As part of the JAFSCD sponsorship package, MFSI is eligible for sponsorship advertising and guest editorial space (Corry Bregendahl provided an editorial). Along with this collaboration with NAFSN come opportunities to connect with a wide variety of people engaged in similar work to MFSI.

New publications and cool tools
The Local Foods Team prepared numerous publications to support professional staff and members of the public in promoting local food production and sales in Iowa. All are readily available on the Leopold Center website.

- **Local Food System Toolkit #2: Managing Cash Flow for a Low-Capital Food Hub Start-up**
  This toolkit explains the concept of cash flow and how food hub managers can use it to their advantage.
  [www.leopold.iastate.edu/low-capital-food-hub-startup](www.leopold.iastate.edu/low-capital-food-hub-startup)

- **Iowa CSA Farms**
  This directory lists 88 community supported agriculture (CSA) enterprises serving Iowa.
  [www.leopold.iastate.edu/2015-iowa-csa-farms](www.leopold.iastate.edu/2015-iowa-csa-farms)

- **Food Hub Development in Iowa**
  This is the first coordinated study of food hub development in Iowa.

- **Supporting Local Food System Development in Your Community**
  This toolkit offers guidance in helping organize and promote the development of a local food system in your community.
  [www.leopold.iastate.edu/supporting-local-food-development](www.leopold.iastate.edu/supporting-local-food-development)

- **2014 Local Food Champions**
  Here are nine profiles of local food champions who support development of local food systems in Iowa.

- **Best Practices of the Regional Food Systems Working Group**
  This document from the Regional Food Systems Working Group outlines some of the best practices for developing a local food system.
  [www.leopold.iastate.edu/BestPractices-RFSWG](www.leopold.iastate.edu/BestPractices-RFSWG)

- **2013 Economic Impacts of Iowa’s Regional Food Systems Working Group**
  This report offers a two-year look at the statewide impact of the local foods sector on Iowa’s economy, based on the efforts of the Regional Food Systems Working Group.
  [www.leopold.iastate.edu/2013-Economic-Impacts-RFSWG](www.leopold.iastate.edu/2013-Economic-Impacts-RFSWG)

- **Impact Brief: 2013 Economic Impacts of Iowa’s Regional Food Systems Working Group**
  This is a summary of the larger report: 2013 Economic Impacts of Iowa’s Regional Food Systems Working Group.
  [www.leopold.iastate.edu/2013-Economic-Impacts-RFSWG-brief](www.leopold.iastate.edu/2013-Economic-Impacts-RFSWG-brief)

- **Funding Opportunities in Local Foods**
  This compilation presents information about federal, state and private grant programs available as funding sources for development of local food systems.
  [www.leopold.iastate.edu/funding-opportunities-in-local-foods](www.leopold.iastate.edu/funding-opportunities-in-local-foods)

- **Shared-use Kitchen Planning Toolkit**
  This toolkit offers guidance in starting a shared-use kitchen for new and existing value-added food production entrepreneurs, farmers and caterers.
  [www.leopold.iastate.edu/shared-use-kitchen-toolkit](www.leopold.iastate.edu/shared-use-kitchen-toolkit)

- **Local Food Coordinators**
  This publication provides resources for development of a local foods coordinator position, complete with a position description.
  [www.leopold.iastate.edu/local-food-coordinators](www.leopold.iastate.edu/local-food-coordinators)

- **Local Food System Toolkit 1: Developing a Worksite Food Box Program**
  This toolkit provides guidance for creating a program of pre-packed food boxes delivered weekly and picked up by employees at their workplaces.
  [www.leopold.iastate.edu/worksite-toolkit](www.leopold.iastate.edu/worksite-toolkit)

- **Production Planning for Aggregators**
  This guide is designed for aggregators—businesses and organizations that create a single sales outlet through which large-volume buyers can purchase products from several local farmers.
  [www.leopold.iastate.edu/production-planning-aggregators](www.leopold.iastate.edu/production-planning-aggregators)

- **Machinery Sharing Manual for Fruit and Vegetable Growers**
  This manual discusses operational and organizational issues related to sharing farm machinery for fruit and vegetable production.
  [www.leopold.iastate.edu/machinery-sharing-manual](www.leopold.iastate.edu/machinery-sharing-manual)
The Leopold Center’s Policy Initiative supports research on local, state or regional policies that affect the sustainability of natural resources and Iowa agriculture. It also supports policy-related aspects of work being conducted by the other initiatives, but does no public advocacy or promotion of specific policy alternatives. Initiative activities were managed by Mary Adams, outreach and policy coordinator.

