

# 5th Grazing Livestock Nutrition Conference

Enhancing Management, Production, and Sustainability  
of Grazing Ruminants in Extensive Landscapes

July 17-19, 2016 / Canyons Resort / Park City, Utah



# Welcome



## **5th Grazing Livestock Nutrition Conference**

**Enhancing Management, Production,  
and Sustainability of Grazing Ruminants  
in Extensive Landscapes**

Welcome to the Fifth Grazing Livestock Nutrition Conference. The first call-to-order occurred in July 1987 at Jackson Hole, Wyoming. That meeting was dedicated to Drs. Lorin Harris and C. Wayne Cook who inspired the science of Range Livestock Nutrition in the Western United States.

The major inspiration for the Grazing Livestock Nutrition Conference is a desire to facilitate a forum where researchers, practitioners and students meet, explore advances, and learn the science of grazing animal nutrition. Utah is a perfect location to encourage and grow this meeting. The venue is appealing, with beautiful outdoor areas, to encourage participants coming together for formal and informal discussions. Much of the conference agenda is related to the realization that livestock grazing occurs around the globe primarily in extensive grazing scenarios; this recognition has prompted an international aspect to the Grazing Livestock Nutrition Conference.

As with the 4th meeting, this meeting was planned by members of the Multistate Research Project, W2012. We would like to begin by thanking the committee for their dedication to the project.

Highly respected international researchers have been and are key congress speakers presenting challenging theories and intriguing experimental results. Their contribution in the past and this year is highly valued.

We hope the meeting and proceedings are useful.

Sincerely,

*Kenneth C Olson*

# SPEAKERS

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## **Organization and Program Committee**

Ken Olson, Professor, Extension Beef Specialist, Range Livestock Nutrition  
South Dakota State University: GLNC Organizing and Program Chair

Mark Petersen, Research Leader, USDA-ARS Fort Keogh LARRL Miles City  
MT: GLNC Historian

Jack Whittier, Director of the Panhandle Research & Extension Center in  
Scottsbluff , NE: GLNC Meeting Site Coordinator and ASAS liaison

Richard Waterman, Range Animal Nutrition, USDA-ARS Fort Keogh LARRL:  
GLNC sponsorship Coordinator

Eric Scholljegerdes, Asstant Professor, Ruminant Nutrition, GLNC Editor

Joel Caton, Engberg Endowed Professor, Animal Sciences, North Dakota State  
University, GLNC grants coordinator

Meghan Wulster-Radcliffe, CEO American Society of Animal Science. GLNC-  
ASAS site location support and interface with ASAS/JAM

## **Scientific Advisory Committee and Members of W2012:**

David Bohnert, Oregon State University

Craig Carr, Montana State University

Tim Delcurto, Oregon State University

Rachel Endecott, Montana State University

Antonio Faciola, University of Nevada

Dan Faulkner, University of Arizona

Bret Hess, University of Wyoming

Anowar Islam, University of Wyoming

Shanna Ivey, New Mexico State University

Ron Lewis, University of Nebraska

Donald Llewellyn, Washington Cooperative Extension

Allison Meyer, University of Missouri Columbia

Chad Mueller, Oregon State University

John Mulliniks, University of Tennessee

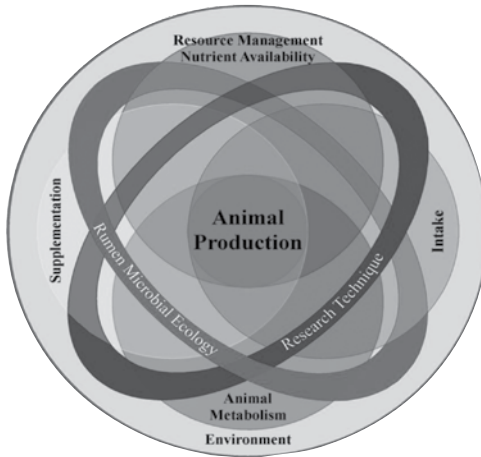
Sergio Soto-Navarro, New Mexico State University

