

Environmental Policy Initiative

2011-2015 Activities Report



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

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Brief Summary of Activities

Since 1999, The Environmental Policy Initiative (EPI) at Ohio State University has facilitated environmental policy scholarship through graduate student research grants; travel grants for students to speak at international policy conferences; guest speakers visiting the OSU campus; targeted research projects on important environmental issues affecting Ohio; conferences; and other outreach efforts.

Graduate Student Support:

EPI supports 2-3 graduate students each summer to conduct research in advance of their general examination. Proposals for the summer grant program are reviewed by a group of environmentally focused faculty around campus. EPI also provides travel grants for students to present their research at policy conferences. Finally, EPI hires a graduate student to help administer its programs, and to conduct specific research projects.

Guest Speakers:

Since 2011, EPI has brought at least one speaker per year to campus, and it has supported other departments who bring environmental policy experts to campus as well.

Targeted Research:

The Ohio Wedges Project examined Ohio's current and future carbon emissions by sector. This research helps policy makers assess a potential revision to Ohio's renewable portfolio standards and it will be useful as Ohio determines how to meet new federal regulations on carbon emissions.

Outreach:

EPI partially funded a conference on voluntary pollution abatement programs, and several state and national webinars on energy and water quality policy.



Ohio Wedges Project

The growing scientific and political interests surrounding global warming have increased public concerns over greenhouse gas emissions with particularly high levels of anxiety being placed upon carbon dioxide (CO₂) emissions. However, not all are sold on the idea of global warming, and fear that decreases in carbon dioxide emissions will lead to an unacceptable decay of the American lifestyle. Ohio, which is the seventh most populous state yet produces the fourth most CO₂, is not immune from this debate.

In fact, since Ohio's economy is so reliant upon industry, there is a sentiment that any CO₂ reductions in the state will be particularly painful. The Ohio Wedges Project aims to settle some of the debate about the severity of lifestyle changes caused by CO₂ reduction. Ohio's CO₂ emitting sectors that we analyzed are broken down into electricity generation, transportation, and residential. For each sector we present the cumulative CO₂ emissions for a business as usual plan, which is a baseline measure assuming the current scenario as fixed over time from 2011 to 2050. We then propose one or more alternative plans called wedges which extend the implementation of current technologies or policies with the goal of reducing cumulative CO₂ emissions from 2011 to 2050 in the sector. It should be noted that these sectors are not

necessarily exogenous from each other.

For example, the emissions point for a house turning on their lights is the power plant where the electricity is generated.

Therefore, a reduction in energy required for lighting caused by decreased demand is actually realized by the electricity generation sector, and not the residential sector.

This study is not meant to be a comprehensive analysis of every source of CO₂ emissions in Ohio. Rather, it is an eye opening report that reveals the vast potential CO₂ savings that are available simply by maintaining/extending current policies and further implementing currently available technologies. If you would like more information on The Ohio Wedges Project please see our full report at

<http://go.osu.edu/ohiowedges>.

Emissions in Millions of Tons of CO₂

| Sector | | Business as Usual | Largest Wedge | Savings from Largest Wedge | % Saved |
|------------------------|-----------------------------|-------------------|---------------|----------------------------|------------|
| Transportation | Light Duty Vehicles | 2,470 | 1,960 | 510 | 21% |
| | Heavy Duty Vehicles | 602 | 558 | 44 | 7% |
| Electricity Generation | Electricity Generation | 4,460 | 2,800 | 1,660 | 37% |
| Residential | Lighting - Residential | 85 | 20 | 65 | 76% |
| | Space Heating - Residential | 575 | 561 | 14 | 2% |
| | Water Heating - Residential | 178 | 164 | 14 | 8% |
| Total | | 8,370 | 6,063 | 2,307 | 28% |

Webinar Series

In a continuing effort to bring environmental policy issues to the attention of the public, EPI holds webinars on Ohio relevant topics. This series began in 2013 with the presentation of EPI's 'Ohio Wedges Project'. This series has been seen as a great success, reaching audiences of around 50 – 100 each.

