Newsletter LRES

College of Agriculture

Fall 2012

A Note from Our Department Head

It's amazing that the end of the semester is already upon us, but it allows us to reflect upon a productive and satisfying year across our teaching, research and service mission. Please enjoy learning about LRES' many accomplishments as you peruse this newsletter. I extend my best regards to LRES faculty, staff, students, and supporters for a safe and restful break spent with family and friends. *~Tracy Sterling, Professor & Department Head*

New Faculty Member

Please welcome Dr. Tony Hartshorn, our new Assistant Professor of Soil Science

Before arriving in Bozeman in August, my background included a bachelor's degree in Geography and Environmental Studies at Dartmouth College in New Hampshire, and I had been an English major through my junior year. While an environmental consultant after college, I took some grad classes at the University of Alaska (Anchorage, as well as Fairbanks), and then completed a Ph.D. in Soil Science at the University of California Davis. I was a postdoctoral scientist at the University of California Santa Barbara and at Arizona State University. I then taught environmental science at James Madison University for a couple years before landing in Land Resources and Environmental Sciences at MSU.

My research focus is studying soil-landscape patterns. At MSU, I hope to contribute to efforts to rebuild the Land Rehabilitation program, so my research will target high-return-on-investment strategies for jump-starting soils that require intervention, such as salt-affected or low water-holding-capacity soils. I'm eager to discover common denominators to "mining" reclamation, with "mining" defined broadly. Agricultural production is one form of mining (wheat grain is in part carbohydrate, produced through photosynthesis using water and carbon dioxide). Fires like the Millie Fire serve as an intense mining operation, converting considerable biomass--carbs again--into carbon monoxide and carbon dioxide. I'm expecting that this burned area will lead to erosion of considerable quantities of soils this next year. What challenges do agricultural or burned areas share with hard rock and soft rock (coal) mining reclamation opportunities? I'm looking forward to finding out.

I am currently busy with ENSC 245 (Soils) every Fall (~250 students) and ENSC 460 (Soil remediation) every Spring. I'm always looking for ways to build scientific literacy, so future class offerings might touch on that mission of mine. I'm a nut about dirt. That's in part because I enjoy learning about soils, I love teaching soils and help other learn about soils too. In order for us to learn what soils can teach us requires us to become soil whisperers. I'm hoping that by cultivating "soil ninjas" through the classes I offer that I can motivate students to become better "readers of landscapes" and to become more far-sighted soil stewards. *- Tony Hartshorn*

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MONTANA STATE UNIVERSITY

Land Resources and Environmental Sciences
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Find us on Facebook!

LRES Recognition

Lucy Marshall was featured in the November 2012 edition of Montana Water News published by The Montana Water Center.

Duncan Patten was elected to Fellow of Ecological Society of America. As Montana University System Water Center director and Research Professor in MSU's LRES Department Duncan Patten has been selected to be among the first group of Fellows named by the Ecological Society of America, the world's largest professional organization for ecologists and environmental scientists.

Bob Peterson was interviewed for a segment called Killing off West Nile Virus: Bad for More Than Bugs? On NPR's program 'All Things Considered' back in August. Please visit the link below to listen to the full story.
http://www.npr.org/2012/08/17/159018032/killing-off-west-nile-virus-bad-for-more-than-bugs?ft=1&f=2

Scott Powell was selected to serve on the Science Definition Team for NASA's Carbon Monitoring System, an initiative designed to make significant contributions in characterizing, quantifying, understanding, and predicting the evolution of global carbon sources and sinks.

