIT PhD class of 1999. Four current faculty members—Daron Acemoglu, Esther Duflo, Amy Finkelstein and Jerry Hausman—are Clark Medalists, as are two emeritus faculty members, Franklin Fisher and Robert Solow. The late Paul Samuelson, who spent his entire academic career on the MIT faculty, was the first (and youngest) recipient of the Clark Medal.

L to R: Jerry Hausman (John & Jennie S. MacDonald Professor of Economics, Clark Medalist 1985), Amy Finkelstein (Ford Professor of Economics, Clark Medalist 2012), Daron Acemoglu (Elizabeth and James Killian Professor of Economics, Clark Medalist 2005), Esther Duflo (Abdul Latif Jameel Professor of Poverty Alleviation and Development Economics, Clark Medalist 2010), Franklin M. Fisher (Jane Berkowitz Carlton and Dennis William Carlton Professor of Microeconomics, Emeritus, Clark Medalist 1973).

Undergraduates in Economics Research

MIT senior Chen Lian honed his data collection and programming skills through a UROP with Professors Glenn Ellison and Sara Fisher Ellison (photo on facing page) last year, investigating the impact of the internet on the market for used books. The used book market is one where digital technologies, such as the ability to easily search for titles, could have dramatic effects on market structure, prices, sales volume, and total welfare. Exploring these questions empirically required a massive data collection effort. Chen wrote programs to scrape internet used book sites for availability and prices for a set of book titles, matching this information to similar data that had been collected for a set of brick and mortar dealers. The matched data set was used to compare price distributions within and across channels. The disappearance of a listing from a site can be used as a proxy for a sale, allowing the researchers to estimate models of demand. The results provided insights on the importance and nature of consumer search, and on how firms in both online and offline venues respond to changes in market structure.

Chen enjoyed the chance to see this project evolve from data collection through statistical estimation and results and found the experience of writing programs to estimate structural models of demand challenging but rewarding. The UROP complemented his work in 14.33, the Department’s Research and Communications course, which guides students through an independent empirical research project over the course of a semester. Chen noted, “I was taking 14.33 while working on this project; the empirical skills I learned from that class were very useful.” And vice versa: his 14.33 project collected online data from over 20,000 projects on Kickstarter to explore whether blockbuster projects listed on the site result in more funding for small projects listed around the same time.
The Economics Department at MIT has a long tradition of outstanding training of undergraduates. The unique analytical skills of the MIT undergraduate student body allow the faculty to offer a rigorous and comprehensive program unlike that of any other U.S. college or university.

Undergraduate Economics

Undergraduate students take advantage of numerous opportunities to hone their research skills. One such opportunity is MIT’s Undergraduate Research Opportunities Program (UROP), which fosters close ties between undergraduates and faculty members. Students in the UROP program work closely with faculty members and graduate students to bring the technical skills of modern economics to bear on questions of economic importance. UROP supplements coursework, and its projects allow undergraduates to participate in ongoing research in the Department and to meet with faculty members outside of class. They perform tasks such as gathering and analyzing economic data, writing computer programs, checking mathematical calculations, and gathering research materials. In addition to UROP opportunities, undergraduates develop research and writing skills through coursework that includes producing original papers. Jenny Shen (2013) analyzed the impact of the music service Spotify on users’ listening behavior for her paper in Economics Research and Communication (14.33). She matched the dates Spotify became available in each of 15 countries with Google Trends data on searches from that location, using a list of search terms she developed that were likely to be used by “novice downloaders” searching for pirated music. Comparing the prevalence of piracy-related searches to measures of Spotify’s penetration suggested that Spotify reduced piracy by an average of 13 percent across her sample.

Many faculty members have written undergraduate and graduate textbooks that are used in colleges and universities around the world. Paul Samuelson first developed his pioneering economics text in an introductory economics course for MIT undergraduates. Rudiger Dornbusch and Stanley Fischer’s intermediate macroeconomics textbook, Macroeconomics, introduced modern macroeconomic analysis to undergraduates. Current generations of students are taught from Olivier Blanchard’s textbook in macroeconomics, Jonathan Gruber’s text in Public Finance and Public Policy, and Michael Whinston’s microeconomic theory texts at both the undergraduate and graduate levels. Daron Acemoglu’s textbook, Introduction to Modern Economic Growth, takes graduate students on a journey through the theory of economic growth from its neoclassical paradigms to the most recent models of endogenous growth. Joshua Angrist’s Mostly Harmless Econometrics: An Empiricist’s Companion has been widely praised for its integration of theory and practice. Abhijit Banerjee and Esther Duflo’s Poor Economics grew out of their popular economics development courses and was the primary text assigned for their MITx online MOOC in spring 2013.

The undergraduate major in economics begins with a two-semester introductory sequence that explores theoretical and applied topics in microeconomics and macroeconomics. Additional training in microeconomics, mac-
roeconomics, statistics, and econometrics follows. Majors have a choice of additional applied and advanced courses drawn from a menu that includes economic development, economic theory, health economics, industrial organization, international economics, labor economics, monetary economics, public economics, and other courses. The level of mathematics mastery among undergraduates allows economics courses to be taught at a high level.

The faculty is committed to innovation in the undergraduate curriculum. New courses are constantly being developed to bring insights from recent research into the undergraduate program. Recent innovations include courses on networks, environmental economics, and the introduction of the first economics MOOC at MITx. As part of an MIT-wide initiative on communication skills, the department also offers a course in which students carry out a series of increasingly independent research projects and hone their writing and presentation skills.

The Undergraduate Economics Association (UEA) provides an informal forum for students to meet and explore various topics with faculty. Sponsored by the faculty, the UEA is run by and for MIT graduate Jonathan Tebes’ broad economics skills allowed him to work with Professor Jonathan Gruber on a variety of research projects last year. One example was data collection for a study that Gruber was undertaking on the impact of decision support tools on health insurance plan choice. Choosing the right health insurance plan can be a daunting challenge, and Gruber’s recent research suggests that, as a result, individuals often do not choose the plan that appears to be best for them. To address this concern, the state of Oregon is introducing a decision support tool that will help employees understand the full cost implications of alternative health insurance choices. Studying this tool requires information on the details of all of the insurance choices facing these employees, including the premiums that they pay and the costs they face for different medical services. John Tebes contributed to the project by collecting these data and developing a “cost calculator” that incorporated all of the information into a computer simulation program, which estimates the costs to employees of alternative health insurance plans. This was an integral step in a project which helps shed light on how employers and governments can assist consumers in choosing plans in the new world of health insurance exchanges.

Undergraduate economics majors go on to graduate work and to distinguished careers in academia, global businesses, government, finance, consulting, and law. About 20 percent of MIT economics undergraduates enter a graduate program in economics or finance. This is among the highest yield of PhD candidates for an undergraduate economics program. Approximately half of the Department’s graduates choose to gain experience in business, government, consulting, and non-profit organizations before seeking out business and public policy schools for post-graduate study. The number of post-graduates choosing to study law remains fairly constant. Growing use of formal economics in law has strengthened this connection.

Whatever their destinations, undergraduate economics majors acquire essential skills for a wide variety of jobs, an excellent foundation in economics, and an opportunity to meet faculty and fellow students in a challenging intellectual environment.
Robert J. Shiller

(PhD 1972) is the Sterling Professor of Economics at the Department of Economics and a staff member at the Cowles Foundation for Research in Economics at Yale University. He is also a Professor of Finance and Fellow at the International Center for Finance at Yale School of Management. In 2013, he was awarded the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel jointly with Eugene Fama and Lars Peter Hansen “for their empirical analysis of asset prices.”

Bob’s creativity and curiosity have left a mark across many subfields of economics and beyond. He has written on financial markets, financial innovation, behavioral economics, macroeconomics, real estate, statistical methods, and on public attitudes, opinions, and moral judgments regarding markets.

In addition to a very large number of scholarly articles, he has written a series of books that have transcended academic economics and have had profound impact on salient policy debates of our times. For example, his 1989 book Market Volatility (MIT Press) is a mathematical and behavioral analysis of price fluctuations in speculative markets. His 1993 book Macro Markets: Creating Institutions for Managing Society’s Largest Economic Risks (Oxford University Press) proposes a variety of new risk-management contracts, such as futures contracts in national incomes or securities based on real estate that would permit the management of risks to standards of living. His book Irrational Exuberance (Princeton 2000, Broadway Books, 2001; 2nd edition Princeton, 2005; 3rd edition Princeton 2015) is an analysis and explication of speculative bubbles, with special reference to the stock market and real estate. He also has several other books that have influenced thinking about financial markets in our time.

He is also one of the creators of the popular S&P/Case-Shiller Home Price Indices.

Bob has been a research associate at National Bureau of Economic Research (NBER) since 1980 and has been a co-organizer of its workshops: on behavioral finance with Richard Thaler since 1991 and on macroeconomics and individual decision making (behavioral macroeconomics) with George Akerlof from 1994 to 2007.

Bob served as Vice President of the American Economic Association in 2005 and President of the Eastern Economic Association from 2006 to 2007. He was elected President of the American Economic Association for 2016.


Excellence in Teaching

The Economics Department has long emphasized a commitment to both research and teaching. Throughout its history, many faculty members have made notable pedagogical contributions: for example, Paul Samuelson’s legendary textbook, Economics, was written in the 1940s to enhance the quality of undergraduate economics education at MIT. The Department continues that tradition today, from the textbooks current faculty have written, to the development and delivery of courses that communicate the cutting edge of economic knowledge and draw new generations of students to the study of economics.

Several current faculty members have been recognized for their important contributions as teachers. In 2013, David Autor was awarded the James A. and Ruth Levitan Award for Excellence in Teaching from SHASS, in recognition of his “outstanding success in teaching our undergraduate and graduate students.” Jonathan Gruber and Nancy Rose are Margaret MacVicar Faculty Fellows, a program that each year recognizes three to five of the best undergraduate teachers and mentors across MIT with a ten-year fellowship, honoring the life and devotion to teaching excellence of MIT’s first Dean for Undergraduate Education and founder of MIT’s enormously successful Undergraduate Research Opportunities Program (UROP). Within the Department, students select three faculty members each year for particular recognition. The Undergraduate Economics Association’s (UEA) outstanding teacher of the year in 2014 was Alp Simsek. The Graduate Economics Association (GEA) award for outstanding advising went to Benjamin Olken.

