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Institute of
Technology

MIT Economics

ECONOMICS AT MIT

2022
2023



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From the Department Head

Dear friends,

It is a pleasure to introduce our 2022-2023 department brochure. The pages ahead provide an overview of our academic programs, a look at recent research, and an introduction to faculty, students, researchers, and alumni from the MIT Economics community.

We were delighted to welcome a few new faces this year. Nina Roussille, a labor economist working at the intersection of labor, gender, and public economics, arrived in the fall of 2022 for a year as a postdoctoral associate and will join our faculty as an assistant professor in July 2023. Nina's striking job market paper on the role of the "ask gap" in gender wage inequality is featured on page 20.

Twenty talented and enthusiastic first-year PhD students and a new cohort of students across our three undergraduate programs arrived on campus this fall. We look forward to welcoming the fourth class of Development, Data, and Economics Policy master's students to MIT in January 2023. In addition, we were thrilled to launch a new master's program with MIT EECS this year that allows undergraduates studying Computer Science, Economics, and Data Science to earn both a bachelor's degree and a Master of Engineering in just 10-11 semesters. You can read more about the new program on page 16.

Our faculty continue to undertake research programs to address significant societal challenges. The Abdul Latif Jameel Poverty Action Lab (J-PAL) uses randomized impact evaluations to answer critical questions in the fight against poverty; scholars at Blueprint Labs apply economic theory and empirical evidence to help decision-makers design and implement effective solutions in education, health care, and the workforce; and a new initiative on Shaping the Future of Work will spearhead research on the erosion of job quality and opportunity for US workers and help policymakers, educators, and employers ensure that their communities can compete effectively in the 21st-century global economy.

Last fall, alumnus Ben Bernanke (PhD '79) was awarded a share of the 2022 Nobel Memorial Prize in Economics, bringing the number of MIT faculty and alumni to receive the prize to 29. In addition, one of our recent doctoral graduates, Karthik Sastry, was invited to speak at the 2022 Review of Economic Studies Tour. Finally, in another solid year of placements, PhD graduates secured faculty positions at top programs, including Berkeley Haas, Princeton,

Stanford Graduate School of Business, and Yale, as well as at outstanding governmental and private-sector organizations.

Several recent awards reflect our faculty's influence and extraordinary work. In 2022, Ben Olken and Alex Wolitzky were named fellows of the Econometric Society, Alberto Abadie was elected to the American Academy of Arts and Sciences, Jim Poterba was named a 2022 Distinguished Fellow of the American Economic Association, and Simon Jäger received a Sloan Research Fellowship. In addition, Abhijit Banerjee and Esther Duflo, 2019 Nobel laureates, were recognized with Golden Plate Awards from the American Academy of Achievement.

Our faculty, students, alums, and friends bring a wide range of interests and experiences but share the conviction that economic research has the power to address national and global challenges in profound ways—and that the vibrant community, world-class talent, and intellectual curiosity of MIT Economics make it one of the best places to realize that goal. Thank you for being a part of this exceptional community.



Glenn Ellison
Head, Department of Economics
Gregory K. Palm (1970) Professor of Economics



Photo: Bryce Vickmark



Joshua Angrist: 2021 Nobel Laureate

Josh Angrist has spent his career developing innovative ways to harness the power of natural experiments and answer critical economic questions. In the process, he has helped transform empirical practice in economics and beyond. The new econometric tools Angrist and his colleagues developed have inspired a generation of scholars and helped social scientists, educators, and policymakers better identify and evaluate causal effects.

Along with his frequent collaborator, Guido Imbens of the Stanford Graduate School of Business, Angrist was awarded a share of the 2021 Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel for his “methodological contributions to the analysis of causal relationships.” David Card of UC Berkeley received the other half of the prize for his contributions to labor economics.

Angrist received the prize at a ceremony held at the National Academy of Sciences in Washington, DC, in December 2021. (The 2021 Nobel laureates received their medals and diplomas in their home countries due to the Covid-19 pandemic.) That month, Angrist delivered his prize lecture, “Empirical strategies in economics: Illuminating the path from cause to effect,” virtually for audiences in Stockholm and around the world.

In December 2022, Angrist and other 2021 laureates attended the Nobel week celebrations in Stockholm. Ben Bernanke, a 1979 graduate of our PhD program, was also in attendance to receive his share of the 2022 prize, awarded for his research on banks and financial crises.



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Photo: David Degner for MIT SHASS Communications

MIT Economics by the Numbers

5

John Bates Clark Medal winners on faculty

29

Recipients of the Nobel Prize in economic sciences who are current faculty, former faculty, or alumni

54

PhD students selected for the ReStud Tour

142

Graduate students across our master's and PhD programs

169

Undergraduate students across our three majors

50

Faculty members

Institute Partners

MIT Economics fosters strategic partnerships across the Institute that strengthen our research and teaching. MIT's excellence in engineering, science, and management creates valuable educational and research opportunities for our faculty and students while we, in turn, lend our expertise to the research and education of other departments and initiatives. Some of our key partnerships include:

The **MIT Sloan School of Management**, where several faculty members hold joint appointments with Economics. Doctoral students often cross-enroll in classes, particularly in applied economics and finance. In addition, several joint seminars provide more opportunities for Sloan and Economics students and faculty to connect.

The **Departments of Political Science and Urban Studies and Planning**,

where students and faculty connect on political economics, real estate markets, and income and wealth distribution.

The **MIT Energy Initiative (MITEI)** and the **Center for Energy and Environmental Policy Research (CEEPR)** support interdisciplinary investigations into economic, regulatory, and technological issues related to energy and the environment. Several faculty from Economics are affiliates of one or both projects.

Graduate Students Work to Strengthen and Diversify the Economics Field

Not all students have access to the same support, resources, and information as they consider applying for economics PhD programs. Students with backgrounds that have been historically underrepresented in economics may face barriers stemming from disparate access to connections in the field, rigorous undergraduate coursework in economics, and visible role models in the profession.

In 2020, economics students from MIT launched the Application Assistance and Mentoring Program (AAMP) with the aim of contributing to a more diverse field. The AAMP, modeled on similar programs in other MIT departments, works to improve access to support and information by pairing prospective applicants with graduate student mentors. Mentors provide coaching and feedback on the application process, as well as general insights on economic research and life as a PhD student.

The following year, the AAMP grew into a collaboration between economics PhD students from both MIT and Harvard. The program matched 129 students with mentors in 2021 and 136 in 2022. Nearly half of the 2021 cohort went on to apply to graduate school in the months following their match. These mentees worked with graduate students to workshop their statements of purpose and CVs, identify references, and ensure that they had completed the coursework most likely to make them strong candidates for doctoral programs. This dedicated one-to-one support can make a significant impact. As one mentee shared, “My mentor

was with me every step, from explaining how to organize my list of schools, writing essays, and knowing what to expect during interviews. Having this information greatly influenced my outcome. I would not have been as successful without it.”

The program has also been a valuable resource for students who aren’t immediately applying for graduate school. Conversations with a mentor can provide helpful feedback on the types of coursework and employment that will leave students prepared to apply when the time comes. Some mentees also use these conversations to consider whether a PhD is the right path for them.

Many mentees also emphasized the benefits of the less tangible aspects of the mentor relationship. In some cases, talking to a current student increased participants’ confidence and made pursuing a PhD seem more exciting and attainable. As one of the student organizers of the program commented, “Mentees responded very positively to conversations with encouraging and enthusiastic graduate students. I think applying and enrolling in a graduate program in economics can be daunting to many potential applicants—myself included! – and having someone de-mystify the process can make a huge difference.”

The program organizers are hopeful that initiatives like the AAMP can help build a more diverse field at every stage of the education and career pipeline, creating pathways for a broader group of future economists and, ultimately, growing and strengthening the economics profession.

