

## THEORY AT NORTHWESTERN UNIVERSITY

Northwestern has a history as a breeding ground for many of the important advances in modern microeconomic theory. That tradition continues today. Indeed, for Ph.D. applicants interested in economic theory, [Northwestern University](#) provides a uniquely stimulating learning and research environment, with features unmatched elsewhere. A key element is the seamless integration of the [Department of Economics](#) and the [Kellogg School of Management](#), which gives Northwestern's theory community more theory faculty, more theory courses, more theory visitors, and more theory seminars than anywhere else in the world.

### **Theory in the Department of Economics and the Kellogg School of Management**

The Department of Economics and the Kellogg School of Management are home to a remarkably large number of theory faculty. The Economics Department alone currently has nine faculty who specialize in theory; together with the [MEDS](#) (Managerial Economics and Decision Sciences), [Strategy](#), and [Finance](#) Departments in Kellogg the sum is over 40 faculty devoted to theory.

Magnifying the effect of these large numbers, the Department of Economics and the Kellogg School of Management are located in the same building. As a result, *the theory community at Northwestern is truly one community in a manner that is true nowhere else*. Theory students in the Department of Economics and Kellogg regularly take courses together. The Department of Economics and Kellogg run the weekly theory seminars jointly, and jointly fund visitors and conferences. Cross-advising is the norm. Indeed, insofar as research and teaching is concerned there is a seamless connection between the Department of Economics and Kellogg.

This unique community is also complemented by other strengths at Northwestern. Northwestern is very strong in other related fields, including econometrics, industrial organization, macroeconomics, and political economy. Another resource for theory students at Northwestern is offered by the faculty in the [Department of Electrical Engineering and Computer](#)

[Science \(EECS\)](#), who participate in many of our theory activities and run additional conferences and seminars.

The theory faculty at Northwestern include four members of the American Academy of Arts and Sciences and at least eight fellows of the Econometric Society. Northwestern theory faculty are members of the editorial boards of a large number of journals, including all the leading theory journals, several of the leading general interest journals, and many other (e.g., applied theory) journals. Specifically, there is a coeditor of *The American Economic Review*, two foreign editors of the *Review of Economic Studies*, two associate editors of *Econometrica*, two editors and two associate editors of the *Journal of Economic Theory*, one editor of *Games and Economic Behavior*, two associate editors of *Theoretical Economics* and two associate editors of the *Rand Journal of Economics*. There is also a previous editor of *Econometrica* and a former coeditor of the *Rand Journal of Economics*.

Faculty research interests are correspondingly broad, covering a wide range of topics, including decision theory, foundations of game theory, mechanism design, repeated games, reputation, evolution, contract theory, behavioral economics, continuous time modeling, communication, bounded rationality, and more. Currently, the Economics Department and Kellogg School theory faculty includes the following individuals, whose research interests are also indicated:<sup>1 2</sup>

### **Department of Economics:**

[Eddie Dekel](#) (Decision theory, Game theory esp. foundations of game theory, Voting)

[Jeff Ely](#) (Game theory, Mechanism design, Evolution, Behavioral economics)

[Yingni Guo](#) (Microeconomic Theory; Dynamic delegation, Communication and voting, Repeated games)

[Wojciech Olszewski](#) (Information and communication in economics, Repeated games, Decision theory, Mechanism design, Reputation.)

[Alessandro Pavan](#) (Mechanism design esp. dynamic, Global games, Coordination, Information economics)

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<sup>1</sup> [EECS faculty](#) include Jason Hartline and Ming-Yang Kao who focus on issues that include algorithmic game theory, algorithmic mechanism design, social networks.

<sup>2</sup> Kellogg also has the Department of [Operations Management](#) (Bandi, Bassamboo, Bray, Chopra, Deshmukh, Gurvich, Islegen, Moreno-Garcia, Russo, Van-Mieghem). Some of their research combines queuing theory and stochastic processes with economic theory to examine the behavior of manufacturing and service systems.

[Bill Rogerson](#) (IO Theory, Mechanism design esp. Principal-agent, Procurement)

[Marciano Siniscalchi](#) (Foundations of game theory, Decision theory)

[Bruno Strulovici](#) (Microeconomic theory with applications to political and financial economics)

[Asher Wolinsky](#) (Game theory, IO theory, Information economics.)