Last year, Glenn Ellison added to his many teaching accolades. He collected an extraordinary tenth Teacher of the Year award from the Graduate Economics Association and received MIT’s 2014 Graduate Student Council Teaching Award, one of only two recipients from across the entire Institute faculty. It is exciting to see Glenn’s exceptional contributions to graduate education recognized far beyond the borders of the Economics Department.

Teaching excellence is not confined to the faculty. MIT graduate students hone their teaching and communication skills through teaching assistantships (TAs), and three of the very best are celebrated each spring. The UEA named Su Wang, who taught in both Principles of Macroeconomics (14.02) and Intermediate Applied Macroeconomics (14.05) courses. The GEA graduate TA Award went to Adrien Auclet for his teaching in Economic Fluctuations (14.453) and Advanced Macroeconomics II (14.462). The 2014 Robert M. Solow prize, awarded by the faculty to a graduating PhD student who has excelled in both teaching and research, was given to Isaiah Andrews.

MIT Economics faculty members have begun to engage with EdX, the innovative on-line educational initiative that MIT and Harvard jointly launched in 2012. In the spring of 2013, Abhijit Banerjee and Esther Duflo delivered a version of their popular undergraduate course on “The Challenges of Global Poverty” (14.73) as an MITx course. More than 42,000 students enrolled on this platform, which extends the delivery of MIT courses to a global community.
Robert Solow Receives Presidential Medal of Freedom
Institute Professor Emeritus and Nobel Laureate Robert Solow, who joined the MIT faculty in 1950, played a central role in the post-war growth and development of the MIT Economics Department, was among 19 outstanding individuals who were awarded the Presidential Medal of Freedom in 2014. The citation for the medal, which is the nation’s highest civilian honor, recognized that Bob’s research “transformed the field, laying the groundwork for much of modern economics.” Bob, along with fellow medal-winner Institute Professor Emeritus Mildred Dresselhaus, a physicist, received their awards at a White House ceremony in November 2014. Bob’s award came just a few months after he celebrated his 90th birthday. In early September, a group of current and former faculty marked this milestone with an informal birthday tribute, honoring not only Bob’s scientific contributions but the important role that he played in teaching, graduate advising, and in setting the intellectual tone for the modern MIT Economics Department.

Influential studies and publications on school effectiveness use admissions lotteries and random assignment to gauge overall school efficacy and to identify school practices and interventions that work. The SEII team provided the first rigorous lottery-based impact evaluation of KIPP. It authored the first randomized evaluation of Boston’s pilot schools, comparing this important model with Boston charter schools. SEII researchers helped design and implement student assignment processes in Boston, Chicago, Denver, New York, and New Orleans. They also study the effects of college outreach, financial aid, and academic support services on thousands of public college and university applicants. In a recent evaluation, they have shown how a small increase – adding one additional score report for ACT test takers – can boost college application rates for low-income students.

Research on the labor market consequences of advancing workplace automation and rising international trade has shaped the national debate on the causes of rising U.S. and international income inequality. Over the last decade, SEII’s publications and reports have illuminated the role of computerization in catalyzing employment ‘polarization’—the simultaneous growth of high-education, high-wage and low-education, low-wage jobs—by substituting for workers performing routine, codifiable job tasks. Overturning conventional wisdom, SEII’s recent work on trade integration documents the profoundly disruptive impact of rising international competition on U.S. manufacturing and the local economies where manufacturing workers live. Most recently, SEII researchers have explored the central role of education and skills in determining the lifetime earnings of workers at all levels of the income distribution.
THE DEPARTMENT'S HIGHLY regarded doctoral program enrolls about twenty-four students each year. Doctoral students take required courses in microeconomic theory, macroeconomics, and econometrics. Students are also expected to complete four fields in economics (two major and two minor) and to pass general examinations in their major fields. The field options include public finance, industrial organization, international economics, monetary economics, labor economics, economic development, econometrics, financial economics, organizational economics, political economy, and advanced economic theory.

Graduates of the PhD program teach in leading economics departments, business schools, and schools of public policy. They work on congressional staffs and government advisory councils, and with organizations such as the World Bank, the International Monetary Fund, the National Economic Council, the Council of Economic Advisers, the Federal Reserve, and the Treasury Department. They are also found among the most influential positions in the market economy, ranging from corporate executives to hedge fund managers to economic consultants.

Graduate Research

Graduate students work in intense collaboration with faculty to learn the craft of research. This occurs both in theoretical projects and in empirical fields, where learning-by-doing transfers information about data sets, research strategy and econometric tools. For example, Chris Walters (PhD 2013) recently worked with Joshua Angrist and Parag Pathak to explore the potential for Boston's high-performing charter schools to close the city's racial achievement gap. Walters contributed to an early collaboration that showed that these schools generate impressive average assessment score gains, using lottery-based quasi-experimental research designs. His dissertation extended this research, motivated by the question of how to use the lottery results to predict the effects of charter school expansion. His work shows how structural models can be combined with quasi-experimental estimates to assess various expansion scenarios. Walters' surprising conclusion is that powerful demand-side forces work against the ability of charters to close citywide gaps. This academically innovative work has already influenced the education policy debate. Walters' work was profiled in The Boston Globe, and his results have prompted policy efforts to improve charter school access in Massachusetts.

Workshops & Seminars

Graduate study at MIT consists of more than just satisfying the course requirements. Regularly scheduled department workshops, also known as seminars, offer a forum for students to learn about the latest research in their fields from invited speakers.

In contrast to the more formal nature of seminars, a key component of the dissertation advising system at MIT is a set of informal weekly field lunches at which students who have passed their general exams try out new research ideas. The presentations can range from very early stage research, hardly more than a literature review and a few ideas for future work, to nearly-complete dissertation projects. The informality of these meetings makes it possible for students to explore research topics in a setting where no one is expected to present finished work. Faculty members view attending field lunches as a central departmental responsibility.

Many past graduates of MIT's PhD program report that field lunches were invaluable in providing them with a sounding board for new research topics. Since most thesis writers volunteer to present a talk each semester, the field lunches also have the important benefit of setting near-term, but manageable, deadlines for dissertation progress.

All students who have passed their general examinations are required to attend at least one field lunch each week and to make a presentation in at least one lunch during the course of the year. Many students present their research in multiple lunches and thereby obtain a range of different faculty and student input. First and second year students who are carrying out research are also welcome to participate in these workshops. Third year students are required to complete and present a third-year paper.
**ECONOMICS STUDENTS:**

**Where are they now?**

**PATRICIA C. MOSSER** received her PhD in economics from MIT in 1986. She was on the faculty of Columbia University before joining the Research and Statistics group at the Federal Reserve Bank of New York (FRBNY). In 2005, she became a senior manager of the Markets Group at the FRBNY overseeing financial market and policy analysis as well as the implementation of monetary policy operations for the Federal Reserve and fiscal agent transactions for the Treasury Department. She played an active role in the implementation of the crisis-related liquidity facilities and the creation of 14 central bank swap arrangements to provide US dollar liquidity globally.

In 2009, she served as the Acting System Open Market Account Manager, responsible for implementation of U.S. monetary policy on behalf of the Federal Open Market Committee (FOMC) including the Large Scale Asset Purchase Program of U.S. Treasuries and Agency mortgage backed securities. Later she became Senior Advisor, Markets Group (FRBNY), responsible for the development of policy views and analysis of financial stability and financial reform issues arising from the financial crisis. She has served on numerous interagency and international committees and working groups including the Federal Reserve’s Quantitative Surveillance (financial stability) committee, the Markets Committee of the Bank for International Settlements, and working groups of the Basel Committee, Financial Stability Board, the Committee on the Global Financial System, and the Committee on Payments and Settlement Systems.

After a long career at the FRBNY, Trish became the Deputy Director of the Office of Financial Research of the U.S. Treasury in 2013. At OFR she directs a large research staff that produces academic and policy research on financial stability, analysis of current systemic financial risks, and studies of the impact of regulatory and supervisory policies on financial stability. She is a Member of the Deputies Committee, Financial Stability Oversight Council (FSOC).

From 2007 to 2010, Trish was a Board member, American Economic Association’s Committee on the Status of Women in the Economics Profession (CSWEP).

**RICHARD SCHMALENSEEE**

Richard Schmalensee, the Howard W. Johnson Professor of Economics and Management at the Alfred P. Sloan School of Management and a Professor of Economics, became a Professor Emeritus in 2014. Dick, whose research focuses on industrial organization, with recent emphasis on energy and environmental economics, received both his S.B. and PhD degrees from the MIT Economics Department. He began his career at the University of California - San Diego, and joined the Sloan School faculty in 1977 and the Economics Department in 1986. Dick served as the Dean of the Sloan School from 1998 until 2007 and also served twelve years as Director of MIT’s Center for Energy and Environmental Policy Research. He was a Member of the President's Council of Economic Advisers (1989-1991). Dick is a Fellow of the Econometric Society and the American Academy of Arts and Sciences and was the 2012 Distinguished Fellow of the Industrial Organization Society.

**WILLIAM WHEATON**

William Wheaton became a Professor Emeritus in 2014, after forty-two years of service on the MIT faculty. As an expert on housing markets, urban transportation and local public finance, Bill played a key role in launching the academic field of real estate economics. His 1996 book with Denise DiPasquale, Urban Economics and Real Estate Markets, remains a key introduction to this area. In 2014, Bill received the George Bloom Award from the American Real Estate and Urban Economics Association, recognizing his lifetime accomplishments. At MIT, Bill helped to launch the Center for Real Estate in 1983. He served as its Director between 1992 and 2003, and as Research Director between 2003 and 2005.
Fields of Study

Most economics research at MIT focuses on tangible economic problems. Empirical research may identify new empirical patterns, test theoretical models of economic behavior, or seek to evaluate the effectiveness of different policies. Theoretical research may shed new light on the behavior and the interaction of key economic players, establish new conceptual frameworks for studying markets and economic institutions, or lead to new statistical and analytical tools. Business and government decision makers in the U.S. and abroad frequently seek out MIT faculty for help in formulating and evaluating business decisions and economic policy initiatives. While much of the research activity is organized around broad fields of study, MIT faculty are intensely collaborative, frequently engaging in frontier research that cuts across fields.