“My mentor was with me every step, from explaining how to organize my list of schools, writing essays, and knowing what to expect during interviews. I would not have been as successful without [this program].”

AAMP participant

2021-2022 Departmental Teaching Awards

GEA Teacher of the Year
Parag Pathak

GEA Advisors of the Year
Simon Jäger and Frank Schilbach

GEA Teaching Assistant of the Year
Sylvia Klosin

UEA Teacher of the Year
Frank Schilbach

UEA Teaching Assistants of the Year
Kelsey Moran, Edwin Song, and Sean Wang

PhD Program

Since the 1950s, our PhD program has set the standard for graduate economics training. Students work closely with our world-class faculty to develop their research and prepare to make impactful contributions to the field.

Our doctoral program enrolls 20-24 students each year, and most complete their degree in five to six years. Students undertake core coursework in microeconomic theory, macroeconomics, and econometrics, as well as in two major and two minor fields. Beyond the classroom, doctoral students collaborate closely with faculty to develop their research capabilities and gain hands-on experience in theoretical and empirical projects.

Through weekly workshops and seminars, students have opportunities to hear invited speakers present the latest research in their fields. In addition, at weekly “field lunches,” students test research ideas with peers

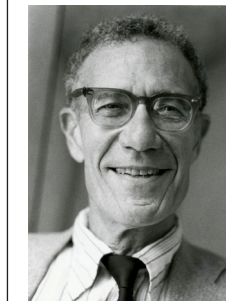
and faculty as they develop. Whether presenting early-stage research or nearly-complete dissertations, these informal meetings give students a space to explore topics and gain feedback while their work is still in progress. Faculty view these lunches as a privilege and a core responsibility to the department and its students. Many graduates report that these field lunches provided an invaluable sounding board as they developed their research.

Our PhD graduates go on to teach in leading economics departments, business schools, and schools of public policy. They work on congressional staff, government advisory councils, and with organizations such as the World Bank, the International Monetary Fund, the National Economic Council, the Federal Reserve, and the Treasury Department. They also hold influential positions in the private sector, ranging from corporate executives and portfolio managers to economic consultants and chief economists at major tech companies.



Photo: David Degner for MIT SHASS Communications

Robert M. Solow Prize



MIT Economics alumni and faculty established the Robert M. Solow Prize to celebrate doctoral students who reflect Bob Solow’s embodiment of one of our core values: the interdependence of innovative research and excellence in teaching. The 2022 prize was awarded jointly to two graduating students who have made remarkable contributions to the educational and research missions of the department: Daniel Clark (joining UCLA’s Economics Department) and Karthik Sastry (joining Princeton’s Economics Department).

Daniel Clark is an economic theorist. His prize-winning job market paper examines principal-agent models with a privately informed principal and agent moral hazard, noting how lessons drawn from previous analyses can change when both elements are present and principals can offer flexible contracts. He also has active research programs on social cooperation and equilibrium refinements.

Karthik Sastry is a macroeconomist. His job market paper (joint with PhD candidate Joel Flynn) develops a model in which the cognitive costs of making precise decisions lead to “attention cycles” that are correlated with business cycles and can generate asymmetric state-dependent shock propagation and stochastic volatility of output growth. He has also worked on several other topics, including directed innovation and climate change.

Clark and Sastry also earned high praise for their work as teaching assistants in both undergraduate and graduate courses.

PhD Student Spotlight

Mohit Karnani



Photo: Bryce Vickmark

As a high school student in Iquique, Chile, Mohit Karnani could already imagine a future at MIT Economics. He recognized that economics would allow him to use math—one of his favorite subjects—as a tool for tackling challenges like global poverty, and he dreamt of pursuing a PhD at MIT. Though it felt like a long shot then, Mohit made his goal a reality with the help of mentors he met along the way.

After his school days in Iquique, Mohit enrolled in Universidad de Chile, where he earned a degree in business engineering and economics before completing a master's in economics. There, he had lecturers who encouraged him to pursue an economics PhD and a master's advisor who shared helpful guidance on research and graduate school applications. This support was instrumental in solidifying Mohit's path to a PhD.

He found a similarly supportive environment at MIT Economics. Having assumed that professors would be too busy to interact much with students, he was pleasantly surprised to find quite the opposite. He quickly discovered that “the faculty at the department really

care about us and devote a substantial amount of time to advising and mentoring their students.”

Now in his fifth year of our PhD program, Mohit works in development economics and market design. The development field was a natural fit given his interest in alleviating global poverty, and market design offered tools for studying matching systems and improving educational outcomes, another of Mohit's passions—as a college student, he devoted substantial time to volunteering as a math tutor for students from low-income backgrounds.

One of Mohit's current projects aims to improve aid to the poorest households in Colombia, where those most in need of financial benefits are often without bank accounts or phones that can receive mobile money, and physical cash deliveries can be risky and costly. Using digital wallets associated with residents' national ID numbers, he is running a randomized controlled trial (RCT) that allows beneficiaries to spend digital balances at participating local stores simply by showing an ID. The RCT will measure the impacts for beneficiaries in terms of consumption,

“**The faculty at the department really care about us and devote a substantial amount of time to advising and mentoring their students.**”

food security, and mental health, as well as the effects for local storeowners and economies. Mohit and his collaborators plan to expand the trial to more neighborhoods this year and study the program's impacts at the market level.

At MIT, Mohit has served as treasurer of the Graduate Economics Association and the Institute's LatinX Graduate Students Association, been involved with the Graduate Student Council, and served as a Graduate Resident Advisor. Reflecting on his time in the department, he says that MIT Economics has been “an extremely welcoming place for me. I have felt very supported throughout my journey and feel I can thrive as an academic economist thanks to this support.” Now, through his research and work outside the classroom, Mohit is doing his part to give back in the same spirit he has received throughout his academic life.

Lucy Page

When Lucy Page reluctantly enrolled in her first economics course as an undergraduate student at Williams College, she was pleasantly surprised to discover that the discipline offered valuable methods for studying environmental issues, one of her lifelong passions. As she describes it, “My focus has always been on environmental protection and policy... I saw that economics could provide a structured toolkit for studying the environmental problems I've always been passionate about.”

As both a student and citizen, Lucy has consistently devoted her time, talents, and efforts to building a pro-climate movement. She has led her high school's environmental club, served as co-president of the Williams Environmental Council, and lobbied for state recycling programs with the Sierra Club. Her undergraduate thesis focused on the impacts of climate change on workplace accidents. Today, Lucy volunteers with the Citizens Climate Lobby, a grassroots initiative focused on national policies to address the climate crisis. She has also been a consultant to the World Bank on climate change in Bangladesh, a research assistant to leading economic scholars

working on environmental issues, and a consultant for a firm specializing in environmental economics.

Unsurprisingly, Lucy's work as a PhD student at MIT Economics has also centered on efforts to address climate change. After taking a graduate course with Professor Frank Schilbach, she focused her doctoral studies on behavioral economics because of its unique and useful framework for addressing environmental issues. Lucy says, “our changing climate is the product of billions of human choices. Behavioral economics gives us the tools to understand how influencing these decisions can move us toward better choices for our planet.”

Lucy's research also draws on insights from psychology to shed light on barriers to addressing environmental issues. Recognizing that the primary constraints to addressing climate change today are political rather than practical, one of Lucy's projects studies how to mobilize environmental advocacy in the US. In a joint project with fellow PhD candidate Hannah Ruebeck, Lucy is using online experiments to test methods of mobilizing young adults for climate

action following the 2022 Inflation Reduction Act—the largest single step that Congress has ever taken to address climate change.

