

DEPARTMENT OF
ECONOMICS

Rensselaer



DOCTORAL PROGRAM IN ECOLOGICAL ECONOMICS

Rensselaer Polytechnic Institute, founded in 1824, is the oldest technological university in the United States. Located in upstate New York near the state capital of Albany, Rensselaer is within three or four hours drive of New York City, Boston, and Montreal. For more information go to: www.rpi.edu.

ECOLOGICAL ECONOMICS AT RENSSELAER

The field of Ecological Economics offers unparalleled opportunities for applying the concepts and methods of economics to challenges surrounding environmental degradation, resource use, and development. Rensselaer is unique in offering a Ph.D. degree in Ecological Economics within its Department of Economics. The program combines traditional training in advanced economics with a broader inter-disciplinary perspective, in an atmosphere of close interaction between faculty and students.

RESEARCH

Our faculty includes ecological economists who have made major contributions in shaping the field and providing leadership for a number of important interdisciplinary professional societies and journals. Students work with them in developing research competence in many aspects of sustainable development, resource and environmental economics, energy and climate policy, and sustainable livelihoods. Much of our faculty and student research involves quantitative models linking economic structure, socio-economic characteristics, and environmental conditions. The research includes analysis at global, regional, national, and local scales. Much of our research also focuses on the intersection of ecological economics with the economics of technological change. Our Department of Economics is in the top 20% of economics institutions in the state of New York according to <http://ideas.repec.org/top/top.usa-ny.html> (August 2009), besting many departments that are much larger.

GRADUATE STUDENTS

The department averages about a dozen Ph.D. students. Recent and current students come from the United States, Europe, Asia, and Latin America. Students have published in refereed journals and contributed to numerous conference proceedings. Funding is available for qualified students.

For a description of program requirements and other information, check out our website at www.economics.rpi.edu. To apply, contact Betty Jean Kaufmann, administrative specialist, at kaufmb@rpi.edu.



CORE ECOLOGICAL ECONOMICS FACULTY

The following are the core faculty in the ecological economics program; see the website for other economics faculty.

Faye Duchin - *Professor* - Economic development and trade with a focus on technology, lifestyles, and environment.

Degrees: Ph.D., University of California at Berkeley; B.A., Cornell University

Research: Professor Duchin's research is concerned with global pollution, land use, and resource scarcities. She works with a model and database of the world economy in collaboration with an international team of colleagues and students to analyze scenarios about changes in lifestyles and technologies that could make a difference. An ongoing research project seeks to quantify resource demands, notably for cropland, fresh water, and phosphate rock, for satisfying projected future demand for food in the developing world. The project will proceed to examine the extent to which changes in rich country diets and in agricultural technologies could alleviate pressures on the environment.

John Gowdy - *Professor* - Ecological and evolutionary economics.

Degrees: Ph.D., West Virginia University; M.A., West Virginia University; M.C.P., University of Rhode Island; B.A., American University

Research: Professor Gowdy's research focuses on ecological economics including economic valuation of biodiversity and environmental theory and policy, welfare economics and environmental valuation, development economics and ecosystem services, evolutionary models of economic change, and biophysical models of sustainability. In 2009, Professor Gowdy became the fourth recipient of the Herman Daly Award from the US Society for Ecological Economics. He is the 2009-2010 president of the International Society for Ecological Economics.

Daniel Shawhan - *Assistant professor* - Energy and environmental economics.

Degrees: Ph.D., Cornell University; B.A., Grinnell College

Research: Professor Shawhan's research deals primarily with the analysis and design of energy policies, particularly policies that address greenhouse gas emissions, other airborne pollutants, renewable energy, and market power in the electricity sector. He has funding for a new Ph.D. student starting in Fall 2010 to conduct research that will help accommodate 50% penetration by renewable energy sources on the electric grid. (This student should have training or interest in the booming field of power systems.) Professor Shawhan's current research combines power system and environmental modeling to predict the effects of different environmental policy options and to optimize decisions about what kinds of power plants should be built where. Students who work with Professor Shawhan also have the opportunity to interact with some of the world's leading power system and market experts in academia, industry, and at the nearby New York power market operator.

COURSES

The core sequence of Ph.D. economics courses at Rensselaer includes Microeconomics, Macroeconomics, Econometrics, Environmental Economics, and Ecological Economics. Our students also have elective course options not available at all universities, including energy economics & policy; cost-benefit analysis; technology change; institutional economics; geographic information systems; and a wide variety of mathematics, decision sciences, operations research, engineering, and management courses.