Economic Theory

Many members of the MIT Economics Department faculty teach courses in economic theory, either as part of the core curriculum for graduate students, graduate electives, or at the undergraduate level. This group of faculty includes Glenn Ellison, Bengt Holmström, Mihai Manea, Parag Pathak, Drazen Prelec, Alp Simsek, Juuso Toikka, Robert Townsend, Michael Whinston, Alex Wolitzky, and Muhamet Yildiz. Other MIT theorists include Daron Acemoglu, George-Marios Angeletos, Abhijit Banerjee, Ricardo Caballero, Arnaud Costinot, Robert Gibbons, Stephen Ross, and Iván Werning. In addition, many Sloan School of Management faculty members, including Alessandro Bonatti, Gonzalo Cisternas, Andrey Malenko, and Jiang Wang, also have significant interests in economic theory. MIT faculty members are currently carrying out theoretical research that bears on both microeconomics and macroeconomics. The range of current theoretical research projects is extraordinary. Glenn Ellison is known for his work on learning in games and also works in theoretical industrial organization. Bengt Holmström is a contract theorist. His seminal work on career concerns and the difficulties of providing incentives to teams and in complex environments has played a fundamental role in shaping the modern theory of the firm. Mihai Manea is a game theorist who has worked on bargaining and matching models. Parag Pathak studies the economics of matching in a wide variety of contexts, most notably medical markets and public school choice. Drazen Prelec is actively involved in research and teaching...
SHAN LI (PhD 1994) is currently the Chief International Business Adviser of China Development Bank, the world’s largest policy bank, and a member of MIT Sloan Finance Group Advisory Board. He is also the founder, Chairman and CEO of Chinastone Capital Management, the leading Chinese private equity firm focusing on energy and natural resources investment. He was Asia Vice Chairman of UBS investment bank and Chief Executive Officer of Bank of China International (BOCI). Under his leadership, BOCI was transformed from a traditional SOE into the premier Chinese investment bank. Prior to joining BOCI, Shan had served as Managing Director and Head of China investment banking at Lehman Brothers and Executive Director of investment banking and economic research at Goldman Sachs.

Shan is also a successful IT entrepreneur. He co-founded Soufun.com, the world’s largest real estate portal listed on the New York Stock Exchange.

While leading a busy business life, Shan also teaches and does research. Right after graduating from MIT, he established China Economic Research at Goldman Sachs. He taught political philosophy at Tsinghua University and is now a Distinguished Professor of Management Practice at Beijing University. Most recently, he became the Executive President of Institute for Governance Studies at Tsinghua University, a new think-tank established to conduct research on Chinese governance issues.

Shan’s research papers appeared in The Journal of Finance, The Wall Street Journal and many leading Chinese newspapers and magazines. He also published three books in Chinese, including the bestseller Journey to Home.

Shan and his wife Helen have five children: Robert, Lucy, Max, James and Grace.

on psychology and economics. Alp Simsek has worked on general equilibrium models of financial markets and belief disagreements. Juuso Toikka worked on repeated games and dynamic mechanism design. Robert Townsend has made fundamental contributions to contract theory and currently works in both mechanism design and general equilibrium modeling. Michael Whinston is a leader in contract theory and antitrust economics. Alexander Wolitzky, who joined the department in January 2015, has worked a range of topics including repeated games, bargaining, and applications to political economy. Muhamet Yildiz is an expert on games of incomplete information and has written on delays and breakdowns in bargaining.

The MIT Economics Department is fortunate to have an ongoing visiting faculty arrangement with recent Nobel Prize winner Jean Tirole, an internationally acclaimed scholar who has worked in game theory, industrial organization, regulation, and many other fields, typically lectures in MIT’s industrial organization courses. Tirole is also a frequent summer visitor. He offers mini-courses on specialized topics in economic theory that are very popular with graduate students in all stages of the PhD program.

Economic theory is part of the basic undergraduate microeconomics sequence at MIT. Because MIT undergraduates have a good command of mathematical methods and because economic theory relies on formalism and mathematical analysis, MIT’s undergraduate economic theory offerings are probably more rigorous than those at any other college or university. MIT’s introductory course “Principles of Economics” is typically taught at the level of intermediate microeconomic and macroeconomic theory courses at other departments. This enables undergraduates to enroll in follow-up courses in advanced microeconomic and macroeconomic theory. Another popular undergraduate course explores applications of game theory in a wide range of economic settings, including business competition and individual decision-making. More advanced courses offer sophisticated undergraduate treatments of subjects (including incentives, advanced game theory, and market design) that even top universities usually only offer at the graduate level. Many former MIT undergraduates who have gone on to graduate studies in economics report that their undergraduate theory courses provided a very firm foundation for their graduate work.

Graduate students are required to pass four half-semester core courses in microeconomic theory. The first of these courses emphasizes price theory, the theory of consumers and producers, and general equilibrium analysis. The second course focuses on game theory and provides the key equilibrium notions that are needed to analyze interactions between firms in an industry and between agents in many economic environments. The third course goes further into game theory and examines decision-theory mod-
els of consumer behavior. Finally, the fourth course focuses on information economics and contract theory. It touches on questions of contract design, asymmetric information, moral hazard, and the working of insurance markets. Together, these four courses provide a comprehensive introduction to modern microeconomic theory.

Graduate students who plan to specialize in economic theory, and who expect to write dissertations in this field, select a minimum of two advanced courses on game theory, contract theory, and market design. Other courses cover a variety of more specialized topics such as auction theory, bargaining theory, networks, decision theory, and dynamic optimization. While not all of these courses are required for students to take general exams in economic theory, most students who study economic theory as a major field enroll in virtually all of the advanced theory courses. The set of faculty members teaching the advanced theory courses varies from year to year, and the content of these courses often varies with the instructors.

There is a close connection between some issues in economic theory and the modern applied field of financial economics. Much of the modern theory of asset pricing derives from research in economic theory on choice under uncertainty and the allocation of risk in security markets. A substantial body of current research on corporate financial policy begins with insights from contract theory and from analysis of how firms and households behave in economic environments characterized by asymmetric information. These close ties between theory and financial economics lead many students who plan to write dissertations in finance to study economic theory as one of their two primary fields of specialization.

Informal discussions take place at weekly theory lunches where graduate students may discuss current topics or present preliminary research ideas. These meetings provide support for students writing their dissertations in economic theory. Current research developments are presented at weekly MIT-Harvard seminars. These seminars, which host outside speakers, provide excellent opportunities for graduate students to learn what leading scholars are currently working on.

Dynamic Mechanism Design

Many economic contracts and institutions can be viewed as optimal responses to asymmetry of information among agents. This approach, known as mechanism design, has been successfully applied to analyze questions ranging from auction design to optimal income taxation. In “Dynamic Mechanism Design: A Myersonian Approach,” recently published in Econometrica, Juuso Toikka and co-authors Alessandro Pavan and Ilya Segal extend the theory to dynamic situations where a sequence of decisions is to be made and the agents privately learn information relevant for the decisions over time. This allows studying new applications such as repeatedly auctioning space for online advertisements when the bidders learn about the profitability of such advertising based on their experience. Toikka and his coauthors provide a rigorous derivation of the technical underpinnings of the theory, unifying and generalizing earlier work on the topic. Applied to the design of optimal mechanisms, their analysis yields a number of interesting results. For example, in the case of repeated online ad auctions, the optimal mechanism is a dynamic auction that grants preferential treatment to bidders with high initial estimates about the value of advertising. This is markedly different from a sequence of independent auctions, suggesting that there can be potential advantages to building long-term contractual relationships in repeated procurement and sponsored search.
Modeling Conflict Cycles

Conflict between groups has been pervasive throughout human history. But the economic logic of conflict is far from clear: given widespread costs of conflict and gains from cooperation, why can’t different groups get along? The flip side of this question is also puzzling: once groups do fall into conflict, how are they ever able to restore trust and cooperation? For example, the post-independence history of Colombia is dominated by a series of violent and highly disruptive conflicts between the Liberal and Conservative parties and their supporters. Full-blown civil wars erupted in 1851, 1854, 1859, 1876, 1884, 1895, 1899, and 1948. These conflicts were rooted in distrust and animosity, yet in several cases they did make way to peace and cooperation between the two parties, including following the last—and perhaps the bloodiest—civil war, which ended with a durable power-sharing agreement between the two parties.

In “Cycles of Conflict: An Economic Model,” Daron Acemoglu and Alexander Wolitzky provide a unified explanation for both the onset and end of inter-group conflict, based on a simple Bayesian learning model. If one group perceives an action by the other group as aggressive (perhaps mistakenly so), it infers that the other group may be inherently untrustworthy, and may respond aggressively in turn. The other group may then infer that the first group is inherently untrustworthy, leading to a conflict spiral. But such a spiral must also contain the seeds of its own dissolution: Bayesian agents eventually conclude that the conflict was likely started by a misperception rather than an intentionally aggressive action, and they then experiment with cooperation, restarting the cycle.

This study’s approach to the dynamics of conflict leads to some unexpected predictions. For instance, even if peaceful actions are very unlikely to be misperceived as aggressions, conflict can still be prevalent, because when misperceptions are less likely to occur, they also take longer to be corrected. More optimistically, cooperation can also be restarted even between groups that can harbor grievances against each other resulting from conflicts in the distant past.

Capital Controls as Dynamic Terms-of-Trade Manipulation?