Lucy is also interested in climate adaptation and other environmental challenges in developing countries. Before the pandemic, she was developing projects on air pollution in Ulaanbaatar, the capital of Mongolia. Lucy had to pivot away from those projects when the country closed to outside visitors but hopes to revive them soon.

Beyond her research, Lucy has found unexpected joy in teaching. This year, she is serving as the head teaching assistant for undergraduate course 14.01: Principles of Microeconomics, and has found it particularly rewarding to guide students during what is for many their first encounter with economics. Outside the classroom, Lucy has been involved with the department's mental health and peer support group and MIT's Chamber Chorus.

“**I saw that economics could provide a structured toolkit for studying the environmental problems I've always been passionate about.**”



Photo: Bryce Vickmark

Alumni: Where Are They Now?

Mayara Felix (PhD '21)



Mayara Felix is a postdoctoral fellow at Princeton University's International Economics Section and will join the faculty of Yale University in July 2024 as an Assistant Professor of Economics and Global Affairs.

Mayara's research is in development, trade, and labor economics, with a focus on public policy. Her recent work on Brazil's trade liberalization shows that, while trade can increase local labor market concentration, whether

“MIT is one of those unique places where creativity and insight have room to flourish, nurtured by hard work, intense collaboration, and mutual respect between faculty and students.”

local firms exploit this to underpay workers depends on workers' ability to substitute within versus across markets. Other policy lessons come from Mayara's joint work with classmate Michael Wong (PhD '22), showing that Brazil's 1990s legalization of domestic outsourcing led to substantial employment gains for security guards, driven by young men entering the occupation. Her research also includes topics in tax policy, evaluating the effect of an Indonesian tax administration reform on tax revenues and firm behavior (joint with MIT Professor Ben Olken), and topics in education policy, estimating the effects of a Massachusetts school suspension policy on charter school students.

Mayara joined the PhD program at MIT Economics in 2015, after earning a degree in mathematics and economics from Mount Holyoke College and working as a research assistant to MIT economists Josh Angrist and Parag Pathak. She received her doctorate in 2021, and says of her time in the department, “MIT is one of those unique places where creativity and insight have room to flourish, nurtured by hard work, intense collaboration, and mutual respect between faculty and students. Its ideas-focused, non-hierarchical culture is core to the researcher I have become, and one which I will always cultivate as a faculty member.”

Mayara grew up in Olinda, Brazil, and attributes her successes to a combination of luck, hard work, and the support of her family and community. Outside economics, she enjoys painting, particularly scenes from her formative years in Brazil, cooking, and life with her husband, Google economist Seth Blumberg.

Matt Slaughter (PhD '94)

Matt Slaughter is the Paul Danos Dean of the Tuck School of Business at Dartmouth, where in addition he is the Earl C. Daum 1924 Professor of International Business. He is also a member of the American Academy of Arts and Sciences, a life member of the Council on Foreign Relations, a research associate at the National Bureau of Economic Research, a member of the Aspen Institute's Economic Strategy Group, and an academic advisor to the McKinsey Global Institute.

From 2005 to 2007, Matt served as a Member on the Council of Economic Advisers in the Executive Office of the President. In this Senate-confirmed position, he held the international portfolio, advising on issues including international trade and investment, immigration, and the competitiveness of the U.S. economy. He has also been affiliated with organizations including the Federal Reserve Board, the International Monetary Fund, the World Bank, the Congressional Budget Office, and the National Academy of Sciences.

Matt's area of expertise is the economics and politics of globalization. Much of his work has focused on the global operations of multinational firms, on the labor-market impacts of globalization, and on public policies to build economic opportunity. His research has been supported by several grants from organizations including the National Science Foundation and the Russell Sage Foundation. He is a frequent keynote speaker to many audiences in the business and policy communities, and he has frequently testified before the U.S. Congress while working, as a lifetime independent, with leaders of both parties.

Matt earned his doctorate from MIT in 1994 and says of his time in the program, “Professionally, more than anything my PhD training taught me how to ask important questions and think about how to answer those questions. Personally, the PhD program brought me the joy of lifelong mentors and friends—and, more than anything else, introduced me to my wife, Lindsey Klecan!”

“Professionally, more than anything my PhD training taught me how to ask important questions and think about how to answer those questions.”



Susan M. Collins (PhD '84)

Susan M. Collins is president and CEO of the Federal Reserve Bank of Boston. In her role, Collins serves on the Federal Open Market Committee, the monetary policymaking body of the United States. She also oversees all activities of the bank to promote its overarching mission of fostering a vibrant, inclusive economy— including economic research, financial stability efforts, community economic development activities, and a wide range of payments, technology and finance initiatives.

An international macroeconomist of Jamaican descent, Collins' research has been driven by the question of how to raise living standards in countries at all levels of development. Using a range of empirical methods, often with a policy lens, she has studied topics such as determinants of economic growth, exchange rate regimes and crises, and implications of global integration for U.S. labor markets. Her lifelong commitment to promoting diversity, equity and inclusion has included serving for 16 years (4 as chair) on the AEA's Committee on the Status of Minorities in the Economics Profession — and contributed to her interest in leading complex, mission-driven organizations.

Collins was drawn to the field of economics in large part because of the tools it offered for shedding light on real-world challenges, and improving people's lives. She graduated summa cum laude from Harvard with a bachelor's in economics, and earned her doctorate in economics from MIT. As a PhD student at MIT Economics, Collins gravitated toward international macroeconomics and trade and wrote her doctoral dissertation on currency crises and exchange-rate management.

“The time I spent earning my MIT economics PhD was rigorous and formative. The department's programs, and especially its people — faculty,



students, alumni, and staff — made it an excellent place for me to develop tools, insights, and capabilities that have served me so well, throughout each phase of my career. And I am also grateful for the many wonderful, long-lasting relationships.”

Collins was a member of the economics faculty at Harvard and Georgetown and worked as a senior fellow at the Brookings Institution. Most recently, she served as provost and executive vice president for academic affairs at the University of Michigan. A professor of public policy and economics at Michigan, Collins spent a decade as dean of the university's Gerald R. Ford School of Public Policy.

“The department's programs, and especially its people—faculty, students, alumni, and staff—made it an excellent place for me to develop tools, insights, and capabilities that have served me so well, throughout each phase of my career.”

Masters Program

Data, Economics, and Development Policy (DEDP)

Run jointly by MIT Economics and the Abdul Latif Jameel Poverty Action Lab (J-PAL), our DEDP master's program equips development professionals from across the globe with the practical skills and theoretical knowledge needed to tackle some of the world's most pressing challenges.

Before applying to the residential DEDP master's program, students must complete the online DEDP MicroMasters program, consisting of seven online courses and proctored exams. Approximately 50,000 learners from more than 200 countries and territories have enrolled in at least one online DEDP course, and 808 have earned the full MicroMasters credential by completing three core

and two elective courses. Students pay for online courses according to their income, and sixty-two percent of DEDP MicroMasters learners come from low to middle-income countries.

Learners who complete the MicroMasters can go on to apply for the residential DEDP master's program. Admitted students complete one semester of coursework at MIT, followed by a summer capstone project, and earn a Master of Applied Science in Data, Economics, and Development Policy from MIT. The third class of DEDP master's students—thirty-one students from 20 countries—received their degrees in September 2022. The fourth cohort of master's students arrives on campus in January 2023.

“These have been some of the best months of my life. I've learned a great deal and met very interesting people who are really on the edge of human knowledge when it comes to economics and doing world-class research.”

Tomas Dulka,
DEDP Class of 2022

Undergraduate Program

We are proud to offer one of the US's most rigorous undergraduate economics programs. The strong analytical skills of the MIT student body allow us to provide a uniquely comprehensive program that includes training in micro and macroeconomics, statistics, econometrics, and a range of applied fields.

