New grant projects for 2016

The Leopold Center for Sustainable Agriculture is providing funds for 17 new research and demonstration projects to begin this year. The grants will aid in the advancement of sustainable agriculture while protecting Iowa’s soil and water and also help Iowa citizens increase the availability of nutritious and locally-grown foods.

The 17 new grants, totaling $1,104,946, fall under the Leopold Center’s research initiatives – Ecology, Marketing and Food Systems, Policy, and Cross-Cutting. Some of the research project topics include: soil health in crops grown for biofuels, antibacterial seed treatments, how swine manure affects antibiotic resistance in bacteria, work with regional food hubs, and grazing, grasslands, and cover crops.

The grant projects that are awarded this year are diverse but they all have the over-arching theme of ways to make soil, crops and food better,” said Leopold Center director Mark Rasmussen. “The Leopold Center is here to help people find ways to improve agricultural systems as well as food availability and quality.”

The grants vary in length; six projects are for one year, six will be done over two years and five projects extend for three years. In addition to these new projects, work continues on other multi-year projects supported by the long-running competitive grants program. The new grants bring the Center’s current-year research commitments to $1.4 million.

Grazing cattle: more than just eating grass

Two grants, completed at the end of 2015, explore ways to improve pastureland health. One grant, begun in 2012, looked at short-term mob grazing to improve grassland productivity. The second grant researched the impact of patch-burning to manage tall fescue in grazing land. Both research projects had similar goals of providing a win-win situation to improve habitat for wildlife while enhancing grazing options for cattle producers.

The project “Enhancing botanical composition, wildlife habitat, and carbon sequestration of pastures in south central Iowa through soil disturbance by mob grazing of beef cattle” (E2011-06) was led by James Russell, Iowa State University animal science professor.

Mob grazing is the act of moving a number of cattle to a concentrated pasture area, where they graze heavily for a short time period, and then moving them to another pasture area, allowing the grazed portion to rest and regenerate. Russell wanted to examine the effects that mob grazing might have on plant diversity, carbon sequestration, wildlife habitat, and water infiltration.

The research area was located in south central Iowa, where rolling hills and highly erodible land are less suitable for row crops and better for livestock. Russell used high densities of cattle grazing for shorter time periods to see if there would be changes in perennial plant diversity including the establishment of legumes and annual grasses. Plant diversity helps with livestock production, increases
Research Results

On the Web: www.leopold.iastate.edu/news/results

Summaries of recently completed research projects are now available on the Leopold Center website:

- Linking soil and water quality with crop performance across a continuum of tillage and management strategies: Enhancing sustainability through soil health-promoting practices (part one of a three-year program)
- Suitability of winter canola (Brassica napus) for enhancing summer annual crop rotations in Iowa II: Economic analysis
- “Cultivating” conservation: Bringing ecology, economics and ethics together
- Understanding microbial contributions to soil aggregation and organic matter accumulation
- Soil health and productivity in riparian grass buffers: A re-evaluation after 13 years

The first Soil Health Conference was held at the Scheman Building at ISU, Feb. 2-3. The Leopold Center supported the conference with a grant from its Competitive Educational Support Program (CESP). Through CESP, the Leopold Center can co-sponsor events, programs, workshops, or conferences that are educational in nature and support the Center’s mission. For details, visit the website: www.leopold.iastate.edu/grants/education

Leopold Center staff hosted the annual breakfast for Iowa legislators on Feb. 23 at the Capitol building in Des Moines. More than 40 lawmakers, staff, and pages stopped to chat and enjoy coffee and pastries. We extend a special thank you to Leopold Center Advisory Board members Bill Ehm, Dale Farnham and Aaron Heley Lehman for their help hosting the breakfast.
Resistance research repeatedly has demonstrated the ability of organisms to find alternative solutions. The inconvenient fact is that life often “finds a way” to frustrate and humble human scientific creativity.

Another impediment is the reality of co-resistance in biology. Organisms frequently develop resistance to more than one compound at a time. When selection pressure is applied with one compound, the target organism often responds in a modular approach and generates resistance to several compounds. This usually stems from the way resistance genes are bundled on DNA segments. Co-resistance complicates attempts to maintain the value of any treatment.

Our standard approaches to resistance have been less than successful. The common first response is to increase the dosage—as if the treatment was a hammer and we only need to pound harder to achieve the desired result. Reliance on increased application rates is one of the reasons why so much more glyphosate is used now. Our second response is to combine treatments to achieve control. This only works until the organism finds a way to resist both treatments. A third approach is to use chemistry to modify the molecule in some way to maintain effectiveness. Success varies depending on the compound.

