

Training Future Faculty in Sustainable Sciences through an Interdisciplinary Ph.D. Program in Rural Sociology (IPPRS)

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Introduction

In 2008, The Ohio State University's Social Responsibility Initiative and Rural Sociology program were awarded funding by the USDA National Institute of Food and Agriculture (USDA-NIFA) to train Ph.D. Fellows in an interdisciplinary rural sociology-focused graduate program (IPPRS) addressing the national need to develop scientific and professional expertise in the sustainable sciences. Advanced interdisciplinary training in this field is increasingly needed to conduct groundbreaking research in the food and agricultural sciences to remain competitive in the knowledge-based society. Upon completion, the Fellows will be well-suited for leadership roles in academia and in global and national policy circles.

The program builds on the following: 1) An existing fellowship training program also funded by USDA-NIFA for master's level Fellows to cultivate future leaders and scholars in the food and agricultural sciences; 2) An outstanding rigorous, research-oriented Rural Sociology Program; and 3) OSU's one of a kind Social Responsibility Initiative that serves as a forum for research and education on the social and/or human dimensions of food and agricultural issues. One of the guiding elements of the Social Responsibility Initiative is that the social dimensions of food, agricultural, and environmental issues must be considered in tandem with other dimensions in order to truly understand the complexity of these systems and to develop creative, proactive solutions to complex problems.¹

The National Need

The purpose of the National Needs grants program is to train students for advanced degrees and to fill nationally identified expertise shortage areas in the food and agricultural sciences. The IPPRS is designed to train Fellows in the Sustainable Sciences. To ensure a sustainable food and agricultural system advanced integrated interdisciplinary training is needed among the nation's most promising emerging scholars. The Bureau of Labor Statistics job outlook supports this need and specifies that agricultural scientists will be expected to balance the need for increased agricultural output in conjunction with other societal and environmental needs, while promoting the practices of sustainable agriculture. The concept of sustainable agriculture is also making significant in-roads into national agricultural policy, further supporting the need for Ph.Ds and professionals well-trained in this integrated perspective. And most recently, the National Academy of Sciences has formally recognized sustainable sciences as a distinct discipline that is by nature interdisciplinary.

The Ecological Pyramid

The Ecological Pyramid (EP) is the guiding framework behind the IPPRS. The Ecological Paradigm was developed by the College of Food, Agriculture, and Environmental Sciences at The Ohio State University in recognition to remain a leader in agricultural sciences and meet the future needs of society, holistic/systems thinking is required to address the issues associated with modern food and agriculture.² The Ecological Paradigm is an integrated systems approach and is comprised of four dimensions: production efficiency, economic viability, environmental compatibility and social responsibility and is represented by a four-sided pyramid (see Figure 1). Together, these concepts reflect the guiding principles for an integrated approach to food, agriculture, and the environment with a combined strength much greater than if any one side of the pyramid stood alone.

Adoption of the EP requires researchers, teachers and Extension professionals and the Fellows to ask four questions when thinking about food, agricultural and environmental issues: 1) Is it economically viable; 2) Is it efficiently productive; 3) Is it environmentally sound; and 4) Will society accept it?