**MEDS** (Managerial Economics and Decision Sciences):

[Nabil Al-Najjar](#) (Decision theory, Learning, Reputation)

[Nemanja Antic](#) (Contract Theory, Political economy)

[David Austen-Smith](#) (Political economy, Social choice, Cheap talk and signaling)

[Sandeep Baliga](#) (Mechanism design, Contract theory, International relations)

[Georgy Egorov](#), (Political economy, Organizational economics)

[Tim Feddersen](#) (Political economy, Voting, Behavioral economics)

[Ronen Gradwohl](#) (Game Theory, Mechanism Design, Computer Science)

[Tai-Wei Hu](#) (Complexity, Decision theory, Monetary economics)

[Ehud Kalai](#), (Game theory, Learning)

[Willemien Kets](#) (Decision theory, Game theory, Behavioral economics, Information)

[Peter Klibanoff](#) (Decision theory)

[Daniel Martin](#) (Information economics)

[Joshua Mollner](#) (Game theory, Market design, Financial markets)

[Nicola Persico](#) (Contract theory, Game theory, Political economy, Voting systems)

[Yuval Salant](#) (Behavioral economics, Bounded rationality, and Decision theory)

[Alvaro Sandroni](#) (Behavioral Economics, Economic Theory)

[Mark Satterthwaite](#) (Healthcare Management, Strategy, Voting Systems)

[James Schummer](#) (Game Theory, Mechanism Design)

[Eran Shmaya](#) (Game theory, Probability and Information theory)

[Robert Weber](#) (Auction theory, Bayesian games)

**Strategy:**

[Daniel Barron](#) (Contract Theory, Economics of Organizations, Information Economics)

[David Besanko](#) (Industrial Economics, Public Policy, Regulation)

[George Georgiadis](#) (Contract Theory, Economics of Organizations, Information Economics)

[Jin Li](#) (Contract Theory, Economics of Organizations, Information Economics)

[Niko Matoushek](#) (Contract theory, Economics of organizations, Information economics)

[Michael Powell](#) (Organizational economics, Relational contracts, Theory of the firm)

[Bryony Reich](#) (Applied theory, network theory and political economy.)

[Daniel Spulber](#) (Innovation, Industrial Organization, Management Strategy, Law)

[Jeroen Swinkels](#) (Contract Theory, Economics of Organizations, Game Theory, Information Economics)

### **Finance:<sup>3</sup>**

[Ian Dew-Becker](#) (Theoretical and empirical consumption-based asset pricing)

[Mike Fishman](#) (Corporate finance, Information economics)

[Kathleen Hagerty](#) (Market microstructure)

[Charles Nathanson](#) (Asset Pricing, Behavioral Finance, Public Finance, and Real Estate)

[Dimitris Papanikolau](#) (Asset Pricing)

[Artur Raviv](#) (Corporate finance, Information economics)

[Costis Skiadas](#) (Asset pricing)

### **The Learning Environment**

The size and strength of the Northwestern theory community has many advantages for students. Thanks to the large and diverse set of theory faculty, we are able to offer an exceptionally broad range of advanced PhD courses. This breadth of course topics provides an important building block to help students identify active areas of research that interest them and possible thesis topics.

A student can typically take more than three year-long sequences of theory courses while at Northwestern, a scope and depth of learning unmatched by any other Ph.D. program. This depth and breadth of exposure increases the likelihood students find thesis topics that truly excite them. And, with this breadth of training, Northwestern theory students are uniquely well-prepared for the years that follow, when they are themselves faculty.

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<sup>3</sup> This list focuses on micro-finance; there is an excellent set of macro-finance faculty as well.

In recent years the Economics Department has offered 6-8 advanced quarter courses in theory. For example, in [2016-2017](#) it is offering the following courses:

Foundations in Decision and Game theory (Dekel and Siniscalchi),  
Information Economics (Wolinsky),  
Mechanism Design-1 (Guo),  
Optimal control for economics (Strulovici).  
Furthermore, other courses in the last 3 years include:  
Mechanism Design-2 & Coordination under incomplete information (Pavan),  
Mechanism Design-3 & Information Design (Ely),

For the period [2016-2017](#) the MEDS and M&S departments offered the following advanced courses:

Contract Theory & Mechanism Design (Sandroni)  
Conflict and Cooperation (Baliga)  
Topics in Formal Political Theory (Persico)  
Selected Topics in Economic Theory (Schummer)  
Decision Theory (Klibanoff)  
Social Choice & Voting Models (Egorov)  
The Economics of Organizations (Powell)  
The Economics of Organizations II (Barron)

In addition, there are courses in algorithmic game theory and mechanism design offered by the [EECS group](#), and courses of interest are also offered by the [Finance Department](#).

The large number of theory faculty and the diversity of their interests is also a big advantage for theory students at the dissertation-writing stage. It means that whatever topic you are interested in, there are likely to be faculty who are experts in the area, and just as excited about it as you are. At Northwestern, theory students don't find themselves limited in their dissertation topics because of the more limited interests that often go along with having a small number of theory faculty, as can happen elsewhere.