Ligia Perzotto, Montana State University

Donald Synder, Utah State University

Jim Sprinkle, University of Arizona

Dale ZoBell, Utah State University



## Sunday, July 17, 2016

4:00 PM - 7:30 PM	Registration	Kokopelli Foyer
4:00 PM - 6:45 PM	Poster Set up	Kokopelli I
6:45 PM	Conference Welcome	
7:00 PM - 8:00 PM	Plenary Session I	Kokopelli II & III
7:00 PM	Meeting projected food demands by 2050: Understanding and enhancing the role of grazing ruminants <i>Joyce Turk, US Agency for International Development, retired</i>	
8:00 PM	Opening reception with Invited Posters Genomic interrelationships of grazing distribution in extensive grazing systems <i>Milt Thomas, Colorado State University</i> Are plant waxes reliable dietary markers for cattle grazing western rangelands? <i>Ron Lewis, University of Nebraska-Lincoln</i>	

# SCHEDULE

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## Monday, July 18, 2016

7:00 AM	Conference Breakfast	
8:00 AM - 7:00 PM	Registration	Kokopelli Foyer
8:00 AM - 12:15 PM	Plenary Session II	Kokopelli II & III
8:00 AM	Drivers of grazing livestock efficiency: how physiology, metabolism, experience and adaptability influence productivity <i>Travis Mulliniks, University of Tennessee</i>	
8:45 AM	Overcoming challenges to utilization of dormant forage in year-round grazing systems <i>Elaine Grings, US Agency for International Development</i>	
9:30 AM	Supplementation and Sustainable Grazing Systems <i>David Bohnert, Oregon State University</i>	
10:15 AM	Poster and Networking Break	Kokopelli I
10:45 AM	Livestock grazing as an integral component of sustained agroecosystems - a private lands perspective <i>Kevin Sedivec, North Dakota State University</i>	
11:30 AM	Livestock grazing, public lands, endangered species, fire, invasive species government policy <i>Tim DelCurto, Oregon State University</i>	
12:15 PM	Conference Lunch	
12:45 PM - 2:00 PM	Plenary Session III	Kokopelli II & III
12:45 PM	Global Sustainability <i>Kim Stackhouse, JBS USA</i>	
2:00 PM - 6:30 PM	Plenary Session IV	Kokopelli II & III
2:00 PM	Predicting Forage intake in Extensive Grazing Systems <i>Mike Galyean, Texas Tech University</i>	
2:45 PM	Animal energetics in extensive grazing systems: Rationality and results of research models to improve energy efficiency of beef cow-calf grazing Campos systems <i>Martín do Carmo Corujo, University of the Republic, Uruguay</i>	

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3:30 PM	Poster and Networking Break	Kokopelli I
4:00 PM	Energetics of grazing cattle: Impacts of activity and climate <i>Joel Caton, North Dakota State University</i>	
4:45 PM	How do we indentify energetically efficient grazing animals? <i>Eric Scholljegerdes, New Mexico State University</i>	
6:30 PM	Conference Dinner	
7:30 PM - 8:30 PM	Plenary Session V	
7:30 PM	Looking Back, Then Pressing Forward <i>Mark Petersen, USDA-ARS Fort Keogh</i>	

## Tuesday, July 19, 2016

8:00 AM - 11:00 AM	Registration	Kokopelli Foyer
8:00 AM - 10:15 AM	Plenary Session VI	Kokopelli II & III
8:00 AM	Genomic aspects of beef cow efficiency and longevity in grazing environments <i>Andy Roberts, USDA-ARS Fort Keogh</i>	
8:45 AM	Impacts of environment on gene expression and epigenetic modification in grazing animals <i>Jennifer Thomson, Montana State University</i>	
9:30 AM	Does the Rumen Microbiome Play a Role in Feed Efficiency of Beef Cattle? - <i>Leluo Guan, University of Alberta</i>	
10:15 AM	Poster and Networking Break	Kokopelli I
10:45 AM - 11:30 AM	Plenary Session VII	Kokopelli II & III
10:45 AM	Synthesis and perspective for the future of grazing livestock nutrition research, training, and application <i>Clay Mathis, Texas A&amp;M University, Kingsville</i>	
11:30 AM	ADJOURN	

# POSTERS

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## **Effect of early intensive grazing of Kentucky bluegrass on animal performance.**

*B. Patton<sup>1</sup>, F. Brummer<sup>\*1</sup>, and R. Limb<sup>2</sup>, <sup>1</sup>North Dakota State University, Central Grasslands Research Extension Center, <sup>2</sup>North Dakota State University, Fargo*