### Sustainable Agricultural Land Tenure (SALT) Initiative

The Sustainable Agricultural Land Tenure (SALT) Initiative is a long-running joint project of the Leopold Center and the Drake Agricultural Law Center in Des Moines. SALT uses a variety of tactics to educate landowners, farmers, their advisors and policy makers on sustainable land tenure arrangements and conducts research on developing land tenure issues that affect Iowa’s sustainability and resiliency.

Leopold Center support has been provided through previous strategic investments, competitive grants and Policy Initiative infrastructure funds.

### Impact of extreme climate events on land tenure arrangements

Sociologist Jean Eells completed 18 interviews with farmers and landowners to learn how their land tenure arrangements have been affected and whether there are any efforts to use tenure arrangements to mitigate the impact of extreme weather events. Drake Law graduate Ellen Essman researched the role of public policy – in particular, crop insurance – in mitigating the negative impact of climate extremes.

### The legal rights and duties of entity ownership of Iowa farm land and the next generation of landowners

Drake staff worked with the Allamakee County Watershed Coordinator, Sara Berges, to conduct interviews with four farmers to develop “legacy plans,” which provide a brief history of the land use for the farmer’s land, information and maps describing potential conservation concerns for the land, the farmer’s wishes and advice for the land when owned by family members who are unlikely to farm the land themselves.


The Drake Ag Law Center hosted an April 2015 gathering of 25 invited participants who discussed family disputes, multi-entity business structures, tax and estate planning, trust management, legal ethics and more. Participants, mainly attorneys, shared their experiences and identified the key issues in Iowa, discussed the range of legal questions being presented and their implications for farm families, and suggested possible solutions.

### Outreach

Outreach for SALT research and publications included presentations on implementing sustainable farm lease arrangements delivered to more than 140 farm land owners at an ISU Extension and Outreach landowner seminar in Altoona, a landowner conference hosted by Agren in Carroll, and a women landowners group in Dallas County. In 2014 Edward Cox presented SALT resources to women landowners in Iowa City.
at a Women, Land, and Legacy meeting; Extension Energy Summit in Ames for Extension personnel from across the country; and American Farmland Trust Conference in Lexington, KY to farmers, landowners and service providers.

SALT infrastructure funds were used to provide educational resources on flash drives for more than 170 participants at the first National Farmer Veteran Stakeholder Conference at Drake University. The event was hosted by the Agricultural Law Center in partnership with the Farmer Veteran Coalition in November 2014. The flash drives included 50 resources from organizations around the country, including a copy of the Landowners Guide to Sustainable Farm Leasing as well as five other useful documents from the Leopold Center. (All of the resources are available on the SALT website: www.sustainablefarmlease.org.)

“Protecting Iowa’s Land Legacy: Soil and water conservation policy - Past, present and future”
This conference is scheduled for November 19-20, 2015 at Drake University. Co-sponsors (with Drake and the Leopold Center) include Wells Fargo, the USDA Natural Resources Conservation Service-Iowa, USDA ARS National Laboratory for Agriculture and the Environment, the Iowa Natural Heritage Foundation, Practical Farmers of Iowa, the Iowa League of Cities, Soil and Water Conservation Society, the Iowa Soybean Association, the Iowa Water Center, the Lillian Goldman Charitable Trust, and Dickinson Mackaman Tyler & Hagen, PC. The conference was preceded by a series of regional workshops in spring and summer 2015 to identify the most critical conservation policy issues to be considered at the conference.
Agroecological farming systems work
The Cross-Cutting Initiative approach to systems agriculture acknowledges the dynamic nature of agroecosystems. These systems exhibit a high degree of diversity, are more complex, require higher levels of management, and their sustainability relies on their ability to adapt to future challenges. Therefore, agroecological systems research takes time and money…and still more time to achieve acceptance and adoption.

The Leopold Center, most recently through the Cross-Cutting Initiative programming, has been a primary sponsor of two long-term research projects that have their roots grounded in systems agriculture.