Since the end of World War II, the world has experienced a dramatic increase in goods and capital markets integration. The multilateral institutions that promote both types of trade, however, have followed two very different approaches. While the primary goal of the World Trade Organization (WTO), and its predecessor the General Agreements on Tariffs and Trade, has been to reduce relative price distortions in intratemporal trade, the multilateral institutions that promote capital market integration, like the International Monetary Fund (IMF), have taken a different, more nuanced approach to intertemporal trade, as exemplified in the recent IMF recommendations on the appropriate use of capital controls.

In “A Theory of Capital Controls as Dynamic Terms-of-Trade Manipulation,” Arnaud Costinot, Guido Lorenzoni, and Ivan Werning propose to bridge the gap between the trade approach to tariffs and the macroeconomic approach to capital controls. They do so by developing some basic tools to think about capital controls as a form of intertemporal trade policy and explore the implications of this idea for how unilaterally optimal capital controls should covary with other macroeconomic variables over time. They find that a country growing faster than the rest of the world has incentives to promote domestic savings by taxing capital inflows or subsidizing capital outflows. Although their theory of capital controls emphasizes interest rate manipulation, the pattern of borrowing and lending, per se, is irrelevant.
The Long Tradition of active interest in current macroeconomic issues is exemplified by the work of MIT’s Nobel Laureates Peter Diamond, Franco Modigliani, Paul Samuelson, and Robert Solow. The current macroeconomics and international group includes Daron Acemoglu, George-Marios Angeletos, Ricardo Caballero, Arnaud Costinot, Alp Simsek and Iván Werning. In addition to this core group, several other faculty members teach and do research at the boundary between macroeconomics and other subfields such as labor economics, development, public finance, and corporate finance. This includes David Autor, Abhijit Banerjee, Bengt Holmström, James Poterba, Jean Tirole, and Robert Townsend.

Empirical research in macroeconomics draws not only from econometrics but also from empirical work in labor economics and public finance. Macroeconomic theory, on the other hand, draws heavily on “microfoundations” in neoclassical microeconomic theory, as well as in game theory and contract theory. Students who plan to carry out research in macroeconomics and international economics often find that course work in economic theory is extremely helpful in identifying research topics and in providing analytical tools for potential dissertation research. Conversely, students interested in theoretical work are often motivated by the type of questions that are in the center of macroeconomics.

The Department offers three undergraduate and six graduate macroeconomics courses. The graduate courses range from the introductory level to advanced seminars in which students assess and participate in current research. The advanced undergraduate macroeconomics course is comparable to the graduate macroeconomics offering at many economics departments.

All PhD students must take four of the six graduate macroeconomics courses. The remaining two are field courses that cover current research and prepare students to write dissertations.

An undergraduate course in international economics introduces students to the theory of international trade and finance. Two graduate courses cover traditional and modern theories of international trade and finance, incorporating both theory and empirical work.

The faculty in macroeconomics and international economics maintain a very active research program. Daron Acemoglu carries out both theoretical and empirical research on diverse topics such as the determinants of economic growth, the development of political institutions, and the workings of labor markets. George-Marios Angeletos’ current research focuses on studying the formation of expectations and the potential of coordination failures within the context of business cycles and financial crises. Ricardo Caballero is exploring a range of issues at the intersection of macroeconomics and finance; he has recently focused on asset market crises and global capital flows. Arnaud Costinot is a trade theorist who is exploring the central determinants of underlying trade patterns between nations. Alp Simsek focuses on financial markets, heterogeneous beliefs, and other important topics at the intersection of finance and macroeconomics. Iván Werning works on optimal policy in both macroeconomics and public finance, touching on diverse issues such as capital controls for macroeconomic stabilization, fiscal unions, and social policies such as unemployment insurance. In addition to these Economics faculty, Kristin Forbes, Simon Johnson, and Roberto Rigobon of the Sloan School of Management are actively involved in research in the area of international economics as are Deborah Lucas and Jonathan Parker in macroeconomics.
Development Economics

**UNDERDEVELOPMENT** is one of the most profound problems in economics, and it may be the problem with the greatest human impact. At MIT the study of development economics began during Paul Rosenstein-Rodan’s tenure and continued through the work of Richard Eckaus. Today, this active group is one of the most impressive in the world, with expertise that spans both microeconomic and macroeconomic perspectives on development.

Daron Acemoglu works on a broad set of issues involving economic growth and the political economy of institutions and development. Abhijit Banerjee is an applied theorist with a strong commitment to studying problems in development economics using both theoretical and empirical tools. He is currently working on issues involving credit, networks, education, and

In developing effective government policy, we know surprisingly little about which policies work best. The objective of J-PAL is to reduce poverty by ensuring that policy is based on scientific evidence. J-PAL aims to set a new standard of rigorous evaluations to identify effective programs across various sectors including agriculture, education, energy and environment, finance, governance, health, and labor markets.

An ongoing revolution in academic economics and related disciplines is changing the way many government programs are evaluated. Researchers use randomized trials like those used in medicine to evaluate social policies. This approach provides transparent and scientifically sound answers to policy questions and can credibly identify the impacts of programs in the field. Improvements in evaluation research have the potential to dramatically enhance the policies that are used to alleviate poverty around the world.

Led by Directors Abhijit Banerjee, Esther Duflo, Rachel Glennerster, and Benjamin Olken, J-PAL works with governments, international development agencies, non-governmental organizations, and foundations to evaluate their poverty reduction programs. Affiliated professors include

David Autor and Amy Finkelstein, as well as Sloan School faculty members Antoinette Schoar and Tavneet Suri. J-PAL’s network of over 100 affiliated professors around the world has conducted over five hundred randomized evaluations in fifty-seven countries to find the most effective approaches to critical development issues including how to reduce the spread of AIDS, increase student attendance, reduce industrial pollution, and decrease corruption in government projects.

J-PAL actively disseminates the results of evaluation research to policymakers from around the world and works with them to scale up proven, effective policies. J-PAL is also dedicated to capacity building and has trained more than fifteen hundred development professionals in rigorous impact evaluation.

J-PAL, while based at MIT, has regional offices throughout the world, covering Africa (based in South Africa), Europe (based in France), Latin America (based in Chile), South Asia (based in India), and Southeast Asia (based in Indonesia). In 2013, J-PAL North America was launched as a regional office of J-PAL, also based within the Department of Economics at MIT. The office is led by Scientific Directors Amy Finkelstein (MIT) and Lawrence Katz (Harvard) and focuses on rigorously evaluating domestic social policy. With the new regional office, J-PAL’s approach of evidence generation, policy outreach, and capacity building is being applied to the challenges of reducing poverty in the US and Canada. Affiliates working in the region have measured the effects of policies ranging from education and household finance programs to housing and health insurance policies.

Further information about J-PAL may be found at [www.povertyactionlab.org](http://www.povertyactionlab.org).

A young girl in Ajmer, India shows off a henna design on her hand during a J-PAL evaluation of the impact of mother’s literacy programs on child learning.
the structure of contracts. Esther Duflo is primarily interested in empirical issues that arise in the study of poverty alleviation, and she ranges widely across various topics. She has recently completed empirical studies of education reform, labor markets, political structures, public works projects, and financial policy. Benjamin Olken is an expert on the challenges of the public sector in developing countries, focusing on the challenges that corruption and governance raise for development policy. Robert Townsend is an economic theorist with substantial interests in financial issues and the role they play in driving development.

Many of the core issues that confront developing economies have close parallels in developed nations, and the set of MIT faculty who have studied economic policy in developing nations includes many members in addition to the group that teaches development economics. Joshua Angrist, for example, has studied education policy in a number of developing nations, and David Autor has worked on education in Chile.

The Department offers a three-semester course for graduate students in development economics, as well as three popular undergraduate courses on economic development. The courses offer students an opportunity to use tools from microeconomic and macroeconomic theory, as well as political economy, to study a range of interesting policy issues in developing nations. The Department also hosts a joint seminar with Harvard that attracts faculty interested in development economics from both institutions.

Many alumni of the department work at international organizations, such as the World Bank and the International Monetary Fund, where they help to design and implement economic policies for developing nations.

Truth-telling in Third-Party Audits

In many regulated markets around the world, private third-party auditors are hired and paid by the firms they audit, potentially creating a conflict of interest. Auditors may have incentives to distort or falsify their reports to maintain business in such a system. Moreover, if auditors do not report the truth, regulated firms have weak incentives to comply, since regulators do not have the information necessary to punish violators. In 2009, environmental regulators in the Indian state of Gujarat suspected that the state’s environmental audit market was producing unreliable information about industrial pollution due to this conflict of interest, and that emissions were actually much higher than auditors were reporting.

In “Truth-telling in Third-Party Audits and the Response of Polluting Firms: Experimental Evidence from India,” Esther Duflo, Michael Greenstone (Chicago), Rohini Pande (Harvard), and Nicholas Ryan (Yale) report on a two-year field experiment in Gujarat that altered the market structure for industrial environmental audits to incentivize accurate reporting. In partnership with the Gujarat Pollution Control Board, researchers randomly assigned industrial plants to a new or status quo audit scheme. In the new scheme, auditors were randomly assigned to plants, paid a fixed fee from a common pool, faced random back-checks of their work, and, in the second year, they received a bonus for accurate reporting. Under the status quo, plants selected and paid their own auditors, negotiated auditor fees, and audit reports were not back-checked. To measure audit accuracy under the two systems, researchers compared the pollution readings from auditors’ reports to pollution readings taken by technical staff from independent engineering colleges in all treatment and control plants.

The researchers found three main results. First, reporting under the status quo system was largely corrupted. Auditors systematically reported plant emissions just below the standard, although true emissions were typically higher. Second, the new audit scheme led auditors to report pollution more truthfully and substantially lowered the fraction of plants that were falsely reported as compliant. Some auditors worked in both treatment and control plants, but they reported pollution more accurately for treatment plants than for the control plants they audited the same year. Third, in response to more accurate audits, industrial plants reduced pollution by 0.21 standard deviations on average. Reductions came from the highest-polluting plants, which historically were the most likely to be penalized for violating pollution standards. These results suggest that reformed incentives for third-party auditors can improve their reporting and make regulation more effective.
ECONOMICS STUDENTS:
Where are they now?