John Priscu was the focus of a feature article entitled 'Antarctica: a world of living ice' in *American Association for the Advancement of Science* found at: http://membercentral.aaas.org/blogs/depth/antarctica-world-living-ice

John Priscu, as a polar ecologist who has spent almost three decades studying the microbial ecology of Antarctic ecosystems, received the SCAR (Scientific Committee on Antarctic Research) Medal for Excellence in Antarctic Research on July 18 in Portland, Ore. Follow the link below to learn more about the international award for his work in Antarctica.
http://www.montana.edu/cpa/news/nwview.php?article=11334&origin=homepage

Lisa Lone Fight was featured in an *Indian Country Today Media Network* article titled Native Women Tackle Science and Win. Follow the link below to view the article.
http://indiancountrytodaymedianetwork.com/article/native-women-tackle-science-and-win-118024

Lisa Kirk, LRES Ph.D. candidate and Principle Geochemist at Enviromin Inc., was invited to present "Through the Looking Glass at Microbes" at the international symposium to address challenges of mine-impacted waters during the International Conference on Acid Rock Drainage in Ottawa Canada. More at: www.miningengineeringmagazine.com

LRES Students Present Internationally

European Geosciences Union 2012 conference in Vienna, Austria

Sam Carlson presented on *Quantifying watershed storage dynamics using long duration, high frequency measurements of precipitation, runoff, and evapotranspiration.*

Tim Covino presented on *In-stream nutrient uptake kinetics along stream size and development gradients in a rapidly developing mountain resort watershed.*

Kendra Kaiser presented on *Mountain pine beetle infestation impacted by water availability.*

Fabian Nippgen presented on *The combined effect of topography and vegetation on the temporal evolution of catchment connectivity* and *Spatial and temporal similarity analysis: Linking landscape structure and climate to hydrologic response.*

Int'l Polar Year in Montreal, Canada

Tristy Vick-Majors presented on *Microbial Communities during the Polar Night Transition in Lakes of the McMurdo Dry Valleys, Antarctica.*

Goldschmidt 2012 Conference in Montreal, Canada

Ryan Jennings presented on *Ferric oxyhydroxide microbial mat community metabolic model based on metagenome sequence analysis.*

2012 Int'l Society for Microbial Ecology meeting in Copenhagen, Denmark

Jake Beam presented on *The distribution and ecophysiology of novel thermophilic, non-ammonia-oxidizing thaumarchaea in Yellowstone National Park.*

Eric Becraft presented on *Ti454 barcode analysis of Synechococcus ecological species inhabiting Mushroom Spring, Yellowstone National Park.*

Zack Jay presented on *Isolation, molecular characterization, and distribution of 'Pyrobaculum yellowstonensis' WP30, a sulfur and arsenate respiring heterotroph important in sulfidic geothermal systems of Yellowstone National Park.*

10th Int'l Conference on Permafrost in Moscow, Russia

Carmel Johnston presented on *The effect of permafrost thaw duration on methane emissions in a western Alaska peatland.*

Ag Appreciation Event

The College of Agriculture hosted the 2nd annual Ag Fair on Friday, October 26, from 2:00-5:00 p.m. in the SUB ballrooms. The Ag Fair featured booths with interactive displays and fun prizes from departments within the College, Extension, 4-H, and a variety of agricultural organizations across Montana. The Extension Water Quality program and the Weed Ecology and Management program were featured from LRES. The event was free and open to the public. *-Jane Mangold*

Adam Sigler (blue) and Katie Kleehammer (white) of the Extension Water Quality Program explaining issues with water quality to interested guests.

Participants guess seed count numbers and match the seed to the plant at the Weed Ecology & Management booth.

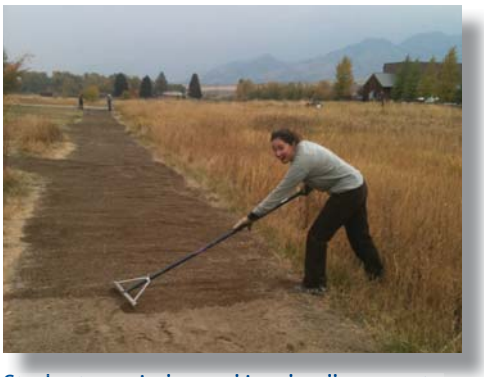
GSO Activity

Friday LRES Socials

Please be on the lookout for invitations for the Friday socials at Columbo's Pizza and Pasta across College St. from campus. They are held every second Friday of the month at 5pm. All Land Resources and Environmental Sciences students, faculty, and staff are encouraged to attend. We hope to see you there!

