

ANIMAL & RANGE SCIENCES NEWSLETTER

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January 2012

Introduction from Dr. Glenn Duff, Department Head



Welcome to the latest edition of our newsletter. Since our last newsletter, we have been busy interviewing for the three faculty positions in Animal and Range Sciences. The spring semester started on January 11th and classes are in full swing.

As a reminder, we have been recruiting faculty positions for a range ecologist, a ruminal and/or gastrointestinal microbiologist and a geneticist. We are pleased to announce that Dr. Craig Carr has accepted our Range Ecologist position and will be starting February 1st. The second position focusing on ruminal/gastrointestinal microbiology will allow us to look at changes in the ruminal and/or gastrointestinal microbiome and effects on production. The third position will focus on the “omics” area and will help producers utilize modern technique for livestock selection. All of the positions will continue to educate our undergraduate population and provide new opportunities for graduate student education. When the last two positions are finalized, we will post the announcements on our website.

I attended the first meeting of the *Collegiate Stockgrowers Club* last Wednesday evening. This organization will provide another opportunity for our undergraduate students to network with producers in the state. In addition, I was visiting with Dr. Rachel Endecott about the possibility of using the organization as a mechanism to reinstate the *Academic Quadrathlon Team*. There is also a new Equine organization, *American Stock Horse Association Collegiate Team*, that was started last fall. Some of our more established undergraduate organizations include *Collegiate Cattlewomen*, *Horseman's Club*, *Polo Club* and *Range Management Club*. I am a strong proponent of students participating in undergraduate organizations. Not only do they learn how to conduct meetings, but it is another opportunity for them to network with students having common interests.



2011 Range Management Club

Thank you for continuing to support our program and please stop by to see us when you are in Bozeman. You should be proud of the direction that Animal and Range Sciences is headed.

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Awards, Publications & Presentations

Jeff Mosley presents the latest edition of [Browsing the Literature](#). The October 2011 section reviews new publications available about the art and science of rangeland management.

Dennis Cash received the 2011 Silver Buffalo Award in recognition of his exceptional service in Extension. The award, given by Montana's Joint Council of Extension Professionals, is the organization's highest honor.

Mary (Mo) Harbac received the Montana State University Pure Gold for her contributions to the university community. The program invites members of the MSU community to nominate deserving individuals to receive public recognition for their outstanding efforts on behalf of MSU. Mo is a staff member on the MSU-Bozeman campus. The following is her Pure Gold Award nomination link submitted by her supervisor John Paterson. <https://www.montana.edu/puregold/recipients.php>.



New publication: **J.I. Keithley, R.W. Kott, J.G. Berardinelli, S. Moreaux** and **P.G. Hatfield**. 2011. Thermogenesis, blood metabolites and hormones, and growth of lambs born to ewes supplemented with algae-derived docosahexaenoic acid. *J. Anim. Sci.* 89:4305-4313. <http://jas.fass.org/content/89/12/4305.full.pdf+html?sid=e70a4410-cf93-4e49-95b8-3db2fc3fbb12>.

Shannon Moreaux had a proposal selected for funding by the Bair Ranch Foundation in the amount of \$56,000. The project title is: The effects of psyllium treatment on serum metabolite concentrations and morphologic characteristics in grass grazed horses.

Rachel Frost was an invited speaker at the recent Montana Weed Control Association Meetings in Great Falls. Frost presented the results of an integrated research project that she, Jeff Mosley, Brent Roeder, Gerald Marks and Tracy Mosley are conducting on the Confederated Salish and Kootenai Reservation near Polson, MT. The project investigates the potential to combine targeted sheep grazing with insect biological control agents to suppress spotted knapweed on rangelands.

New Publication: Redden, R.R., **R.B. McCosh, R.W. Kott**, and **J.G. Berardinelli**. 2011. Effect of residual feed intake on temporal patterns of glucose, insulin, and NEFA concentrations after a glucose challenge in Targhee ewes. *Proc. West. Sect. Amer. Soc. Anim. Sci.* 62:231-233.

New publication: **Berardinelli, J.G., R.R. Redden, R.B. McCosh, R.W. Kott**. 2011. Residual feed intake on temporal patterns of metabolites and metabolic hormones after a glu-

cose challenge in Targhee ewes. *Montana Acad. Sci. Abstracts*. Pg. 6.