- The Long-Term Agroecological Research (LTAR) Experiment

This project uses established experiments, each with a unique crop rotation and management history, to look at long-term impacts of changes in soil microbiology on soil health. Its three research sites are the Long-Term Agroecological Research (LTAR) Experiment established in 1998 near Greenfield, the USDA-ARS Organic Water Quality site on the ISU Agronomy Research Farm in Boone County in its third year, and the Organic Reduced-Tillage site in its seventh year, and also located on the ISU Agronomy Research Farm. This unique program uses a multidisciplinary approach to analyze many of the system’s comprehensive components (productivity, soil health, pest status and economics). At the same time, it links the different crops used within each rotation and cropping system in a single year, which is important for conducting long-term annual analyses of the system’s performance. The findings from this extended research have supplied crucial information on the processes that create better soil quality in organic systems, which in turn can create competitive economic returns while maintaining or improving yields when compared to the modern conventional agricultural practices. Continued funding of this project will support additional soil and water sampling as well as development of Best Management Practices guides based on these research results.

- Impacts of contrasting rotation systems and weed management regimes on weed dynamics and agroecosystem

This project uses data from a 22-acre cropping systems experiment at the ISU’s Marsden Farm to investigate differences in crop yields, soil properties, pathogen dynamics, agrichemical and energy use, production costs and net returns and selected ecological impacts. The plots compare three rotations: conventional 2-year rotation of corn-soybean and two more diverse systems—a 3-year corn-soybean-oat + red clover rotation and a 4-yr corn-soybean-oat + alfalfa-alfalfa rotation.
Previous findings from this long-term project showed that diversified crop production yields significant reductions in:

- soybean disease incidence and severity,
- aquatic toxicity, and
- fossil energy use,

as well as improvements in:

- crop yields,
- soil organic matter and potentially useable nitrogen (N) for crops, and
- net profitability.

This research has shown that weeds were suppressed as effectively in the longer rotations as in the two-year rotation. This was attributed to declining soil seedbanks and negligible weed biomass in the longer rotations, yet herbicide inputs in these plots were six to 10 times less. New funding for this project will build on the prior work while providing additional knowledge about weed seedbank dynamics.

It also will investigate how herbicide regimes affect fossil energy inputs, greenhouse gas emissions, ozone formation and factors in Life Cycle Assessment (LCA).

**Energy and indirect climate work**

Two years of support for the dynamic University of Iowa Biomass Partnership project (with the Cross-Cutting Initiative serving as the primary funder) ended in 2015. The working group partners from UI and ISU designed and implemented a project that demonstrated how Iowa could generate renewable energy while simultaneously improving environmental performance (soil, water, wildlife habitat) and benefiting the people who live and work in the area.

The working group oversaw the planting of Giant Miscanthus (*Miscanthus x giganteus*) test plots and subsequently established two pilot fields in Muscatine and Johnson counties. Additional production plots were planted in 2015, advancing the project to a commercial scale. More than 350 acres of *Miscanthus* were planted with a goal of 2,500 acres of *Miscanthus* in the ground by 2016. In July 2015, the University of Iowa was honored with the Iowa Governor’s Award for Environmental Excellence for its initiative using a locally available grass to reduce the university’s carbon footprint.

Following the successful introduction of *Miscanthus* in eastern Iowa, a 2015 Cross-Cutting Initiative grant will help activate a new research program at ISU, the Long-term Assessment of *Miscanthus* Productivity and Sustainability, or LAMPS. It builds on work by the University of Iowa’s Biomass Partnership Project and will use a field-based approach to address the challenges facing *Miscanthus* establishment and production. The overall objective is to answer basic and applied research questions by fostering collaborative efforts among bioenergy researchers at ISU and UI. The field-scale experiment will provide producers with practical production information while developing best management practices (BMPs) for maintaining productive *Miscanthus* stands.
The Leopold Center funds a wide variety of research, education and demonstration projects aimed at increasing the sustainability of Iowa agriculture. The projects are selected after a competitive process that includes a Request for Pre-proposals (RFP) in June, multiple reviews and assessment of full proposals submitted in November and awarding of funds in January.

NEW \textsuperscript{\textcircled{a}}. Crop diversity effects on soil organic matter and nitrate retention in surface and subsoils, 2 years  
M. Castellano, ISU agronomy  
This research looks at what happens deep within the soil profile (2-3 ft. below the surface) when alfalfa is added to the typical corn-soybean rotation. The key question is whether an extended rotation improves the soil’s ability to store carbon and organic matter at lower depths, making the soil more resilient to drought and to soil erosion and nutrient losses after heavy rainfall.