We have to face the fact that “to use is to lose” the value of these treatments. In many cases, the best we can do is minimize and target use to keep resistance at a low, albeit manageable level. Unfortunately for some treatments, it already is too late and resistance is so pervasive that the drug has been rendered ineffective. In the world of medical microbiology there is concern that we are entering a post-antibiotic era, in which the drugs we rely on will no longer treat even minor ailments. The disturbing prospect is that lives could be lost from a simple scratch on the finger or a minor respiratory infection that advances to life-threatening pneumonia.

Is it too late? We may not be able to easily undo the consequences. The best approach is “judicious use,” which basically means using when appropriate, necessary and effective, and avoiding use when conditions are not applicable or risk making resistance worse. The challenge is in knowing the difference.

However, we do not always follow these prescribed actions. Agriculture is currently using the Q1 fungicides intensively, just like we did with glyphosate. So increasing levels of resistance can be expected. In fact, in the southern U.S., the frogeye leaf spot pathogen is resistant to Q1 fungicides, necessitating the use of older fungicides to protect soybean from yield loss.

Whether the compound is available over the counter or by permit or prescription, we need to be aware and take responsibility. Our decisions to use have an impact beyond “curing” the original problem. Collectively, if we use or abuse any treatment option, we run the risk of forfeiting the benefits it provides to humanity.

We hear rumblings about the rise in antibiotic (or antimicrobial) resistance in bacteria, and weeds that are becoming glyphosate resistant, but the current commentary is only the tip of the iceberg. Looking across the biological spectrum, the rise of resistance is a far more serious problem than we might realize.

Many compounds have been compromised by a developed resistance in targeted organisms. Here is a list of compounds where resistance has become, or is becoming, a serious problem. Note that this list is incomplete as more compounds and resistant organisms continue to be identified.

At one time, nearly all of the listed compounds were hailed as “miracle” compounds that combined serendipitous discovery, clever insight, and diligent development, and garnered widespread accolades. The 2015 Nobel Prize in Physiology or Medicine was awarded to William C. Campbell and Satoshi Omura for their discovery of avermectins as treatments for roundworm parasite, and also to Youyou Tu for her discovery that artemisinin could treat Malaria. Many of these compounds have helped control important pests and pathogens that have plagued humans for centuries.

Most work by blocking or disrupting an essential metabolic path in the target organism. This kind of specificity has in most cases proven to be a double-edged sword. The upside of this specificity allows the compound to be used with fewer side effects or less toxicity than older, broad spectrum treatments.

However, specificity also can be a weakness in that these new drugs or compounds block only particular metabolic steps. This specificity allows the target organism to develop effective alternatives and mechanisms of resistance. These mechanisms vary, but may include drug inactivation, receptor modification or alternative pathways that bypass the blockage.

### Table: Compounds and Their Targeted Organisms

<table>
<thead>
<tr>
<th>Compound</th>
<th>Type</th>
<th>Targeted Organism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glyphosate</td>
<td>herbicide</td>
<td>Marestail, Palmer amaranth, other weeds</td>
</tr>
<tr>
<td>Bt proteins</td>
<td>insecticide</td>
<td>European corn borer, Colorado potato beetle, pink bollworm</td>
</tr>
<tr>
<td>Avermectins</td>
<td>parasiticide</td>
<td>Canine heartworm, scabies mite, other parasites</td>
</tr>
<tr>
<td>Methoprene</td>
<td>insecticide</td>
<td>Mosquito, stored grain insects, some fly species</td>
</tr>
<tr>
<td>Atrazine</td>
<td>herbicide</td>
<td>Velvetleaf, lambsquarter</td>
</tr>
<tr>
<td>Tolnaftate</td>
<td>fungicide</td>
<td>Tinea foot fungus, ringworm</td>
</tr>
<tr>
<td>Fluconazole</td>
<td>fungicide</td>
<td>Candida yeast, Aspergillus</td>
</tr>
<tr>
<td>Chloroquine</td>
<td>parasiticide</td>
<td>Malaria parasite</td>
</tr>
<tr>
<td>Artemisinin</td>
<td>parasiticide</td>
<td>Malaria parasite</td>
</tr>
<tr>
<td>Penicillin</td>
<td>antimicrobial</td>
<td>Staphylococcus</td>
</tr>
<tr>
<td>Fluoroquinolones</td>
<td>antimicrobial</td>
<td>Neisseria, Staphylococcus</td>
</tr>
<tr>
<td>Carbapenem</td>
<td>antimicrobial</td>
<td>Enterobacteriaceae</td>
</tr>
</tbody>
</table>

Resistance: Life finds a way
2016 GRANTS (continued from page 1)

Ecology
The Ecology Initiative is funding several new soil health projects for a total cost of $614,514. Topics include biofuels and soil health, microalgae-based fertilizer to reduce loss of nitrogen and phosphorus, restoring organic matter in soil, and others.

