

ANIMAL & RANGE SCIENCES NEWSLETTER

Volume 4, Issue 1

January 2011

Introduction from Dr. Glenn Duff, Department Head



Greetings and welcome to the latest version of the Department of Animal and Range Sciences Newsletter. The last few months have been filled with exciting events for our department and Montana State University. If you missed the November dedication of the Animal Bioscience Building, you missed a wonderful event. The weather was perfect and attendance was spectacular. Other departmental highlights are presented in this newsletter.

Donna and I both agree that this has been the best decision we have ever made to move to Montana. We are both getting involved in the community of Bozeman and have really enjoyed the winter. We both have taken to cross country skiing, and we now embrace snow and the colder temperatures. You will probably want to remind me of this statement when our next newsletter comes out later this spring.

We finished our first semester teaching in the new Animal Bioscience Building. The building has most of the technology up and running and we are excited about all of the capabilities that it possesses. We would again like to thank everyone that have been a part of the process. This attests to the importance of Animal and Range Sciences to Montana.

Since our last newsletter, I have attended Montana Farm Bureau, Wool Growers, Montana Stockgrowers, Montana Pork Producers and visited the Northern Agriculture Research Center in Havre. I have also had the opportunity to travel to a few ranches and I look forward to getting out and meeting more of you soon. Donna has also been able to travel with me on occasion and even had the chance to experience pregnancy checking cows. Donna found out that cows aren't particularly happy about her practicing on them and realized it takes a bit of strength (see attached picture). Even though I am a nutritionist and not a reproductive physiologist, I know that Donna has a 50:50 chance of being correct in her diagnosis of this particular cow.



Mark your calendars for our upcoming events. The equine conference is scheduled for the first part of March and the Nutrition Conference will be held in Bozeman in April. Many of our faculty will be participating in the Society for Range Management meetings that will be held in Billings the first part of February. We also had representation at the American Sheep Institute meeting in Reno, NV.

We would like to express our thanks to the Animal and Range Science advisory committee. These dedicated individuals met during Ag Appreciation weekend and before the dedication of the Animal Bioscience Building. We had faculty and staff give short updates of their research programs and assignments. The Advisory Committee also had the chance to visit with Dean Jeff Jacobsen.

We continue to experience increased enrollment in our majors. Last fall, we had approximately 270 undergraduate and 14 graduate students in Animal and Range Sciences. An example is, Dr. Jane Ann Boles' Introductory Animal Science course (ARNR 100) has 194 students in the lecture and 24 students taking the on-line section. I am proud of the dedication of our faculty to the teaching efforts. We have also started reevaluating our curriculum to ensure students get the best education available. Faculty and I are realigning our classes with potential new faculty hires in the department.

Please stop by and see us if you are in Bozeman. Your continued support of the Department of Animal and Range Sciences is much appreciated.

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Awards, Publications & Presentations

Jim Berardinelli was presented with the Mershon Award at the Montana Academy of Sciences Annual Meeting which was held in April 2010 in Butte, MT. <http://www.sciencemt.org/>.

Dennis Cash was awarded the "Liupanshan Mountain Friendship Award" from the Ningxia Hui Autonomous Region Government, China. Dennis was awarded this for his work on the UN-FAO alfalfa project 2007-2009.

Merrita Fraker-Marble received the Alicia Hargrave Memorial Award from the International Mountain Section of the Society for Range Management. Merrita was awarded this for fostering the art and science of rangeland management through range education and extension activities.

Jeff Mosley presented the keynote address at the 2011 Intermountain Range Livestock Symposium in Twin Falls, ID on January 13. Jeff also gave another presentation titled "Opportunities for the Rangeland Livestock Industry to Thrive." "Selective Culling of Beef Cows to Reduce Riparian Grazing Impacts" at this same symposium.

In September of 2010 **Jeff Mosley** presented an invited paper at the Western Region Meeting of the National Association of County Agricultural Agents in Helena, MT. The paper was titled: "Targeted Livestock Grazing for Vegetation Management."

