AGRICULTURAL AND RESOURCE ECONOMICS (AREC)

Graduate Degree Program
College: Agriculture and Natural Resources

Abstract
The Department offers both M.S. and Ph.D. degrees from one of the nation's premier graduate programs in agricultural and resource economics. Both programs focus on the application of advanced microeconomic theory and econometrics to issues in environmental and resource economics, agricultural economics, and development economics. Courses are taught by leading researchers in those fields, who combine rigorous scholarship with extensive policy experience.

The Department's faculty includes internationally prominent scholars in environmental and resource economics, agricultural economics, and development economics. In recognition of their research, Department faculty members have received such international awards as Germany's Alexander von Humboldt Prize, the American Economic Association's John Bates Clark Medal, and the Agricultural and Applied Economics Association's Quality of Research Discovery and Publication of Enduring Quality Awards, among others. Several have been elected fellows of such professional associations as the Agricultural and Applied Economics Association (formerly the American Agricultural Economics Association), the Association of Environmental and Resource Economics, the Econometric Society, and the American Statistical Association. Department faculty members have served as presidents of the American Agricultural Economics Association and Association of Environmental and Resource Economists and as editors and associate editors of the Journal of Environmental Economics and Management, the American Journal of Agricultural Economics, the Journal of Public Economics, and Environment and Development Economics, among others. One faculty member is currently a research fellow of the National Bureau of Economic Research. For additional Department highlights, please visit www.arec.umd.edu/graduate/prospective-students.

The policy experience of the Department's faculty is equal to its scholarship in both quality and extent. Three have served on the staff of the President's Council of Economic Advisers. Other policy experience includes service as consultants to agencies and organizations like the U.S. Department of Justice, the U.S. Department of Agriculture, the Environmental Protection Agency, the World Bank, and the Inter-American Development Bank. The University's location in the Washington, D.C., area provides numerous opportunities for interaction with the World Bank, International Food Policy Research Institute, Resources for the Future, International Monetary Fund, U.S. Department of Agriculture, U.S. Environmental Protection Agency, U.S. Agency for International Development, Food and Drug Administration, Inter-American Development Bank, Census Bureau, and a host of other such institutions and organizations. Questions about the Department's graduate programs should be directed to the Graduate Program Coordinator at arecgradpgm@umd.edu or 301-405-1820.

Financial Assistance
Graduate assistantships are offered to qualified applicants on the basis of past academic performance, research potential, and availability of funds. Many full-time students in the Department hold assistantships or some other form of financial aid. Part-time and summer work are sometimes available for students who do not have assistantships. Graduate fellowships are also available on a competitive basis. The Department offers financial assistance in the form of graduate assistantships and fellowships. All applications are considered for financial assistance.

Graduate Assistantships
Many of our students are supported by graduate assistantships with responsibilities for either research or teaching. Graduate assistants are expected to work an average of 20 hours a week on their research or teaching duties. They must maintain at least a B average. They are considered employees of the University and are thus covered by health insurance. In addition to a competitive salary, graduate assistants receive tuition remission for up to 10 credits in the fall and spring semesters and up to 8 credits each summer semester.

Fellowships
The Department awards a number of fellowships each year to highly qualified applicants. Annual fellowship stipends are highly competitive. Fellowship awards also include tuition remission of up to twelve credits per semester. Fellowships are awarded to Ph.D. students for two (2) years. After the expiration of the fellowship, the Department expects to provide Ph.D. fellowship recipients with an additional two years of support as a graduate assistant subject to satisfactory academic progress. All applicants for financial aid are automatically considered for fellowships as well as assistantships.

Financial assistance in the form of loans and work study may also be available. Interested students should contact the University's Office of Student Financial Aid.

Contact
The AREC Graduate Program website at http://www.arec.umd.edu/graduate provides course requirements, examination procedures, and descriptive material for the M.S. and Ph.D. programs.