NEW \textsuperscript{\textcircled{a}}. Economic impacts of soil erosion in Iowa, 1 year (ending)  
R. Cruse, ISU agronomy; M. Shelley, ISU statistics; C. Burras, ISU agronomy; J. Tyndall, ISU natural resource ecology and management; and M. Miller, ISU agronomy  
This study aims to quantify soil erosion and topsoil depth lost across Iowa’s HUC 12 watershed regions, determine how these values correspond to lost corn and soybean yield, and estimate the economic value of this loss.

NEW \textsuperscript{\textcircled{a}}. Blurring the lines between working and conservation lands: Enhancing bird and pollinator habitat using prairie strips, 3 years  
L. Schulte Moore and M. Harris, ISU natural resource ecology and management  
This project examines how birds and pollinators respond to prairie strips planted on commercial farm fields. Data on bird response will be collected via autonomous recording units, auditory and visual bird surveys, and nest searching and monitoring. Bee species richness and diversity data will be gathered using pan traps, blue vane traps and sweep netting.

NEW \textsuperscript{\textcircled{a}}. Grazing prairie: Improving species diversity while maintaining cattle and goat productivity and resting home pastures, 4 years, (extended)  
D. Ryan and L. Appelgate, Iowa Heartland Resource Conservation and Development, Ankeny; L. Lown, Natural Resources Specialist, Resource Conservation and Development, and A. Basche, ISU agronomy  
The investigators organized farmer focus groups to discuss modeling predictions about the long-term costs and benefits of cover crops in corn-soybean rotations. These discussions are yielding information about farmer perceptions of cover crops, the likelihood of farmers adopting this conservation practice, and the barriers to adoption.

NEW \textsuperscript{\textcircled{a}}. Impacts of landscape and on-farm diversity on the abundance and health of bee pollinators, 3 years  
A. Toth and A. Dolezal, ISU ecology, evolution and organismal biology; M. O’Neal and E. Hodgson, ISU entomology  
The goal of this project is to better understand how agricultural landscape diversity and approaches to pest management impact the health of native bees and other pollinators. The experiment considers bee health in the context of landscape diversity, examining bees in both conventional row-crop systems and farms growing fruit and vegetables for Community Supported Agriculture (CSA) enterprises.

NEW \textsuperscript{\textcircled{a}}. Improving soil health and water quality through better soil phosphorus assessment and management practices, 2 years  
A. Mallarino, ISU agronomy and M. Helmers, ISU agricultural and biosystems engineering  
This research assesses the value of no-till and subsurface-banded applications of phosphorus fertilizer, especially as they relate to surface runoff. The information will be used to improve soil test recommendations for farmers.
**NEW**. Prairie contour strips: Demonstrating the importance of custom seed mix for biological integrity, 2 years
L. Jackson, biology, University of Northern Iowa, Cedar Falls
This project seeks to create a community of practice among prairie restoration specialists, technical service providers and landowners and land managers that is focused on prairie contour strips. Through its Prairies on Farm Project, the Tallgrass Prairie Center hopes this network can establish demonstration sites on farms and develop educational materials, including an online seed mix calculator, that will lead to broader awareness and use of prairie and prairie contour strips in Iowa.

Predicting long-term cover crop impacts on soil quality using a cropping systems model, 1 year, (extended)
F. Miquez, S. Archontoulis and A. Basche, ISU agronomy
This project monitored crops and soils at a corn-soybean field site with a winter rye cover crop to provide information for a process-based model, APSIM. The model eventually is expected to facilitate use of cover crops in Iowa by providing improved understanding of crop production/cover crop management under Iowa soil and climate conditions.

Winter rye cover crop effect on corn seedling pathogens, 3 years (extended)
T. Kaspar and T. Moorman, USDA-ARS National Laboratory for Agriculture and the Environment
While cover crops are an excellent management tool for sustainable agriculture, decreases in corn yield have been observed following winter rye cover crops. This project tests the hypothesis that glyphosate-killed rye cover crops are hosts for corn seedling pathogens. There were studies in a controlled environment and on-farm field studies, as well as testing of management strategies to prevent or minimize corn yield decreases.