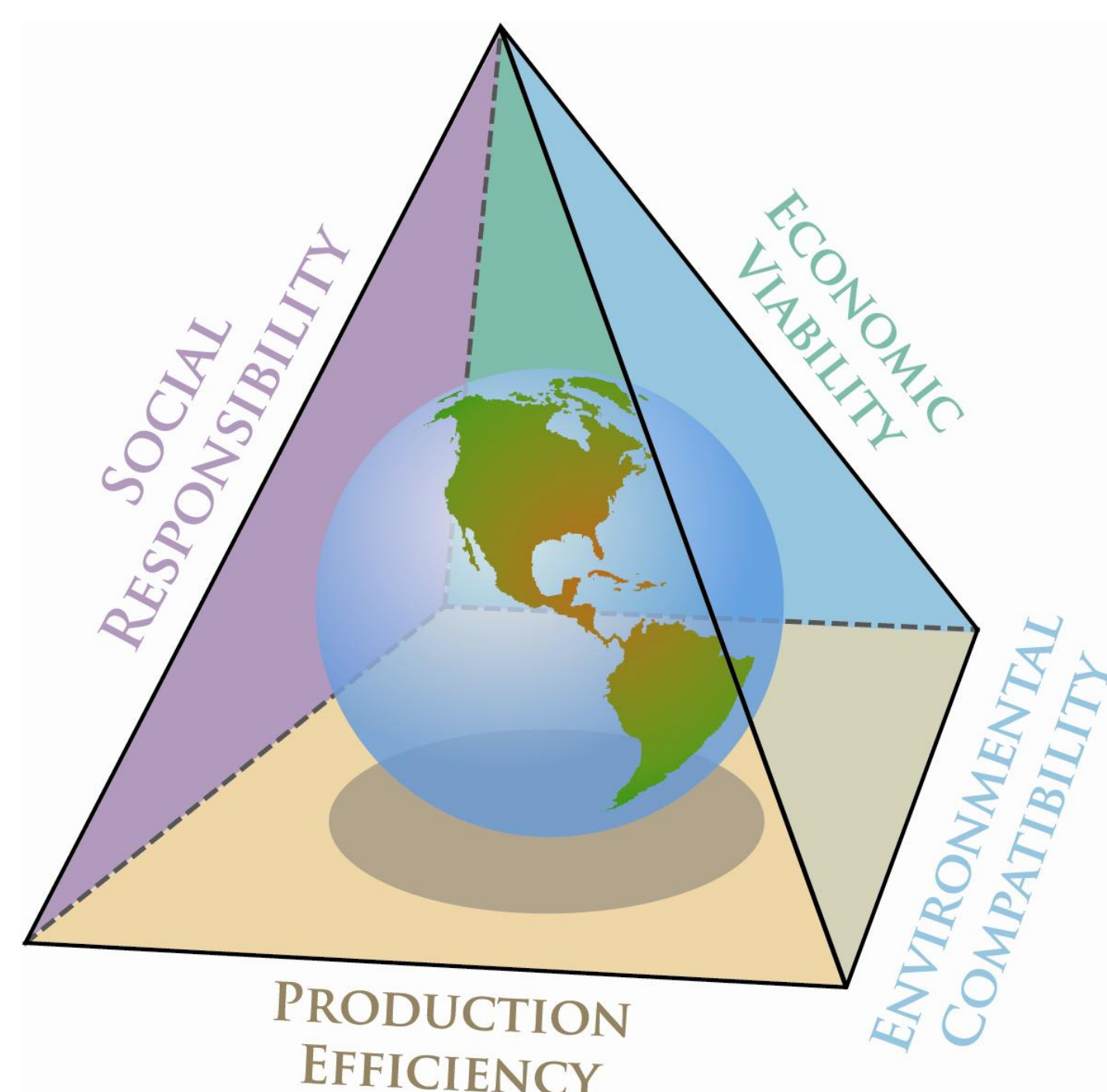


Figure 1. The Ecological Pyramid

Innovative Features

Innovations based on the goal of developing core competencies to successfully pipeline into the workforce include:

- A systems perspective that takes into account the four dimensions of food, agricultural and environmental systems: production efficiency, economic viability, environmental compatibility, and social responsibility to address contemporary and emerging food and agricultural issues;
- Ability to engage in research that is innovative, collaborative and interdisciplinary to address rapidly changing and complex food and agricultural issues;
- Ability to lead, communicate and engage with diverse stakeholders.

Innovative Features of IPPRS:

- Interdisciplinary Coursework and Mentoring
- Interdisciplinary Research Topics
- Experiential Learning and Leadership Development Opportunities

The IPPRS Training Model

To address the USDA-NIFA national need in the sustainable sciences a comprehensive model guides the IPPRS training program. The model builds on the existing Rural Sociology program's core curriculum by incorporating interdisciplinary coursework in the four dimensions of food, agricultural and environmental sciences. Fellows have frequent and interdisciplinary mentoring and the opportunity to engage in experiential learning and leadership opportunities. These innovations greatly enhance the competencies of future food and agricultural scholars for leadership roles in academia and wider policy contexts in the sustainable sciences.