We offer three majors:

- **Economics Major (14-1)** explores theoretical and applied topics in microeconomics and macroeconomics, provides training in statistics and econometrics, and offers advanced courses spanning a range of fields.
- **Mathematical Economics Major (14-2)** begins with foundational training in microeconomics and macroeconomics before focusing intensively on technical and mathematical subjects.
- **Computer Science, Economics, and Data Science (6-14)**, offered jointly with Electrical Engineering and Computer Science, applies methods derived from economic analysis, computing, optimization, and data science to real-world challenges.

Hands-on research experience is a vital component of undergraduate economics training. In addition to completing a thesis, students can gain experience through the following:

- **The Project Lab**, where students in course 14.33: Economics Research and Communication combine their knowledge of economic principles to data analysis in an applied area of their choosing
- **MIT's Undergraduate Research Opportunities Program (UROP)**, where students can hone their research skills by working directly with faculty members on their ongoing research projects
- **Summer employment experiences** on faculty-directed research projects or internships in government, industry, or research organizations

New! Master of Engineering in Computer Science, Economics, and Data Science

MIT Economics, along with the Department of Electrical Engineering and Computer Science (EECS), is now offering a master's program for undergraduates studying Computer Science, Economics, and Data Science (6-14) as a primary or secondary major. The program is modeled on other MEng degrees offered by EECS and allows students to earn both a bachelor's and a master's degree in just 10-11 semesters.

Students majoring in 6-14 can apply for the Master of Engineering (MEng) after their junior year. After meeting all the four-year bachelor's degree requirements, MEng students complete three additional semesters of graduate-level work and earn a Master of Engineering in Computer Science, Economics, and Data Science.

Through a combination of advanced classwork and masters-level thesis work, the program equips students for research careers and the job market, where the unique combination of computer science, data science, and economic analysis skills is highly sought after by today's employers.

A small cohort is piloting the program in 2022-2023, with a full rollout scheduled for the following academic year. Orrie Page, one of the pioneering participants in the program, is profiled on page 16.

Undergraduate Economics Association (UEA)

The Undergraduate Economics Association (UEA) is a group of undergraduates interested in economics who meet regularly to support academic endeavors, improve employment opportunities, and expand networks within and beyond MIT. In addition, they provide peer support, social events, and other opportunities to connect over the academic year.

The UEA's guest lecture series has featured notable department alums such as Paul Krugman, Hal Varian, and Eugene Shen, current economics faculty, and interdisciplinary talks by other MIT faculty.



Student Spotlight

Orrie Page



Photo: Bryce Vickmark

When Orrie Page arrived at MIT from Ann Arbor, Michigan, economics was just one of his many interests. He originally planned to major in mechanical engineering but decided to give Professor Jon Gruber's Principles of Microeconomics class a try in his first semester at MIT. Orrie had a great experience in the class and settled on a major in Computer Science, Economics, and Data Science (Course 6-14) after taking an introductory course in Computer Science.

Orrie appreciated the major's flexibility and the opportunity to gain knowledge and skills with plenty of real-world applications. After an internship with SpaceX before his senior year, however, Orrie returned to MIT prepared to shift all his energies to business analytics. But two courses changed his mind: Professor Parag Pathak's class in Market Design and Professor Ian Ball's Economic Applications of Game Theory class. Market Design offered engaging practical applications and the chance to think about voting mechanisms and matching theory in a new, structured way. In Ian Ball's class, Orrie had opportunities to explore aspects of Game Theory, a

branch of economics he has always found fascinating. A highlight was learning about the revenue equivalence theorem—the idea that given certain conditions, any mechanism that results in the same outcomes also has the same expected revenue.

After completing his undergraduate studies with a major in Computer Science, Economics, and Data Science and a minor in Business Analytics, Page decided to join the inaugural cohort of students working toward a Master of Engineering in Computer Science, Economics, and Data Science. The new program (detailed on page 15) allows students majoring in 6-14 to earn a master's degree after three additional semesters of graduate-level coursework. After he completes the master's, Orrie plans to pursue a PhD in economics or operations research.

During his time at MIT, Orrie has found hands-on research experience and a supportive community that leaves him well-equipped for future studies and work. In addition to his stint with SpaceX, Orrie has undertaken summer internships with Ford's autonomous driving team and with the Voloridge

“Every time I have reached out to a professor to ask for advice or inquire about a UROP, I've gotten really great responses and guidance.”

Investment Management hedge fund. He also took a semester off in his junior year to work full-time at the VoLo foundation, a climate change nonprofit. In addition to UROP projects with the MIT Media Lab and MIT Sloan, he has worked with Parag Pathak and Blueprint Labs to help Boston Public Schools evaluate their school assignment system. Orrie has also been struck by how receptive and helpful faculty have been, noting, “Every time I have reached out to a professor to ask for advice or inquire about a UROP, I've gotten really great responses and guidance.”

Outside the classroom, Orrie is on MIT's varsity heavyweight rowing team and was a team captain for three years. He is also a brother of the Phi Sigma Kappa fraternity, where he was president in 2020. He also served as vice president and chief of staff for MIT's more than 1,000-member interfraternity council.

Alumni: Where Are They Now?

Dr. Hal R. Varian ('69)



Dr. Hal R. Varian is the Chief Economist at Google. He started in May 2002 as a consultant and has been involved in many aspects of the company, including auction design, econometric analysis, finance, corporate strategy, and public policy. Hal is also an emeritus professor at the University of California, Berkeley in three departments: business, economics, and information management.

Varian received his bachelor's degree in economics from MIT and a master's in mathematics and PhD in economics from UC Berkeley. He has taught at MIT, Stanford, Oxford, Michigan, and other universities around the world. He was also the founding dean of UC Berkeley's School of Information.

Varian's exposure to economics as an undergraduate at MIT affected his trajectory in profound ways. In a feature for the MIT Technology Review, he recalls that “At 14, I read the *Foundation* trilogy by Isaac Asimov; it was about a future where social science had become an exact science, and you could mathematically model human behavior,” Varian says. “When I got to MIT, I realized that mathematically modeling human behavior was called economics. It shaped my whole life.”

Varian is a fellow of the Guggenheim Foundation, the Econometric Society, and the American Academy of Arts and Sciences. He has published numerous papers in economic theory, industrial organization, financial economics, econometrics, and information economics. He is the author of two major economics textbooks, which have been translated into 22 languages, and co-author of a bestselling book on business strategy, *Information Rules: A Strategic Guide to the Network Economy*.

“MIT had a big impact on my life. It showed me what was possible,” Varian says in the MIT Technology Review. “Even now, when I come across a new problem, I'll jump right in and say, ‘I can do this.’ MIT gave me the optimism to look for solutions.”



Faculty Research

Communicating Health Messages at Scale Using Social Media

Understanding the effectiveness of public health messaging has been a critical focus throughout the Covid-19 pandemic and continues to be important as experts look ahead to effectively managing future pandemics. In “Effects of a large-scale social media advertising campaign on holiday travel and COVID-19 infections: a cluster randomized controlled trial,” Esther Duflo, Abhijit Banerjee, and Benjamin Olken, along with an interdisciplinary research team, evaluate a large-scale video messaging campaign designed and launched around Thanksgiving and Christmas 2020. Through the campaign, 35 million Facebook

users across 13 states received a 20-second video ad recorded by a nurse or physician encouraging them to stay at home rather than travel in the lead-up to the holidays.