LRES Trailwork Day

The GSO organized a 'Trailwork Day' on Saturday October 13, a hardy crew of about ten to fifteen LRES students and faculty (thanks Perry!) partnered with the Gallatin Valley Land Trust to resurface a trail connecting Gallatin Park Dr. and the Cherry River Fishing Access. We spent the morning shoveling, moving and raking gravel around the area to make the trail more easily accessed by everyone. It was a great opportunity to get outside, meet people from the department, have a good time and help maintain the extensive trail system we have here in Bozeman. - *Kim Taylor*



Students carried gravel in wheelbarrows to a trail near the East Gallatin Recreation area. Where they, like Heidi Clark here, then raked it out to a nice thick gravel surface that should last for at least 10 years.

Experience at the European Geophysical Union in Vienna

In April of last year, I was given the opportunity to present a poster summarizing my research, titled "Quantifying watershed storage dynamics using long duration, high frequency measurements of precipitation, runoff, and evapotranspiration", with the MSU Watershed Hydrology lab at the general assembly of the European Geophysical Union. My research, which has also been presented at MSU, combines terms for the hydrological inputs and outputs to quantify water storage and release dynamics within a small watershed. This opportunity was made possible by funding from the MSU LRES department, College of Agriculture, and the MSU Undergraduate Scholars Program. While attending the EGU (the second largest geosciences conference in the world!), I was exposed to cutting edge environmental science, including new research in the fields of hydrology, snow science, biogeochemistry, and climatology. During the time leading up to my poster presentation, I found myself increasingly excited about the relevance of my own work, and increasingly familiar with the context. In presenting my poster, I was able to engage scientists of many different persuasions in a varied discussion of the connections between my work and the many other compelling ideas which were presented at this conference. As expected, I learned more about my own project, and about related research by the numerous hydrologists and ecologists in attendance. However, I did not anticipate the degree to which I would be exposed to the exciting process of developing new ideas, or new connections between existing ideas. During my presentation, and at the subsequent Catchment Symposium, I was thrilled to be engaged in the amorphous and egalitarian process of developing new ideas and scientific directions. My attendance at EGU has helped me to develop and define my current project, and will help me to develop and clarify scientific ideas in the future. - *Sam Carlson*

Sam Carlson taking a break at the EGU *(right)*

New Course

New GPS Mapping Service Learning Course Offered

A new Fall semester service learning course gives students hands-on GPS mapping experience in a real-world setting, and benefits the community at the same time. Offered as a special topic in Fall 2012, the one-credit course provides the opportunity for students to work on one of two service learning projects while they study GPS fundamentals and applications in mapping in GPHY 357. Students have the choice of participating in the E-911 mapping project with the City of Bozeman Fire and GIS Departments, or the canal mapping project with the Association of Gallatin Agricultural Irrigators (AGAI) and the Gallatin County GIS Department.

The E-911 mapping students are creating maps of high density housing developments to aid in emergency response, while the AGAI students are helping to inventory water resources in the Gallatin Valley. In addition to project planning and implementation, students and cooperators are reflecting on their experiences and learning in an academic setting. This process, called structured reflection, is an essential element of a service learning course. The course also incorporates field trips, meetings with cooperators and other activities in support of the projects.

Seventeen students (of the 36 in GPHY 357) are taking advantage of the opportunity this Fall. A permanent course with Service Learning (SL) designation will be offered in Fall of 2013.

- Diana Cooksey

Mapping students with Allen Armstrong (front right) from Gallatin County GIS - on the tour for the Lewis Ditch mapping project.

Professional Spotlight:

I work as an Education Specialist in the Department of Land Resources and Environmental Sciences. I have worked as a staff member at MSU since completing my M.S. in the Earth Sciences Department in 1999. My thesis project focused on invasive species in Grand Teton National Park, and when I completed the degree I worked as a Research Associate in the LRES Cropland Weeds program. I received undergraduate degrees in Environmental Sciences and International Affairs from the University of Colorado in Boulder and worked as an interpretive Park Ranger in Grand Teton National Park before returning to graduate school at MSU—but sharing science with public audiences has always been a common theme. I was able to combine my science background with my interest in science education when I worked first as the Education Coordinator for the Center for Invasive Species in LRES, and then later as the Education and Outreach Manager for the Thermal Biology Institute, which examines the biology and geochemistry of life in Yellowstone's thermal environments. I am still working with extremophiles with faculty in LRES, but am focused on much colder environments—examining life in ice with the lab groups of Dr.'s Priscu and Foreman.