New publication: Blake, T., V. C. Blake, **J.G.P. Bowman**, and H. Abdel-Haleem. 2011. Barley feed uses and quality improvement. Page 522 in Barley: Production, Improvement, and Uses. Steven E. Ullrich, ed. Blackwell Publishing Ltd., West Sussex, UK. <http://www.wiley.com/WileyCDA/WileyTitle/productCd-0813801230,descCd-tableOfContents.html>.

New publication: Bao Weidong, Xu Jiliang, Cui Guofa and **Michael Frisina**. 2010. Cat Research In China. CATnews Special Issue 5 Autumn 2010. 07-09. http://www.catsg.org/catnews/03_specialissue/cats_in_china/Bao_Weidong_et_al_2010_Cat_research_in_China.pdf.

New publication: Campbell, E.J., **R.A. Frost**, T.K. Mosley, **J.C. Mosley**, C.J. Lupton, C.A. Taylor Jr., J.W. Walker and J. Musser. 2010. Pharmacokinetic Differences in Exposure to Camphor After Intraruminal Dosing in Selectively Bred Lines of Goats. J. Anim. Sci. 88:2620-2626. <http://jas.fass.org/cgi/content/abstract/88/8/2620>.

New publication: **McDonald, T.J.**, G.W. Brewster, A. Bekkerman and **J.A. Paterson**. 2010. Case Study: Searching for the Ultimate Cow: The Economic Value of Residual Feed Intake at Bull Sales. The Professional Animal Scientist 26 (10): 655-660. <http://pas.fass.org/content/26/6/655.abstract>

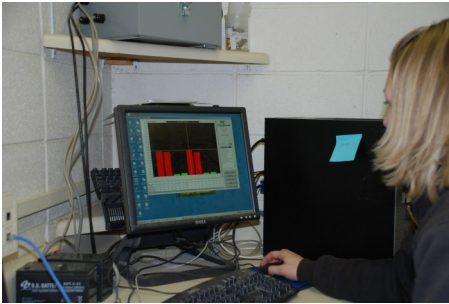
New publication: **Tauk, S. A., J.R. Olsen, J.R.C. Wilkinson**, and **J.G. Berardinelli**. 2010. Duration of Daily Bull Exposure on Resumption of Ovulatory Activity in Postpartum, Primiparous, Suckled, Beef Cows. Anim. Repro. Sci. 118:13-8. <http://download.journals.elsevierhealth.com/pdfs/journals/0378-4320/PIIS0378432009001614.pdf>.

New publication: **Tauk, S.A., J.R. Olsen, J.R.C. Wilkinson, K. Davis, R. Wedlake**, and **J.G. Berardinelli**. 2010. Characteristics of temporal patterns of cortisol and luteinizing hormone in primiparous, postpartum, suckled, beef cows exposed acutely to bulls. Reprod. Biol. and Endocrinol. 8:89. <http://www.rbej.com/content/pdf/1477-7827-8-89.pdf>.

Upcoming Dates

February 6-10, 2011	Society for Range Management 64th Annual Meeting (Billings, MT) http://www.rangelands.org/billings2011/ .
February 21, 2011	President's Day Holiday
March 5, 2011	6th Annual MSU Equine Conference http://animalrangeextension.montana.edu/equine/equine_conf.htm Contact Julie Hager for more information at: jhager@montana.edu
March 12-14, 2011	Beginner Shearing School Contact Peggy Kelley for more information: kelly@montana.edu
March 14-18, 2011	Spring Break
March 15-17, 2011	Advanced Shearing School Contact Peggy Kelley for more information: kelly@montana.edu
April 12-13, 2011	Montana Livestock Forum & Nutrition Conference
May 6, 2011	Spring Semester Ends

Current Research Highlights from Dr. John Paterson's Group



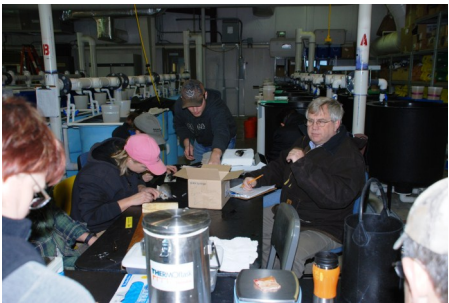
Tess checking mineral consumption on the GrowSafe.