In counties where a large percentage of zip codes received the ad campaign, the average distance traveled in the three days leading up to each holiday decreased. Moreover, the campaign led to a subsequent decrease in Covid-19 infections in zip codes receiving the treatment (3.5% relative to areas that did not receive the ads). Banerjee, Duflo, Olken, and their coauthors knew there was potential for the ad campaign to cause unintended

adverse consequences given the polarized political environment. In the end, the researchers did not observe differences in impact between Republican and Democratic counties or urban and rural counties.

The team’s findings suggest that lifesaving messages from healthcare professionals can be effective when communicated at scale via social media campaigns. This work has important implications for disseminating health information and preventing the spread of future pandemics.

Esther Duflo



Abhijit Banerjee



Benjamin Olken



The Long-Term Effects Of Universal Preschool

High-quality early childhood education is increasingly viewed as an important and cost-effective intervention to address early-life deficits. Though enrollment in state-funded preschools is growing, many students still lack access. In the first large-scale study of a lottery-based preschool program’s impact on long-term academic achievement, Parag Pathak, Class of 1922 Professor of Economics and Director of Blueprint Labs, and coauthors tracked applicants to Boston Public School’s preschool lottery through high school and beyond. Pathak and his coauthors estimate the effects of preschool on college-going, test scores, and behavioral outcomes.

They find that attending a Boston public preschool leads to positive long-term impacts on educational attainment – attendees were more likely to graduate from high school (6 percentage points), take the SAT (8.5 percentage points), and enroll in college (5.4 percentage points). In addition, although the study detected no impact of preschool on elementary, middle, or high school test scores, attending preschool positively affects student behavior, decreasing disciplinary measures such as suspensions and juvenile incarceration. Finally, the effects on college enrollment, SAT-taking, and disciplinary outcomes were more significant for boys than girls but did not differ by race or income.



Parag Pathak

This study highlights the importance of measuring long-term and non-test score outcomes when evaluating the effectiveness of education programs. Moreover, as policymakers consider public investment in early childhood education, these research findings suggest that preschool can positively impact long-term educational attainment. Looking ahead, Pathak hopes to examine

the effects of preschool and other education reforms on a host of long-term outcomes, including employment and earnings.

Does the “Ask Gap” Perpetuate Gender Pay Inequality?

Research has shown that women persistently earn less than men, even when controlling for education, experience, and occupation. In “The central role of the ask gap in gender pay inequality,” Nina Roussille, a Postdoctoral Associate who will be joining the MIT Economics faculty in July 2023, investigates how gender differences in salary demands (the “ask gap”) influence this gender wage gap.

Roussille’s paper considers *Hired.com*, a high-skill online labor market where candidates must post a salary ask specifying how much they hope to make in their next job. Employers then send candidates salary bids, that is, how much they are willing to pay them based on their resume and requested salary. Roussille ultimately finds that women on the platform ask for 2.9% (or \$3,830) less than men with similar resumes. After adjusting for resume characteristics and further controlling for ask salary, she determines that the “ask gap” statistically explains all the gender gaps in bids received on *Hired.com*.

This does not necessarily demonstrate that narrowing the ask gap would lead to more equitable bids, so Roussille goes on to infer causality using a change in *Hired.com*’s features.



Nina Roussille

In mid-2018, the platform began prompting some candidates to provide their ask salary in a box pre-filled with the median bid salary for their combination of desired location, job title, and experience, rather than in an empty box. By comparing candidates who created profiles immediately before and after the change, Roussille finds that the

new feature eliminated ask and bid gaps on the platform. It also had no impact on the number of bids or final offers women received, suggesting that women did not face penalties for demanding wages comparable to men.

Poverty and Productivity

People, especially the poor, frequently have too little cash to meet necessary expenses. Research suggests the resulting mental burdens can hinder one’s ability to focus. Does this psychological stress also have adverse effects on productivity and financial earnings? In “Do Financial Concerns Make Workers Less Productive?” Frank Schilbach and coauthors Supreet Kaur, Susanna Oh, and Sendhil Mullainathan study the relationship between financial strain and productivity using a field experiment in rural India.

Local workers were hired during the agricultural “off-season,” when work is often scarce, to create disposable leaf plates commonly used in local restaurants. The study paid workers by the number of plates produced, and these payments were the participants’ primary source of income during the experiment period. To evaluate whether alleviating financial strain allows workers to better focus and be more productive, Schilbach and coauthors varied the workers’ payment schedules, with some receiving their accrued earnings in a single payment after the two weeks and some receiving their wages in two batches—one after eight days and another at the end of the experiment. Aside from the timing

of each group’s pay, all other factors, such as piece rates or overall work hours, were kept constant.

The experiment found that the participants who received the early cash infusion experienced less financial strain, were more likely to repay a loan, and increased their work output by more than 7% relative to the control group. Schilbach and his colleagues also

found that the treatment group made fewer time-costly mistakes, with effects concentrated amongst the poorest participants. These results suggest that by amplifying mental burdens that make it harder to focus at work, financial strain may reinforce the links between economic and psychological stress and reduce earnings exactly when money is most needed.

Frank Schilbach



Research Labs and Centers

The Abdul Latif Jameel Poverty Action Lab (J-Pal)

The Abdul Latif Jameel Poverty Action Lab (J-PAL), led by MIT Economists Abhijit Banerjee, Esther Duflo, and Benjamin Olken, is a global research center working to reduce poverty by ensuring that policy is informed by scientific evidence.

Anchored by a network of more than 250 affiliated professors at universities worldwide, J-PAL takes a scientific approach to poverty alleviation using randomized impact evaluations. This research can not only measure the effectiveness of a policy or program but also answer questions like, “Were there unintended side effects?” “Who benefited most?” “Who was harmed?” “Why did or didn’t it work?” and “Can we apply lessons to other contexts?”

J-PAL’s affiliated research faculty are leading or have completed over 1,100 randomized evaluations in more than 90 countries. Their work seeks the most effective approaches to critical development issues, from clean water to microfinance to crime prevention. As a result, over 540 million people have been reached by programs that were scaled up after being evaluated by J-PAL-affiliated researchers.

J-PAL also builds partnerships with others to share this knowledge, scale up effective programs, and advance evidence-informed decision-making. For example, high-quality research resources, online courses, and training programs around the world help researchers and policymakers become

better producers and users of scientific evidence, and J-PAL’s team of policy experts conducts analysis and outreach to help governments, NGOs, donors, and the private sector apply evidence from randomized evaluations to their work. J-PAL also develops cross-cutting policy insights and works with partners to provide funding, technical assistance, and staffing to help shape programs and policies that deliver results.

J-PAL was launched at MIT in 2003 and has centers at partner universities in Africa, Europe, Latin America and the Caribbean, the Middle East and North Africa, North America, South Asia, and Southeast Asia.

Over 540 million people have been reached by programs that were scaled up after being evaluated by J-PAL-affiliated researchers.

J-PAL North America

Developing successful public policies to combat poverty, improve learning outcomes, promote health, and address other social issues is a challenging and complex task, and a lack of credible evidence on the efficacy of social programs often compounds challenges for policymakers.

J-PAL North America was launched at MIT in 2013 to bring J-PAL’s proven model of generating rigorous evidence to a North American context. To date, J-PAL-affiliated researchers have conducted over 250 ongoing and completed randomized evaluations in North America.

The J-PAL North America team also provides training and support to help researchers and policymakers be better producers and consumers of evidence about policies and social programs. J-PAL North America catalyzes policy-relevant research and promotes evidence-informed policymaking through four key initiatives:

- **The US. Health Care Delivery Initiative** generates rigorous evidence on strategies that make healthcare delivery in the United States more efficient, effective, and equitable.
- **The State and Local Innovation Initiative** supports government leaders with funding, technical support, and opportunities to collaborate with preeminent researchers on high-priority policy questions.
- **The Worker Prosperity Initiative** identifies strategies for increasing opportunities for workers and reducing the barriers and challenges associated with the changing nature of work.
- **The Social Policy Research Initiative** supports randomized evaluations on education, crime and violence prevention, environment, homelessness, consumer finance, and more.