Through our work, I focus my efforts helping to build capacity for science teaching with K-12 teachers, and getting kids excited about science—Polar science is a great platform. I organize professional development opportunities for teachers locally and nationally. I have developed field classes through the Master of Science in Science Education (MSSE) program at MSU, and web seminars and teacher training in partnership with the National Science Teachers Association.

My favorite project is the Crow Education Partnership, which we started in 2009. With a lot of help from MSU scientists and LRES graduate students, we provide science enrichment activities for about 225 4th and 5th grade students on the Crow Reservation. Working with nine teachers at three schools, we provide hands-on science activities, science-based field experiences, and professional development opportunity for teachers.

The best part of my job is working closely with LRES graduate students, who often make my crazy outreach ideas a reality, and share new and exciting science with me along the way. I am headed to Antarctica as the Outreach Coordinator with the Whillans Ice Stream Subglacial Access Research Drilling (WISSARD) Project in November 2012, where I will coordinate the education and outreach efforts from the ice, with a large team of scientists including members of the Priscu Lab Group. Follow our adventures on the WISSARD webpage, www.wissard.org! *- Susan Kelly*

ENCS245 Fall Field Trip to Kelly Canyon

The ENSC245 (formerly LRES201; "Soils") teaching team has made a tradition of taking all ~250 students on field trips to sites with high "soil value" density. Kelly Canyon, about a 15-minute drive northeast of campus, is one of these locations.

Two large excavations showcase a number of important lessons for students. For example, the floodplain soil pit highlights how plant growth can transform fresh "parent material" washed in as overbank deposits from a nearby tributary of Rocky Creek. The terrace soil pit, by contrast, is a trickster of a soil pit. It is filled with rounded gravels (2-75 mm in size) and cobbles (75-250 mm in size) that would suggest that, at least once upon a time, a river ran through that location. But its position perched high above the floodplain actually hints at another source for those rounded rocks: it is more likely that these rounded rocks originated as conglomerate (a form of sedimentary rock built in part of rounded river-rock) and have eroded down the slopes of the Story Hills, on their eventual journey to the Gulf of Mexico via the Gallatin Valley's creeks and streams. One additional feature was discovered this year: a "spoils" pile of soil was inadvertently placed upslope of the terrace pit, and students noticed that the eroded material from this pile (over the past decade or so that the pit has been used for educational purposes) had buried the original surface, a process they had just witnessed in the floodplain pit, with new deposits burying the previous soil surface. The field trip turned out to be quite the educational and interactive experience for ENSC 245 students.

– *Tony Hartshorn*

Professor Tony Hartshorn (long sleeved green shirt) teaches students how to characterize soil properties.

MSU GPS Base Station Upgrade Helps Local Surveyors and Mappers

The MSU GPS base station got a significant upgrade in September, allowing survey grade receivers using its real-time corrections to experience improved positioning in difficult environments. The new base station receiver is able to track more satellite signals, which makes it easier to survey under heavy tree canopy and in urban “canyons” where buildings block satellite signals. In addition to tracking GPS satellites, the new station also tracks Russian GLONASS and European Galileo signals - more satellites to choose from translates to better accuracy.

Originally installed in 2007, the MSU GPS base station provides real-time kinematic (RTK) corrections for survey grade equipment as well as base files for post-processed correction of mapping grade receivers. Users of the base station data include local engineering firms, the City of Bozeman and Gallatin County GIS departments, Federal and State agencies, and MSU students and researchers. In addition to the new receiver, the station upgrade included a new radio (for broadcasting RTK corrections) which complies with the recent FCC narrowband requirement. The MSU GPS base station is part of a national network of Continuously Operating Reference Stations (CORS) managed by the National Geodetic Survey (NGS).

Funding for the upgrade was provided by the MSU Civil Engineering Department. The original installation was funded by Sanderson-Stewart of Billings and Bozeman.