Mike Frisina received an award from the IUCN Central Asian Sustainable Use Group while recently working in Pakistan. The award is in recognition of many years of research on wild goats and sheep in Pakistan.



Jim Berardinelli was an invited speaker at the Annual 2011 Annual Meeting of the Western Section, American Society of Animal Science (WSASAS) held in Miles City, MT.. The title of Jim's talk was: Effect of residual feed intake on temporal patterns of glucose, insulin, and NEFA concentrations after a glucose challenge in Targhee ewes.

Jim Berardinelli was an invited speaker at the 2011 Annual Meeting of the Montana Academy of Sciences in Butte, MT. The title of Jim's talk was: Residual feed intake on temporal patterns of metabolites and metabolic hormones after a glucose challenge in Targhee ewes.

New publication: **Glenn Owings** and **Clayton Marlow** wrote the publication titled: Landowner's Guide for Re-Establishing Riparian Gallery Forests Along Montana's Milk River Corridor. This publication was done under contract for the following groups: Blaine County Conservation District, Phillips Conservation District, U.S. Department of the Interior Bureau of Land Management, MRWA, Valley County Conservation District, and the Hill County Conservation District.

Rodney Kott and **Lisa Surber** were invited speakers at the American Sheep Industry's Annual Convention, held in Scottsdale, Arizona January 24-28. They were both asked to participate as panel members at the Genetic Stakeholders Meeting Panel entitled "Improving loin-eye size in the U.S. sheep industry - The tools are here." This discussion was on the procedures of using ultrasound measurements in genetic evaluation programs in sheep. Rodney also gave a presentation on an Extension Project to Develop Community of Practice for Sheep in the rebuild the sheep inventory committee meetings.

The Montana Wool Growers Convention was held December 2-3, 2011 in Billings, MT. **Rodney Kott** was interviewed on a live broadcast of Voices of Montana and later gave a presentation on raising sheep in a wet climate.



Lisa Surber demonstrated how to ultrasound the loin eye of a sheep and **Brent Roeder** is the new Executive Secretary of the Montana Wool Growers Association.

Visiting Student Highlight: Louise Labadie

The Animal & Range Sciences Department was very happy to host Louise Labadie, a visiting student from Angers, France. From September of 2011 through December 2011, Louise joined Dr. John Paterson's research group to complete an internship.

After high school, Louise received a scientific baccalaureate degree in animal production. She then entered a 1.5 year program of consultancy and advice in animal production (extension agent) in a French university, named Groupe ESA in Angers. This university had an exchange program with a Dutch university, CAH Dronten, where she chose to participate in this exchange in Holland. Louise spent 6 months in Holland and 6 months at the French university. To end her training she had to complete a 5 month internship related to animal production or science. Louise chose to do her internship in animal science at Montana State University.

The objectives of Louise's internship were to learn about the work in a company or a research institute and write a thesis report and make an oral presentation to an academic jury about this internship. Some of the things Louise was responsible for during her time here, was to help in mixing the feed, feeding the sheep every day, weighing them every week, conducting digestibility tests of their diets, running laboratory work and collecting and analyzing all the data. She was not alone in these activities and with the help of Mo Harbac, John Paterson and Blake Hauptman she had a very successful internship.

During Louise's time in Montana, she also had the chance to help work on research not associated with her internship. Although it was not part of her internship work, Louise was able to work with some of Dr. Paterson's other graduate students, Omolola Betiku, Blake Hauptman and Liz Read, helping on their fish trial work. Louise was also very grateful to have been able to work at the Padlock Ranch helping Mo Harbac.



Newest Faculty Member of the Department of Animal & Range Sciences: Dr. Craig Carr

The entire Animal & Range Sciences Department at Montana State University – Bozeman would like to welcome Dr. Craig Carr to the department. Dr. Carr has accepted the position of Assistant Professor – Rangeland Ecology.

Craig received his Bachelor's degree in Animal Science from the University of Alberta in 1994. He attended Oregon State University where he completed his M.S. and Ph.D. requirements. Craig's dissertation examined understory responses in ponderosa pine forests. Craig served as an agrologist with the British Columbia Ministry of Forests in the Kamloops Forest Region. In addition, he was the Executive Director of the Crooked River Watershed Council. Most recently, Craig was a Research Assistant Professor at the University of Nevada – Reno.