Department of Agricultural and Resource Economics
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7998 Regents Drive
University of Maryland
College Park, MD 20742
Telephone: 301.405.1293
Email: arecgradpgm@umd.edu

Website: http://www.arec.umd.edu

Admissions
General Requirements
- Statement of Purpose
- Transcript(s)
- TOEFL/IELTS/PTE (international graduate students (https://gradschool.umd.edu/admissions/english-language-proficiency-requirements))

Program-Specific Requirements
- Letters of Recommendation (3)
- Graduate Record Examination (GRE)
• CV/Resume

At a minimum, students entering either the Department’s M.S. or Ph.D. program are expected to have the following preparation:

1. Knowledge of macroeconomic theory at the intermediate level and microeconomic theory at the advanced level.
2. Knowledge of multivariate calculus and linear algebra.

Additional coursework in mathematics is desirable—for example, analysis, probability, advanced statistics, or differential equations.

Students are normally admitted to the MS and PhD programs only for the fall semester, because the first year program consists of course sequences that begin only in the fall.

Transfer from M.S. to Ph.D. Program

Students enrolled in the Department’s M.S. program may apply for admission to the Department’s Ph.D. program by submitting a new Graduate School application, supplemental transcripts, and three letters of recommendation. The Graduate School application fee is waived if the student applies for the Ph.D. program in or before the semester in which the M.S. degree will be completed. Students within the Department’s M.S. program need not submit GRE’s when applying for the Ph.D. program.

The University of Maryland’s Graduate School accepts applications through its ApplyYourself/Hobsons (link is external) application system. Before completing the application, applicants are asked to check the Admissions Requirements (link is external) site for specific instructions.

As required by the Graduate School, all application materials are to be submitted electronically.

The electronic submission of application materials helps expedite the review of an application. Completed applications are reviewed by an admissions committee in each graduate degree program. The recommendations of the committees are submitted to the Dean of the Graduate School, who will make the final admission decision. Students seeking to complete graduate work at the University of Maryland for degree purposes must be formally admitted to the Graduate School by the Dean.

Information for International Graduate Students

The University of Maryland is dedicated to maintaining a vibrant international graduate student community. The Office of International Students and Scholars Services (http://globalmaryland.umd.edu) (link is external) (ISSS) is a valuable resource of information and assistance for prospective and current international students. International applicants are encouraged to explore the services they offer, and contact them with related questions. The University of Maryland Graduate School offers admission to international students based on academic information; it is not a guarantee of attendance. Admitted international students will then receive instructions about obtaining the appropriate visa to study at the University of Maryland which will require submission of additional documents. Please see the Graduate Admissions Process for International applicants (https://www.gradschool.umd.edu/admissions/international-admissions) (link is external) for more information.

For more admissions information or to apply to the program, please visit our Graduate School website: www.gradschool.umd.edu/admissions

### Application Deadlines

<table>
<thead>
<tr>
<th>Type of Applicant</th>
<th>Fall Deadline</th>
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<tbody>
<tr>
<td>Domestic Applicants</td>
<td>4 Jan</td>
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<tr>
<td>US Citizens and Permanent Residents</td>
<td>4 Jan</td>
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<tr>
<td>International Applicants</td>
<td>4 Jan</td>
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<tr>
<td>F (student) or J (exchange visitor) visas; A,E,G,H,I and L visas and immigrants</td>
<td>4 Jan</td>
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### Requirements

- Agricultural and Resource Economics, Master of Science (M.S.) (https://academiccatalog.umd.edu/graduate/programs/agricultural-resource-economics-arec/agricultural-resource-economics-ms)

### Facilities and Special Resources

The AREC Department provides a 15-seat computer lab for the exclusive use of our graduate students. The lab is available 24 hours a day, 365 days a year. Another 25-seat lab is available by reservation for classes, presentations, and research (e.g., experimental economics sessions). These labs are equipped with thin client devices that connect end users to desktop virtual desktops. This solution allows graduate students to remotely access a virtual desktop with all the applications listed below, as well as their files stored on the network servers. The following applications are available at this time: ArcInfo, Fortran, Mathematica, Matlab, Mozilla Firefox, MS Office, R, SAS, Stata, StatTransfer, TextPad, Lyx and WinEdt. Graduate students can access the AREC network and Internet from home via several remote access methods. A multifunction printer/scanner/copier is available in the graduate student computer lab. Wireless access is available to the campus network.