12/12/13: An Analysis of the Effect of Federal and State Energy Efficiency Regulations on Past and Future Ohio Carbon Emissions

This webinar examined the role of policy and economic trends on reducing carbon emissions in Ohio. The research showed that renewable energy laws are effective at reducing carbon emissions, lowering the nation's emissions by over 1.1 billion tons CO₂ over a ten year period, or around 3.5% per year by 2012. Ohio's renewable energy laws, Senate Bill 221, have a smaller requirement than most other states, but they reduced carbon emissions in Ohio by over 2.5 million tons through 2012, or around 0.5%. Looking forward, the reductions in emissions that will result from Ohio's existing energy efficiency regulations will be dramatic in the state, cutting Ohio's emissions by over 50% within the next 40 years.

Participants:

- Bill Stanley (The Nature Conservancy)
- Samy Sekar (Resources for the Future)
- Dr. Brent Sohngen, James Goodenberger, and Shelby Stults (The Ohio State University)

9/30/14: The Economics of Water Pollution Control: The Case of Harmful Algal Blooms

This webinar examined the economics of water pollution control through the lens of harmful algal blooms. In particular, the webinar contained a discussion of the economic dangers of harmful algal blooms, an evaluation of traditional conservation practices in the Maumee River Basin, and an overview of economic instruments to control algal blooms, such as taxes, water quality trading, and phosphorus limits.

Participants:

- Frank Lupi (Professor of Env. and Resource Economics, Michigan State University)
- James Shortle (Distinguished Professor of Ag. and Env. Economics, Penn State University)
- Brent Sohngen (Professor of Env. Economics, The Ohio State University)
- Moderator: Anne Baird (School of Env. and Natural Resources, The Ohio State University)

PhD Dissertation Proposal Summer Research Grant

EPI offers a competitive research grant program for Ohio State graduate students preparing doctoral dissertation proposals for work in environmental policy. Up to three recipients receive an award of \$4,000 for the summer term.

Each year, the winners are selected from a group of outstanding graduate student scholars. The work proposed by winners exemplifies the spirit of EPI's mission for quality research on environmental policy issues.

2012/2013 Academic Year Winners:



Yun Qiu

A doctoral student in the AED Economics Department, Qiu studies the dynamic interactions between geophysical processes and human activity in response to climate change in coastal zones. EPI's Summer Research Grant will allow Qiu to continue her current work examining consumer's willingness to pay for changes in beach amenities, and whether heterogeneous preferences and expectations about beach nourishment cause people to sort across coastal communities.

Pranay Ranjan

Specializing in environmental social science, Ranjan is using the EPI Summer Research Grant to study the institutional response of watershed communities in per-urban regions to increased market access and diverse employment opportunities. Ranjan is also interested in understanding the circumstances under which these institutional responses make the watershed institutions more adaptive.





Justine Law

Law focuses on human-environment geography and is interested in the ways that rural communities extract, manage, and use natural resources. Her current work investigates how wood energy can best support local, sustainable rural development in central Vermont and the Upper Peninsula of Michigan. Using EPI's Summer Research Grant, Law was able to spend the summer performing comparative analysis of woody biomass energy generation in both regions.

2013/2014 Academic Year Winners:

Elizabeth Gardiner

Gardiner studies cultural anthropology. She focuses on the impacts of large-scale land acquisitions for commercial commodity production in West Africa with the goal of looking at livelihood sustainability from the household, community, and regional levels. Using EPI's grant, Gardiner will study recent land acquisition impacts on livelihoods in Burkina Faso. Gardiner aims to develop theoretical models accounting for the long-term impacts of environmental policies and changes in land governance.





Chris Hartmann

Hartmann studies human and environmental geography. His work examines contemporary environmental and health issues in Latin America. Hartmann is interested in the ways in which post-neoliberal policies are emerging in Managua, Nicaragua. EPI's funding will allow Hartmann to examine the roll out of a national health and well-being campaign and the modernization of Managua's only municipal waste site. He will examine the new conceptualizations of environmental public health by

Nicholas Irwin

Irwin studies the intersection of environmental and urban economics with a focus on urban sustainability. Using EPI's funding Irwin will extend his research on the impact of storm water management practices in suburban settings to investigate the issue in urban locales. His research has shown that in suburban, households do not adequately value the ecosystem service provided by storm water basics, but rather they value the buffer the basins create against future development.



2014/2015 Academic Year Winners:



Nora Sylvander

Sylvander studies the dynamics by which non-indigenous mestizo migrants are blamed for undermining conservation goals in Nicaragua's Bosawas Biosphere Reserve, and how they consequently become marginalized and excluded from the conservation policy framework. This socio-political marginalization and exclusion of mestizos may partly explain why conservation policies have rarely been successful in Bosawas.