J-PAL North America is led by MIT’s Amy Finkelstein, a leading health economist and one of the principal investigators of the Oregon Health Insurance Experiment, and Lawrence Katz of Harvard, who served as Chief Economist for the US Department of Labor during the Clinton Administration and is the principal investigator of the long-term evaluation of the Moving to Opportunity housing mobility program.



Blueprint Labs



Blueprint Labs is a non-partisan research lab whose scholars and staff bring unique expertise in economics to study pressing challenges in education, healthcare, and the workforce. MIT Economists Nikhil Agarwal, Joshua Angrist, David Autor, and Parag Pathak lead Blueprint's growing team of more than 40 faculty, staff, and student affiliates.

Blueprint researchers believe rigorous evidence and data are the best foundations for policy and decision-making. Using market design and research design, they produce evidence that can help decision-makers close student achievement gaps, better target resources to historically disadvantaged communities, and improve employment opportunities. Blueprint researchers are tackling important

questions like "How can educators close gaps in student achievement?" "How should scarce medical resources be allocated?" and "What skills will workers need to succeed?"

Blueprint also aims to foster continuous interaction between research and policy. Since its founding in 2011, Blueprint has provided ongoing support to the country's largest school districts by running policy simulations and presenting findings on the impact of student assignment policies on school diversity and achievement. Early in the Covid-19 pandemic, a Blueprint team used market design principles to propose more equitable ways of rationing vital medical resources. These tools have been implemented by state governments and health policymakers across the country.

Blueprint Labs

Blueprint researchers produce evidence that can help decision-makers close student achievement gaps, better target resources to historically disadvantaged communities, and improve employment opportunities.

In recent years, Blueprint has grown the School Access and Quality Fellowship, a yearlong program for education leaders focused on education equity, and held annual policy summits that provide an opportunity for educators, policymakers, and researchers to engage with new research and innovative policy ideas.

Shaping The Future of Work

The new Shaping the Future of Work Center, led by Daron Acemoglu, David Autor, and Simon Johnson of MIT Sloan, will examine the causes and impacts of increasing labor market inequality driven by the erosion of well-paying, career-building jobs. Acemoglu, Autor, and Johnson are already studying prominent aspects of this job-quality crisis, particularly the effects of automation and globalization, changes in labor market institutions, and implications of AI. Recent research has examined:

- New types of work that have been a significant driver of US employment growth over the last eighty years

("New Frontiers: The Origins and Content of New Work, 1940-2018," David Autor with Anna Salomons and Bryan Seegmiller)

- Changes in rent-sharing arrangements in the US and Denmark ("Eclipse of Rent-Sharing: The Effects of Managers' Business Education on Wages and the Labor Share in the US and Denmark," Daron Acemoglu with Alex He and Daniel le Maire)
- The role of automation technologies in wage inequality ("Tasks, Automation, and the Rise in US Wage Inequality," Daron Acemoglu with Pascual Restrepo)

- The puzzlingly slow economic recovery of local US labor markets that were adversely affected by the China trade shock of the early 2000s ("On the Persistence of the China Shock," David Autor with David Dorn and Gordon Hanson).

The Shaping the Future of Work Center will be staffed by a growing group of research and postdoctoral fellows. The project is supported by major funding from the Hewlett Foundation.



Fields of Study

Most MIT faculty engage in research that applies economic tools to understand real world problems. Empirical research may identify economic regularities, test theoretical models of behavior, or evaluate the effectiveness of alternative policies. Theoretical research may shed new light on the behavior and interaction of economic agents, establish new conceptual frameworks for studying markets and economic institutions, or lead to new statistical and analytic tools. While much research activity is organized around broad fields of study, MIT faculty are intensely collaborative, often engaging in frontier research that cuts across fields.

Development Economics

Underdevelopment is one of the most profound economic problems, and it may be the problem with the most significant human impact. At MIT, the study of development economics has a long tradition, beginning during Paul Rosenstein-Rodan's tenure in the 1950s and 60s, continuing through the work of Richard Eckaus, and today represented by an impressive development economics group with expertise that spans both microeconomic and macroeconomic perspectives on development. MIT faculty began using randomized field experiments in the late 1990s. Their work transformed development economics and was recognized with the 2019 Nobel Prize.

Our current development economics faculty is the strongest in the world. Abhijit Banerjee is both an applied theorist and an empirical economist who studies issues in development

economics, with recent work on credit, networks, and education. Esther Duflo is primarily interested in empirical issues that arise in the study of poverty alleviation. Her work spans a broad range of topics, including education, delivery of public goods, microfinance, and health. Benjamin Olken is an expert on public sector operations in developing countries, focusing on the challenges that governance raises for development policy and how to design effective anti-poverty strategies. All three are pioneers in the use of randomized controlled trials to test and design policy. They co-direct MIT's Abdul Latif Jameel Poverty Action Lab, which helps lead this type of research worldwide. Frank Schilbach investigates how behavioral limitations interact with poverty and potentially contribute to its persistence. Robert Townsend is an economic theorist with substantial interests in financial issues

and their role in driving development. Several faculty members work at the intersection of development economics and related fields, including trade, environmental economics, and political economy.

The department offers a three-semester graduate course in development economics, three popular undergraduate courses on economic development, and a Master's and online MicroMasters in Data, Economics, and Development Policy. 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 design and implement economic policies for developing nations.



Abhijit Banerjee



Esther Duflo



Benjamin Olken



Frank Schilbach



Robert Townsend

Econometrics



Alberto Abadie



Victor Chernozhukov



Anna Mikusheva



Whitney Newey

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. At MIT, econometrics research and teaching blend the theory and practice of economic data analysis.

The current econometrics faculty at MIT includes Alberto Abadie, whose research interests span econometric methodology and applied econometrics, with particular emphasis on causal inference and program evaluation methods. Nobel laureate Josh Angrist is a leading applied econometrician with path-breaking econometric contributions in education and labor economics. Victor Chernozhukov is a leading econometric theorist whose research focuses on causal inference with high-dimensional data, applications of machine learning methods, counterfactual and policy analysis, distribution and quantile methods, shape restrictions, partial identification, and extreme value theory.

Professor Post Tenure Jerry Hausman has contributed many of the cornerstone results of econometrics and

has ongoing work on demand analysis with many prices, quantile regression with measurement error, and panel data with varying coefficients. Anna Mikusheva is a world authority on time series and weak identification, with recent work concerning conditional inference in GMM and inference with many weak instruments. Finally, Whitney Newey has made fundamental advances to econometric methods for decades, with recent work on heterogeneous choice, shape restrictions, and debiased machine learning.

The department's graduate-level econometrics sequence starts with a course in theoretical statistics and regression analysis, followed by another on modern identification, estimation, and inference methods. Second-year PhD students can choose from classes on microeconometrics, time series, and a topics course in advanced econometrics. We also offer three undergraduate-level courses, ranging from introductory to advanced.

Economic Theory

Substantial advances in economic science are usually based on economic theory—new ways of thinking about and modeling economic phenomena. One of the unique strengths of our economic theory program is the close collaboration between the faculty and students working in theory and those performing empirical research and framing public policy. Most MIT faculty members who work in economic theory also have substantial research and teaching interests in one or more applied fields. In addition, many faculty specializing in an applied field have significant interests in economic theory.