For more information, please see the MSU GPS Lab website at: www.montana.edu/gps.

– *Diana Cooksey*

Advanced GPS mapping student Kevin Loberg installing the new base station antenna.

Teacher's Workshop in Yellowstone on Climate Change

In August 2012, the Department of Land Resources and Environmental Sciences co-sponsored a climate change teacher workshop in Yellowstone National Park. Fifteen middle and high school teachers who live and teach in the Greater Yellowstone Ecosystem attended. During the four-day workshop teachers participated in hands-on activities for the classroom, field excursions and lectures from MSU and federal agency scientists. Teachers designed service learning projects for their students that focus on climate change issues linked to Yellowstone and will implement the service learning projects with their students during the 2012-2013 school year.

Both LRES faculty and graduate students helped to make the workshop a success. Dr. Christine Foreman talked about ice cores and how scientists use proxy data to reconstruct climate records, while graduate students Tristy Vick and Heidi Smith assisted with workshop activities and logistics. LRES Education Specialist Susan Kelly, along with scientists and graduate students work in the classrooms with the teachers throughout the year. Teachers and their students will participate in a final Climate Change Summit at MSU in the spring of 2013, when the middle and high school students will showcase their project results for MSU faculty.

The workshop was supported by the Department of Land Resources and Environmental Sciences, the MSU Institute on Ecosystems, Yellowstone National Park, and a grant from the National Park Foundation.

(above) LRES graduate student Tristy Vick working with future climate change scientists at the Sleeping Giant Middle School in Livingston, MT.
(left) Belgrade teachers design service learning projects for their students that focus on climate change.

Argentinian Insect Chemical Ecology Workshop

David Weaver visited Bariloche, Argentina this past spring to join collaborators working in insect chemical ecology and management of insects in stored product. In this portion of Patagonia, he joined an international team of experts providing training on key techniques in chemical ecology to graduate students from academic and research institutions throughout Argentina. The intensive training workshop ran from April 10 – 14 and was hosted by the Universidad Nacional de Comahue – Bariloche.

After this he gave two symposium presentations at the Eighth Congreso Argentino de Entomologia held from April 17 - 20. The talks were co-authored with Bozeman colleagues from MSU and the Forest Service, as well as researchers from Argentina.

An interesting adventure occurred during his return trip. A volcanic eruption in nearby Chile had deposited ash in the region where he visited and the fine layer covering all surfaces caused a local die-off in much of the insect community. As part of the collaboration on stored product insects, he agreed to bring back samples of the ash to MSU, because it probably kills the insects by absorbing waxes on their bodies. The goal was to have particle size and composition measured by a collaborating Mechanical Engineering laboratory on the Bozeman campus because these characteristics play a role in how effective the particles are at soaking up wax. Of course, scientists always provide a bit of excitement crossing international borders and trying to explain that several large vials of grayish-white power were actually volcanic ash intended for scientific research proved to be no exception! Fortunately, David was able to successfully deliver the material to his colleague here on campus after carefully explaining the circumstances.

LRES Grants 2011-2012

New grants awarded from December 2011 through October 2012

These funds fuel our research and teaching mission—to discover new knowledge, to engage and train students using laboratory and field studies across local to global scales, and to enrich the lives of Montanans. Please take a minute to congratulate our faculty and staff on their meaningful work and impressive accomplishments.

Agency & PI	*Title*

Montana Grants

Montana Department of Agriculture

O'Neill, Delphia	Effect of Temperature on Leafcutting Bee Development
Weaver	Farm Bill Khapra Beetle Survey

Montana Noxious Weed Trust Fund

Goodwin, Galli-Noble	Weed Free Borders Protection
Littlefield	Whitetop Biological Control
Littlefield	Invasive Hawkweed Biological Control
Littlefield	Common Tansy & Ox-Eye Daisy Biological Control
Littlefield	Russian Knapweed Biological Control
Mangold	Tall Buttercup Ecology and Integrated Management
Mangold, Menalled	Weed Seedling Identification Guide
Weaver	Establishing and Monitoring Insectaries for Yellow Toadflax Biocontrol
Weaver	Identifying and Testing Candidate Agents for Russian Olive Biocontrol

