

# James C. MacDonald, Ph.D.

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## EDUCATION

**Doctor of Philosophy**, May, 2006  
University of Nebraska, Lincoln  
Major: Animal Science, Ruminant Nutrition, Advisor: Dr. Terry Klopfenstein

**Master of Science**, May 2002  
University of Nebraska, Lincoln  
Major: Animal Science, Advisor: Dr. Terry Klopfenstein

**Bachelor of Science**, May 1999  
North Dakota State University, Fargo  
Major: Animal Science, Advisor: Mr. Russ Danielson

## EXPERIENCE

**Assistant Professor of Animal Nutrition**, April 2006 to Present  
Texas Agricultural Experiment Station, Amarillo  
Dr. John Sweeten, Resident Director  
Research related to improved feeding efficiency, forage utilization, nutrient management, and animal health.

**Laboratory Manager**, August 2003 to December 2005  
University of Nebraska-Lincoln  
Dr. Terry Klopfenstein, Ruminant Nutrition  
Graduate student training in analytical techniques. Commercial laboratory analysis. Data collection with analytical equipment including liquid chromatography, gas chromatography, and spectrophotometry.

**Graduate Research Assistant**, January 2000 to May 2006  
University of Nebraska-Lincoln  
Dr. Terry Klopfenstein, Ruminant Nutrition  
Research dealing with animal nutrition, feedlot management and forage utilization in beef production.

- Changes in animal performance during the feeding period.
- Sorting strategies to reduce variation and improve profitability.
- Effects of sorting on animal performance and carcass characteristics.
- Determination of microbial crude protein flow in growing cattle.
- Effects of protein and amino acid supplementation in growing cattle.
- Effects of dried distillers grains supplementation on forage intake.
- Methods to improve nitrogen use by ruminants.

## EXPERIENCE CONTINUED

**Teaching Assistant**, August 2000 to July 2005

University of Nebraska-Lincoln

Dr. Galen Erickson and Dr. Terry Klopfenstein, ASCI 820, Feedlot Nutrition and Management

Spring 2005

Dr. Terry Klopfenstein, ASCI 490S, Beef Feedlot Internship

Summer 2001, 2002, 2003, 2004, 2005

Dr. Galen Erickson, ASCI 457, Beef Feedlot Management

Fall 2004

Dr. Andrea Cupp, ASCI 442/842, Endocrinology

Fall 2003

Dr. Terry Klopfenstein, ASCI 485, Animal Systems Analysis

Fall 2000; Spring 2001; Fall 2002

Dr. Jim Gosey, ASCI 455, Beef Cow-Calf Management

Spring 2002

**Research Technician**, May 2002 to August 2002

University of Nebraska-Lincoln

Dr. Terry Klopfenstein, Ruminant Nutrition

Research to determine *E. coli* 0157:H7 prevalence in feedlots.

**Feedlot Management Intern**, July 1999 to November 1999

Rhea Cattle Company, Arlington, NE

Mr. William H. Rhea, owner/manager

Animal health, feeding, and nutrition and other managerial skills.

**Undergraduate Research Assistant**, August 1998 to May 1999

North Dakota State University

Dr. Greg Lardy and Dr. Mark Bauer, Ruminant Nutrition

Dry matter disappearance of four varieties of field peas.

**Special Skills:** Rumens cannulation surgeon.  
Use of specialized laboratory instrumentation.  
Statistical analysis with SAS software.  
1996 Beef Cattle NRC model.  
Microsoft Office software.  
Ration formulation software.

**Professional Member:** American Society of Animal Science, 1998  
American Registry of Professional Animal Scientists, 2005

## SCHOLARSHIPS AND HONORS

William G. Whitmore Memorial Travel Award, recipient, 2005  
Holling Family Excellence in Teaching Award, recipient, 2004  
ASAS Midwest Section Graduate Student Competitive Research Paper - MS Division, 3<sup>rd</sup> place, 2003  
NDSU Saddle and Sirloin Club, president, 1998-99  
Blue Key National Honor Fraternity, philanthropy chair, 1998  
North Dakota Stockmen's Association Scholarship, recipient, 1998  
North Dakota Livestock Endowment Scholarship, recipient, 1997  
Harrold Vettel Memorial Scholarship, recipient, 1996  
North Dakota FFA, state president, 1995-96

## PUBLICATIONS

### Ph.D. Dissertation:

**MacDonald, JC.** 2006. Use of dried distillers grains and protein sources in high forage diets. University of Nebraska – Lincoln

### M.S. Thesis:

**MacDonald, JC.** 2002. Sorting strategies in an extensive forage utilization beef production system. University of Nebraska – Lincoln

### Referred Publications

Loy, TW, **JC MacDonald**, TJ Klopfenstein, and GE Erickson. 2006. Effect of distillers grains or corn supplementation frequency on forage intake and digestibility. *J. Anim. Sci.* Submitted

Loy, TW, TJ Klopfenstein, GE Erickson, CN Macken, and **JC MacDonald**. 2006. Effect of supplemental energy source and frequency on growing calf performance. *J. Anim. Sci.* Submitted.

**MacDonald, JC**, CN Macken, MP Blackford, GE Erickson, and TJ Klopfenstein. 2006. Sorting strategies for yearlings. *Professional Animal Scientist*. 22: 225-235.