MIT theorists work on an extraordinary range of subjects relevant to both micro and macroeconomics. Ian Ball works on information design and the role of information in markets. Glenn Ellison is known for his work on learning in games and theoretical industrial organization. Drew Fudenberg, who helped shape

the field of game theory, has recent work on repeated games, decision theory, and evolution and learning. Stephen Morris' work spans pure and applied theory topics, including global games, robust mechanism design, and macroeconomics. Parag Pathak studies the economics of matching in contexts including medical markets and public school choice. Drazen Prelec specializes in research and teaching in the area of psychology and economics. Alex Wolitzky does work on repeated games, bargaining, and applications to political economy. Finally, Muhamet Yildiz is an expert on games of incomplete information and is known for his work on delays and breakdowns in bargaining.

Beyond this core group, several faculty from MIT Economics and MIT Sloan have teaching and research interests in economic theory. The department is also fortunate to have an ongoing visiting faculty arrangement with

Nobel Prize winner Jean Tirole, who regularly teaches a graduate-level summer course on specialized topics in economic theory.

The department offers exceptionally rigorous introductory coursework in economic theory at the undergraduate level. This advanced starting point enables students to move on to more sophisticated theory courses during their undergraduate studies, providing a firm foundation for graduate work in economics.

The department's first-year PhD program includes four half-semester core theory courses that, together, provide a comprehensive introduction to modern microeconomic theory, as well as advanced studies in game theory, contract theory, market design, and specialized topics such as bargaining theory, learning, networks, and decision theory.

Environmental Economics



Clare Balboni

Environmental economics investigates how economic incentives and policies affect the environment and the impact of environmental degradation and climate change on health, well-being, and productivity.

Clare Balboni's primary research interest is environmental economics, and her innovative work on global warming has brought a broad perspective to the topic. Balboni's research has adapted empirical techniques from international

trade to examine the potential effects of sea level rise on infrastructure investments in Vietnam. She has also studied the political economy of Indonesian forest fires.

Other MIT Economists have research that overlaps with the field of environmental economics. For example, Ben Olken's work in development economics includes work on deforestation and the impact of climate shocks on developing economies. Professor Post Tenure Paul Joskow's vast body of work on electricity generation includes studies on conservation, nuclear and renewable energy, and environmental regulations.

The economics department also benefits from an interdisciplinary environmental community at MIT. Several Sloan School faculty share an interest in environmental economics.

In addition, the Center for Energy and Environmental Policy Research (CEEPR), jointly sponsored by MIT Sloan, MIT Economics, and the MIT Energy Initiative, supports energy and environmental economics research. The MIT Energy Initiative brings together social scientists and engineers for energy research, education, and outreach.

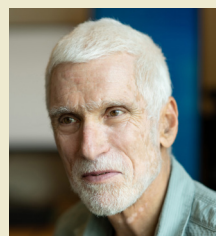
The department consistently offers both undergraduate and graduate courses in environmental economics. Along with MIT Sloan, we also co-host a seminar series in environmental and energy economics and a weekly tea for graduate students interested in environmental and energy research.



Ian Ball



Glenn Ellison



Drew Fudenberg



Stephen Morris



Parag Pathak



Drazen Prelec



Alexander Wolitzky



Muhamet Yildiz



Industrial Organization

The field of industrial organization and regulation (IO) analyzes the strategic behavior of firms, the effect of government policy, and the structure, behavior, and performance of markets.

MIT Economics has a strong and vibrant IO research presence. 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. Glenn Ellison's research spans a broad range of theoretical and empirical analyses across the field of industrial organization. Sara Fisher Ellison's research is wide-ranging but has focused particularly on the digital economy and the economics of the pharmaceutical industry. 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. Tobias Salz studies the role of intermediaries in markets with imperfect information



Nikhil Agarwal



Sara Fisher Ellison



Nancy Rose



Tobias Salz



Michael Whinston

and costly search by consumers. Michael Whinston has made significant contributions to contract theory, organizational economics, and industrial organization.

In addition to these core faculty, a number of associated faculty enrich the experience of students working in industrial organization. Nobel laureate Jean Tirole has a longstanding visiting arrangement with MIT Economics and often guest lectures in the department's graduate industrial organization courses. Several Sloan faculty and emeriti are active contributors to the IO field, as are Professor Post Tenure Paul Joskow and Professor Emeritus Richard Schmalensee.

MIT Economics regularly offers undergraduate courses in industrial organization, e-commerce, health economics, and energy economics. The doctoral IO sequence includes three semester-long courses that develop theoretical and empirical approaches to the classic questions in industrial organization before moving on to hands-on experience with structural econometric methods. At our weekly IO workshop, local and outside researchers present their current work. We also hold a weekly IO lunch where graduate students can present their work in progress to faculty and peers.

International Economics

International economics studies the flows of goods, capital, and people between locations and the implications these flows have for economic activity and policy. It has a long and distinguished tradition at MIT, from the foundational work of Paul Samuelson in international trade to Rudi Dornbusch's influential research in international macroeconomics and Paul Krugman's path-breaking work in economic geography.

Today, international economics is a vibrant field that overlaps with areas such as development, labor, and macroeconomics. It is also the center of the department's research and teaching on other dimensions of spatial and geographical economics – encompassing phenomena such as urbanization and regional inequality, migration, intra-national trade, place-based policy, industrial policy, and transportation. David Atkin works on core empirical questions at the intersection of international trade and development. His recent research analyzes the effects of trade liberalization on nutrition, human capital investment, and firm productivity. Arnaud Costinot focuses on theoretical issues in international trade and international macroeconomics, including the central determinants of trade patterns between nations, the welfare gains from trade, and optimal capital controls. Dave Donaldson's research spans the fields of international trade, economic history, and development. He has made fundamental contributions to the empirical analysis of within-country market integration and comparative advantage. In addition to this core group, many faculty members in the department and at MIT Sloan



David Atkin



Arnaud Costinot



Dave Donaldson

share an interest in international economics and interact regularly with our students and faculty.

The department offers one undergraduate and two graduate courses in international economics. The undergraduate course emphasizes how to use formal economic modeling to understand past and current events in the world economy. The two graduate courses cover traditional and modern theories of international trade, economic geography, and finance, incorporating both theory and empirical work. The department also regularly hosts joint seminars with Harvard as well as informal international lunches where students can present or discuss preliminary research in international economics and other related areas.

Labor Economics

Labor economics studies the forces that determine wages and employment. MIT Economics has a distinguished group of faculty specializing in labor topics. Josh Angrist, a leader of the credibility revolution that has reshaped empirical practice over the last two decades, focuses his current research on econometric methods for program and policy evaluation and the effects of schools on human capital and earnings. Daron Acemoglu has addressed core theoretical labor questions such as the design of optimal unemployment insurance and the links between skill, technology, and wage structure. David Autor's research has focused on the labor market consequences of rising import competition from China, the impact of technological change on income distribution and the demand for skills, and the role of the Social Security Disability Insurance program in masking chronically high unemployment among less-educated workers. Simon Jäger focuses on understanding the role of firms, institutional arrangements, and labor

market frictions in shaping wages and employment. Parag Pathak uses economic theory to design school choice mechanisms and develop strategies for policy evaluation. Many faculty beyond this core group are interested in labor topics and interact regularly with the department's labor faculty and students.

The MIT undergraduate labor economics 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 robust econometric tools to answer central economic questions. Graduate students in labor economics take a two-semester course on frontier empirical and theoretical labor economics, as well as more advanced courses on labor topics and on the econometric methods that are of special interest to labor economists.



Joshua Angrist



David Autor



Simon Jäger

Macroeconomics

Macroeconomics studies the forces that shape economic activity and welfare at the aggregate level, focusing on topics such as economic growth, business cycles, financial crises, and related policy questions. Many economics faculty members actively participate in the macroeconomics group at MIT through research, teaching, advising, seminars, and student workshops.