Tess Norvell, a second year graduate student (from Kiowa, CO) of Dr. Paterson's, just completed the feeding phase of her study on magnesium. Tess had 24 first calf heifers on trial rotating them from the pasture to the GrowSafe barn. Her mineral supplement was a control with no Mg and then "control plus" supplement which included Mg. Her thesis is entitled: The Effects of Increasing Tetany Risk Ratio on Magnesium Utilization and Supplementation in Ruminants.



Line feeding in Mg study.

Liz Read (from West Point, UT), a first year graduate student from BYU finished a trial using rainbow trout. Her major advisor is Dr. John Paterson. Dr. Wendy Sealey from the Bozeman Fish Technology Center and Dr. Mark Petersen from Ft Keogh are also on her committee. She had 32 tanks of fish with 16 different diets (two sources of protein plant or fish meal and then varying levels of copper within each diet). The last day of a fish trial is an all hands effort. The following steps were accomplished with a sampling of fish from each tank: weight, total length, dorsal fin length, livers were removed, fillets were taken and weighed. The fish is then frozen so she can run some additional mineral tests. We even had Dr. Duff and Dr. Boles show up to lend a hand!!



Everyone lending a hand sampling fish.

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Liz stocking a tank at the beginning of her trial.

Dr. Ricardo Manzano is a post doctoral student from Brazil currently conducting research with Dr. John Paterson. Thanks to the Bair Ranch Foundation, we had steers made available to Ricardo for a mineral study. Ricardo relocated two of the Growsafe bunks to a pasture at the BART. Ricardo experienced a MT spring with snow in late May and then our beautiful fall. The title of his work is: Individual Loose Mineral Supplement Intake and Behavior of Beef Steers Grazing Spring Growth Forage and Dormant Forage. Ricardo's brother-in-law, Rocky, spent six weeks with us this summer. He was a great help with Ricardo's research and anything else we needed to accomplish. Ricardo and his family will be moving back to Brazil at the completion of this academic year.



Ricardo working on mineral feeder in May snowfall.

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Bair steers at the mineral feeder.

A big thanks to **Chase Younkin** (Hinsdale, MT) student employee of John Paterson's. Chase is a real asset and helps out with feeding research animals as well as the donated steers in the Steer-a-Year (SAY) program. Chase is a first year student studying Ag Economics.



Other News



Tommy Bass is a co-organizer of the Environmental Leaders Award Program. This program is a joint effort of the National Young Farmers Educational Association (NYFEA), Montana State University and University of Nebraska-Lincoln. It seeks to reward and recognize young/beginning animal ag producers who have a proactive environmental stewardship ethic in their operation. Winners receive a \$500 travel scholarship to Agriculture's Promise <http://www.agriculturespromise.com/> held annually in Washington, DC. If you are interested please contact Tommy Bass at tmbass@montana.edu or by calling 406-994-5733. Announcements about the program can be found at <http://www.facebook.com/envagleaders>.



The Department of Animal and Range Sciences partnered with two genetics companies of Montana to offer short courses for artificial insemination (AI) in cattle. Mr. John Jackson of Accelerated Genetics, Billings, MT, cooperated with **Dr. Jim Berardinelli** and his graduate student, Rick McCosh, to certify 14 students in technologies and techniques of AI in beef cattle in December, 2010. Mr. Shawn McGinley, Area Beef Representative for Genex Cooperative, Inc., in cooperation with **Drs. Michael Wehrman** and **Jim Berardinelli** certified 9 producers and students in the use of AI to improve beef cattle reproduction in January, 2011. Students and producers use the new 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.



Former MSU Swine Specialist and professor emeritus **Dr. Wayne Gipp** emceed the Montana Pork Producers meeting in Great Falls on January 20, 2011. Those in attendance included members of the border patrol, law enforcement, Montana Department of Livestock, Extension Service and swine producers. Others in attendance from the Animal & Range Sciences Department were **Dr. Glenn Duff**, **Tommy Bass** and **Peggy Kelley**.



Kudos to Santa Boles and her Merry Meat Lab Elves! Adopt A Sox is a local non-profit organization that sends Christmas boxes to Montana military personnel serving overseas. While chatting with **Dr. Jane Boles**, I mentioned that one of the items the soldiers really enjoyed was the beef jerky included in each package. She later told me she was willing to make jerky at the meat lab if we could procure the meat. Oh, boy! Through donations of money and beef from local outlets, we were able to bring in about 120 pounds of beef. This became 250 packages of beef jerky for the Christmas boxes. What a treat, and to make it even better, the jerky is packaged under the Montana Magic label.