## **Feeding strategy and pasture quality relative to nutrient requirements of grazing dairy cows in the northeastern U.S.**

*K. Soder<sup>\*1</sup>, A. Hafla<sup>1</sup>, A. Brito<sup>2</sup>, R. Kersbergen<sup>3</sup>, F. Benson<sup>4</sup>, H. Darby<sup>5</sup>, and M. Rubano<sup>1</sup>, <sup>1</sup>USDA-ARS, <sup>2</sup>University of New Hampshire, <sup>3</sup>University of Maine, <sup>4</sup>Cornell University, <sup>5</sup>University of Vermont*

## **Dairy cows that were selected for low residual feed intake as calves are energetically more efficient while grazing.**

*P. Gregorini<sup>\*</sup>, K. Macdonald, G. Waghorn and A. Romera, DairyNZ, Hamilton, New Zealand*

## **A demonstration on the use of goats and sheep to control unwanted vegetation in sensitive areas on Delmarva.**

*E. N. Escobar<sup>\*</sup>, J. J. Rodriguez and H. Taylor, University of Maryland Extension-1890 Program, University of Maryland Eastern Shore*

## **Application of a rising plate meter for estimation of forage yield in multi-species swards.**

*S. L. Dillard<sup>\*1</sup>, A. N. Hafla<sup>2</sup>, M. D. Rubano<sup>1</sup>, R. C. Stout<sup>1</sup>, and K. J. Soder<sup>1</sup>, <sup>1</sup>USDA-ARS, <sup>2</sup>Agri-King, Inc.*

## **Effect of Herbage Allowance on Adipose Tissue Gene Expression of Rangeland Beef Cows.**

*M. Carriquiry<sup>\*</sup>, A. C. Espasandin, and P. M. Soca, Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay*

## **Effect of legumes containing increasing levels of condensed tannins on greenhouse gas output of an orchardgrass diet.**

*A. I. Roca-Fernández<sup>\*</sup>, S. L. Dillard, M. J. Rubano, C. J. Dell, and K. J. Soder, USDA-ARS*

## **Foraging strategy of gestating beef cows grazing Campos grassland with changes in herbage allowance and cow genotype.**

*P. M. Soca<sup>\*</sup>, S. Scarlato, M. Do Carmo, Animal Production and Pastures Department, School of Agronomy, UDELAR, Montevideo, Uruguay*

## **Oxidative stress of mature beef cows grazing different herbage allowances of grasslands.**

*A. Casal<sup>\*</sup>, P. Soca, A.C. Espasandin, and M. Carriquiry, Departamento de Producción Animal y Pasturas, Facultad de Agronomía, UDELAR, Montevideo, Uruguay*



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**Daily variation of salt intake by steers grazing dormant native range.**

*R. Reuter\**, Oklahoma Agricultural Experiment Station

**Mobile App for Tracking and Analysis of Beef Herd Rangeland Use and Location.**

*J.W. Oltjen\**<sup>1</sup>, *L.C. Forero*<sup>2</sup> and *J.W. Stackhouse*, <sup>1</sup>University of California-Davis, <sup>2</sup>University of California Cooperative Extension

**A novel technique for model evaluation and selection for in situ degradation parameters from cattle supplemented with varying levels of DDGS.**

*W. B. Smith*<sup>1</sup>, *J. L. Foster*<sup>1</sup>, *K. C. McCuiston*<sup>2</sup>, *L. O. Tedeschi*<sup>3</sup>, *E. van Santen*<sup>4</sup>, and *F. M. Rouquette, Jr.*<sup>1</sup>, <sup>1</sup>Texas A&M AgriLife Research, <sup>2</sup>Texas A&M University-Kingsville, <sup>3</sup>Texas A&M University, <sup>4</sup>Institute of Food and Agricultural Sciences-University of Florida

**Effect of bait delivery rate in a GreenFeed system on methane emission estimates from cattle grazing native rangeland.**

*S. A. Gunter\** and *J. A. Bradford*, USDA-ARS, Woodward, OK

**Effect of stockpiling initiation method of cool-season grass pastures on winter forage mass and nutritional composition.**