LAURA D’ANDREA TYSON
(PhD 1974), Professor of Economics and Business Administration at the University of California, Berkeley’s Haas School of Business, has made significant contributions throughout her career in academia, government and the private sector. After graduating from MIT, Tyson was an assistant professor at Princeton University before joining the Department of Economics at the University of California at Berkeley. In 1990, she also became a professor at the Haas School of Business at Berkeley. She served as Dean of the Haas School from 1998 to 2001, leaving to become Dean of the London Business School from 2002 to 2006 before rejoining Haas in 2007. An expert on international trade and competitiveness, she serves on the State Department’s Foreign Affairs Policy Board and was a member of President Obama’s Council of Jobs and Competitiveness and Economic Recovery Advisory Board (2009 – 2012). She played a key role in economic policy-making in President Clinton’s administration, during which she chaired the Council of Economic Advisers (the first woman to hold that position) and the National Economic Council. Tyson serves on numerous advisory boards across settings that range from the McKinsey Global Institute to the Brookings Institution Hamilton Project to the National Academy of Sciences and is a director for four publicly traded companies. She is a well-known contributor on economics to many major news outlets.

Tyson was a member of the MIT Corporation from 2008 through 2013 and has contributed insights from her wide range of experience to the MIT Economics Department through her service on the department’s Visiting Committee.

ECONOMICS STUDENTS:
Where are they now?

Econometrics and Monetary Policy

Dynamic Stochastic General Equilibrium (DSGE) models are currently used by many central banks, including the European Central Bank and the Federal Reserve, as inputs to monetary policy decision-making. There is growing concern that these models may suffer from a problem econometricians term “weak identification,” where the lack of information in the data leads conventional statistical techniques to understate the level of uncertainty present in the estimation. Anna Mikusheva’s working paper with Isaiah Andrews (PhD 2014), “Maximum Likelihood Inference in Weakly Identified DSGE Models,” shows that DSGE models indeed suffer from severe weak identification problems. In this setting, commonly-used tools for statistical inference can lead to substantial errors in the apparent precision and reliability of models’ estimates—errors that, uncorrected, may distort policy responses. The authors show how to remedy this problem, developing a new frequentist method of inference that is fully robust to weak identification and that can be implemented within the commonly used maximum likelihood framework.
Econometrics

Research and teaching at MIT blend the theory and practice of economic data analysis. Econometrics provides fundamental approaches to using data to understand underlying structural and causal relationships and finds application in a wide range of topics in both microeconomics and macroeconomics.

Victor Chernozhukov carries out wide ranging research in econometric theory. Topics include high dimensional models, shape restrictions, set inference, endogeneity, and quantile estimation. He applies these methods to novel and classical economic problems, often in collaboration with other MIT faculty or students. Jerry Hausman has made fundamental contributions to the econometric analysis of microeconomic data, developing new ways to estimate models of transportation, labor supply, research and development investment, educational returns, and stock market prices. He is currently working on discrete choice models with flexible correlation among alternatives and demand analysis with general heterogeneity, while carrying out a range of applied studies in industrial organization and public finance. Anna Mikusheva has worked on the problems of statistical inference when time series are nearly non-stationary and weak identification in empirical macroeconomic models. Her recent research focuses on geometry and dynamics of weak identification. Whitney Newey has extended instrumental variables to nonparametric models, developed inference methods for models with many moment restrictions, and proposed methods for non separable econometric models. His recent interests include demand analysis with general heterogeneity and nonlinear panel models.

In addition to these core econometrics faculty members, several other faculty members in the Economics Department and the Sloan School have important interests in econometrics. Joshua Angrist studies methods for program evaluation in applied economics. Andrew Lo of the Sloan School studies the econometrics of financial markets and is an author of a leading text in this field. Thomas Stoker, another member of the Sloan School faculty, has also worked on demand analysis, semiparametric estimation, and a range of other problems in micro-econometrics.

Mastering ‘Metrics
The Path from Cause to Effect

By Joshua D. Angrist and Jörn-Steﬀen Pischke

Applied econometrics, known to aficionados as ‘metrics, is the original data science. ‘Metrics encompasses the statistical methods economists use to untangle cause and effect in human affairs. Through accessible discussion and with a dose of kung fu-themed humor, Mastering ‘Metrics presents the essential tools of econometric research and demonstrates why econometrics is both exciting and useful.

Mastering ‘Metrics highlights what the authors call the Furious Five econometric tools: random assignment, regression, instrumental variables, regression discontinuity designs, and differences in differences. These essential tools are illustrated through well-crafted real-world examples (voted by Grand Master Oogway of Kung Fu Panda’s Jade Palace). Mastering ‘Metrics uses data and statistics to illuminate the path from cause to effect, showing how our basic econometric toolkit provides convincing answers to questions ranging from the effects of monetary policy on economic activity to the effects of health insurance on health.
Undergraduate Majors in Economics

Noam Angrist, one of the 32 American students who has been named a Rhodes scholar for 2015, graduated from MIT in 2013 earning a BS in Economics and Mathematics.

During his college years, Noam co-founded an after-school enrichment program called Amphibious Achievement, which introduced innovative techniques to make the sport of rowing accessible to over 200 low-income urban youth. He was also a co-founder and principal investigator of TechLit, a reading enrichment program in Boston, which used Kindle e-readers to boost reading access for underprivileged youth. During his undergraduate summers, Noam interned at the World Bank, the White House, and at the MIT Economics Department, where he sometimes encountered his father, Joshua Angrist.

Noam said that his most memorable course-14 experience was “leveraging his friends’ MIT computers web-scraping skills to get Yelp data for his 14.33 class” (taught by Sara Fisher Ellison). He was determined to study the effect of the tipped minimum wage on the quality of service in restaurants around the country. The higher the percentage of a waiter’s wage was made up of tips (which varied by state and minimum-wage laws), the higher or lower the incentive to perform, captured by Yelp quality-of-service data. Inspired by the Big Mac index, in an attempt to control for food quality, he considered only fast-food chains with tipped waiting jobs. The results of the study were reported in Noam’s paper (“Does Merit Pay Pay?”) and presented to the class. He shares that “the whole experience taught me the nuances, challenges and thrills of research, and was a true Course 14 (economics) moment.”

After receiving a Fulbright Scholarship, Noam founded Young 1OVE, a non-governmental organization in Botswana dedicated to informing children of the risks of HIV/AIDS and how to lead healthy lives by teaching classes in high-risk public schools. He was successful in raising over $250,000 USD, was featured on national TV & radio, secured a mandate from the Ministry of Education to reach every child in Botswana, and delivered classes in 340 schools to 35,000+ youth.

Economics Computing at MIT

The Department supplements MIT’s computing resources with its own cutting-edge systems designed to support learning and research. The graduate computing lab grants students access to powerful Windows-based virtual machines, which run a full suite of econometric and statistical software packages. The lab is open 24 hours a day and is also remotely accessible, allowing students to connect using their personal computers from anywhere in the world. Additionally, the department provides multiple Linux-based research computing servers, including a 200+ processor high-performance computing cluster. These systems allow students to work with massive data sets and easily manage long-running jobs. This computing infrastructure is backed by a robust and secure fiber-optic data storage system which provides user-accessible backups of datasets and documents.

Three full-time professionals, Mark Leary, Carl Anderson, and Andy Dorner, support the department’s extensive IT operation. Graduate students may also look to user consultants for assistance and direction. These consultants, drawn from the ranks of current economics PhD students, train new users and help with data management and programming.

The Department offers a student-taught programming course designed to acquaint both graduate and undergraduate students with popular programming languages. Students often take this class in preparation for empirical projects and work as faculty research assistants. Other important computing resources for MIT economists include MIT’s Geographic Information Systems Laboratory, housed at Rotch Library, and the virtual Harvard-MIT Data Center. In 2012, the Economics Department launched an agreement with the Census Bureau’s Research Data Center (RDC), located at the nearby National Bureau of Economic Research (NBER), allowing students and faculty to access confidential government microdata sources for approved projects.
Applied Microeconomics

Applied Microeconomics is comprised of several specialized areas of study including industrial organization and regulation, labor economics, public economics, political economy, organizational economics, health economics, and financial economics.

Industrial Organization and Regulation

The field of industrial organization and regulation explores the strategic behavior of firms, the effect of government regulations, and more generally, the structure, behavior, and performance of product and service markets. MIT Economics regularly offers undergraduate courses in industrial organization, health economics, and energy economics. The main PhD field sequence in industrial organization is comprised of three semester-long courses that develop the theory of and empirical approaches to oligopoly, antitrust, and regulation during the first two semesters, and focus in the third semester on hands-on experience with structural econometric models used in industrial organization and applied microeconomic research. The methods course is strongly recommended for students writing dissertations in industrial organization and has been popular among graduate students in related fields as well. Current research papers by local and outside researchers are presented in the joint Economics Department/Sloan School of Management Industrial Organization workshop, which meets with the Harvard Research in Industrial Organization seminar several times each year.

The department has a strong and vibrant research presence in industrial organization. Nikhil Agarwal brings skills in economic theory and econometrics to bear on a variety of problems, particularly those involving market design and two-sided markets, such as the medical residency matching program. Glenn Ellison’s research spans a broad range of theoretical and empirical analyses across the field of industrial organization. His recent work includes analyses of the implications of consumer deviations from neoclassical optimizing behavior for firms and markets, the design and performance of various internet-based markets, and determinants of firm location decisions and agglomeration. Sara Fisher Ellison is an applied econometrician with expertise on the pharmaceutical industry and the digital economy, and broad interests in how political and market institutions influence strategic decisions by firms. Nancy Rose is an expert in the economics of regulation who studies the effects of regulation and market competition on performance in a range of energy and transportation markets, which are combined in her current research analyzing airlines’ adaptations to changing fuel prices. Paulo Somaini unites his interest in applied theory with econometrics expertise to analyze firm behavior through the lens of structural econometric models, developing and applying cutting edge econometric tools to problems of interest. His recent research analyzes the effect of interdependent costs on competition in highway procurement auctions. Michael Whinston is an applied theorist and author of graduate and undergraduate microtheory texts. He has made significant contributions to contract theory, organizational economics, and industrial organization, and his research on antitrust economics has shaped both the academic literature and the practice of competition policy. His current research includes work on horizontal mergers, health exchanges, vertical integration, and property rights.