Montana Wheat & Barley Committee

Menalled, Mangold, Parkinson	Weed Seedling Identification Guide for Montana and the Northern Great Plains
Miller, Holmes, Jones, Bekkerman	Diversified Cropping Systems: High and Low Input Strategies
Stoy	Atmospheric Transport, Water Use, and Carbon Sequestration in MT Wheat Fields: Technology for Improved Management
Weaver	Wheat Stem Sawfly IPM: Developing New Forms of Host Plant Resistance and Implementing IPM Systems Statewide
Weaver	Parasitoids of the Wheat Stem Sawfly: Augmentation, Impact and Education
Weaver	MWBC - Orange Wheat Blossom Midge Management

University Grants

Algoma University

Galli-Noble	2012 NAISN Workshop Coordination

Private Grants

American Honda Foundation

Kelly	Crow Education Partnership

Confederated Tribes of the Umatilla Indian Reservation

Poole	CTUIR Evaluation of Hydrologic Effectiveness of Stream Reach Treatment Methods
Poole	Regional Assessment of Geomorphic and Hyporheic Influences on Stream Temperature and Resilience to Climate Change

Lockheed Martin Corporation

Kelly	TBI Mini-Grant

Washington Foundation

Kelly	Support for WISSARD Outreach Efforts

Weyerhaeuser Company

Hartshorn	Quantifying Soil Respiration Rates in Managed Loblolly Pine Plantations

Federal Grants

Bureau of Indian Affairs

Weaver	Biological Control of Noxious Weeds – Toadflaxes

Bureau of Land Management

Mangold	Noxious Weed Awareness and Education in Montana

Goddard Space Flight Center

Dore	Environmental Controls on Abiotic Trace Gas Production Via Low-Temperature Brine-Rock Interactions

Montana Department of Environmental Quality

Sigler	Enhancing Advanced Volunteer Monitoring Capabilities in Montana

National Science Foundation - MT Institute on Ecosytems

Brookshire	Water, Carbon, and Nitrogen Dynamics in a Floodplain Riverscape: Isotopic and Sensor Approaches to Link Biogeochemical Cycles
Brookshire, Stoy, Ewing, Whitlock	Controls on Productivity and Biogeochemical Cycling in Sub-Alpine Grasslands of the Northern Rocky Mountains
Dore, McDermott, McGlynn, Whitlock	Linking Microbial Processes to Landscape-Scale Trace Gas Fluxes Via Hydrologic Controls on Soil Chemistry in a Forested Montana Ecosystem
Ewing, Jones, Whitlock	Long-Term Water Balance and Nitrate Biogeochemistry in Cultivated Alluvial Landscapes of Central Montana
Foreman	Clues to the Cryosphere: Symposium for the National Science Teachers Association Annual Meeting
McDermott, Whitlock	EPSCoR Focus 1 Science Plan
Marshall, Whitlock	Landscape Systems and Environmental Change in Western Montana: A Multidisciplinary approach to Hydrology, Ecology, and Economics
Maxwell, Rew, Barroso-Perez, Whitlock	Identifying the Factors and Interactions That Drive Agroecosystems Over Sustainability Thresholds
Poole, Izurieta, Whitlock	Seasonality and Sources of Recharge Water to the Nyack Floodplain in Relation to Rates of Biogeochemical Processes and Ecosystem Function
Poole, Whitlock	Preliminary Science Plan for Focus 2: Linking Changes in Landscape Pattern to Ecosystem Process
Poole	COLLABORATIVE RESEARCH: Leaky Rivers: Nutrient Retention and Productivity in Rocky Mountain Streams Under Alternate Stable States

University of California Davis

Menalled, Mangold, Parkinson	Weed Seedling Identification Guide for Montana and the Northern Great Plains

US Animal and Plant Health Inspection Service

Littlefield	Biological Control of Orange Hawkweed
Littlefield	Biological Control Agents of Russian Knapweed: Rearing, Redistribution and Monitoring of Agents
Weaver	Yellow Toadflax Biological Control