Marketing and Food Systems
Four new projects in the Marketing and Food Systems Initiative are receiving $171,514 in competitive grant funding. Topics under this initiative are: food hub expansion in Dubuque, a study of Latino groceries in rural areas, reducing challenges with partnerships and increasing financial expertise for the beginning farmer, and optimizing workflow in regional food hubs.

Policy
The Policy Initiative is supporting a new project grant costing $37,500. The Drake University Agricultural Law Center will evaluate how private conservation initiatives could increase farmer adoption of practices such as no-till, adding cover crops, installing terraces and buffers.

Cross-Cutting
Five new projects in the Cross-Cutting Initiative are receiving $331,806 in grant funding. Topics include: reducing beef cow heat stress, adding winter canola to a corn-soybean rotation, and more.

LEOPOLD CENTER 2016 COMPETITIVE GRANTS

Ecology Initiative
- Soil health in biofuel cropping systems
- Development of field mobile soil nitrate sensor technology
- Microalgae-based fertilizer for nitrogen and phosphorus loss reduction
- What will it take to restore organic matter to Iowa’s soil?
- Bio-based antibacterial seed treatments to improve soil and plant health
- Does increasing landscape diversity in farmed closed depressions (potholes) increase profitability and ecosystem services?
- Investigation of bacterial community structure and antibiotic resistance and genetic mobility abundance in soils fertilized with swine manure

Marketing and Food Systems Initiative
- Investigating feasibility of food hub node expansion in Dubuque, Iowa
- Latino groceries in the rural Midwest: An examination of food security, cultural identity and economics
- Reducing challenges for Iowa’s beginning farmers through partnerships with Iowa financial experts
- Workflow optimization for Iowa regional food hubs

Policy Initiative
- Evaluating how private conservation initiatives may increase farmer adoption of conservation practices

Cross-Cutting Initiative
- Improving economic sustainability of beef cow enterprises in the Midwest by mitigating tall fescue-related heat stress and determining the value of shade in grazing systems
- Climate change adaptation in grassland agroecosystems
- Further investigation of winter canola in order to enhance the sustainability of rotations in Iowa
- Innovative Conservation Agriculture
- Maximizing conservation and return of investment on farms in the Turkey River Watershed

Leopold Center website sporting a new look
Spring is a time for renewal and regeneration and the Leopold Center website is showing off its new look as well. The website has been streamlined to allow for easier navigation and fewer clicks, but still contains a wealth of resources to help showcase research within the Center and the sustainable agriculture community.

The Leopold Center made the transition to the new site due to new software and the large amount of content in the completed grants archives. The archival library had grown to become difficult for our servers to store and retrieve the information in a timely manner. Now, the archived grants—from the Center’s establishment in 1987 through now—are on a new system. The new website will be accessible on mobile devices now as well.

We invite you to explore the new site and to let us know if you can’t find a resource from our old site that you regularly use or if there are features you would like to see.