*B. T. Stokes\**<sup>1</sup>, *J. R. Russell*<sup>1</sup>, *P. Gunn*<sup>1</sup>, and *S. M. Ensley*<sup>2</sup>, <sup>1</sup>Department of Animal Science, Iowa State University, <sup>2</sup>Veterinary Diagnostic & Production Animal Medicine, Iowa State University

**Foraging strategy of lactating beef cows grazing Campos grassland with changes in herbage allowance and cow genotype.**

*M. Do Carmo\**, *S. Scarlato*, and *P. Soca*, Animal Production and Pastures Department, School of Agronomy, UDELAR. Montevideo, Uruguay

**Effect of forage allowance on forage mass, stocking rates, estimations of cow intake and forage utilization of Campos grassland.**

*M. Claramunt\**<sup>1</sup> and *P. Soca*<sup>2</sup>, <sup>1</sup>Centro Universitario Regional del Este, Universidad de la República, Uruguay, <sup>2</sup>Facultad de Agronomía, Universidad de la República, Uruguay

**Effect of native pasture allowances on placenta efficiency and beef calf birth weight.**

*A. Alvarez-Oxiley\**, *S. Orcasberro*, *C. Loza*, and *L. Astigarraga*, University of the Republic, Uruguay

**Performance of heifers supplemented with different levels of corn on pasture.**

*H. Ospina Patino\**<sup>1</sup>, *F. A. Lopez Gonzalez*<sup>1</sup>, *K. C. Swanson*<sup>2</sup>, *C. Heller Pereira*<sup>1</sup>, and *J. Urdapilleta Tarouco*<sup>1</sup>, <sup>1</sup>Universidade Federal do Rio Grande do Sul, Brazil, <sup>2</sup>North Dakota State University

**Effects of grazing intensity and advancing season on in situ forage disappearance in steers supplemented with distillers dried grains with solubles grazing northern Great Plains rangelands.**

*B. W. Neville<sup>1\*</sup>, K. E. Chilcoat<sup>2</sup>, M. S. Crouse<sup>2</sup>, and J. S. Caton<sup>2</sup>, Central Grasslands Research Extension Center, Streeter, ND, <sup>2</sup>Departments of Animal Science, North Dakota State University, Fargo*

**Effects of grazing intensity and advancing season on ruminal fermentation in steers supplemented with distillers dried grains with solubles grazing northern Great Plains rangelands.**

*K. E. Chilcoat<sup>2\*</sup>, B. W. Neville<sup>1</sup>, M. S. Crouse<sup>2</sup>, and J. S. Caton<sup>2</sup>, Central Grasslands Research Extension Center, Streeter, ND, <sup>2</sup>Departments of Animal Science, North Dakota State University, Fargo*

**Effects of grazing intensity and advancing season on performance and intake in steers supplemented with distillers dried grains with solubles grazing northern Great Plains rangelands.**

*K. E. Chilcoat<sup>2\*</sup>, B. W. Neville<sup>1</sup>, M. S. Crouse<sup>2</sup>, and J. S. Caton<sup>2</sup>, Central Grasslands Research Extension Center, Streeter, ND, <sup>2</sup>Departments of Animal Science, North Dakota State University, Fargo*



## **Dr. David Bohnert**

David Bohnert grew up on his parent's dairy farm in the Texas Hill Country. He also raised beef cattle and registered Delaine-Merino sheep and was active in 4-H and FFA. David obtained his B.S. in 1990 and M.S. in 1994 from Angelo State University in San Angelo, Texas, and his Ph.D. from the University of Kentucky in 1998. His M.S. and Ph.D. were both in ruminant nutrition. Since 1998, Dr. Bohnert has been employed as a Range Animal Scientist by Oregon State University at the Eastern Oregon Agricultural Research Center in Burns, Oregon. David's research program has focused on nutritional management strategies that improve the efficiency of beef production systems in the Intermountain West. David has served on the editorial board and as an Associate editor of the Journal of Animal Science. He has authored or co-authored 59 peer-reviewed articles, 49 proceedings papers, 54 abstracts, 88 extension publications, and 33 popular press articles. In 2005 he was awarded the Young Scientist Award by the Western Section of the American Society of Animal Science.