Craig will be teaching NRSM 350 Vegetation of Western Wildlands and NRSM 351 Biomes of Western Wildlands.

Where Has Glenn Been??

Listed below are some of the places Glenn Duff, Department Head, has visited since the last newsletter:

December 2011:

Montana Wool Growers Convention (Billings, MT)

Montana Stockgrowers & Montana Cattlewomen's Convention (Billings, MT)

January 2012:

Board of Livestock Meeting (Helena, MT)

National Cattlemen's Beef Association (NCBA) 2012 Cattle Industry Convention & Trade Show (Nashville, TN)



Upcoming Dates

February 7, 2012	Veterans Equine Volunteer Program Open House 5:00 pm Miller Pavilion
February 25-26, 2012	MSU Polo Training Foundation Clinic & Tournament Miller Pavilion
March 12-16, 2012	MSU Spring Break
March 17-19, 2012	2012 Montana Wool Harvesting School (Beginner). Contact Peggy Kelley at: kelly@montana.edu
March 19, 2012	MSU Spring 2012 Farrier School http://animalrange.montana.edu/horseshoe.htm
March 20-21, 2012	2012 Montana Wool Harvesting School (Advanced). Contact Peggy Kelley at: kelly@montana.edu
April 17-18, 2012	Nutrition Conference GranTree Inn (Bozeman, MT) Contact Rachel Endecott: rachel.endecott@montana.edu
April 21, 2012	Equine Conference (Bozeman, MT) Contact Julie Hager: jhager@montana.edu
May 28, 2012	Memorial Day Holiday
June 24-26, 2012	National Association of Equine Affiliated Academics (NAEAA) 2012 Conference (Big Sky, MT) Contact Shannon Moreaux: moreaux@montana.edu

Recent Events Held at the Animal Bioscience Building



October 27, 2011 **Animal & Range Sciences Department Advisory Committee Annual Meeting** was held. The Northern Ag Network wrote a very nice piece in regards to this meeting and it can be viewed at: <http://www.northernag.net/AGNews/tabid/171/articleType/ArticleView/articleId/5202/MSU-Animal-and-Range-Dept-Enrollment-Grows.aspx>.

December 2011, the Department of Animal and Range Sciences partnered with Accelerated Genetics, Billing, MT to offer a short course for artificial insemination (AI) in cattle. Students and producers used the new student physiology laboratory facility in the new Animal Bioscience Building and the AI Facility at the Bozeman Area Research and Teaching Facility.

January 2011, the College of Agriculture Research Centers held their faculty meeting at the Animal Bioscience Building.

Research Highlight: Bovine Respiratory Disease (BRD)



Glenn Duff and Kate Sharon take a blood sam-

ple from a cow. Kate Sharon, Dr. Glenn Duff's MS graduate student in Animal Science, originally from Dillon, MT gave us an update on the research that is currently being done at the BART Farm.

This spring Dr. Glenn Duff and I are investigating a very important topic in the cattle industry, bovine respiratory disease or BRD. The objective of our research project is to address the severity of bovine respiratory disease in beef cattle. BRD is the most common and costly problem in feedlot cattle in North America, having a \$750 million annually cost to industry. BRD accounts for approximately 75% of morbidity and over 50% of mortality in feedlot net profit loss. Calves treated for BRD once returned \$40.64 less than uninfected calves, treated twice returned \$58.35 less, three or more times returned \$291.93 less. We have a few trials planned to further research this topic. These

trials are focusing on vaccination practices for this disease as well the disease of BRD itself. Our later projects will be targeting one of the known precursors for BRD, Bovine Herpes Virus-1 (BHV-1) more commonly known as infectious bovine rhinotracheitis (IBR). Our research is focusing on reducing costs to cattle producers in Montana as well as producers around country.

Our initial trial, which is currently ongoing, addresses the relationship between vaccination timing and feed intake. Our question being: does vaccination upon arrival versus a delayed vaccination program result in a difference in feed intake in beef cattle. This study has three groups of heifers, one which receives a vaccination upon arrival, one which vaccination is delayed two weeks and one group which receives no vaccination. All heifers have their temperature recorded every five minutes from a temperature probe which is in a CIDR that is inserted into the heifers. This information will help determine the severity of any adverse effects from the vaccination on these heifers by allowing us to observe any fever response. Our

trail is taking place at the BART farm with the GrowSafe facility which allows us to constantly monitor feed intake of the heifers.