Of course, a good graduate program is not merely one that offers the largest number of classes, or has the most faculty. Equally important is the attitude that the faculty bring to courses and advising. Northwestern is well known for the attention and importance that the faculty put on teaching and training Ph.D. students. Northwestern's theory faculty are devoted to maintaining a

high-quality program and to advising Ph.D. students, and this shows in the quality of instruction, the accessibility of faculty, and the placement record of Northwestern theory students, a record that we are very proud of. Placement (as of Summer 2016) for theory students of the Northwestern Economics department since 1995 has been at the following institutions:

- Arizona State University
- Bates White, Washington DC
- Bocconi University, Italy
- Boston University
- Bowdoin College
- California Institute of Technology (4)
- Cambridge University (post-doc)
- Charles River Associates, Washington DC
- Citadel LLC (2)
- City University of Hong Kong
- Collegio Carlo Alberto
- CUNEF Madrid
- European University Institute (2)
- Georgia State University
- Harvard Business School
- Harvard University
- Keio University, Japan
- McKinsey and Company, Minneapolis
- National University of Singapore
- Ohio State University
- Oregon State University
- Pennsylvania State University
- Princeton University (2)
- Princeton University (political science post-doc)
- Rice University (2)
- Shanghai University of Finance and Economics (2)
- Sotera Defense Solutions, Washington DC
- Tel Aviv University (2)
- Toulouse School of Economics (2)
- University of British Columbia (3)
- University of California, Los Angeles
- University of California, San Diego
- University of Chicago
- University of Haifa

University of Minnesota (2)  
University of Oxford (post-doc)  
University of Queensland  
University of Rochester  
University of Southampton, United Kingdom  
University of Southern Florida  
University of St. Gallen  
University of Technology, Sydney  
University of Texas, Austin  
University of Toronto  
University of Western Ontario  
Yale University

## **Seminars**

There are *two* main weekly theory seminars. The [first](#) features faculty from other institutions presenting their work ([click here](#) for a list of previous speakers), while the [second](#) is a weekly “brown-bag lunch” seminar at which Northwestern faculty present their current research. Not surprisingly, these seminars are well-attended (the number of faculty in attendance is often greater than twenty) and very active. In addition to these seminars, students present their work in progress at a separate student theory lunch, and once a year students invite a speaker for a seminar open only to PhD students, which enables much closer interaction of students with the speaker.

Moreover, many seminars in related applied fields regularly include theory talks, including the industrial organization seminar, the political economy seminar, the finance seminar, the strategy seminar, and a theory seminar run by [EECS](#).

## **Visitors**

In addition to the weekly seminar speakers, many theory faculty from other institutions visit Northwestern for longer periods of time. These include visitors invited by Kellogg (in particular MEDS), the Math Center, and the Center for Economic Theory (CET). Many of these also teach advanced mini-courses while they visit (see [here](#) for some examples). In recent years theory students have also benefited from Nemmers Prize visitors, such as Ariel

Rubinstein, Paul Milgrom and Daron Acemoglu. Nemmers Prize visitors spend a quarter in residence, and offer another advanced topics course while visiting (beyond those listed above).

For example, visitors in 2016-2017 include Sylvain Chassang (Princeton), Sander Heinsalu (Australian National University) and Jean Tirole (Toulouse).

Visitors during the previous two years (2014-2016) included Maryam Saedi, Ben Golub, Mallesh Pai, Pietro Ortoleva, Bart Lipman, David Dillenberger, Stephen Morris, Mihai Manea, Faruk Gul, Kfir Eliaz, Tilman Borgers, Rahul Deb, Andy Skrzypacz, Michael Peters and Arthur Robson.

There are also many pre-doctoral visitors (listed [here](#)). These are Ph.D. students from other programs who have not yet completed their Ph.D., and who further enrich the theory environment at Northwestern.

## **Conferences**

The Economics Department and Kellogg School also organize numerous conferences, more than at most leading departments. (Some recent conferences are listed [here](#).)

In recent years Northwestern has hosted:

The Third World Congress of the Game Theory Society, August 2008

The Nemmers Prize conference in honor of Paul Milgrom, November 2009

Risk, Uncertainty and Decisions (RUD), June 2012

The Econometric Society North America Summer Meetings, June-July 2012

The 5<sup>th</sup> Trans-Atlantic Theory Workshop, September 2012

The Nemmers Prize conference in honor of Daron Acemoglu, Spring 2013

The Nemmers Prize conference in honor of Jean Tirole, Spring 2015

Reimagining Decentralization: A Conference in Honor of Stanley Reiter,  
Spring 2015

The Fourth Bounded Rationality in Choice Conference (BRIC4), June 2016

[The Center for the Study of Industrial Organization \(CSIO\)](#) also holds annual conferences, one with faculty from Institut D'Economie Industrielle of the University of Toulouse and one that has been sponsored jointly with Duke and the University of Texas at Austin, both of which have a strong theory component (information on both conferences is available [here](#)).

## **Financial Support**

In addition to the regular funding offered by the Economics Department and Kellogg School, the [CET](#) supports Economics Department students with research assistant positions (one to three students obtain such support each academic quarter), in addition to the research assistant positions provided by faculty. CET has also provided funds for students to participate in conferences and to obtain professional editors who improve their writing. Other forms of CET research support for students are also available.