

# Jacquelyn P. Boerman

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<b>Education:</b>	<i>Michigan State University</i> , East Lansing, MI PhD: Animal Science, Dairy Lipid Metabolism PI: Dr. Adam Lock Thesis: “Dietary factors associated with preformed fatty acid incorporation into milk fat of dairy cattle”  <i>University of Illinois</i> , Champaign-Urbana, IL MS: Animal Sciences, Dairy Nutrition PI: Dr. James Drackley Thesis: “Evaluation of feed mixing technology and increasing amounts of Modified wet distillers with solubles for lactating dairy cattle”  <i>Cornell University</i> , Ithaca, NY BS: Animal Sciences, Dairy Health and Management Concentration: Agriculture Education  <i>S.U.N.Y. Cobleskill</i> , Cobleskill, NY AS: Dairy Science	2014  2011  2007  2005
<b>Research &amp; Teaching Experience:</b>	<b>Assistant Professor</b> Purdue University, West Lafayette, IN Responsible for extension program related to dairy cattle nutrition and management including podcasts, presentations and written dissemination of information. Conducting applied research related to nutrient mobilization during the transition period, predictive cow performance based on early life nutrient intake, and development of automated lameness assessment tool for dairy cattle. Teach two undergraduate level course in dairy cattle management and farm evaluation.  <b>Dairy Specialist</b> <i>Cargill, Elk River, MN</i> Developed training programs and trained new dairy consultant hires in the Midwest on ration balancing software, dairy cattle nutrition, and walk through farms and make recommendations to improve. Conducted on farm research trials to determine product acquisition. Presented to nutritionists, producers, and laypeople on dairy nutrition and milk and human health.  <b>Adjunct Professor</b> <i>Purdue University, West Lafayette, IN</i> Instructed upper level dairy herd management class and lab; coordinated with Purdue faculty to provide guest lectures; organized tours of Indiana dairy farms; provided hands on learning experiences for students to increase exposure to dairy cattle management.	2017 - Present  2015 - 2017  Fall 2014
	<b>Graduate Research Assistant</b> <i>Michigan State University, East Lansing, MI</i> Planned, organized, and executed trials that characterize dietary factors associated with milk fat synthesis in lactating dairy cattle. Quantified fatty acids found in milk and feed samples and ran statistical analysis using SAS and JMP. Conducted meta-analyses on digestibility of individual fatty acids and the effects of dietary fat supplements on production parameters.	2011 – 2014

**Graduate Research Fellow**

2009 – 2011

University of Illinois, Champaign-Urbana, IL

Organized, planned and executed three concurrent research trials with dairy cattle; coordinated farm staff, undergraduate workers and graduate students to assist with collecting samples; prepared samples for analysis; performed assays. Used SAS software to evaluate results and presented results to companies who funded research.

**Adjunct Professor**

Fall 2008

*Morrisville State College, Morrisville, NY*

Developed curriculum for dairy herd management class; instructed students; organized guest speakers; led laboratories and facilitated discussion about current developments in the dairy industry.

**Published Papers:**

**J. P. Boerman**, J. de Souza, and A. L. Lock. 2017. Milk production and nutrient digestibility responses to increasing levels of stearic acid supplementation of dairy cows. *J. Dairy Sci.* Article in Press.

Hu. W., **J. P. Boerman**, and J. M. Aldrich. 2017. Production responses of Holstein dairy cows when fed supplemental fat containing saturated free fatty acids: a meta-analysis. *Asian-Australasian J. Anim. Sci.* 30:1105-1116.

**J. P. Boerman**, S. B. Potts, M. J. VandeHaar, M. S. Allen, A. L. Lock. 2015. Milk production responses to a change in dietary starch concentration vary by production level in dairy cattle. *J. Dairy Sci.* 98:4698-4706.

**J. P. Boerman**, S. B. Potts, M. J. VandeHaar, and A. L. Lock. 2015. Effects of partly replacing dietary starch with fiber and fat on milk production and energy partitioning. *J. Dairy Sci.* 98:7264-7276.

**J. P. Boerman**, J. L. Firkins, N. R. St-Pierre, and A. L. Lock. 2015. Intestinal digestibility of long-chain fatty acids in lactating dairy cows: A meta-analysis and meta-regression. *J. Dairy Sci.* 98:8889-8903.

**J. P. Boerman**, C. L. Preseault, J. Kraft, H. M. Dann, and A. L. Lock. 2014. Short Communication: Effect of antioxidant supplementation on milk production, milk fat synthesis, and milk fatty acids in dairy cows when fed a diet designed to cause milk fat depression. *J. Dairy Sci.* 97:1077-1081.

**J. P. Boerman** and A. L. Lock. 2014. Effect of unsaturated fatty acids and triglycerides from soybeans on milk fat synthesis and biohydrogenation intermediates in dairy cattle. *J. Dairy Sci.* 97:7031-7042.

**J. P. Boerman**, C. L. Preseault, and A. L. Lock. 2014. Effect of dietary antioxidant and increasing corn oil inclusion on milk fat yield and fatty acid composition in dairy cattle. *J. Dairy Sci.* 97:7697-7705.

S. B. Potts, **J. P. Boerman**, A. L. Lock, M. S. Allen, and M. J. VandeHaar. 2016. Relationship between residual feed intake and digestibility for lactating Holstein cows fed high and low starch diets. *J. Dairy Sci.* Article in Press.