# SPEAKERS

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## **Dr. Joel Caton**

Joel Caton was raised in central Missouri on a diversified livestock and grain farm. He received his BS degree from New Mexico State University, MS degree from University of Missouri, and PhD in 1987 from New Mexico State University. He completed a postdoctoral fellowship at University of Missouri and then became an Assistant Professor at North Dakota State University (NDSU). While progressing through the ranks at NDSU he completed sabbaticals at the University of Reading, UK and the Rowett Research Institute in Aberdeen, Scotland. In 2013 he was appointed Engberg Endow Professor in Animal Sciences at NDSU. He and holds an 80% research, 20% teaching appointment in Ruminant Nutrition. Joel recently served on the Committee on Nutrient Requirements of Beef Cattle (8<sup>th</sup> Revised Beef NRC). He was also recently appointed to the National Animal Nutrition Program (NRSP-9), Coordinating Committee. Joel also currently serves as the Associate Editor-in-Chief for the Journal of Animal Science. Joel is also a member of the ASAS International Activities and Involvement Committee and the ASAS Publication Committee. His research program has attracted over 5.25 million dollars in grant funds and resulted in over 650 total publications. To date, he has mentored as major or co-major advisor: 5 postdoctoral fellows, 41 graduate students, and over 30 undergraduate research experiences. He has served on study sections/peer review panels, and as ad hoc reviewer for numerous granting agencies including USDA, NIH, NSF, and Fulbright. He has also served as Associate Editor, Division Editor, and Section Editor for the Journal of Animal Science and as ad hoc reviewer for 16 other journals. He received the NDSU College of Agriculture's Research Award in 2003 and the National AFIA Ruminant Nutrition Award from the American Society of Animal Science in 2004. In 2013, he received the American Society of Animal Science-Gary L. Cromwell Award in Mineral Nutrition. Joel and his wife Kristina have five grown children and live in Fargo ND.



## **Martin do Carmo Corujo**

Carmo obtained his B.S. in Agronomy in 2006 and his M.S. in Animal Science in 2013 at the University of the Republic, Montevideo, Uruguay. His B.S. and M.S. degree were focused on strategies to improve efficiency of beef cow-calf grazing Campos grassland. Currently, his PhD research broadly explores some factors affecting spatial-temporal cow behavior, herbage selectivity and intake in Campos grassland.

Carmo worked as an assistant research from 2005 to 2010 at University of the Republic in Paysandú involved in grazing experiments with beef cows, dairy cattle and growing lambs, in sown and native grasslands, under different grazing intensity. He has been working in a livestock extension project called “Manejo integrado de campo natural” at National Institute for Agricultural Research (2012-2015).

# SPEAKERS

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## **Dr. Tim DelCurto**

Tim DelCurto has served as the Director and Program Head of the Eastern Oregon Agricultural & Natural Resource Program which includes two range livestock research stations (Burns and Union Stations) of Oregon State University. His responsibilities included administering a multi-disciplinary staff with strong multi-agency cooperative relationships as well as maintaining a productive range beef cattle nutrition and management research program, and teaching Animal & Range Sciences curriculum in the OSU Program at Eastern Oregon University. DelCurto was born and raised on a third generation cattle ranch in eastern Oregon and earned his BS (1984) and MS (1986) degrees from Oregon State University, and doctorate degree from Kansas State University (1989) in Ruminant Nutrition. DelCurto was hired in 1989 as a research scientist at the OSU Eastern Oregon Agricultural Research Center. In 1994, DelCurto was promoted to Associate Professor and Assistant Director and served in this capacity until 2004 when he was promoted to Director. His research is internationally recognized and focuses on beef cattle grazing behavior/management, and subsequent relationships to wildlife and vegetation diversity relative on both private and public rangelands. Dr. DelCurto has received numerous awards including the Western Section American Society of Animal Science Young Scientist Award (2000), Oregon State University's Savory Award (2001) for Outstanding Young Faculty, and was twice recognized (2010 & 2012) for the Oldfield/E.R. Jackman Team Award. Dr. DelCurto recently accepted the Nancy Cameron Chair in Animal & Range Sciences at Montana State University and will begin in this capacity this fall.