Department faculty and students interact frequently with Sloan School of Management faculty whose research interests intersect with industrial organization, including many in the Applied Economics; Information Technology; Marketing; and Technological Innovation, Entrepreneurship, and Strategic Management groups at Sloan.

Labor Economics

Labor economics is concerned with the economic forces that determine wages and employment. In addition to traditional labor topics, such as supply and demand in the labor
market, labor students study the economics of education and the economics of the family because schooling and family life are also important determinants of earnings. The undergraduate labor course provides an overview of supply and demand in the labor market, human capital, and the distribution of income and wages. This course emphasizes the power of microeconomic reasoning and econometric tools to answer important economic questions. Graduate students may take a two-semester course on modern empirical and theoretical labor economics, as well as more advanced courses on labor topics and on the econometric methods of special interest to labor economists.

A distinguished group of MIT faculty specializes in labor economics. Daron Acemoglu has contributed to core theoretical subjects in labor economics, including the effects of training, the design of optimal unemployment insurance, and the links between skill, technology, and the wage structure. Joshua Angrist, a leader in empirical labor economics, has studied human capital, immigration, and a host of public policies. His current research focuses on the design of education systems and their impact on labor market outcomes. David Autor’s work analyzes the effects of technological change and international trade on the labor market. A second strand of David’s research explores the growing impact of Social Security disability insurance programs. Parag Pathak uses economic theory to design school choice mechanisms—including those recently adopted by Boston, New Orleans, New York, and Chicago. In ongoing work, Pathak has been studying charter and exam schools. Heidi Williams studies technology and innovation, with a particular focus on technological change in health care.

Many other faculty are deeply interested in labor economics and interact regularly with the labor group. For example, public finance economists Amy Finkelstein and Jonathan Gruber study the impact of health insurance, disability pro-

Do Fixed Patent Terms Distort Innovation?
Evidence from Cancer Clinical Trials

Among new drug approvals, treatments for late-stage cancer are much more common than are cancer vaccines. While that pattern could reflect greater challenges in the science of cancer prevention, a recent working paper by Heidi Williams—with co-authors Eric Budish and Ben Roin—points to the role the patent system may have on incentives for research and development (R&D) investments in early-stage cancer drugs and cancer prevention.

Patents reward innovation by granting inventors a fixed period of market exclusivity. But when firms face strong incentives to file patents at the time of discovery (“invention”) rather than at the time of first sale (“commercialization”), fixed patent terms generate variable effective patent lives. Inventions that have a long time lag between invention and commercialization receive substantially reduced—or in extreme cases, zero—effective patent terms. How does this relate to cancer treatments? For biomedical R&D, clinical trials are shorter—and hence, effective patent terms longer—for drugs targeting late-stage cancer, relative to drugs treating early-stage cancer patients or cancer prevention. Using a newly constructed data set on cancer R&D investments, Williams and her co-authors present several sources of evidence consistent with fixed patent terms distorting cancer R&D. Patient groups that require longer clinical trials tend to attract less R&D, and the exceptions to that pattern reinforce the importance of patent length. For example, existing cancer prevention drugs have all either been publicly-financed or approved on the basis of so-called “surrogate endpoints” that enabled shorter clinical trials, and hence, longer effective patent terms. Rough back-of-the-envelope calculations suggest the number of life-years at stake is large - on the order of 800,000 years of life lost among US cancer patients diagnosed in 2003 - and the paper analyzes potential policy levers that could be used to eliminate this distortion.
programs, and other government policies on labor markets, while Development economists Esther Duflo and Abhijit Banerjee investigate the role of labor markets in developing countries. Econometricians Victor Chernozhukov, Jerry Hausman, Whitney Newey, and Anna Mikusheva teach and advise labor students, keeping them on the econometric frontier.

Public Economics

Public economics focuses on the design of government tax and expenditure policies and on the economic effects of these policies. Undergraduates interested in this area may take an introductory course in public economics and also pursue related courses, such as environmental economics. Graduate students enroll in a two-semester public economics sequence. While there is always a core of material on taxation and social insurance programs covered in these courses, additional subject matter can vary from year to year. There is also a graduate course focused on health economics that involves substantial discussion of issues related to the public sector. Several recent PhD students have received National Tax Association or National Academy of Social Insurance awards for outstanding dissertations.

Several faculty members specialize in public economics. Amy Finkelstein focuses on the interplay between private and public insurance markets, with particular emphasis on health and long-term care insurance. Jonathan Gruber studies a range of social insurance programs, particularly state and federal health insurance programs. James Poterba examines various issues in tax policy, especially with regard to retirement saving. Iván Werning works on optimal tax design, with a focus on intertemporal issues such as capital income taxation. Heidi Williams analyzes public policy toward intellectual property, and the effect of such policy on innovation in markets including health care.

Political Economy

Political economy is the subfield of economics that studies the interplay of political factors, political institutions, and economic incentives. It focuses both on the determination of a broad range of policies and the implications of political factors on economic outcomes. Daron Acemoglu has been studying the links between institutions and economic growth and development as well as the dynamics of political institutions and policies. Abhijit Banerjee has worked on various issues at the intersection of political economy and economic development. Benjamin Olken has studied the role of political leaders in affecting policy outcomes and economic growth and the implications of corruption in developing economies. Daron Acemoglu, Abhijit Banerjee, and Benjamin Olken offer a graduate course on political economy of institutions and development, focusing on the interaction of political institutions and economic growth and development. The department also offers a second graduate course on theoretical and empirical approaches to political economy, which, together with the political economy of institutions and development course, makes up the political economy general field. Other faculty working on political economy issues include Esther Duflo, who has worked on the effect of village-level political institutions on women’s representation, and Alex Wolitzky whose work has focused on conflict, repression and coercion. Simon Johnson, a member of the Sloan School faculty, works actively on the links between political institutions and economic development. Graduate students interested in political economy can also enroll in a number of other courses that are offered jointly with the Political Science Department.

Health Economics

Health Economics is a rapidly growing area of research interest, particularly given the ongoing public policy debate surrounding the Affordable Care Act. The public policy significance of this topic, the continued growth in health care costs, and the availability of high quality data and novel research questions have prompted a large number of students to carry out research in health economics. Their work is supported by a large faculty group with strong interests in health economics. Nikhil Agarwal, works on the process of matching physicians to residency slots. Amy Finkelstein studies private market failures in health insurance markets and the role of government interventions to address them, including the effects of Medicare's introduction and of expanding Medicaid to cover low income individuals. Jonathan Gruber studies public policy towards health insurance in a variety of contexts, such as tax subsidies to employer sponsored insurance, expansions of Medicaid, and the use of choice-based exchanges to promote insurance coverage. Jeffrey Harris, who holds an M.D. as well as a PhD in economics, works on the economics of health issues ranging from smoking to AIDS. Heidi Williams works on the development of innovative technologies in medical care and on the returns to higher medical spending. The Economics Department has long offered an undergraduate course in health economics. There is also a graduate course offering, co-taught by Amy Finkelstein, Jonathan Gruber, and Heidi Williams.

Financial Economics

Financial economics is a very active field of applied economics research, and for more than five decades MIT has been one of the centers for this research. Paul Samuelson did path-breaking work on the random walk hypothesis for stock prices in the 1960s. The Black-Scholes-Merton option pricing formula was developed at MIT in the early 1970s, and Franco Modigliani, one of the most important contributors to corporate finance, held a joint professorship in the Economics Department and the Sloan School for nearly forty years. Today, a close collaboration between the finance group in the Sloan School of Management and
The Elite Illusion

In the “The Elite Illusion: Achievement Effects at Boston and New York Exam Schools,” Joshua Angrist and Parag Pathak (working with Atila Abdulkadiroglu from Duke) study the effects of attendance at some of the nation’s most elite public high schools, including the storied Boston Latin School and Stuyvesant High School in New York. Students at these exam schools do well on most measures of achievement. It’s therefore no surprise that competition for exam school seats is fierce. Students who attend selective schools are necessarily a special group, so the question remains: Does an exam school education add value relative to a standard public education for already high achieving students? Using a powerful econometric tool known as the regression discontinuity design, this paper compares the achievement of otherwise similar applicants who fall just above and just below admission cutoffs. In spite of the fact that those who clear the cutoff benefit from a rich school environment, populated by high-achieving peers, the regression-discontinuity design reveals no causal effect of exam school attendance on PSAT, SAT, and AP scores, on college enrollment and selectivity, or on 8th and 10th grade achievement. The good outcomes seen for exam school students are a misleading reflection of selection bias, an “elite illusion” generated by non-random selection of students.

Undergraduate Majors in Economics

Katherine Allsop graduated from MIT in June, 2014, earning a degree in Economics with a minor in Mathematics. As an undergraduate, Katie participated in a UROP at J-PAL during her junior year. In the summer of 2013 she interned with the White House Council of Economic Advisers, where she primarily worked on projects related to energy policy. Katie’s main project involved the CEA’s collaboration with the EPA and other governmental departments to revise the Renewable Fuel Standards, legislation that determines national minimum requirements for renewable fuel usage. The team she was involved with at the CEA constructed a model to help forecast the economic impacts of different potential renewable fuel requirements to help the involved parties determine the optimal choice of renewable fuel requirements for future years. In particular, she had the opportunity to work closely with CEA member Professor James Stock of Harvard on this Renewable Fuel Standards project.

Katie’s most memorable experiences were her interactions with the faculty and her advisors over her four years at the Institute. In particular, she recalled that Professors Panle Jia Barwick and Sara Fisher Ellison were very supportive and involved advisors who always gave great advice about finding UROPs, picking classes, and anything else that she needed help with.