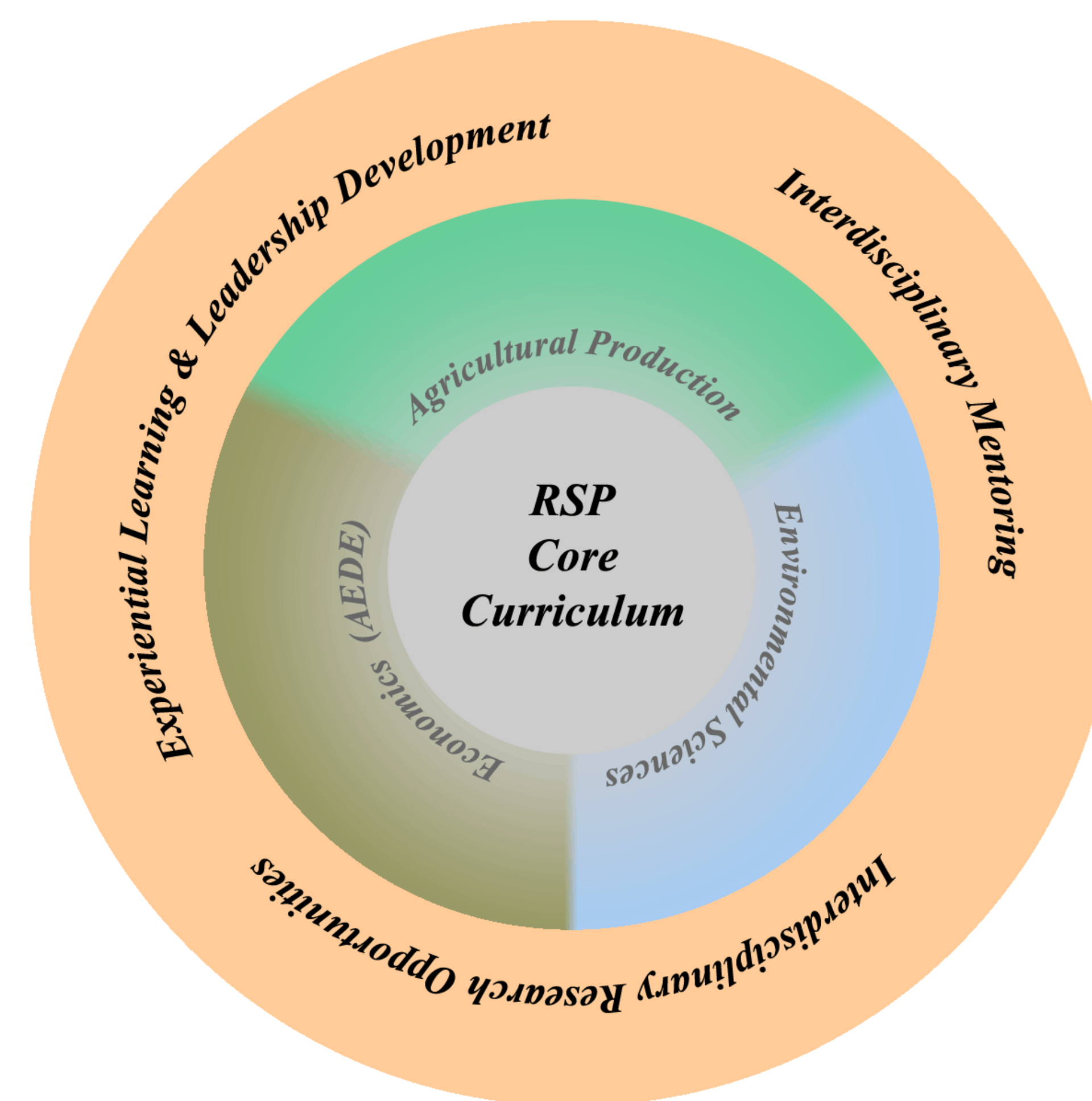


Figure 2. The IPPRS Training Model

Outcomes

The expected outcomes of the training program are:

Outcome #1:	Fellows Develop a Theoretical Understanding of Sustainable Sciences Research within an Interdisciplinary Framework
Outcome #2:	Fellows Develop Applied Understanding of Sustainable Sciences within an Interdisciplinary Framework
Outcome #3:	Fellows Grow and Develop Professionally

Table 1. Expected IPPRS Outcomes

Activities and Output

Experiential Internships:

Appalachian Coal Country Watershed Team, Beckley, WV (doctoral)
Mid-Ohio Regional Planning Commission, Columbus, OH (master's)
Ohio State University's Waterman Dairy Farm, Columbus, OH (master's)
Ohio Department of Agriculture, Reynoldsburg, OH (master's and doctoral)
Ohio Ecological Food and Farming Association, Columbus, OH (master's)

Research Presentations:

Barton, J. 2010. "Agricultural and Food System Economic Development in Ohio." Rural Sociological Society, Atlanta, GA

Som Castellano, R. 2010. "Examining the Immigrant Experience in the School Food Environment." Agriculture and Human Values, Bloomington, IN.

Som Castellano, R. 2010. "Bursting the Local Foods Bubble? An Examination of Potential Obstacles Facing Food System Localization." Rural Sociological Society, Atlanta, GA.

The Fellows



Dissemination of Accomplishments

As a unique training opportunity the IPPRS serves as a model or catalyst for the development of an on-going program focused on the sustainable sciences at The Ohio State University and other institutions. Fellow accomplishments and the impact of the training program is disseminated via a number of channels including a special link on the Social Responsibility Initiative's website. Fellow updates and scholarly accomplishments are included in the quarterly SRI publication, *Highlights*. This publication is distributed widely across campus and among Ohio food, farming and environmental organizations and policymakers. The publication is also shared with USDA-NIFA. Research outcomes are presented at scholarly meetings.

References

- Bradshaw, G.A. and M. Bekoff. 2001. "Ecology and Social Responsibility: The Reembodiment of Science." *Trends in Ecology & Evolution* 16(8): 460-465.
- Moser, B.D. "An Agricultural Call to Arms: Addressing Society's Concerns." Available on-line at: <http://ohioline.osu.edu/paradigm/a0.pdf>

Contact Information

For more information on this training program, visit:

<http://sri.osu.edu/usda.php>



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