You can find it at the same URL: www.leopold.iastate.edu

On the Web
Read descriptions of the new projects: www.leopold.iastate.edu/grants/current
Since farmers know all too well that weather is a major player in the success or failure of their operations, they also might be one of the best resources for dealing with the menacing impact of climate change. That insight led Laura Lengnick to write Resilient Agriculture: Cultivating Food Systems for a Changing Climate, a new book outlining practical strategies devised by farmers for mitigating, as well as adapting to, the impacts of climate change. Through interviews with a diverse group of farmers from each bio-region of the United States, she learned how they were coping with the effects that climate change is already having on their farms, as well as how they are anticipating future challenges. In addition, Lengnick provides an insightful context for understanding the complexity of climate change, and how resilience thinking can provide a framework for adaptation and mitigation. Lengnick acknowledges that there is still a deep cultural motivation among farmers to increase food production through “two complementary strategies” — cultivating more acres and increasing crop and livestock yields. Since this two-fold strategy worked so well for so long, it still leads the entire industrial agriculture community to believe that it can overcome the challenges of climate change by continuing on the same path. However, given that our industrial agriculture system emerged during a period of “unusual climate stability” and “unlimited natural, financial, scientific or technological resources” this confidence may be misplaced, because many of those resources are no longer available. Lengnick’s book features a new generation of farmers who have designed alternative approaches. Their approaches may serve as an especially important resource for addressing some of the challenges of climate change. This collection of farmers operates from an alternative culture. They embrace an awareness that “the intensive focus on deep soil preparation and on-farm compost production, combined with resource use reductions, offer significant advantages to both climate change mitigation and adaptation.” (p. 117) In other words, these farmers who found that regenerative, resilient farming systems grounded in healthy soils and biodiversity are more likely to be able to adapt to climate change than intensive technological solutions that are dependent on depleting resources. This is not to imply that farmers alone can solve the problem of climate change, but it does suggest that they can be part of the solution rather than part of the problem. They already have adopted alternative practices which have a reasonable chance of surviving the incredible damage that climate change can cause on the farm. Among the many farmers that Lengnick features in her book is Iowa farmer Ron Rosmann. Ron returned to the family farm in 1973 when it was a typical monoculture commodity farm using chemical fertilizers and pesticides. He was one of the first farmers in west-central Iowa to transition to a more diversified farm, “that integrates beef cattle and swine into a five-year crop rotation” which feeds the livestock and also produces value-added products, many of which are now sold in their on-farm retail store. Furthermore, the organic wastes produced by the farm are composted and returned to the soil. Given his adherence to this “law of return,” Rosmann has not purchased nitrogen for his farm since 1982 and rarely has to purchase phosphorus. The health of his soil has also improved to a point where the soil absorbs more moisture during the increasing periods of heavy rains and retains more moisture to support crops during the increasing drought periods. While these diverse, soil building practices have enabled Ron to cope with the more extreme weather events, he looks forward to incorporating “more perennial nut, fruit, and berry crops” into his farm to help adapt with more climate changes in the future. (pp. 221–227) Of course there are still some among us who believe climate change is a hoax. To those souls, I offer three suggestions:

1. You may want to read Earth: The Operators’ Manual by Richard B. Alley, one of the scientists on the Intergovernmental Panel on Climate Change; especially note the section, “The Future” (pp. 170-187).
2. Simply wait it out, see what happens, and accept the results. The potential consequences are spelled out quite clearly in Alley’s book.
3. Read Lengnick’s book and consider the fact that there are farmers who already have put practices into place that enable them to cope with the current on-farm impacts of climate change, as well as anticipating additional future climate challenges.

One thing seems clear in all this—the scientific evidence supporting the reality of climate change now seems so clear that I think it is simply no longer possible to be a “climate denier.” The only alternative to being a “climate realist” today is to be a “climate liar.”

References:
Debinski found that patch-burn grazing by itself may not eliminate tall fescue, application of herbicide also may be necessary. However, this work illustrates that patch-burn grazing can increase consumption of endophyte-infected fescue by cattle with few apparent negative consequences.

“The goal is to have the cattle select for the patch that was recently burned, rather than selecting a specific type of plant,” says Debinski. “Sites that have been recently burned provide more lush, green grasses and forbs for grazing and the cattle find these locations to graze within the pasture. That selective grazing creates structural and compositional heterogeneity within the grassland.” She says that “grasses and flowering plants respond very quickly to burning, coming back within weeks depending upon the season.” They conducted their grassland burning in the spring, so when combined with warmer temperatures and spring rains, the plants grow rapidly.

“In some cases, the woody plants can be killed by fire, but this is part of the goal—to stimulate growth of the native grasses and forbs of the grassland ecosystem,” says Debinski.

Another tool for grassland management

Tall fescue, a cool-season grass, is predominant in Iowa pasturelands, and with proper management it is a preferred plant for livestock grazing. However, tall fescue can be considered invasive if left unmanaged and allowed to take over pastures during the warmer months. When mature, tall fescue can host a fungus that produces toxic alkaloids which can cause fescue toxicosis in grazing cattle.

The recently completed grant “The complex role of tall fescue in grassland ecology” (E2012-01), looked at whether patch-burn grazing could reduce the dominance of tall fescue in grazing lands. The research team was headed by Diane Debinski and Karen Jokela, both with the Ecology, Evolution and Organismal Biology Department at ISU, in collaboration with Dave Engle and Derek Scasta, Oklahoma State University, and Rebecca McCulley, University of Kentucky.