Quantifying nitrogen credits and impacts of cover crops on soil biology and health in vegetable cropping systems in Iowa, 1 year (extended)
A. Nair, ISU horticulture extension; K. Delate, ISU horticulture and agronomy; C. Bregendahl, Leopold Center for Sustainable Agriculture; G. Artz, ISU economics
The study collected data on cover crop nitrogen credits, nitrogen scavenging capacity, biomass generation capability, weed suppression properties and effects on soil quality and health in vegetable cropping systems. It also surveyed traditional crops (cereal rye, oats) and nontraditional cover crops (brassicas, mustards, peas, clovers, etc.). Cost-benefit analyses and enterprise budgets will be created for different cover crop types.

**NEW**. A smartphone-based device for measuring soil organic matter, 1 year
M. Lu, ISU mechanical engineering and electrical and computer engineering; R. Cruse, ISU agronomy
The researcher proposes to develop, calibrate and pilot a camera and software system for smartphones that allows users to rapidly measure soil organic matter (SOM) content in the field. The pilot project will test data from the smartphone device against lab-based soil analysis to improve the accuracy of its calculating software.

Understanding microbial contributions to soil aggregation and organic matter accumulation, 1 year (ending)
K. Hofmockel and E. Bach, ISU ecology, evolution and organismal biology
The investigators characterized soil bacterial and fungal communities and the rates at which they break down plant-derived carbon in soil from three different farming systems: continuous corn, prairie and fertilized prairie. This project continues work started by the Comparison of Biofuel Systems (COBS) group.

Management and performance of Iowa cover crops, 1 year (extended)
J. Comito, Iowa Learning Farms; M. Helmers, ISU agricultural and biosystems engineering; J. Benning, ISU sociology; and T. Kaspar, USDA-ARS National Laboratory for Agriculture and the Environment, Ames
This Iowa Learning Farms project continues the efforts of the Iowa Cover Crops Working Group to determine long-term soil quality and crop yield changes resulting from planting cover crops on farms. The grant supports the 2014 cover crop planting on seven farmer-partner sites, as well as data collection on soil quality and crop yield indicators for fall 2014 and spring 2015.

Use of grazing management to mitigate greenhouse gas emissions while increasing soil organic matter and water holding capacity of cool season pastures in southern Iowa, 3 years (ending)
J. Russell, ISU animal science; W. Powers, Michigan State University; and T. Isenhart, ISU natural resource ecology and management
The chief investigator’s long-term goal is to quantify the effects of grazing management on the flux of major greenhouse gases, and assess the relationships among greenhouse gases, soil organic carbon sequestration, botanical and chemical composition of vegetation, and physical characteristics of soil in southern Iowa grasslands. The grazing systems compared are continuous stocking, rotational stocking and mob-stocking.
Quantifying the effect of perennial vegetation on soil and water quality, 3 years, (extended)
T. Isenhart and R. Schultz, ISU natural resource ecology and management, and K. Schilling, Iowa Department of Natural Resources
The investigators are using data from a well-established research site (Bear Creek in Story County) to interpret the influence of perennial vegetation on soil biogeochemical processes. The information will be used to develop a tool to assess the potential impact of changes in land use on the quality of stream water.

Integrating project knowledge and models:
The next step in developing a Payment for Ecosystem Services scheme for the Big Creek watershed, 1 year, (extended)
L. Schulte-Moore, J. Tyndall and T. Isenhart, ISU natural resource ecology and management; J. Gordon Arbuckle, ISU sociology; K. Franz, ISU geological and atmospheric sciences; E. Heaton and M. Liebman, ISU agronomy; and M. Helmers, ISU agricultural and biosystems engineering
The investigators will further the development of a pilot Payment for Ecosystem Services (PES) framework. Focusing on central Iowa, they will integrate data and knowledge from prior research in the Big Creek watershed in preparation for using an ecosystem services model called InVEST. Widely used outside of Iowa, this model is popular for its capacity to link providers (farmers, landowners) with beneficiaries (the public) by estimating the dollar value of multiple ecosystem services.

MARKETING AND FOOD SYSTEMS INITIATIVE
The Marketing and Food Systems Initiative funded five pre-proposals received from the Summer 2014 RFP. One project received an extension to complete its work.

New Marketing Initiative grants – FY2015
- Total amount awarded – $125,565
- Total number of projects – 5

Agricultural Urbanism Toolkit, 1 year
N. Anderson, ISU Extension and Outreach; and C. Long, ISU Community Design Laboratory
The investigators will collaborate with several Iowa communities to identify food system resources and needs for an agricultural urbanism toolkit. Issues such as health, walkability and transportation, equity, and business development and connectivity will be addressed, with the goal of connecting urban and rural food systems.