The Department offers close proximity to an incomparable array of government agencies, international institutions, and non-governmental organizations devoted to environmental issues, agricultural policy, natural resource management, and international development. Opportunities for attending stimulating seminars abound. Many students find useful work experience, access to data, and cutting-edge thesis topics as well as future employment through these organizations. These include (all within approximately 10 miles) the U.S. Environmental Protection Agency, the U.S. Department of Agriculture and U.S. Economic Research Service, the U.S. Food and Drug Administration, Resources for the Future, the Joint Institute for Food Science and Nutrition, the Joint Global Change Research Institute, the National Center for Smart Growth Research and Education, the National Oceanic and Atmospheric Administration, the World Bank, the Inter-American Development Bank, the International Food Policy Research Institute, the Beltsville Agricultural Research Center with
its National Agricultural Library, as well as the U.S. Capitol, Senate, and House of Representatives.

## Faculty

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First/Middle Name</th>
<th>Graduate Faculty Status</th>
<th>Academic Credentials</th>
<th>Positions</th>
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<tbody>
<tr>
<td>Alberini</td>
<td>Anna</td>
<td>Full Member</td>
<td>B.A., Italy, 1987; M.A., 1989; Ph.D., University of California-San Diego, 1992.</td>
<td>Professor, Agricultural and Resource Economics</td>
</tr>
<tr>
<td>Battistin</td>
<td>Erich</td>
<td>Adjunct Member</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown</td>
<td>Earl H.</td>
<td>Full Member</td>
<td>B.S., University of Minnesota, 1956; M.S., University of Minnesota, 1957; Ph.D., Michigan State University, 1961</td>
<td>Professor Emeritus, Agricultural and Resource Economics</td>
</tr>
<tr>
<td>Cai</td>
<td>Jing</td>
<td>Full Member</td>
<td>Ph.D., University of California, Berkeley, Agricultural and Resource Economics, 2012 M.A. University of California, Berkeley, Statistics, 2009 M.S., Peking University, Finance, 2006 B.S., Beijing Normal University, Computer Science, 2004</td>
<td>Assistant Professor, Agricultural and Resource Economics</td>
</tr>
<tr>
<td>Cain</td>
<td>Jarvis L.</td>
<td>Full Member</td>
<td></td>
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<tr>
<td>Chambers</td>
<td>Robert G.</td>
<td>Full Member</td>
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<tr>
<td>Cramton</td>
<td>Peter</td>
<td>Full Member</td>
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<tr>
<td>Cropper</td>
<td>Maureen L.</td>
<td>Full Member</td>
<td></td>
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<tr>
<td>Fare</td>
<td>Rolf</td>
<td>Adjunct Member</td>
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</table>

Cain, Jarvis L.  B.S., Purdue University, 1955; M.S., Ohio State University-Columbus, 1956; Ph.D., 1961.  Professor Emeritus, Agricultural and Resource Economics

Chambers, Robert G.  B.S.F.S., George Washington University, 1972; M.S., University of Maryland-College Park, 1975; Ph.D., University of California-Berkeley, 1979.  Professor, Agricultural and Resource Economics

Cramton, Peter  B.S., Cornell University, 1980; Ph.D., Stanford University, 1984.  Professor, Economics  Professor, Applied Mathematics & Statistics, and Scientific Computation  Affiliate Professor, Agricultural and Resource Economics


Fare, Rolf  PhD, University of Gothenburg, October 2009  PhD, University of Lund, May 2005  Adjunct Professor, Agricultural and Resource Economics
Gunnsteinsson Snaebjorn Full Member
B.Sc., University of Iceland, 2003; Sc.M., Johns Hopkins University, 2006; M.A. Yale University, 2009; Ph.D., Yale University, 2013.

Hueth Darrell L. Full Member
Assistant Professor, Agricultural and Resource Economics

Jakiela Pamela Full Member
B.A., University of Michigan, Ann Arbor, 1999; M.Sc., London School of Economics, 2000; Ph.D., University of California, Berkeley, 2008

Hanson James C. Full Member

Just Richard E. Full Member

Hardie Ian W. Full Member
B.S., University of California-Davis, 1960; Ph.D., University of California-Berkeley, 1965.

Lange Andreas Adjunct Member
M.S., Pontificia Universidad Catolica de Chile, 1996; M.B.A., University of Oxford, 2000; M.S., University of Maryland, 2009; Ph.D., University of Maryland, 2010.