In these grazed systems, by burning one-third of a pasture each year, instead of burning the entire pasture every three years, Debinski her colleagues hoped to find that the less desirable tall fescue and woody plants can be reduced relative to native grasses and forbs.

Their research was conducted in the Grand River Grasslands of southern Iowa and northern Missouri on privately-owned land as well as land owned by the Department of Natural Resources and The Nature Conservancy.
New publication—
**Cover crops for veggie growers**

Planting cover crops can provide multiple benefits to growers who employ them in their fields. Techniques of proper planting and termination, advantages and challenges of specific crops, and cover crop species, are discussed in a new Iowa State University Extension and Outreach publication, “Short Duration Cover Crops for Vegetable Production Systems” (HORT 3041).

The guide is by Ajay Nair, ISU assistant professor of horticulture and Extension vegetable production specialist, and Ray Kruse, agriculture specialist in agronomy. “Cover crops allow growers to keep their production system sustainable for years to come,” Nair said. “Using the correct crop during these short periods helps to increase soil organic matter, improves soil structure and aggregate stability, enhances soil biology and prevents soil erosion.”

Research has shown the benefit of using cover crops for weed suppression, with buckwheat, oats, cowpea, and sorghum-sundangrass all significantly reducing weed biomass in areas of use.

Choosing the correct cover crop requires careful thought. Factors such as growing season, environment and soil properties need to be considered as well as cover crop seeding and termination methods, all of which are covered in the publication.

The publication is available online for free at: [http://store.extension.iastate.edu/Product/Short-Duration-Cover-Crops-for-Vegetable-Production-Systems](http://store.extension.iastate.edu/Product/Short-Duration-Cover-Crops-for-Vegetable-Production-Systems)

---

**New CSA Directory**

A directory is now available for those seeking out local, fresh food beyond the grocery store. The publication *Iowa CSA Farms: 2016 Statewide List of CSA Farms and Organizers Serving Iowa* has just been updated to include the latest contact information from farms across the state that offer Community Supported Agriculture (CSA) programs.

CSAs are partnerships between farmers and community members who want to buy high quality, fresh, local produce on a regular basis.

Membership in a CSA ranges in cost depending on the season length, the variety and quantity that a share provides. A CSA membership would be highly beneficial for consumers who are looking for one or more of the following:

- the freshest, sustainably grown food delivered at a convenient location on a regular basis,
- support for the local economy and local farmers,
- exciting new varieties of vegetables available for sampling,
- new recipes to try, and
- healthy food for a fair price.

The newly updated directory lists 79 CSAs that are offering fresh produce and other products specifically for local consumers. The directory was compiled by Savanna Lyons and Alice Topaloff, ISU Extension and Outreach Local Foods Team members, and Craig Chase, who coordinates the Local Foods team as well as the Marketing and Food Systems Initiative at the Leopold Center.

“CSAs give customers a real connection to the place and people that produce their food,” Lyons says. “Plus, receiving payment for products up front can be a big help to farmers. Joining a CSA is a great way to show your support for a small, sustainable farmer in your community. That’s why it’s called ‘community supported’ agriculture.”

Lyons said that farmers were encouraged to list more information about their production practices, since many grow low-spray or chemical-free produce, or have certain certifications. The directory includes individual farm contact information, including links to websites and social media, their available products and distribution range. The listings are organized by Extension region and county. The directory also includes CSAs from neighboring states that offer drop-off sites in Iowa.

“This year’s directory reflects, once again, the diversity of CSAs that Iowa farms offer: spring, summer and fall shares; vegetable, fruit, meat, eggs or a combination of these,” says Lyons.

The 2016 *Iowa CSA Farms* publication can be found in several places as a PDF file for downloading: the ISU Extension Online Store at [https://store.extension.iastate.edu/Product/PM1693](https://store.extension.iastate.edu/Product/PM1693); on the Local Foods website: [www.extension.iastate.edu/localfoods/](http://www.extension.iastate.edu/localfoods/) and on the Leopold Center’s website. The directory is updated at least once each year. Visit [www.leopold.iastate.edu/csa](http://www.leopold.iastate.edu/csa) to provide additions and modifications to the directory.
Plan to attend Ames ‘Sees’ Leopold on April 9

The annual Ames Reads Leopold event will be a departure from the traditional readings by local residents and fans from *A Sand County Almanac*, written by Aldo Leopold.