Core faculty include Daron Acemoglu, who carries out theoretical and empirical research on the determinants of economic growth, the development of political institutions, and the workings of labor markets. Martin Beraja works on business cycles, with a focus on empirical identification and estimation using regional data. Ricardo Caballero explores issues at the intersection of macroeconomics and finance, recently focusing on asset market crises and global capital flows. Iván Werning's work spans a range of policy issues in macro and public finance, including monetary, fiscal, and macroprudential stabilization policies, unemployment insurance, and capital taxation. Christian Wolf works on new econometric methods

to recover the general equilibrium effects of a variety of macroeconomic shocks, otherwise missed in standard econometric procedures that rely on microeconomic data.

Macroeconomics overlaps with other fields in both questions and methods, and a broad group of faculty from the department and MIT Sloan participate in the intellectual life of the macro community. Our program emphasizes and builds on these connections, and our faculty often collaborate across fields.

The department offers three undergraduate macroeconomics courses, ranging from the introductory level to an advanced class comparable to the graduate offerings at many economics departments. All of our PhD students complete a yearlong graduate macroeconomics core. The department also offers two advanced field courses, which cover leading-edge research and prepare students to write dissertations in macroeconomics.



Daron Acemoglu



Martin Beraja



Ricardo Caballero



Iván Werning



Christian Wolf

Organizational Economics



Robert Gibbons

Organizational economics (OE) studies the design and performance of organizations—including firms, schools, hospitals, government agencies, and more. There is substantial heterogeneity in the productivity of these organizations, even when they operate in similar environments, and understanding the drivers of performance can present opportunities to improve economic welfare and growth.

Organizational economics covers topics both within firms and between firms. The “within firms” part of OE covers employment issues such as pay and skill development, organizational structures and processes, and decision-making. The “between firms” part considers topics like the “make or buy” question of vertical integration, contracts between firms, and lateral integration.

Bob Gibbons is an organizational economist whose research and teaching concern the design and performance of organized activities within, between, and beyond firms. He often studies “relational contracts”—informal agreements that courts cannot adjudicate—particularly the difficulties in building, managing, and changing the shared understandings that underlie them.

Organizational economics intersects with several other economics fields, including labor economics, corporate finance, and industrial organization. Many OE topics are also studied by other social sciences and management fields, such as social psychology, economic sociology, corporate strategy, and marketing. A number of MIT Economics faculty have interests that intersect with OE.

MIT offers a year-long doctoral sequence in organizational economics, with courses regularly taught by Robert Gibbons, Michael Whinston, and MIT Sloan's Charles Angelucci. The fall graduate course introduces key topics in OE, and two half-semester spring courses cover advanced topics. The department also offers an undergraduate course introducing OE theory and application.

Public Economics

Public economics explores the economic effects of government tax and expenditure policies and offers insights on the optimal design of these policies. The field studies questions such as the impact of income taxation on the behavior of individuals and firms, the rationale for and impact of social insurance programs such as Social Security, Medicare, Medicaid, unemployment insurance, and food stamps, as well as the effects of direct government spending programs in areas such as education, defense, infrastructure, and healthcare.

Three faculty members have primary research programs in public economics. Amy Finkelstein works on market failures in insurance markets and government intervention in healthcare markets. Jonathan Gruber studies a range of government-provided social insurance programs, also with a focus on health issues. James Poterba specializes in the economics of tax policy, with a focus on policies that affect retirement security. Beyond

this core group, several other MIT Economics faculty have substantial agendas in public economics. Simon Jäger analyzes the labor market consequences of social insurance programs. Benjamin Olken studies taxation and welfare systems in developing countries. Iván Werning works on optimal tax and social insurance design, including the taxation of high-income households, capital and estate taxation, and unemployment insurance. Two emeritus professors are also actively engaged in the field. Peter Diamond continues a research program on public pensions as an emeritus professor, and Professor Post Tenure William Wheaton studies housing markets and state and local taxation.

At the undergraduate level, the department offers an introductory course in public economics as well as a course in environmental economics. Doctoral students enroll in a two-semester public economics sequence that covers core material on taxation and social insurance programs.



Amy Finkelstein



Jonathan Gruber



Jim Poterba

Financial Economics

MIT's program in financial economics draws on expertise from both the Department of Economics and the Finance Group at the MIT Sloan School. MIT Economics has a long tradition of interest in financial economics, dating back at least to Paul Samuelson's work on the pricing of warrants and options and his supervision of Robert Merton's PhD thesis. (Merton is a 1997 Nobel laureate and a faculty member in the Sloan finance group.)

Today, five economics faculty are affiliates in the Sloan finance group, which is widely regarded as one of the top programs in the world. Sloan has 14 senior faculty who cover all aspects of modern finance, nine talented junior faculty, and a constant flow of eminent visiting scholars who bring new perspectives to the department. The rich interaction between the two groups creates a vibrant research community for faculty and students with an interest in financial economics.

The graduate financial economics sequence includes Asset Pricing in the fall (taught by Leonid Kogan and Lawrence Schmidt) and Corporate Finance in the spring (taught by Maryam Farboodi, Antoinette Schoar, and David Thesmar). Students can also choose to enroll in up to three advanced courses: Advanced Asset Pricing (taught by Eben Lazarus and Deborah Lucas), Advanced Corporate Finance (taught by Antoinette Schoar, David Thesmar, Taha Choukhmane, Christopher Palmer, and Emil Verner), and Current Topics in Finance (taught by a rotating set of faculty).

A number of informal seminars and workshops nurture a collegial atmosphere for faculty and graduate students working in financial economics. Junior faculty hold a joint economics-finance reading group; faculty and students gather for a weekly finance research seminar featuring invited outside speakers; and PhD students from Economics and Sloan present their work to peers and faculty at weekly lunches. These meetings provide great opportunities for students to learn about frontier research and help make MIT a world center for research in financial economics.

Health Economics

As the healthcare sector continues to expand rapidly, there is growing interest in research on health economics. The continued growth in healthcare costs and greater availability of high-quality data have prompted a considerable number of MIT Economics students to carry out research in the area. Their work is supported by a large faculty group with strong interests in health economics. Nikhil Agarwal works on matching in medical markets both for medical students and human organs. Abhijit Banerjee, Esther Duflo, and Frank Schilbach conduct field experiments to understand the impact of health interventions in developing nations. Amy Finkelstein studies the economics of healthcare delivery, the effects of health insurance on health, the willingness of individuals to pay for health insurance, and the efficacy of interventions to contain expenditure by healthcare "super-utilizers", among other topics. Jonathan Gruber studies public policy toward 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. Parag Pathak developed models for matching resources to needs during the COVID-19 pandemic. The department offers an undergraduate course in health economics.

Political Economy

Political economy 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 studies the links between institutions and economic growth and development, as well as the dynamics of political institutions, the interplay between conflict and cooperation, and the role of state capacity. Abhijit Banerjee works on issues at the intersection of political economy and economic development. Benjamin Olken studies the role of political leaders in affecting policy outcomes and economic growth and the implications of corruption in developing economies.

The department offers a PhD course on the political economy of institutions and development, taught by Daron Acemoglu, Abhijit Banerjee, and Benjamin Olken. We also offer a graduate course on theoretical and empirical approaches to political economy. Graduate students interested in political economy can also enroll in a number of related courses offered by MIT's Department of Political Science.

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, Alex Wolitzky, who has examined conflict, repression, coercion, and foundations of societal cooperation, and Stephen Morris, who

has written on the theory of policy-making and political inefficiencies. Simon Johnson, a member of the MIT Sloan faculty, works on the links between political institutions and economic development.





Members of MIT Economics faculty in fall 2022. Photo: Bryce Vickmark

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