Katie is currently working at Cornerstone Research, an economic consulting firm, as an analyst. She works in Copley Square at the Boston office, and her responsibilities include conducting quantitative and qualitative analyses to assist Cornerstone’s clients in answering the many complex economic questions that arise in business litigation.
the Economics Department provides students with an outstanding opportunity to learn about current insights and state-of-the-art methods in both asset pricing and corporate finance.

Faculty members from the Economics Department and the Sloan School of Management play a central role in teaching both undergraduate and graduate finance courses, and in supervising doctoral students. Within the Economics Department, Ricardo Caballero, Victor Chernozhukov, Bengt Holmström, and James Poterba, as well as visiting professor Jean Tirole have significant interests in financial economics. Some of the core research on liquidity and the financial crisis has been conducted by this group.

The finance group in the Sloan School is widely regarded as one of the premier departments in the world and its faculty work closely with economics department students. Robert Merton, who received his PhD from the MIT Economics Department and is the 1997 Nobel Laureate, is currently the School of Management Distinguished Professor of Finance. His research focuses on risk management issues with particular application to retirement and pension planning. Stephen Ross – who holds a joint appointment in the Economics Department and the Sloan School – developed the Arbitrage Pricing Theory and has made many other seminal contributions in financial economics. He teaches the introductory PhD course on asset pricing. John Cox, whose book on option markets is a standard reference, specializes in asset pricing and derivative markets. Leonid Kogan works on theoretical asset pricing, macro-finance, and financial engineering while Jun Pan is interested in derivatives markets and credit risk modeling. Andrew Lo is an expert on econometric methods and their application in financial economics, and director of the MIT Sloan Laboratory for Financial Engineering, which facilitates quantitative research in financial engineering and computational finance. Jiang Wang specializes in asset pricing and is currently working on the characterization of financial risks and the impact of liquidity on asset prices. Deborah Lucas works in diverse areas such asset pricing, dynamic models of corporate finance, and monetary economics. Jonathan Parker, another MIT Economics PhD, also focuses on macroeconomic issues that bear on financial markets. Paul Asquith focuses on corporate finance and control, dividend policy and market efficiency. Stew Myers, a past president of the American Finance Association, is primarily interested in corporate finance as are Antoinette Schoar and Nittai Bergman, whose research focuses on corporate finance and governance issues.

Doctoral students from the Economics Department are welcome to participate in the weekly financial economics seminar that is hosted by the Sloan finance group. This seminar provides an opportunity for learning about the current state of research in the field of financial economics. Undergraduate economics majors can enroll in the Sloan School’s introductory finance course for master’s students. This is a very popular undergraduate elective.

Many MIT graduates have been pioneering contributors to financial economics, including Robert Merton, Robert Shiller, and Joseph Stiglitz. Many PhD graduates of the last three decades have played, and continue to play, a central role in advancing this research field. This group includes Yacine Ait-Sahalia (Princeton), Judy Chevalier (Yale SOM), Harrison Hong (Princeton), Pablo Kurlat (Stanford), Jennifer La’O (Columbia), David Matsa and Mitchell Petersen (Northwestern - Kellogg School), Daniel Paravisini (LSE Finance), Joshua Rauh and Jeffrey Zweibel (Stanford Graduate School of Business), David Scharfstein (Harvard Business School), Andrei Shleifer (Harvard), Alp Simsek (MIT), Jeremy Stein (Harvard), Amir Sufi, Robert Vishny, and Luigi Zingales (Booth School of Business, University of Chicago), Rene Stulz and Michael Weisbach (Ohio State), and Stephen Zeldes (Columbia Business School).
**Poor Economics**

A Radical Rethinking of the Way to Fight Global Poverty

By Abhijit Banerjee and Esther Duflo

Why is it so hard for children in poor areas to learn even when they attend school? Why would a man in Morocco who doesn’t have enough to eat buy a television?

Named *Financial Times Book of the Year, Poor Economics* provides a radical rethinking of the way to fight poverty. In the book, Abhijit Banerjee and Esther Duflo argue that so much of anti-poverty policy has failed because of an inadequate understanding of poverty, and help guide readers on the path towards a better understanding.

For more than fifteen years, Banerjee and Duflo have worked with the poor in dozens of countries spanning five continents, trying to understand the specific problems that come with poverty and to find proven solutions. Building on this work, as well as a rich body of research in development economics (including a growing body of randomized controlled trials), they show why the poor, despite having the same desires and abilities as anyone else, end up with entirely different lives.

In *Poor Economics*, Banerjee and Duflo look at some of the most surprising facets of the poor: why they start many businesses but do not grow any of them, why they miss out on free life-saving immunizations but pay for drugs they do not need, and many other puzzling facts about living on less than 99 cents per day. The book’s ten chapters guide readers through the main topics in development economics today: health, education, the financial lives of the poor, and more. Key conceptual cross-sectoral lessons also emerge: among them, the role of hopes and aspirations, the importance of information and the difficulties in sharing it, the fact that the poor sometimes suffer from too many decisions to make (wrong) choices, and when the rich benefit from institutions that protect them from their own mistakes.

*Poor Economics* attempts to be at once a scholarly book and a popular one. It makes rigorous research and applied economics accessible to policy makers, philanthropists, activists, and all who envision building a world without poverty. It also develops a conceptual framework for a better understanding of poverty to help motivate a new generation of students and researchers.

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**Undergraduate Majors in Economics**

During his time as an undergraduate, Saad Shaheen, who graduated in 2014 earning a bachelor degree in Economics and Management Science, served as the President of the MIT Fighting World Hunger Club. He says that this provided him “the opportunity to give back to the community and work with some very talented people.” He also worked as an associate advisor during 2013-2014 for the Class of 2015 Economics Majors, guiding them through their MIT experience. He shared that his most memorable course-14 experience had been chairing the course 14 (Economics) panel. It involved mostly meeting and interacting with Economics freshmen with tremendous vigor and zeal.

Another important part of Saad’s undergraduate experience was participation in UROPs with Professors Dave Donaldson, Andrew Lo and Pierre Azoulay. He stated that the best part about his UROP experiences was that it was “a roller coaster ride from working on investment strategies to researching remote sensing initiative and satellite imagery in order to estimate economic variables.” The wide array of skills he acquired has been invaluable in his practical life.

Saad is currently working as a portfolio manager assistant at Numeric Investors in Boston, a quantitative investment company that manages $15.1 billion in assets. He assists portfolio managers in implementing Numeric’s Investment Strategies, researching alpha signals, and developing financial models to supplement and enhance Numeric’s strategies.
Economics Around the Institute

While the interaction between Economics and Sloan is strongest in the applied economics and finance fields, it is substantially broader. The Sloan School has assembled a leading group of economics researchers in the organizational design, business strategy, marketing, and technological competition. Formal joint seminars in industrial organization and applied microeconomics strengthen these ties across faculty and students. Sloan School courses and seminars serve as a window into current economic research by business school faculty at MIT and elsewhere. Sloan School doctoral students often find that graduate courses taught in the Economics Department provide a base for their research. Economics PhD students, at the same time, often discover that the issues studied by faculty and students in the Sloan School provide ideal applications for their research.

The MIT Center for Energy and Environmental Policy Research (CEEPR) is sponsored by the Economics Department, the Sloan School, and the MIT Energy Initiative. The Director of CEEPR is William Barton Rogers Professor of Energy Economics Christopher R. Knittel at the Sloan School, whose energy economics course is joint between the Economics Department and the Sloan School. The Center investigates economic, regulatory, and technological issues related to energy and the environment and is supported by corporations, trade associations, environmental organizations, and grants from foundations and government agencies. The Center holds bi-annual meetings and conferences to discuss policy issues with business and academic economists.

CEEPR is a co-sponsor of the Joint Program on the Science and Policy of Global Change, which supports research on global warming and related topics by faculty and students in the Economics Department, the Sloan School, the School of Science, and the School of Engineering. The program provides opportunities for economics and management faculty to work with specialists on climate change in the School of Science, and with emissions control and remediation experts in the School of Engineering.

The MIT Energy Initiative (MITEI) has become an important partner in economics research since it was launched in the fall of 2006. MITEI has provided significant funding for faculty research projects, supported graduate students, and funded...
Luis Videgaray Caso (PhD 1998) is Mexico’s Secretary of Finance and Public Credit, appointed in December 2012 by Mexican President Enrique Peña Nieto. From this position, he has articulated proposals to substantially reform several sectors of the Mexican economy, including one that he studied while at MIT — the oil industry. Videgaray’s PhD dissertation, “The Fiscal Response to Oil Shocks,” examined how changes in global oil prices affected the revenues of PEMEX, the state-owned Mexican oil company, and in turn other components of fiscal policy.

Videgaray has had a remarkable career in the seventeen years since he graduated from MIT. He first joined Protego Asesores, a consulting and advisory firm founded by Pedro Aspe Armella (PhD 1978), who also served as Mexico’s Secretary of Finance. At Protego, he pursued his long-standing interest in how to improve the public sector through a variety of projects, notably advising several Mexican states on how to structure their debt financing. In 2005, Videgaray returned to government service as the Finance Secretary of the State of Mexico, the largest of the country’s 31 states. He introduced reforms that streamlined the tax system and brought greater fiscal discipline, resulting in an improvement of the state’s credit rating. He was elected to the country’s House of Representatives in 2009, serving as Chairman of the Committee on Budget and Public Accounts before applying for leave to coordinate a gubernatorial and then presidential campaign.

The Economics Department also has ties with MIT’s Political Science Department. Research on political economy straddles the boundary between economics and political science. It emphasizes the use of economic models and economic insights to understand decision-making in political settings. Economists in fields such as regulatory economics and public finance have increasingly come to realize that recognizing and analyzing the political factors that underlie current policies can open a rich set of research opportunities. Several recent graduates of the Economics Department’s PhD program are now leading scholars in the field of positive political economy.

The Economics Department has a long-standing relationship with MIT’s Urban Studies and Planning Department, where Emeriti Professors William Wheaton, whose work focuses on real estate markets, and Frank Levy, who is an expert on income and wealth distribution in the U.S. and its changes over time, have provided important links between the two departments.