This year, the Leopold Center hosts a special event at 2 p.m. on Saturday, April 9 in the south ballroom of the ISU Alumni Center. “Aldo Leopold–A Standard of Change” is a one-man, one-act play written by and starring James Pfitzer. The performance is open to the public and free of charge.

Pfitzer, from Rising Fawn, Georgia, has performed his play across the United States to glowing reviews.

The play, as described on Pfitzer’s website, is: “Set in one evening in and around the famous Wisconsin Shack that inspired much of his writing, A Standard of Change explores the influences and challenges that led Aldo Leopold to penning some of the most important essays in his book *A Sand County Almanac*.

“As the lights come up, Leopold walks up the path. It has been 64 years since his death, and as many years since he has seen his now historic Shack. Awaiting him are surprises, memories, emotions, and stories to be shared. Leopold explores the effects of human progress on wildness as well as his own transformation as he learns the effects of his policies and changes his mind about how we manage wild places.”

The play’s set is minimal but meaningful. Leopold Center Director Mark Rasmussen constructed Leopold’s writing desk and wall of “the Shack,” which serves as the backdrop for the performance. Other props, including Leopold’s popular park bench, have been gathered from friends and staff of the Center. Each item on stage has a Leopold connection and a reason for being there.

Following the performance, there will be a question and answer session. Plan to join us at this unique event!

Iowa Water Conference celebrates 10 years

The 10th annual Iowa Water Conference was held March 23-24 at the Scheman Building in Ames. The Leopold Center was a sponsor for the “Art of Water,” a free community event featuring performing and visual arts. At the Art of Water, the Ames High School Bluestem Institute held a gallery session featuring posters defining water quality from technical, social, and cultural perspectives. Then, Luther College students presented “Body of Water,” using video, music, and dance to tell the intimate story of water usage and quality within our watersheds.

During lunch on March 23, Irene and Tom Franzen received the 2015 Spencer Award, presented by the Leopold Center. This award recognizes those who have made significant contributions to the environmental and economic stability of the Iowa farming community. The Franzens have been farming since 1976 near New Hampton with the philosophy of being good stewards, to respect and to care for the land.
Shivvers Memorial Lecture expands to a panel on sustainability

The Shivvers Memorial Lecture is scheduled for 7 p.m., Tuesday, April 5, in the Memorial Union Sun Room, Iowa State University, Ames. This event has brought distinguished speakers to campus to talk about how agriculture can be sustained to protect and benefit natural resources.

This year’s lecture will feature a panel of three Iowa farmers who are each doing their part to keep their farmland as productive and resilient as possible. Leopold Center Director Mark Rasmussen will moderate the panel as they discuss “How can we farm for the long-term?”

The panelists are Nathan Anderson, Aurelia; Mike DeCook, Lovilla; and Laura Krouse, Mt. Vernon.

Nathan Anderson is a farmer in Cherokee County. A 2010 graduate of Iowa State University, he and his wife, Sarah, have an integrated crop and livestock farm. He is an advocate for natural resources, serving as a Cherokee County Soil and Water Conservation District commissioner, and was recently elected to the Board of Directors for Practical Farmers of Iowa.

Mike DeCook operates a ranch near Lovilla in southern Iowa, where he custom grazes cattle and raises grass-fed bison. He is committed to restoring biodiversity of native species and donated 200 acres of land to the Iowa Natural Heritage Foundation to be permanently protected by a conservation easement.

Laura Krouse is the owner of Abbe Hills Farm near Mt. Vernon. In addition to operating a 200 member CSA and selling vegetables and eggs locally, she markets Abbe Hill Open Pollinated Seed Corn, a heirloom yellow dent corn grown on the farm since 1903. Krouse taught biology at Cornell College and is a longtime commissioner for the Linn County Soil and Water Conservation District.

The annual lecture series is sponsored by the Leopold Center, the ISU Chapter of Gamma Sigma Delta Honorary Society for Agriculture, and the ISU Committee on Lectures (funded by Student Government).

About the Shivvers Lecture

L.C. (John) Shivvers was born in 1894 near Knoxville, Iowa, and became a pioneer of sustainable agriculture. Although he never graduated from grade school, he became a leader and a role model for his innovative farming practices. John was elected to the Iowa Senate in 1962, but passed away that December, before he could take office. In a special election, his wife, Vera, took his place for the next two years, becoming the third woman to serve in the Iowa Senate. In 1969 she coordinated with ISU to establish the Shivvers Lecture Series as a lasting memorial to her husband. The Shivvers family continues to farm in Iowa and oversee the lecture series.

