RICE ECON

News and Views from the Economics Department at Rice

Spring Break!

We hope that you are planning a great spring break and will return refreshed and eager to finish out the rest of the semester. And, to anticipate things a bit, we congratulate our some one hundred ECON and MTEC graduating seniors who will be walking in May and beginning their adventure beyond the hedges – best of luck to you all!

In this issue of our newsletter, we continue featuring our undergraduate offerings, as we focus on one of the most essential of our core courses, ECON 200, Intermediate Microeconomics, taught by Professor James Brown. Jim is a renowned instructor who recently received the most prestigious teaching award presented by Rice, the George R. Brown Certificate of Highest Merit, culminating a career in which he won two Brown Prizes for Excellence

in Teaching, four Brown Awards for Superior Teaching, the Sarah Burnett Teaching Prize, and was named a Piper Professor. Our faculty spotlight shines on Professor Mallesh Pai, who received the Ralph O'Connor Award for Distinction in Teaching and Research in Economics in 2018. We are also delighted to announce the next in our series of RISE (Rice Initiative for the Study of Economics) Lectures by Nobel laureates, as we bring Professor Christopher A. Sims of Princeton University, recipient of the 2011 Nobel Memorial Prize in Economic Sciences, to Rice on March 21. And, if you haven't done so already, please stop by the Economics Department offices and meet Joan Guthrie, our (relatively) new department undergraduate program coordinator, who can help out with problems large and small.

If you haven't checked out our website recently, you might take a look at our listing of various student opportunities, as well as some pointers on conducting research in economics, and on getting your work published in undergraduate economics journals.

Hoping the rest of your spring semester goes well,

George Zodrow

Director of Undergraduate Studies

Meet Joan Guthrie, our new Undergraduate Program Coordinator

Joan Guthrie is our new Undergraduate Program Coordinator. Her office is Baker Hall 277, and you can reach her by email at joanie@rice.edu or by phone at 713-348-4381. Please feel free to drop by her office anytime for assistance with or questions regarding our ECON and MTEC majors. If you are interested in curricular advising, such as creating a degree plan or course selection, please visit one of our major advisors during their office hours, which are posted on the Economics Website under Advising/Contact and are always displayed under the "Advising Corner" feature of this newsletter.

Born and raised in Houston, Texas, Joan first began her career at Rice in the Information Technology department in 1990. In 1992, she transferred to the office of the Vice President of Information Technology and then moved on to the Center for Technology in Teaching and Learning in 2000. She left Rice in 2016, taking a short retirement, but returned in the fall of 2018 to begin her current role in the Economics Department. Joan has enjoyed her long career at Rice, and she especially likes attending Rice baseball and football games.

Advising Corner

**Spring 2019
Advising Office Hours**

Monday
1:00–3:00 p.m.
Peter Hartley, BKH 262

Tuesday
1:15–2:15 p.m.
Maria Bejan, BKH 251

Wednesday
4:00–5:00 p.m.
James Brown, BKH 250

Thursday
2:30–3:30 p.m.
Mahmoud El-Gamal, BKH 240

Friday
10:30–11:30 a.m.
George Zodrow, BKH 260

Spotlight on our Faculty

Mallesh Pai, Assistant Professor of Economics

Research Interests: Mechanism Design/Auction Theory, Economics of Privacy, Social Networks/Social Learning, and Statistical Decision Theory

Mallesh Pai came to Rice in 2016 from the University of Pennsylvania. He is a prominent researcher and outstanding teacher, and received the Ralph O'Connor Award for Distinction in Teaching and Research in Economics in 2018. Mallesh's research focuses on issues in mechanism design, auction theory, the economics of privacy, social networks, social learning, and statistical decision theory. He received his Ph.D. in 2010 from Northwestern University.

Mallesh has taught two undergraduate courses at Rice: Econ 470, Market Design, an upper-level elective, and ECON 496, Research in Economic Theory, a capstone course for MTEC majors. Both courses examine various aspects of how innovations in modern economics, as an empirical science, are used to understand any system or process that determines who gets what by matching demand with supply as a market.

How did you first become interested in economics?

I majored in computer engineering in undergrad and liked it, but there were a lot of policy changes going on in India during that time that fascinated me. In the fall of my junior year, I attended a game theory conference in Mumbai. All of the big names in game theory were there; John Nash, who had already won the Nobel Prize by that point, and Lloyd Shapley, who everyone predicted would (and did soon after) win the Nobel Prize, were both there. Before that conference, I had taken zero courses in game theory and only one elective in economics. Afterward, I ended up moving some things around and applying to graduate school in economics!

Do you think your computer engineering background has helped you as an economist?

Research in economics has become very quantitative, and my engineering training provided me with math skills, which has helped a lot. Moreover, the research that I'm most interested in sits at the intersection of economics and computer science. I find it beneficial that I can understand both the economics and computer science aspects of my work. As an example, in the past I've worked with Google and Microsoft on ad auctions that they designed for their search engines.