Haugen, HL, SK Ivan, **JC MacDonald**, and TJ Klopfenstein. 2006. Determination of undegradable intake protein digestibility in forages using the mobile nylon bag technique. *J. Anim. Sci.* 84: 886-893.

### Symposia Proceedings:

Erickson, GE, TJ Klopfenstein, DJ Jordon, and **JC MacDonald**. 2002. Systems approach to production from weaning to market. Proc. 2002 Colorado Nutrition Roundtable.

### Abstracts:

**MacDonald, J**, T Klopfenstein, G Erickson. 2005. Grazed forage supplementation with dried distillers grains, corn oil, or corn gluten meal. *J. Anim. Sci.* 83(Suppl 1): 126.

**MacDonald, J**, T Klopfenstein, G Erickson. 2005. Variation in digestibility of undegradable intake protein among feedstuffs. *J. Anim. Sci.* 83(Suppl 1): 47.

Benton, J., T. Klopfenstein, **J MacDonald**, and M Lamothe. 2005. Estimation of undegradable intake protein digestibility in forages using a mobile nylon bag technique. *J. Anim. Sci.* 83(Suppl 2): 87.

**MacDonald, JC**, TJ Klopfenstein, GE Erickson, and CN Macken. 2004. Supplemental dried distillers grains reduces intake of grazed forages. *J. Anim. Sci.* 82(Suppl 2): 96.

Lamothe, MJ, **JC MacDonald**, TJ Klopfenstein, DC Adams, GE Erickson, and JA Musgrave. 2003. Microbial crude protein efficiency in nursing calves and gestating cows. *J. Anim. Sci.* 81(Suppl 1): 122.

Loy, TW, **JC MacDonald**, TJ Klopfenstein, and GE Erickson. 2003. Effect of supplemental energy form and frequency on forage intake and digestibility. *J. Anim. Sci.* 81(Suppl 1): 24.

**MacDonald, JC**, TJ Klopfenstein, GE Erickson, CN Macken, JD Folmer, and ML Blackford. 2003. Sorting strategies for yearlings. *J. Anim Sci.* 81(Suppl 2): 47.

**MacDonald, JC**, TJ Klopfenstein, GE Erickson, CN Macken, and JD Folmer. 2003. Relationships of chute-side measurements to carcass measurements. *J. Anim Sci.* 81(Suppl 2): 110.

**MacDonald, JC**, TJ Klopfenstein, GE Erickson, CN Macken, JD Folmer, and MP Blackford. 2002. Sorting strategies for feedlot cattle. Proc. 2002 Plains Nutrition Council Spring Conference, San Antonio, TX. Texas A&M Res. and Ext. Publ. No. AREC 02-20: 130.

#### **Experiment Station Reports, Nebraska Beef Reports:**

**MacDonald, JC**, GE Erickson and TJ Klopfenstein. 2006. Effect of fat and undegradable intake protein in dried distillers grains on performance of cattle grazing smooth bromegrass pastures. Nebr. Beef Cattle Rep. MP 88-A: 27-29.

Benton, JR, **JC MacDonald**, GE Erickson, and TJ Klopfenstein. 2006. Digestibility of undegradable intake protein of feedstuffs. Nebr. Beef Cattle Rep. MP 88-A: 23-26.

Morris, SE, **JC MacDonald**, DC Adams, TJ Klopfenstein, RL Davis, and JR Teichert. 2006. Effects of supplementing dried distillers grains to steers grazing summer sandhills range. Nebr. Beef Cattle Rep. MP 88-A: 30-32.

Gustad, KH, TJ Klopfenstein, GE Erickson, KJ Vander Pol, **JC MacDonald**, and MA Greenquist. 2006. Dried distillers grains supplementation of calves grazing corn residue. Nebr. Beef Cattle Rep. MP 88-A: 36-37.

**MacDonald, JC**, and TJ Klopfenstein. 2004. Dried distillers grains as a grazed forage supplement. Nebr. Beef Cattle Rep. MP 80-A: 25-27.

Loy, TW, **JC MacDonald**, TJ Klopfenstein and GE Erickson. 2004. Effect of distillers grains or corn supplementation frequency on forage intake and digestibility. Nebr. Beef Cattle Rep. MP 80-A: 22-24.

**MacDonald, JC**, TJ Klopfenstein, and CN Macken. 2003. Amino acid supplementation to growing heifers fed Soyypass®. Nebr. Beef Cattle Rep. MP 80-A: 16-17.

**MacDonald, JC**, TJ Klopfenstein, GE Erickson, CN Macken, and JD Folmer. 2003. Relationship of chute-side measurements to carcass measurements. Nebr. Beef Cattle Rep. MP 80-A: 61-65.

**MacDonald, JC**, TJ Klopfenstein, GE Erickson, CN Macken, JD Folmer, and MP Blackford. 2003. Sorting strategies for yearlings. Nebr. Beef Cattle Rep. MP 80-A: 65-68.

**MacDonald, JC**, TJ Klopfenstein, GE Erickson, CN Macken, JD Folmer, and MP Blackford. 2002. Sorting strategies in an extensive forage utilization beef production system. Nebr. Beef Cattle Rep. MP 79-A: 36-39.