Leopold Center Distinguished Fellow travels the U.S.

Fred Kirschenmann, the Leopold Center Distinguished Fellow, is on the road for much of the year, appearing at conferences and events across the country.

Recently, he has served as a keynote speaker for the Pennsylvania Association for Sustainable Agriculture’s (PASA) 25th annual Farming for the Future conference, Feb. 3-6, in State College, Penn. This was a special event, as Kirschenmann was the keynote speaker for their very first conference in 1991.

Working his way west, Kirschenmann stopped at Dordt College, Sioux Center, Iowa, to participate as one of the speakers at the Global Agriculture Summit on March 3-4. The summit was hosted by the college and offered more than 60 workshops and presentations for attendees over the two-day event.

He moved on to Anaheim, Calif., to serve as the keynote speaker at the Organic Farming Research Foundation’s 19th annual Benefit Luncheon, which kicked off the 2016 Natural Products Expo West, on March 10.

A little closer to home, Fred is participating in a panel on water quality at the Iowa Academy of Science’s 128th annual meeting on April 22 at Grand View University in Des Moines. Watch for him at future events and read some of his past presentations at the Leopold Center website: http://www.leopold.iastate.edu/content/writings-fred-kirschenmann#other.

On the Web

Read about and listen to podcasts of past Shivvers Lecture presenters: http://www.leopold.iastate.edu/news/calendar/shivvers

Feb. 9 was Iowa State University Day at the Capitol building in Des Moines. Leopold Center Director Mark Rasmussen chats with a visitor to the Center’s table. The annual event celebrates Iowa State with many departments and offices displaying their accomplishments to the public and legislators.

[photo: ISU College of Agriculture and Life Sciences]
New Leopold Center Advisory Board members

The Leopold Center Advisory Board has two new members starting four-year terms in 2016.

Alicia Rosburg
Representing the University of Northern Iowa is Alicia Rosburg, assistant professor of economics. She holds a Ph.D. in economics from Iowa State University, with emphasis in the fields of environmental and resource economics, agricultural economics, human resources and econometrics.

She earned a B.A. in economics from the University of Northern Iowa and has been teaching at UNI since 2011.

Rosburg’s appointment to the board is in line with her background along with her education. She grew up on an acreage near Boone, Iowa, where her father instilled Alicia with a passion for wildlife. They had a “mini-menagerie... that included domesticated deer, geese, chickens, ducks, pheasants, ferrets, sheep, and at one point, a pet raccoon.” She spent summers working on her grandfather’s farm walking beans and loading hogs to sell.

Rosburg says that she is honored to represent UNI on the Advisory Board and “hopes to contribute to a group whose passion for sustainability efforts will create collective efforts that exceed individual contributions.”

U. Sunday Tim
One of the Iowa State University representatives is U. Sunday Tim, associate professor in the Agriculture and Biosystems Engineering department. Tim earned his bachelor’s degree and Ph.D. in civil and environmental engineering from Concordia University, Montreal, Canada.

He currently teaches undergraduate and graduate level courses in engineering design and graphics as well as geographic information science (GIScience) and has been teaching at ISU since 1990.

He has conducted research in the areas of computer simulation models, GIS-based technologies for watershed assessment, environmental planning, and natural resources management. Tim’s research philosophy is one that parallels the Leopold Center: “to better understand the impact of humans on the environment and the impact of environmental changes on society.”

Tim is also committed to enhancing diversity among students, faculty and staff as ISU, and has served on numerous committees and groups to help create understanding, respect and acceptance of underrepresented groups.

STRIPS project taking off

If farmers were to install areas of perennial prairie plants in 10 percent of their row-crop fields, how would it affect soil erosion, water quality, and crop performance?

The multi-disciplinary team at Iowa State University has explored answers to this question with the STRIPS project, which started in 2008 at the Neal Smith National Wildlife Refuge, Prairie City, with a Leopold Center grant. The field-scale research results at the Refuge showed that by strategically placing prairie plants in the corn-soybean fields, nitrogen runoff was reduced by more than 80 percent, phosphorus runoff was reduced by 90 percent as well as a 44 percent reduction in water runoff, and yields were maintained. Additional benefits are increased pollinator populations, more diversity of birds and other wildlife.