Dr. Boles was assisted in this endeavor by **Kelsi Gambill**, **Amanda Hart**, **Shalaine Watson**, and **Anita Gray**. Thank you so very much for helping us send a bit of home to our service men and women overseas. You made Christmas in a far off land a bit more special. Gratefully submitted by **K.C. Davis**, Research Associate and Adopt A Sox volunteer



Dr. Shannon Moreaux will be teaching 5 workshops at the Montana 4-H Horse & Livestock Forum in Helena, MT on January 28-30, 2011.

Dr. Moreaux is the Chair of the upcoming 6th Annual MSU Equine Conference to be held at the Bozeman GranTree Inn on March 5, 2011. Dr. C. Wayne McIlwraith, arguably the world's leading expert on equine osteoarthritis, will be the keynote speaker. There is also an exceptional lineup of regionally respected horse experts, legal and economic experts, equine health professionals and the Assistant State Veterinarian to deliver the latest information concerning horse health, management and business issues. For registration information contact **Julie Hager** at 406-994-7953 or jhager@montana.edu. Conference brochure and registration are located on our website at: http://animalrangeextension.montana.edu/equine/equine_conf.htm.

Society for Range Management 64th Annual Meeting—February 6-10, 2011, Billings, MT

Several faculty, staff and students from the Animal & Range Sciences Department will play a big part in the upcoming 64th Annual Meeting of the Society for Range Management (SRM) to be held February 6-10 in Billings, MT. Among those are Dr. Jeff Mosley who will be completing his term as President of SRM, and Dr. Bret Olson, and Merrita Fraker-Marble who were part of the Annual Meeting Planning Committee. You can get details for the meeting at:

<http://www.rangelands.org/billings2011/>.

The following Animal & Range Sciences personnel will present a talk or poster at the 64th Annual Meeting of the SRM:

PRESENTATIONS:

Rachel Frost, Res. Scientist, “Rangelands on Extension: Compiling the Best of the Best for Rangeland” and “Can Targeted Sheep Grazing or Mowing Suppress Sulfur Cinquefoil (Potential recta) on Rangeland?”

Brent Roeder, Range/Sheep Research & Extension Specialist, “Alfalfa Hay Supplementation Increases Ponderosa Pine Browsing by Goats in Winter.”

Charles Glenn, Undergraduate Student, “Composition and Quality of Diets of Sheep Grazing Sulfur Cinquefoil Infested Rangeland in Western Montana.”

Melissa Graves, Graduate Student, “Impact of Sheep Grazing on Demographic Parameters of Cheatgrass (*Bromus tectorum*) and Wild Oat (*Avena fatua*) in Three Common Montana Agricultural Systems.” **(See highlights of Melissa’s research below)**

Kelsey Guffey, Undergraduate Student “Forage Nutrient Availability and Reproductive Success of Semi-Wild Bison in Western Montana, USA.”

Charles Sloane, Graduate Student, “Environmental Influences on Structural Characteristics of Cheatgrass (*Bromus tectorum*).”

Clayton Marlow, Professor, “Wildfire as a Process in Riparian Recovery and Stability.”

Kimberly Haile, Graduate Student, “Predicting Direct Fire-Induced Mortality of Four Prominent Rangeland Graminoids.”

POSTERS:

Karen Kitchen, MS Graduate, “Conifer and Abiotic Factors Influence on Big Sagebrush Cover.”

Melissa Graves, who is going to be a presenter at the upcoming SRM, is a current MSU graduate student working with Dr. Pat Hatfield. Melissa has had some very interesting preliminary data that has indicated grazed fallow plots showed 95% less weed biomass when compared to chemical fallow plots, indicating that sheep grazing as a weed control option can be more effective than chemical control (see pictures below).