Can you give a brief summary of your field of research?

Broadly speaking, I'm an economic theorist, which means that I believe in the power of theory and simple models to give us real insights into the real world. I work in a field that's called mechanism design, which focuses on designing institutions that help us achieve goals we set as a society in situations where the necessary information and actions that people need to take in order to achieve those goals are disparate. Essentially, I work on figuring out how to design institutions that align people's incentives with the incentives of society.

What are some of your own research projects?

My own research looks at the impact of computers and the internet on modern society. With the innovations of the information and internet revolutions of the past 20 years, we can design and execute markets that we couldn't dream of implementing previously. Recently, I've been interested in the question of whether machine learning algorithms that are designed to help humans make important decisions, such as approving a person's loan application, can learn how to discriminate. Part of the reason that we have moved away from people making these decisions and toward machines making them is accuracy; another is that machines presumably do not suffer from the same biases that humans do. Of course,
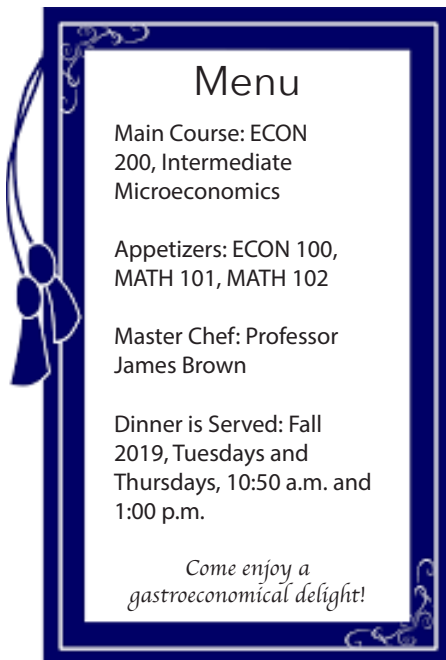
the answer to this question fundamentally depends on the design of the algorithm, but it also relates crucially to the type of market and economy in which these algorithms are operating.

You have recently been appointed Director of Managerial Studies. What are your plans for that program?

Lots of exciting things ahead! In the short-term, the plan is to refresh the curriculum. Several departments around the university have revamped their course offerings, and in light of that we're tweaking the major a little: using the practicums offered by the school of social sciences as the capstone class, updating the core statistics requirement, etc. In the longer run, we're exploring offering a "full" major, that is a major that can be taken as a standalone, while keeping the interdisciplinary flavor of the major. There's also a few social events planned so majors and prospective majors get to meet and mingle. Professors Schaefer (CAAM), Schwindt-Bayer (Political Science), and Zodrow (Economics) have graciously agreed to be part of an advisory committee and provide adult supervision while I tinker with things. If you have thoughts or suggestions, stop by!

For more information on Professor Pai's research projects, including his current working papers and his C.V., see the Faculty Page on the Economics Department website.

Great Course on the Menu!

Menu

Main Course: ECON 200, Intermediate Microeconomics

Appetizers: ECON 100, MATH 101, MATH 102

Master Chef: Professor James Brown

Dinner is Served: Fall 2019, Tuesdays and Thursdays, 10:50 a.m. and 1:00 p.m.

Come enjoy a gastroeconomical delight!

Microeconomics, or ECON 200, is the second core course in economics for both ECON and MTEC majors. In the RICE ECON interview below, Dr. James Brown, the instructor for ECON 200, provides some helpful advice for students who are planning to take his course in future semesters. In particular, he recommends several ways that students can prepare themselves to succeed in and fully enjoy the material presented in ECON 200 (in addition to completing the required prerequisites of MATH 102 and ECON 100).

How does ECON 200 build on ECON 100, and how are the two courses different?

As an introductory course that covers both microeconomics and macroeconomics in a way that is suitable for majors and non-majors, ECON 100 is necessarily limited in depth. In contrast, ECON 200 focuses intensively on a smaller set of topics in microeconomics and does so with an emphasis on analytical methods and mathematical modeling. ECON 200 is designed specifically for ECON and MTEC majors and is intended to prepare them for more advanced economics courses they will encounter later. As such, ECON 200 presumes a level of mathematical readiness far beyond that required for ECON 100.

How can students best prepare themselves for ECON 200?

In ECON 200, we explore models in which individuals and firms are assumed to optimize under various constraints, modeling human behavior and market outcomes in ways that lead to precise and empirically testable hypotheses. Because algebra and calculus are so often essential to the development and verification of economic hypotheses, students should expect to see a considerable amount of math in ECON 200. Partial differentiation is frequently employed, so students will find it helpful to take MATH 212 either before enrolling in or concurrently with ECON 200.

What can students expect to take away from ECON 200?

Students who participate actively and take full advantage of all course components should see substantial improvement in their ability to think analytically and to model individual behavior and market outcomes in imaginative and insightful ways. Many will discover that they love economics, both because it provides tools that allow them to think more effectively for themselves and because those tools can be applied to so many fascinating features of human behavior. Some may later discover a love of teaching if they serve as course TAs.