Because the results have been significant, farmers are adopting prairie strips on their own fields. Tim Youngquist is the farmer liaison for the STRIPS project and he reports that there are over 25 sites in Iowa, and one in Missouri, that have installed prairie strips on at least one field. A mixture of private farms, public areas, and businesses are involved including the Eastern Iowa Airport in Cedar Rapids and Badger Creek Lake Watershed in Madison County.

Youngquist says that there are more plots on the schedule for installation this year. He divides his time “among technical assistance, visits to current sites, field walks with potential adopters, and presentations about STRIPS around the state.”
Honor your mentor—
Nominations open for Spencer Award

Do you know a neighbor who is farming—and thinking—differently to keep their land sustainable? Is there a member of your organization who should be recognized for their contributions to sustainable agriculture? Nominate them for the Spencer Award!

The Leopold Center is accepting nominations for the 2016 Spencer Award for Sustainable Agriculture, which honors those who have demonstrated a commitment to the sustainability of Iowa’s family farms.

Individuals may nominate others or apply for the Spencer Award themselves. Any Iowan is eligible who has:

• Made a significant contribution that will affect, influence or advance the ecological and economic stability of mainstream family farms in Iowa;
• A record of accomplishment in research, technical or practical advancement or education;
• A long-standing commitment to the sustainability of mainstream family farms.

Nomination forms must be submitted, along with two letters of support, to the Leopold Center by June 15. The form can be downloaded from our website.

The Spencer Award is named for Norman and Margaretha Spencer, who farmed near Sioux City for 40 years. They believed that it is the obligation of each generation to leave the world a better and healthier place for the next generation. The award was created with an endowment from the Spencer family and is administered by the Leopold Center.

Since 2002, the Spencer Award has honored farmers, teachers, researchers and others who have been committed to sustainable agriculture on the family farm.

Download the nomination form, read about the Spencer family, and learn of previous recipients, on our website: www.leopold.iastate.edu/spencer-award

Read about the 2015 recipients Tom and Irene Frantzen in the Winter 2015 newsletter: www.leopold.iastate.edu/news/leopold-letter/2015/winter

Did you know?

The first full week in March in Iowa has been designated Aldo Leopold Week. In 2015, Iowa Governor Terry Branstad declared, “Aldo Leopold Week to be celebrated annually on the first full week in March as a way to pay tribute to the work and legacy of Aldo Leopold and to create a focused time to learn and celebrate wildlife preservation and conservation for all the citizens of Iowa.”

We hope that you live every week as if it were Aldo Leopold Week.

A land ethic, then, reflects the existence of an ecological conscience, and this in turn reflects a conviction of individual responsibility for the health of the land. Health is the capacity of the land for self-renewal. Conservation is our effort to understand and preserve this capacity.”

April 16: Green Ways Rally, Guttenberg

The Green Ways Rally: How to Think, Act, and Vote Green! will be held April 16, from 1-5 p.m. at the Municipal Building in Guttenberg. Speakers include Iowa State Senator Rob Hogg, Guttenberg Mayor Russell Loven, Leopold Center Director Mark Rasmussen, and others. The rally introduces the new Clayton County Energy District and raises awareness of the environmental opportunities as well as the concerns in northeast Iowa. Watch the Leopold Center website for details.

April 13-23: Up! Up! Farm Film Festival, Decorah

The Winneshiek Energy District and Seed Savers Exchange, along with other supporters including the Leopold Center, host the Up! Up! Farm Film Festival in Decorah. The free festival is a collection of independently produced films and shorts, each exploring questions of farmland access, rural livelihoods, and the sustainability of people and place. The films will be shown in various locations in Decorah over 10 days. Look for the schedule of films on their Facebook page or at: www.upupdecorah.com

June 23-24: Quad Cities Pollinator Conference, Davenport

The Quad Cities Pollinator Conference will be held at the River Center, Davenport, June 23-24. It includes sessions on plant-pollinator relationships, urban entomology, designing pollinator support plantings and more. The Leopold Center is a sponsor of the conference. Find more information at: www.qcpollinatorconference.org.

Plan your pollinator garden now!

Spring is upon us and gardens are on the minds of many, including those who help with pollination. Join the Plant.Grow.Fly movement and when you plant a garden, large or small, consider the many pollinators who will visit. Go to the Plant.Grow.Fly website to get ideas, learn from experts and then register your pollinator garden.

Plant. Grow. Fly. is based at Blank Park Zoo, Des Moines. There are many partners helping to get more plants for pollinators on the land, including the Leopold Center.