NEW - Agricultural Urbanism Toolkit, Years 2+3, 2 years
N. Anderson, ISU Extension and Outreach; C. Rogers and C. Long, ISU Community Design Laboratory
This project will expand use of the Agricultural Urbanism Toolkit created in 2014. Team members worked in three Iowa communities – Cedar Rapids, Cresco and Des Moines – in a year-long strategic planning process to understand and create a holistic food system that connects urban, rural, local and regional efforts to promote food accessibility in each community. The team will continue to work with the three pilot communities and establish the program in three new Iowa communities.

NEW - Building producer capacity for institutional food distribution, 2 years
M. Temeyer, Black Hawk County, ISU Extension and Outreach
Investigators will plan and develop a series of workshops to build the capacity of Cedar Valley producers to supply institutional markets in the region such as the University of Northern Iowa, supermarkets and a new Cedar Falls Food Co-op. The workshops will cover price negotiations, identifying crops, online ordering systems, food safety training, business planning and management. They hope to engage Burmese refugees with agrarian backgrounds who have settled in the region and have expressed interest in farm business development.

Increasing the capacity of a local food hub to service the public school market, 1 year
T. Wiemerslage, Northeast Iowa Program and Communications Coordinator, ISU Extension and Outreach
The investigator will continue work in the northeast Iowa region focusing on bringing local foods to schools. This project will team with the Northeast Iowa Food Hub to double the current amount of local food purchases in four school districts. Objectives include finding accessible prices for farms, processors and schools; finding models and methods that create networks between farms and schools; and creating distribution models that include schools and leverage existing resources.

NEW - Increasing local food consumption in rural communities by partnering with non-traditional food retailers, 1 year
N. Mabe, Iowa Food Hub, Decorah
The food hub will work with non-traditional retailers, such as meat lockers, feed stores and seasonal tourism attractions, to increase the access to local, healthy foods, especially fruits and vegetables. A new part-time marketing and sales assistant will help those retailers identify and market those foods in four rural communities with limited access to fresh foods.
Machinery management for small- and medium-sized horticultural farms, 2 years
G. Artz and W. Edwards, ISU economics, and D. Jarboe, ISU Center for Crops Utilization Research and BioCentury Research Farm
The investigators will design and implement a survey of Iowa fruit and vegetable growers and develop a set of case study interviews with growers who have expanded their operations. The knowledge gained will be used to develop a user-friendly decision tool and educational materials to help growers who face a variety of machinery-related challenges.

Market development and logistics for local food distribution in the Cedar Valley, 1 year
R. Wobeter, Local Food Program, University of Northern Iowa, Cedar Falls
This project will expand the reach of local foods in the Cedar Valley region by establishing a worksite community supported agriculture (CSA) program supplied by the Iowa Food Hub. The investigator will identify staff interested in managing the local food distribution site, institutional buyers who can access local food through the site, and area food purchasers and producers who may profit from awareness of local foods options and accessibility through the project.

NEW ✔ Supply chain management for Iowa regional food systems, 2 years
C. Krejci, ISU industrial and manufacturing systems engineering, A. Shaw, ISU food science and human nutrition
Investigators will work with two food hubs in Iowa and one logistics provider to apply supply chain management and food safety principles and methodologies to their operations. Partners include the Iowa Food Hub in Decorah, the Iowa Food Cooperative in Des Moines and FarmTable Procurement based in Harlan, Iowa. They will analyze inbound and outbound logistics and aggregation/staging activities to maintain food safety and quality and increase efficiency.

POLICY INITIATIVE
The Policy Research Initiative funded two proposals received from the Summer 2014 RFP. Two other grants completed a second year of operation.

New Policy Initiative grants – FY2015
✔ Total amount awarded – $84,500
✔ Total number of projects – 2

NEW ✔ Protecting Iowa’s land legacy: Soil and water conservation policy – past, present and future, 1 year
N. Hamilton and M. Russell, Agricultural Law Center, Drake University, Des Moines
Through the Sustainable Agricultural Land Tenure (SALT) Initiative, investigators will produce a “Legacy Report” for farmers, landowners and their legal advisors that illustrates how property is passed on to the next generation of farm owners, particularly by identifying current and best land management practices that emphasize sustainability and resilience of the land’s resources. The project will identify sustainable land management options relevant to the specific property being passed on, and create legal resources for courts to rely on to aid cases involving farmland resource mismanagement.
CROSS-CUTTING INITIATIVE

The Cross-Cutting Initiative funded five pre-proposals received from the Summer 2014 RFP. Another five projects were renewed for a second or third year of funding or given extensions to complete their work.