A Student Perspective — *Meghana Gaur, Lovett Class of 2019 (MTEC and Math)*

As a senior who took Dr. Brown's course many semesters ago and served as a TA for the class for several semesters, I can honestly say that ECON 200 with Dr. Brown can be a truly transformative experience. I found the material incredibly eye-opening in terms of the wide applications of economic analysis, and it spurred my interest in pursuing graduate studies in economics. The class trained me to learn and appreciate a concept deeply before moving on to the next topic, a skill useful in all disciplines. ECON 200 is certainly a challenging course, and for many students the first course that pushes them to leave their academic comfort zone. I recommend that all students who take ECON 200 commit the time necessary to engage with the material further than what is typically expected in most 200-level classes and also take advantage of Dr. Brown's willingness to teach you as much as he possibly can. Dr. Brown's dedication to his students and passion for the material is a remarkable resource, but success in this class requires a serious commitment of time and effort to learn the material in a rigorous way.

RISE Lecture - Nobel Laureate Christopher A. Sims

The eighth event in the RISE (Rice Initiative for the Study of Economics) Nobel Laureate Lecture Series will feature Christopher A. Sims, who is the John J. F. Sherrerd '52 University Professor of Economics at Princeton University. Sims – along with Thomas Sargent (a previous speaker in the RISE series) – was awarded the 2011 Nobel Memorial Prize in Economic Sciences for "empirical research on cause and effect in the macroeconomy" which provided pathbreaking answers to "questions regarding the causal relationship between economic policy and different macroeconomic variables such as GDP (gross domestic product), inflation, unemployment and investments." This work had a foundational impact on the field of macroeconomics and how it is applied by central banks and governments around the world.

Sims has also held teaching positions at Harvard, Yale, and Princeton, and is a Fellow of the Econometric Society, a member of the American Academy of Arts and Sciences, and a member of the National Academy of Sciences. He will present his lecture on "How to Worry About Government Debt" on Thursday, March 21 at 5:00 p.m. at Duncan Hall in McMurtry Auditorium. We hope to see you there!

Beyond the Hedges: An Interview with Tay Jacobe'18

Tay Jacobe is a Business Analyst for Deloitte Consulting, LLP in McLean, Virginia. A member of Wiess College, Tay graduated from Rice in 2018 with degrees in Economics and Policy Studies.

How have you enjoyed your first year at Deloitte?

Consulting definitely has its ups and downs. There are moments when I am really excited about my work, but it is a difficult role that sometimes requires tedious deliverable-making. I really enjoy the parts of my work that present interesting challenges that allow me to work directly with people to help them solve their problems.

What can you tell interested students about consulting?

Consulting, like Rice, is hard. The job requires you to devote most of your time during the week to work, and sometimes you will be away from home for the entire week. With that in mind, I think that consulting is the type of career that is suited for certain types of people. I wouldn't recommend that you pursue a career in consulting if you really want predictable work hours or work-life balance in a career. However, I definitely can recommend pursuing a career in consulting if you

enjoy tackling interesting challenges and want to explore your options, while still being employed by one company. I can't emphasize enough how useful this career is for exploring multiple career paths; within consulting, there are so many industries you can work in and service types that you can explore!

How did your classes at Rice as well as your overall student experience help you prepare for current role in your career? In what ways do you feel you could have been better prepared?

I can't say that any specific class I took at Rice comes into play in my daily work, but I do think my time at Rice was great preparation for consulting. Rice taught me to work hard, to work well with others, and to lead. These skills come into play every hour of every day in consulting. It is an incredibly team-oriented job, so being able to work well in a team is a vital skill. One way that I could have better prepared for the position as undergrad is investing more time in developing skills in Excel, Tableau, SQL, and PowerPoint. Strong technical skills really help you stand out as a consultant, and they also make you more desirable to managers, so that you're more likely to be staffed on projects that you're interested in. I would definitely recommend gaining familiarity with some of these platforms if you're interested in consulting!

What are the best parts of working at Deloitte?

I really enjoy working with such a talented group of people. Everyone I meet at Deloitte is smart, and I love working

with people who are smarter and more experienced than me because I can learn from them. My non-work-related favorite part of my job is the travel! I get to explore and experience new places around the country without money as a consideration, which is an amazing way to live at this point in my career.

How do you like living in McLean, Virginia?

I'm originally from Virginia, so it's great because I love the DC area and living close to home. However, I'm not actually home that much because I am usually working at a client site elsewhere in the country during the week. On the weekends, I often exercise Deloitte's "alternative travel" option, which allows me to fly to another city at no cost (so long as the flight costs the same or less than the flight home). I've been trying to take advantage of this opportunity as much as possible and have visited many of my Rice friends, who are working all over the country. This past year has been interesting because it has definitely become a nomadic point in my life in which I feel as if I don't live in any one place!