Following trials, taking place later this spring will be focusing on our precursor of interest for bovine respiratory disease, Bovine Herpes-Virus-1. There have been significant findings in other species including humans and cats that oral lysine supplementation helps to naturally suppress herpes. We want to integrate this theory into the cattle species by incorporating rumen bypass lysine into the diet of cattle we hypothesize an altered response to a BHV-1 challenge; therefore lessening the impact of one of the agents that cause BRD for cattle producers. We are very enthusiastic about these projects and look forward to conducting these trials to gain further information and possibly come up with alternative solutions for this disease.



KC Davis helping out by moving animals in the shoot using the Electronic ID (EID)



Heifers used in study using GrowSafe system.

Other News



Dr. Shannon Moreaux is happy to announce that MSU has been chosen to host the National Association of Equine Affiliated Academics (NAEAA) 2012 Conference, June 24-26, 2012 in Big Sky, MT. Over 150 equine experts from 52 institutions across the United States, Canada, Mexico, Europe and Australia are expected to participate in seminars advancing the equine undergraduate and graduate discipline. Dr. Moreaux will present “Facilitating Equine Student Internships Thru Outreach Education”.

MSU’s equine program is in the process of starting an equine facilitated therapy project for veterans. Animal and Range Science Professor, **Dr. Shannon Moreaux** and Equitation Manager **An-di Shockley** have worked with the MSU Department of Veteran Services to create a program that will introduce veterans to horse behavior, care and management. MSU equine science students and instructors will use horses as facilitators for military veterans to gain self-understanding and emotional growth.



Dr. Mike Frisina was in Pakistan last fall, and taught a week long field course that addressed practical ways to monitor large ungulate populations. The course included actually completing a survey of the straight horned markhor (Worlds rarest wild goat) in the Torghar hills. The course emphasized the importance of incorporating habitat factors along with using technology that is appropriate to the situation. This is an important issue for those needing practical ways to monitor populations, under primitive conditions, for use in making management decisions. The students were professionals working in National Parks and local forest and wildlife departments. 10 students completed the course which was hosted by the Society for Torghar Environmental Protection and were awarded diplomas.



Dr. Rachel Frost was recently appointed as the new Chair for the eXtension Rangelands Stewardship and Health Community of Practice. eXtension is an interactive learning environment that consolidates the best knowledge from land-grant university minds across America and delivers it to the general public. The Rangeland Stewardship and Health group is a community of practice devoted to informing and educating the public about rangelands and their management. The Rangelands community provides information on the ecology and management of our nation’s rangelands. Frost is responsible for coordinating technical writers and other volunteers to put the site through the final steps of publication. The site should be available to the public early



The Department of Animal and Range Sciences partnered with Accelerated Genetics, Billing, MT to offer a short course for artificial insemination (AI) in cattle. Mr. John Jackson, cooperated with **Dr. Jim Berardinelli** and his 3 undergraduate students to certify 15 students in technologies and techniques of AI in beef cattle in December, 2011. Students and producers used the new student physiology laboratory facility in the new Animal Bioscience Building and the AI Facility at the Bozeman Area Research and Teaching Facility. These interactions contribute to our teaching mission and improve our relationships with Montana companies and producers to improve overall use of AI in our State.



Dr. Lisa Surber completed a training session held in Hettinger, North Dakota, November 19-22, 2011, and became a Certified Wool Classifier. Only about 500 wool handlers in the United States have this title. Congratulations, Lisa!



Thank You!

The Department of Animal and Range Sciences would like to acknowledge that the Montana Wool Lab was the recipient of a significant donation from Helle Livestock of Dillon, Montana. We would also like to thank them for their continued support.



Classroom News

The Outstanding Student of this year's class in ANSC 421 "Assisted Reproductive Technologies in Domestic Animals" were:



Rocky Forseth, 1st place winner (left)

Ashley Boomer, 2nd place winner



Kasey Russell (left) and Megan Hansen (right) above, 3rd place winners

Help Support Animal and Range Sciences

A gift to the Department is a great way to support student and faculty endeavors. Donations can be earmarked for student scholarship funds, faculty research, the new Animal Bioscience Building, and more.

For more information about making a donation to the Department contact:

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With special thanks to the entire A&RS Administrative Team



The new Animal Bioscience Building