Angel Arroyo-Rodriguez

Arroyo-Rodriguez examines how social psychology theories can help increase our understanding of household's attitudes regarding food scraps odors and potential for animal/pest attraction and how these might affect their participation in curbside collection of food scraps commingled with yard waste.





Yuxi Zhao

Zhao's work focuses on the land-use decision-making processes of family forest owners in the post-productivist transition. Through establishing an intellectual conversation between three disciplines: economics, regional planning, and forestry, her research aims to create interdisciplinary theories to reveal the barriers preventing family forest owners from adopting forest cost-share policies.

Graduate Student Professional Travel Grants

The Environmental Policy Initiative offers competitive Graduate Student Professional Travel Grants of up to \$500 for graduate students presenting research papers at professional meetings related to environmental policy.

2013:

Beau Steven Ingle: Travelled to Los Angeles, CA to present research at the Western Political Science Conference.

Lea Kee Sun Fortmann: Travelled to Banff, Canada to present research at the Association of Environmental and Resource Economists Annual Meeting

Yun Qiu: Travelled to Champaign, IL to present research at the Heartland Environmental and Resource Economics Workshop

Yun Qiu: Travelled to Atlanta, GA to present at the North American Regional Science Conference

2014:

Pranay Ranjay: Travelled to Seattle, WA to present at the Western Political Science Association Annual Meeting

Guest Speakers

2011:

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| Scott Swinton | Professor in the Agricultural, Food, and Resource Economics Department at Michigan State University |
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2012:

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| Sue Elisa Greenhalgh | Principal, LandCare Research, Auckland, New Zealand |
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| Nicholas Muller | Associate Professor in the Department of Economics at Middlebury College |
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2013:

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| Robert Richardson | Professor in the Department of Community Sustainability at Michigan State University |
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| Jeff Hopkins | Principal Advisor for International Energy and Climate Policy at Rio Tinto |
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2014:

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| Adam Daigneault | Principal, LandCare Research, Auckland, New Zealand |
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| Robert Mendelsohn | Edwin Weyerhaeuser Davis Professor of Forest Policy, Professor of Economics, and Professor, School of Management, at the Yale School of Forestry & Environmental |
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| Paul Barrett | Assistant managing editor and senior writer at Bloomberg Businessweek (Seminar hosted by the Moritz College of Law, Ohio State University) |
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Conferences

"Voluntary Pollution Control (VPC) Workshop", at the Blackwell Hotel, The Ohio State University, May 20-21, 2012. This workshop was organized by Abdoul Sam in AED Economics, and supported partially by the Environmental Policy Initiative.

PhD Student Administrative Assistant

A PhD student engaged environmental policy research serves as the administrative assistant for the EPI program. In addition to conducting research on environmental policy, the administrative assistant helps additional tasks includes assisting with organizing webinars and guest speakers, administering the reviews for the summer research competition, and conducting special research activities.

2011-2012:

Matthew Winden, Ph.D. in AED Economics, 2012. Dissertation Title: "Integrating Stated Preference Choice Analysis and Multi-Metric Indicators in Environmental Valuation." (Advisor: Tim Haab)

Other Projects conducted by Matthew Winden:

- Developed survey of farmers in Scioto watershed as part of a joint project with Richard Moore to investigate the cost-effectiveness of water quality trading. Wrote a report for the City of Columbus, and prepared a manuscript for consideration as a journal article.

2012-2015:

James Goodenberger, PhD student in AED Economics. Expected Completion in Spring, 2016. Proposed Dissertation Title: "Three Essays on the Post-Invasion Economics of Invasive Species" (Advisors: Allen Klaiber and Sathya Gopalakrishnan)

Other projects and presentations conducted by James Goodenberger:

- Developed the Ohio Wedges Project described above and provided guidance to the undergraduate students who worked on the project. Developed content for the webinar.
- Goodenberger's work has been presented at many professional conferences and workshops including:
 - Colorado University Environmental and Resource Economics Workshop – 2015
 - Association of Environmental and Resource Economists Conference - 2015
 - Heartland Environmental and Resource Economics Workshop – 2014
 - Camp Resources Environmental and Resource Economics Workshop – 2014
 - World Congress of Environmental and Resource Economists – 2014
 - Agricultural and Applied Economics Association Meetings – 2014
 - Agricultural and Applied Economics Association Meetings - 2013



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