MIT’s excellence in engineering, science, and management has created valuable educational and research opportunities for Economics Department faculty and students. The Department in turn has contributed its experience and expertise to research and education throughout the Institute.
K. Daron Acemoglu, PhD, 
London School of Economics; 
Elizabeth and James Killian Professor of Economics.

Nikhil Agarwal, PhD, Harvard; 
Assistant Professor of Economics

George-Marios Angeletos, PhD, Harvard; 
Professor of Economics.

Joshua Angrist, PhD, Princeton; 
Ford Professor of Economics.

David Autor, PhD, Harvard; 
Professor of Economics, 
Associate Department Head.

Abhijit Banerjee, PhD, Harvard; 
Ford International Professor of Economics.

Ricardo Caballero, PhD, MIT; 
Ford International Professor of Economics.

Victor Chernozhukov, PhD, Stanford; 
Professor of Economics.

Arnaud Costinot, PhD, Princeton; 
Professor of Economics.

Esther Duflo, PhD, MIT; 
Abdul Latif Jameel Professor of Poverty Alleviation and Development Economics.

Glenn Ellison, PhD, MIT; 

Sara Fisher Ellison, PhD, MIT; 
Senior Lecturer in Economics.

Amy Finkelstein, PhD, MIT; 
Ford Professor of Economics.

Robert Gibbons, PhD, Stanford; 
Sloan Distinguished Professor of Management and Economics.

Jonathan Gruber, PhD, Harvard; 
Ford Professor of Economics.

Jeffrey E. Harris, M.D., PhD, Pennsylvania; 
Professor of Economics.

Jerry A. Hausman, D. Phil., Oxford; 
John and Jennie S. MacDonald Professor of Economics.

Bengt R. Holmström, PhD, Stanford; 
Paul A. Samuelson Professor of Economics.

Mihai Manea, PhD, Harvard; 
Silverman (1968) Family Career Development 
Associate Professor of Economics.
Faculty

Juuso Toikka, PhD, Stanford; Assistant Professor of Economics.

Jane Berkowitz Carlton and Dennis William James M. Poterba, D. Phil., Oxford; Assistant Professor of Economics.

Michiel Olen, PhD, Harvard; Professor of Economics.

Parag Pathak, PhD, Harvard; Professor of Economics.

James M. Poterba, D. Phil., Oxford; Mitsubishi Professor of Economics.

Jeffrey Prelec, PhD, Harvard; Digital Equipment Corporation Leaders for Entrepreneurship and Strategic Management, MIT Sloan School of Management and Economics.

Charles P. Kindleberger Professor of Applied Economics, MIT Sloan School of Management.

Stephen Ross, PhD, Harvard; Franco Modigliani Professor of Financial Economics, MIT Sloan School of Management.

Alvin E. Roth, PhD, Stanford; Victor S. R. P. Smith Professor of Economics.

Paulo Somaini, PhD, Stanford; Robert C. Merton (1970) Professor of Financial Engineering, MIT Sloan School of Management.

Parag Pathak, PhD, Harvard; Rudi Dornbusch Career Development Professor of Economics.

Jian Pan, PhD, Stanford; School of Management Distinguished Professor of Finance, MIT Sloan School of Management.

Jonathan Parker, PhD, Yale; Sloan School International Programs Professor of Management.

Alp Simsek, PhD, MIT; Applied Economics, MIT Sloan School of Management.

Leonid Kogan, PhD, MIT; Nippon Telegraph & Telephone Professor of Management, MIT Sloan School of Management.

Andrew W. Lo, PhD, Harvard; Harris & Harris Group Professor, Director of the MIT Laboratory for Financial Engineering, MIT Sloan School of Management.

Annette-Deanne Bernert, PhD, University of Wisconsin; Louis E. Seley Professor of Applied Economics, MIT Sloan School of Management.

Jiang Wang, PhD, Pennsylvania; Mizuho Financial Group Professor, MIT Sloan School of Management.

Suzanne Berger, PhD, Harvard; Raphaël Dornbusch and Helen Starbuck Professor of Political Science, MIT Department of Political Science.

Jean Tirole, PhD, MIT; Jerome and Dorothy Lemelson Professor of Entrepreneurship, MIT Sloan School of Management.

Parag Pathak, PhD, Harvard; Rudi Dornbusch Career Development Professor of Economics.

Suzanne Berger, PhD, Harvard; Raphaël Dornbusch and Helen Starbuck Professor of Political Science, MIT Department of Political Science.

Jean Tirole, PhD, MIT; Jerome and Dorothy Lemelson Professor of Entrepreneurship, MIT Sloan School of Management.

Affiliated Faculty

Jean Tirole, PhD, MIT; Visiting Professor of Economics.

Annemiek van der Straten, PhD, Cambridge; Mastercard Professor of Finance, MIT Sloan School of Management.

Olivier J. Blanchard, PhD, MIT; Ford International Professor of Economics, Emeritus.

Richard S. Eckaus, PhD, MIT; Ford International Professor of Economics, Emeritus.

Stanley Fischer, PhD, MIT; Professor of Economics, Emeritus.

Paul L. Joskow, PhD, Yale; Elizabeth and James Killian Professor of Economics and Management, Emeritus.

Michael J. Piotre, PhD, Harvard; David W. Skinner Professor of Political Economy, Emeritus.

Jerome Rothenberg, PhD, Columbia; Professor of Economics, Emeritus.

Richard L. Schmalensee, PhD, MIT; Howard W. Johnson Professor of Economics and Management, Emeritus; Dean Emeritus.

Robert M. Solow, PhD, Harvard; Institute Professor and Professor of Economics, Emeritus.

Peter Temin, PhD, MIT; Elisha Gray II Professor of Economics, Emeritus.

Lester C. Thurow, PhD, Harvard; Jerome and Dorothy Lamelson Professor of Management and Economics, Emeritus.

William C. Wheaton, PhD, Pennsylvania; Professor of Economics and Urban Studies, Emeritus.

Professors Emeriti

Michael L. Ehrman, PhD, MIT; Professor of Economics, Emeritus.

Richard S. Eckaus, PhD, MIT; Ford International Professor of Economics, Emeritus.

Stanley Fischer, PhD, MIT; Professor of Economics, Emeritus.

Paul L. Joskow, PhD, Yale; Elizabeth and James Killian Professor of Economics and Management, Emeritus.

Michael J. Piotre, PhD, Harvard; David W. Skinner Professor of Political Economy, Emeritus.

Jerome Rothenberg, PhD, Columbia; Professor of Economics, Emeritus.

Richard L. Schmalensee, PhD, MIT; Howard W. Johnson Professor of Economics and Management, Emeritus; Dean Emeritus.

Robert M. Solow, PhD, Harvard; Institute Professor and Professor of Economics, Emeritus.

Peter Temin, PhD, MIT; Elisha Gray II Professor of Economics, Emeritus.

Lester C. Thurow, PhD, Harvard; Jerome and Dorothy Lamelson Professor of Management and Economics, Emeritus.

William C. Wheaton, PhD, Pennsylvania; Professor of Economics and Urban Studies, Emeritus.

Visiting Committee

Every department at MIT has a Visiting Committee that consists of distinguished scholars, department graduates, and several members of the MIT Corporation. These committees typically meet once every two years, at MIT, to hear reports from the Department Head, the faculty, and current students about the department’s health and future direction. These committees prepare reports for the President, Provost, and Chancellor that provide an important source of external evaluation for each department. The members of the MIT Economics Department Visiting Committee as of Fall 2014 are listed below.
Faculty

Ms. Judy C. Lewent
GM ’72
Retired, Executive Vice President & CFO
Merck & Co., Inc.

Mr. Frank Ahimaz
’95 AA
Chief Investment Officer
The Museum of Modern Art

Mr. Arman A. Avanessians
’82 EE
Managing Director
Goldman Sachs & Company

Mr. Dennis A. Bovin
’69 MG
Senior Advisor
Evercore Partners Inc.

Mr. John K. Castle
’63 EC
Chairman and Chief Executive Officer
Castle Harlan, Inc.

Dr. Morris Chang
’52 ME, ME ’53, ’55
Chairman and CEO
Taiwan Semiconductor Manufacturing Company, Ltd.

Professor Susan M. Collins
’84 EC
Joan and Sanford Weill Dean of Public Policy
and Gerald R. Ford School of Public Policy
University of Michigan

Professor Avinash K. Dixit
EC ’68
Department of Economics
Princeton University

Dr. Janice Eberly
’91 EC
Kellogg Professor of Finance & Academic
Director
Northwestern University

Dr. Dwight M Jaffee
Willis Booth Professor
University of California Berkeley
Walter A. Haas School of Business

Dr. Morris A.L. Jameel
’78 CE
Chairman and President
Abdul Latif Jameel Co., Ltd.

Ms. Abigail P. Johnson
Chief Executive Officer
Fidelity Investments

Ms. Grace J. Koo
’92 EC
Managing Director, Equities
Credit Suisse

Dr. Gary W. Loveman
’89 EC
Chairman, President and CEO
Caesars Entertainment Corporation

Professor Frederic S. Mishkin
’73 EC, EC ’76
Finance & Economics Division
Columbia University
Graduate School of Business

Mr. Gregory K. Palm
’70 EC
Executive Vice President and
General Counsel
The Goldman Sachs Group Inc.

Mr. Jeffrey L. Silverman
’68 MG
Co-Founder and Managing Director
Agman Partners

Mr. John A. Thain
’77 EE
Chairman and CEO
CIT Group Inc.

Dr. Hal R. Varian
’69 EC
Chief Economist
Google, Inc.

L to R: Kyle Greenberg (4th year PhD student); Nathan Hendren (MIT PhD 2012, assistant professor at Harvard Econ); George Ni (Mech Engineering PhD student); Youngjun Jang (6th year PhD student); Mikka Rokkanen (MIT PhD 2014, assistant professor at Columbia Econ; goalie); Anton Tsay (6th year PhD student); David Autor (Professor of Economics); Ashish Shenoy (5th year PhD student); Sally Hudson (5th year PhD student).