USDA Forest Service

Lawrence	Combining Landsat and Radarsat Technology to Delineate Spruce-Fir and Other Forest Types Within the Distribution of Canada Lynx
Littlefield	Collecting, Redistributing, Monitoring Populations and Estimating Impacts of the Rush Skeletonweed Root Moth, Bradyrrhoa gilveolella

USDA National Institute of Food and Agriculture

Engel, Menalled	Targeted Grazing to Reduce Tillage: Environmental, Ecological, and Economic Assessment of Reintegrating Animal and Crop Production
Mangold, Littlefield, Lehnhoff, Burkel	Investigating Multi-Trophic Interactions
Menalled, Mangold, Dyer, Z. Miller	Optimizing Efficacy Of Downy Brome (Bromus tectorum) Biocontrol in Crops and Rangelands: Integration and Implementation
Menalled, O'Neill, Weaver, Boles, Z. Miller, Burkle, Bekkerman, Hatfield, Burrows, P. Miller, Engel	Targeted Grazing to Reduce Tillage: Environmental, Ecological, and Economic Assessment of Reintegrating Animal and Crop Production
P. Miller, Menalled	Targeted Grazing to Reduce Tillage: Environmental, Ecological, and Economic Assessment of Reintegrating Animal and Crop Production

US Geological Survey

Poole	Assessing Hydrologic, Hyporheic, and Surface Water Temperature Responses to Stream Restoration

LRES 2012-2013 Scholarship Awards

Clyde and Helen Erskine Excellence in Ag Scholarship
Brackett Mays
Dylan Strike

Dr. Arthur H. Post and Margaret Post Scholarship
Katie Dykgreve

Land Resources Stewardship Scholarship
Donabel Bickford
Tucker Colvin
Margaret Franquemont
Danielle Kadrmas
Stephanie Kerns
Megan Primmer
Shane Stoner

New LRES Graduate Students

Shea Allen
M.S. LRES Online
Advisor: Bob Peterson

Sarina Bao
Ph.D. ECES
Advisor: Cliff Montagne

Hally Berg
M.S. LAND
Advisor: Jane Mangold

Heidi Clark
M.S. LAND
Advisors: Patten & Wyckoff

Badamgarav Dovchin
M.S. LRES
Advisor: Cliff Montagne

Beth Eiring
M.S. LRES Online
Advisor: Bob Peterson

Erin Frolli
M.S. LRES Online
Advisor: Lucy Marshall

Christina Herron-Sweet
MS LRES
Advisor: Jane Mangold

Charles Holt
M.S. LRES
Advisor: Fabian Menalled

Andrew John
M.S. LAND
Advisor: Clain Jones

Nicole McClain
M.S. LRES Online
Advisor: Lucy Marshall

Sean McKenzie
M.S. LAND
Advisors: Menalled & O'Neill

Katelyn Miller
M.S. LRES Online
Advisor: Lucy Marshall

Daniel Princz
PhD ECES
Advisors: Marshall & Poole

Arian Randall
M.S. LRES Online
Advisor: Scott Powell

Carla Rickert
M.S. LRES Online
Advisor: Bob Peterson

Jeremy Sebes
M.S. LRES Online
Advisor: Scott Powell

Adam Sigler
PhD ECES
Advisor: Stephanie Ewing

John Sugden
M.S. LRES
Advisor: Tony Hartshorn

Seth Swanson
PhD ECES
Advisor: Bruce Maxwell

Eric Trum
M.S. LRES Online
Advisor: Scott Powell

Marley Vaughn
M.S. LRES Online
Advisor: Lucy Marshall

Shavonn Whiten
M.S. ENTO
Advisor: Robert Peterson

ECES Ecology & Environmental Science
LAND Land Rehabilitation
LRES Land Resources & Environmental Sciences

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A gift to the Department is a great way to support student and faculty endeavors. Donations can be earmarked for student scholarships or internships, graduate fellowships, undergraduate and graduate student programs, endowed professorships and more. For information about making a donation to the Department please contact: Darin Paine, Director of Development, MSU College of Agriculture, (406) 994-7671.