## **Dr. Michael Galyean**

Michael Galyean received a B.S. in Agriculture from New Mexico State University in 1973 and completed his M.S. (1975) and Ph.D. in Animal Nutrition (1977) at Oklahoma State University. He served on the faculty of the New Mexico State University from 1977 to 1996, working at both Las Cruces and Clayton. In 1996, he moved to a position with West Texas A&M University/Texas A&M University in Canyon, TX, and subsequently moved to Texas Tech University in 1998, where is the Thornton Distinguished Chair in Animal Science, with the rank of Paul Whitfield Horn Professor. He became the Dean of the College of Agricultural Sciences and Natural Resources at Texas Tech in 2012. Dr. Galyean and his students and colleagues have authored 246 peer-reviewed journal articles, 59 invited papers and book chapters, and numerous other scientific publications. Twenty-nine M.S. students, 33 Ph.D. students, and 9 post-doctoral research associates have worked under his guidance. He served as a member of several NRC committees and recently chaired the Committee on Nutrient Requirements of Beef Cattle. He was President of the ASAS Western Section, served three times as a member of the ASAS Board of Directors, and also served as a Section Editor and Editor-in-Chief of the *Journal of Animal Science*. He has been President of both ASAS and the American Registry of Professional Animal Scientists. In 2010, he became a Fellow of ASAS, and he received the ASAS Morrison Award in 2012 and the FASS-AFIA New Frontiers in Animal Nutrition Award in 2013.

# SPEAKERS

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**Dr. Elaine Grings**

Elaine Grings is a Livestock Research Advisor with United States Agency for International Development, Bureau for Food Security in Washington DC, where she began work in 2015. Prior to joining USAID, Dr. Grings was an Assistant Professor of Beef Cow/Calf Management at South Dakota State University. From 2007-2010, she served as a Livestock Scientist with the International Livestock Research Institute based in Ibadan, Nigeria. She also spent 16 years as an Animal Scientist with USDA-ARS at the Fort Keogh Livestock and Range Research Laboratory in Miles City, Montana. Dr. Grings' research efforts have focused on forage and rangeland-based ruminant production systems. She holds a B.S. in Animal Science from the University of California, Davis, M.S. in Range Science from Colorado State University and Ph.D. in Animal Science from Washington State University.





## **Dr. Leluo Guan**

Dr. Leluo Guan is a Professor of Functional Genomics and Microbiology in the Department of Agricultural, Food and Nutritional Science at University of Alberta, Canada. Dr. Guan has published more than 120 peer-reviewed articles to date. Her research program focuses on bovine functional genomics involving establishing a link of “omics” with economically important traits in livestock species, using transcriptome and proteome profiling through high throughput technologies. Her other research focus elucidates the molecular mechanisms of in host-microbial interactions by studying the associations between bovine gut microbiome and feed efficiency, along with methane emission and gut immunity development in beef/dairy cattle using metagenomics/metatranscriptomics approaches. Currently, she is supervising 8 PhD and an MS student as well as 2 Post Doctoral Fellows and 2 lab technicians.

# SPEAKERS

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## **Dr. Ron Lewis**

Ron Lewis is Professor of Animal Breeding and Genomics in the Animal Science Department at the University of Nebraska-Lincoln (UNL). He earned a B.S. degree in Animal Science at the University of California-Davis and an M.S. degree in Animal Breeding at Texas A&M University. After receiving his Ph.D. in Animal Science from Virginia Tech, he was hired as a Geneticist by the Western Australia Department of Agriculture. A few years thereafter he joined the Scottish Agriculture College as an Animal Breeding Specialist advancing to Leader of the Sheep Breeding Section. After 10 years in Edinburgh, he returned to Virginia Tech achieving the rank of Professor in the Animal and Poultry Sciences Department. In 2013, he joined UNL.

Dr. Lewis has enjoyed nearly 40 years working with livestock industries in the U.S., United Kingdom, Norway and Australia. His research interests are in defining strategies to improve the reliability of genetic evaluation systems, and in understanding how animals, changed through artificial selection, are influenced by and interact with their environment. This work has involved sheep, beef and poultry.

Dr. Lewis's has taught over 800 undergraduate students in animal breeding and genetics, which included development of an online simulation game (CyberSheep) to provide experiential learning in quantitative genetics. He is the director of a graduate distance-delivery program in quantitative genetics and genomics (<http://www.agidea.org/programs/gen/>), which has provided training to over 275 graduate students worldwide. In recognition of that effort, in 2016 he was awarded the Great Plains IDEA Faculty Excellence Award.