Leathers Howard D. Full Member
A.B., Princeton University, 1974; M.S., University of Minnesota-Twin Cities, 1978; Ph.D., University of Wisconsin-Madison, 1986.

Holzer Jorge Bilbao Full Member
M.S., Universidad Catolica de Chile, 1996; M.B.A, University of Oxford, 2000; M.S., University of Maryland, 2009; Ph.D., University of Maryland, 2010.

Adjunct Professor, Agricultural and Resource Economics

Houde Sebastien Full Member
B.A., University Laval, 2003; M.S., University Laval, 2004; Ph.D., Stanford University, 2012.

Leonard Kenneth Full Member

Professor Emeritus, Agricultural and Resource Economics

Professor, Agricultural and Resource Economics

Associate Professor, Agricultural and Resource Economics

Distinguished University Professor, Agricultural and Resource Economics

Assistant Professor, Agricultural and Resource Economics

Adjunct Professor, Agricultural and Resource Economics

Professor, Agricultural and Resource Economics

Assistant Professor, Agricultural and Resource Economics

Professor, Agricultural and Resource Economics
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Education</th>
<th>Position</th>
<th>Institution</th>
<th>Year of Appointment</th>
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</thead>
<tbody>
<tr>
<td>Linn</td>
<td>Joshua</td>
<td>Associate Professor Emeritus, Agricultural and Resource Economics</td>
<td>Associate Member</td>
<td>University of Chicago, 1991; Ph.D., University of California, Berkeley, 2002</td>
<td></td>
</tr>
<tr>
<td>Lipton</td>
<td>Douglas W.</td>
<td>B.S., State University of New York-Stony Brook, 1976; M.A., Virginia Inst. of Marine Science-College of William &amp; Mary, 1979; Ph.D., University of Maryland-College Park, 1989.</td>
<td>Full Member</td>
<td>Associate Professor, Agricultural and Resource Economics</td>
<td></td>
</tr>
<tr>
<td>Lynch</td>
<td>Loretta M.</td>
<td>B.A., University of California-Davis, 1984; M.S., 1989; Ph.D., University of California-Berkeley, 1996.</td>
<td>Full Member</td>
<td>Professor Emeritus, Agricultural and Resource Economics</td>
<td></td>
</tr>
<tr>
<td>Nerlove</td>
<td>Marc L.</td>
<td>B.A., University of Illinois-Champaign, 1972; Ph.D., 1985.</td>
<td>Full Member</td>
<td>Assistant Professor Emeritus, Agricultural and Resource Economics</td>
<td></td>
</tr>
<tr>
<td>Newburn</td>
<td>David</td>
<td>Associate Professor Emeritus, Agricultural and Resource Economics</td>
<td>Full Member</td>
<td>University of Maryland, College Park, 1991; Ph.D., University of California, Berkeley, 2002</td>
<td></td>
</tr>
<tr>
<td>Olson</td>
<td>Lars J.</td>
<td>B.A., Eckerd College, 1981; M.A., Cornell University, 1985; Ph.D., 1988.</td>
<td>Full Member</td>
<td>Chair, Agricultural and Resource Economics</td>
<td></td>
</tr>
<tr>
<td>Strand</td>
<td>Ivar E., Jr.</td>
<td>B.A., University of Rochester, 1967; M.A., University of Rhode Island, 1972; Ph.D., 1975.</td>
<td>Full Member</td>
<td>Professor Emeritus, Agricultural and Resource Economics</td>
<td></td>
</tr>
<tr>
<td>Tuthill</td>
<td>Dean Fanning</td>
<td>B.S., Cornell University, 1948; M.S., University of Illinois-Urbana-Champaign, 1954; Ph.D., 1958.</td>
<td>Full Member</td>
<td>Professor Emeritus, Agricultural and Resource Economics</td>
<td></td>
</tr>
</tbody>
</table>
Williams Roberton III Full Member A.B., Harvard College, 1994; Ph.D., Stanford University, 1999 Professor, Agricultural and Resource Economics

Zaki Mary Full Member B.A., University of Pennsylvania, 2003; B.S., University of Pennsylvania, 2003; M.A., Northwestern University, 2008; Ph.D., Northwestern University, 2014. Assistant Professor, Agricultural and Resource Economics