New Cross-Cutting Initiative grants – FY2015
- Total amount awarded – $151,310
- Total number of projects – 5

Attracting pollinators and natural enemies to add value to Iowa agriculture, 3 years
M. O’Neal and D. Lewis, ISU entomology; M. Gleason, ISU plant pathology and microbiology; C. Haynes, ISU horticulture and agriculture education; A. Joseph, Iowa Department of Agriculture and Land Stewardship; and M. Duffy, ISU economics

The investigators are developing an outreach program to show Iowa stakeholders how they can increase the ecosystem services of wild pollinators and natural pest enemies. They will implement a paired-comparison experiment on five ISU farms throughout the state to test the hypothesis that adding a refuge of perennial plants attractive to beneficial insects will improve the delivery of ecosystem services to soybean and melon production. They will calculate a partial budget to isolate the effects of the beneficial insects-enhancement treatment on the value of the marketable harvest of muskmelon and soybean.

Food safety, economics and environmental impacts of aquaponics in Iowa, 1 year
D. Pattillo, ISU natural resource ecology and management; K. Rosentrater, ISU agricultural and biosystems engineering; and A. Shaw, ISU food science and human nutrition

The investigators will continue research on aquaponics systems which raise fish and grow herbs and vegetables in a closed loop system that recycles most water and nutrients. The project aims to identify how to eradicate potential disease-causing microorganisms in the system; quantify the economic costs, benefits and other impacts associated with setting up the system; and document the environmental impacts associated with the system.

Linking soil and water quality with crop performance across a continuum of tillage and management strategies, Years 2 and 3, 2 years
K. Delate, ISU agronomy and horticulture; C. Cambardella and M. Bakker, USDA-ARS National Laboratory for Agriculture and the Environment, Ames; A. Johanns, ISU Extension and Outreach, Osage

This project uses established experiments, each with a unique crop rotation and management history, to look at long-term impacts of changes in soil microbiology on soil health. The three sites are the Long-Term Agroecological Research (LTAR) Experiment established in 1998 near Greenfield, the USDA-ARS Organic Water Quality site on the ISU Agronomy Research Farm in Boone County in its third year, and the Organic Reduced-Tillage site in its seventh year, also on the ISU Agronomy Farm. Additional soil and water samples will be collected as part of this grant, as well as development of Best Management Practices guides based on research results.

NEW – Long-term assessment of miscanthus productivity and sustainability (LAMPS), 2 years
E. Heaton, N. Boersma, and C. Bonin, ISU agronomy; I. Anderson, University of Iowa

This new research program, the Long-term Assessment of Miscanthus Productivity and Sustainability (LAMPS), builds on work by the University of Iowa’s Biomass Partnership Project. The UI 2020 goal of 40 percent renewable energy could be met by burning sustainably produced biomass with fossil fuels in the University’s power plant. Investigators plan to establish miscanthus fields at sites in northwest and central Iowa, in addition to the initial 15-acre field near Iowa City in southeastern Iowa.
NEW  Sustainably growing Iowa’s beef herds: Evaluating systems that provide economic opportunities while protecting soil and water resources, 3 years
H. J. Sellers, ISU Extension and Outreach; L. Schulz, ISU economics; P. Gunn, ISU animal science
Investigators will work with 24 beef producers using one of three grazing systems: traditional grazing, extensive grazing and limited grazing. Using benchmark data, they will analyze the environmental and economic sustainability of each model as well as the risk-bearing ability of each system. They will create case studies of practices for successful operations in each system to share with Iowa cow-calf producers.

NEW  Budgeting for organic dairying, 1 year
L. Tranel, ISU Extension and Outreach, Dubuque
The investigator is working with producers in the Organic Valley Cooperative to develop seven organic dairy budgets that will allow users to compare various organic systems based on milk production, feeding levels and breed. The new materials will be explained in a recorded presentation and used at pasture walks and various dairy producer meetings.
join us in preserving our natural resources

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306 pounds solid waste not generated
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3 million BTUs energy not consumed

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He plants trees to benefit another generation. - Caecilius Statius