## **Dr. Clay P. Mathis**

Dr. Clay Mathis was named Director and Endowed Chair of the King Ranch® Institute for Ranch Management in July, 2010. As Director, Dr. Mathis leads faculty and staff appointed to the King Ranch® Institute for Ranch Management and oversees teaching and outreach efforts of the Institute. He maintains and develops curriculum for the M.S. in Ranch Management degree program, which includes more than 42 hours of business and animal production coursework and intensive project work tackling issues on large partnering ranches across the United States. Dr. Mathis works closely with the KRIRM Management Council to identify topics and speakers for the entire suite of KRIRM lectureships and the annual Holt Cat® Symposium on Excellence in Ranch Management.

Dr. Mathis is a native of New Braunfels, TX. He received a B.S. in Animal Science and M.S. in the Physiology of Reproduction from Texas A&M University. In 1998, he earned a PhD from Kansas State University in Ruminant Nutrition where his research focused on supplementing grazing cattle. From 1998 to 2010, Dr. Mathis worked as a Professor and Extension Livestock Specialist at New Mexico State University. Dr. Mathis and his wife, Rhonda, have three children: Morgan, Miles, and Amy Kaye.

# SPEAKERS

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## **Dr. Travis Mulliniks**

Dr. Travis Mulliniks is an Assistant Professor in Beef Cattle Nutrition and Management at the University of Tennessee, Knoxville and located at the Plateau Research and Education Center in Crossville, TN. Dr. Mulliniks' research objectives consist of developing an applied cow-calf research program that emphasize sustainability and economically viable management options through enhanced efficiency, productivity, and strategic nutritional management in beef cattle production. More specifically, Dr. Mulliniks is focused on beef cow metabolic efficiency and its impact on heifer development and ensuing longevity, cow and calf productivity and economic sustainability. In addition, his research is focused on elucidating the adaptive mechanisms that promote energy efficiency and metabolic flexibility in grazing beef cows for improving reproductive efficiency.



## **Dr. Mark Petersen**

Dr. Mark Petersen takes pleasure in his position at Fort Keogh Livestock and Range Research Laboratory. In 2009 he was lucky to be appointed as Research Leader for Fort Keogh. His team based research focuses on utilizing native rangeland for range cow biological and economic efficiency with the purpose of developing management technologies that promotes sustainable lifetime cow productivity. His career started at the University of Wyoming (1981) and later was a member of the faculty in the Animal and Range Sciences Department at Montana State University teaching and conducting research at Red Bluff Research Ranch. In 1991 he moved to New Mexico State University Where he conducted research at the Corona Range and Livestock Research Center. He is married to his wife Polly who is a faculty member at MSU in the School of Nursing and has two married daughters Beth and Jeni that live in Colorado.

# SPEAKERS

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## **Dr. Andy Roberts**

Andy Roberts has been at the USDA, ARS, Fort Keogh Livestock and Range Research Laboratory in Miles City, Montana since 2001. His research has focused on identifying nutritional and genetic interactions that contribute to management strategies for improving lifetime production efficiency in beef cattle.



## **Dr. Eric Scholljegerdes**

Dr. Eric Scholljegerdes is an Associate Professor at New Mexico State University. Eric is the Range Livestock Nutritionist in the Department of Animal and Range Sciences. His area of specialty is cow/calf nutrition with an emphasis on strategic supplementation programs that not only improve cow reproduction but also improve the longevity, health, and growth performance of their offspring. Dr. Scholljegerdes has been with New Mexico State for six years and previous to this he worked as a Research Animal Scientist for the USDA-ARS in North Dakota.

# SPEAKERS

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## Dr. Kevin K. Sedivec

Kevin K. Sedivec, Ph.D. has worked at North Dakota State University since 1989, and currently based on the Main Campus in Fargo in the School of Natural Resource Sciences. Received B.S in Zoology – Wildlife Management, M.S. in Animal and Range Sciences, and Ph.D. in Animal and Range Sciences from North Dakota State University in 1994.