Grazed fallow plot



Chemical fallow plot

Adjunct Professor Highlight: Dr. Michael Meyers

Although Dr. Michael Meyers, FACSM, is presently Senior Research Scientist in the College of Education, Health and Human Development at Montana State University, his experience as a former collegiate athlete in basketball and lacrosse, as well as a professional team roper, spurred his interest in multidisciplinary focus on both human and equine performance. Recently, he has come full circle as an Adjunct Faculty member in the Department of Animal and Range Sciences.

Formerly a Professor and Director of the Human Performance Research Laboratory at West Texas A&M University, Dr. Meyers is a Fellow in the American College of Sports Medicine, Past-President of the Texas Chapter of the American College of Sports Medicine, and recognized on the Sport Psychology Registry with the United States Olympic Committee.

Dr. Meyers holds a Ph.D. from Texas A&M University with an emphasis in human exercise physiology as it relates to orthopedic sports medicine, a M.S. degree working with Dr. Gary Potter in equine nutrition and physiology (TAMU), and a B.S. degree in animal nutrition from Oklahoma State University. He is also currently an Adjunct Associate Professor and Visiting Graduate Faculty in the Department of Psychology at Texas A&M University, working in the area of pain response in athletes following injury and rehabilitation.

Michael has authored over 75 scientific journal publications, and has given over 370 scientific and medical presentations around the world. His research has appeared in such journals as *Medicine and Science in Sports and Exercise*, *Journal of Applied Physiology*, *American Journal of Sports Medicine*, *European Journal of Applied Physiology*, *Clinical Journal of Sport Medicine*, *Physician and Sportsmedicine*, *Journal of Equine Veterinary Science*, and *Sports Medicine*.

Dr. Meyers has been featured in *KTRH 740 AM News Radio-Houston*, *Outside Magazine*, *Newsweek-on-the-Air Radio Program*, and *PBS Scientific American Frontiers Television Series*, and has written for *Equus*, *Practical Horseman*, *The American Quarter Horse Journal*, and as a columnist for *Horse and Rider Magazine*.

Over the past 20 years, Michael has worked with numerous collegiate, professional, and elite sport organizations in the areas of comprehensive sport performance identification and development, nutritional and psychological assessment, and orthopaedic trauma on artificial surfaces. Organizations include the U.S. Olympic Developmental Soccer Program, U.S. Equestrian Team, U.S. Gymnastics, Women's Professional Tennis Association, National Intercollegiate Rodeo Association, and the Bureau of Educational and Cultural Affairs, U.S. Information Agency in Washington, DC. He has also directed sport performance testing with numerous universities. This semester, Dr. Meyers teaches *Horse Management: An Introduction to Equine Exercise Physiology*.



MSU President Waded Cruzado with Glenn and Donna Duff at the A&RS Christmas Party hosted by the Duff's.



Fun times had by all....thank you Glenn and Donna!

Student News

Congratulations to the following graduate students who graduated fall semester 2010:
Brittany Mendelsohn, MS in Animal & Range Sciences,
Michael Borgreen, MS in Animal & Range Sciences and
Lindsey Voigt, MS Animal & Range Sciences.

Recent masters graduate, Jyme (Peterson) Nichols has started her own Equine Nutrition Consultation Business. You can access her web page at the following: <http://nicholsequine.net>.

Students interested in obtaining more information on scholarships available please check out: <http://ag.montana.edu/students/scholarships.htm>.

College of Agriculture students looking to get involved in student organizations please go to: <http://ag.montana.edu/students/student-groups.htm>.

Michael Borgreen, recent MS graduate was presented with the Best Graduate Student Oral Presentation at the Montana Academy of Sciences Annual Meeting which was held in April 2010 in Butte, MT. <http://www.sciencemt.org/>.

Anna Marie Samson (Three Forks, MT) is one of 19 national recipients of a \$2,000 2010-2011 Pork Industry Scholarship. Anne Marie is a junior in our Animal & Range Sciences Department.



MSU Marching Band playing at the Animal Bioscience Building Dedication.



MSU President Waded Cruzado speaking at the Animal Bioscience Building Dedication.

Conrad Burns, former Montana Senator was an honored guest at the Animal Bioscience Bldg. dedication (in front of the Donor Wall)



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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Newsletter edited and compiled by Susan Cooper

With special thanks to the entire A&RS Administrative Team



The new Animal Bioscience Building