**Extension Responsibilities:** 1) Provide statewide leadership in range and natural resource management programs. Develop and disseminate educational material and programs for County Agents and Citizens of North Dakota, of range management and development of a 12-month forage management system, and 3) Provide leadership for educating our youth (4-H, FFA, and others) on the importance and uses of the range resource, conducting camps and statewide range judging activities.

**Research interests:** 1) Range nutrition, 2) noxious weed management, 3) grazing systems, 4) rangeland monitoring, 5) reclamation and remediation of disturbances associated with energy development, and 6) horse forages.

Current research includes 1) interaction of black tailed prairie dog and cattle grazing on different plant community and associated passerine birds within the semi-arid region of the Northern Great Plains, 2) effects of select inhibitors on brine spill remediation associated with oil production, 3) interaction of fire and grazing on Kentucky bluegrass invaded rangelands of the Northern Plains, and 4) interaction of fire and herbicides and leafy spurge control.





## **Dr. Kim Stackhouse**

Kim Stackhouse is the Director of Sustainability for JBS USA where she is responsible for coordinating the JBS North American sustainability program, inclusive of the Company's beef, pork, poultry, case ready, cattle feeding, transportation, and branded product business. In this role, Kim leads the Company's internal sustainability program and public reporting initiatives to leverage best practices and reduce environmental and social impacts. She is also actively engaged in multi-stakeholder efforts to advance sustainability along agricultural value chains.

Kim has spent the last ten years working in the area of sustainability. Most recently, she served as the Executive Director of Global Sustainability at the National Cattlemen's Beef Association where she led the first and largest sustainability assessment of the beef value chain and coordinated the establishment of the U.S. Roundtable for Sustainable Beef.

Kim received her PhD in Animal Science from the University of California, Davis and was a postdoctoral fellow at Kansas State University College of Veterinary Medicine. She was recently recognized as a UC Davis "alumni spotlight" by the College of Agriculture and Environmental Science for her leadership in the area of sustainability.

# SPEAKERS

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## **Dr. Jennifer Thomson**

Jennifer Thomson, Ph.D. is an Assistant Professor of Animal Breeding and Genetics in the Department of Animal and Range Sciences at Montana State University. She received both her B.S. and M.S degrees from Oregon State University and a doctoral degree from Washington State University. Dr. Thomson completed her postdoctoral work in combination with the USDA Functional Genomics Laboratory in Beltsville MD and the University of Alberta in Edmonton AB. Her research experiences in the livestock industry extend over 15 years. Her research program focuses include understanding the physiology of economically important selection traits in beef and sheep production. More specifically, she is focused on traits impacting animal growth, animal reproduction, nutrition, feed efficiency, and animal behavior. Additionally, she is interested in the development of novel phenotypes to improve both the understanding of animal metabolism and the accuracy of animal selection with a concomitant overall genetic improvement. Her abilities as an established researcher include experimental design and analysis, molecular biology, molecular and quantitative genetics, and systems physiology.



## **Ms. Joyce Turk**

Ms. Turk's career spanned thirty-five years as Foreign Service Officer and Civil Service employee with the U.S. Agency for International Development with focused experience in agricultural and livestock program management. She joined USAID in 1980 following her service as a livestock advisor in the U.S. Peace Corps-Philippine Islands then enjoyed three years in the former Sudan overseeing a multilaterally-funded agricultural research project that built livestock research stations and trained staff in North and South Kordofan and Darfur states.

Her responsibilities have included managing a multimillion dollar portfolio of livestock projects and the implementation of research activities and teams, analyzing the feasibility of technical proposals and negotiating terms of reference, evaluating international research programs, coordinating strategic portfolio planning, and organizing and chairing international and domestic symposia on global livestock production and trade. In addition, she has assisted partners in developing potential market opportunities for U.S. trade in collaboration with livestock industry representatives, and advises developing country governments on strategies for livestock production, health and marketing.

Her international consultancies have included: The Wellcome Trust, United Nations Food and Agriculture Organization (UN-FAO), the International Fund for Agricultural Development (IFAD), World Organization for Animal Health (OIE), European Union (EU), International Atomic Energy Agency (IAEA), and USAID livestock programs in various countries.

Ms. Turk attained a B.S. in Animal Science from The Ohio State University and an M.S. in Animal Science from Cornell University. She is a multi-year recipient of U.S.A.I.D.'s Meritorious Performance Awards and is listed in Who's Who of American Women.





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