S. B. Potts, **J. P. Boerman**, A. L. Lock, M. S. Allen, and M. J. VandeHaar. 2015. Residual feed intake is repeatable for lactating Holstein dairy cows fed high and low starch diets. *J. Dairy Sci.* 98:4735-4747.

- Abstracts:** **J. P. Boerman**, T. S. Steckler, and N. Lopez-Villalobos. 2018. The effects of milk consumption on predicted future body weight of heifers. To be presented at 2018 ADSA Annual Meeting.
- J. P. Boerman** and A. L. Lock. 2014. Feed intake and production responses of lactating dairy cows when commercially available fat supplements are included in diets: a meta-analysis. *J. Dairy Sci.* 97 (Suppl. 1): 319.
- J. P. Boerman**, S. E. Burczynski, M. J. VandeHaar, and A. L. Lock. 2014. Effects of diets differing in starch, fiber, and fatty acid concentrations on milk production and energy partitioning. *J. Dairy Sci.* 97 (Suppl. 1) 303.
- J. P. Boerman** and A. L. Lock. 2014 Milk yield and milk fat responses to increasing levels of stearic acid supplementation of dairy cows. *J. Dairy Sci.* 97 (Suppl. 1) 840.
- C. L. Presault, **J. P. Boerman**, and A. L. Lock. 2014. Lactational responses to palmitic acid supplementation of dairy cows. *J. Dairy Sci.* 97 (Suppl. 1) 318.
- S. E. Burczynski, **J. P. Boerman**, A. L. Lock, M. S. Allen, and M. J. VandeHaar. 2014. Relationship between digestibility and residual feed intake in lactating Holstein cows fed high and low starch diets. *J. Dairy Sci.* 97 (Suppl. 1) 172.
- J. C. Ploetz**, S. E. Burczynski, M. J. VandeHaar, M. S. Allen, and A. L. Lock. 2013. Milk production responses to a change in dietary starch concentration vary by production level in dairy cattle. *J. Dairy Sci.* 96 (Suppl. 1) 452.
- J. C. Ploetz** and A. L. Lock. 2013. Impact of unsaturated and free fatty acids and triglycerides on rumen biohydrogenation and milk fat synthesis in dairy cattle. *J. Dairy Sc.* 96 (Suppl. 1) 150.
- C. M. Klein, **J. C. Ploetz**, T. C. Jenkins, and A. L. Lock. 2013. Variability in the concentrations of free and esterified fatty acids in corn silage and byproduct feeds. *J. Dairy Sci.* 96 (Suppl. 1) 658.
- C. L. Preseault, L. C. Nagengast, **J. C. Ploetz**, C. M. Klein, and A. L. Lock. 2013. Incorporation of omega-6 and omega-3 fatty acids into plasma lipid fractions of lactating cows: chronic effect of abomasal infusion of linoleic and linolenic acids. *J. Dairy Sci.* 96 (Suppl. 1) 658.
- S. E. Burczynski, J. S. Liesman, R. J. Tempelman, **J. C. Ploetz**, M. S. Allen, A. L. Lock, and M. J. VandeHaar. 2013. Residual feed intake is repeatable when high and low starch diets are fed to lactating Holstein dairy cows. *J. Dairy Sci.* 96 (Suppl. 1) 397.
- L. C. Nagengast, C.L. Preseault, **J. C. Ploetz**, C. M. Klein, and A. L. Lock. 2013. Incorporation of omega-6 and omega-3 fatty acids into plasma lipid fractions of lactating cows: acute effect of abomasal infusions of linoleic and linolenic acids. *J. Dairy Sci.* 96 (Suppl. 1) 239.
- J. C. Ploetz** and A. L. Lock. 2012. Intestinal digestibility of long chain fatty acids in lactating dairy cows: a meta-analysis. *J. Dairy Sci.* 95 (Suppl. 2) 248.
- J. C. Ploetz**, C.L. Preseault, and A.L. Lock. 2012. Impact of dietary antioxidant and increased rumen unsaturated fatty acid load on milk fat synthesis and fatty acid composition. *J. Dairy Sci.* 95 (Suppl. 2) 354
- K. E. DeLand, M. Hollmann, **J. C. Ploetz**, W. J. Powers, D. K. Beede, and A. L. Lock. 2012. Potential use of specific milk fatty acids to predict enteric methane emissions from lactating dairy cows. *J. Dairy Sci.* 95 (Suppl. 2) 433.

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**J. C. Ploetz**, W. C. Hornback, D. E. Beever, P. H. Doane, M. J. Cecava, M. R. Murphy, A. L. Lock and J. K. Drackley. Effects of mixer type on utilization of diets with increasing amounts of modified wet distillers grains with solubles for lactating dairy cattle. 22nd American Dairy Science Discover Conference: Milk Components: Opportunities for Maximizing Farm Gate Returns and Meeting Manufacturing Needs. Itasca, IL. Oct. 10-13, 2011.

**J. C. Ploetz**, W. C. Hornback, D. E. Beever, P. H. Doane, M. J. Cecava, M. R. Murphy, A. L. Lock and J. K. Drackley. 2011. Effects of mixer type on utilization of diets with increasing amounts of modified wet distillers grains with solubles for lactating dairy cattle. *J. Dairy Sci.* 94 (Suppl. 1) 238.

**Received Grants:** **J. P. Boerman** and M. Erasmus. AgSEED Grant. Development of a digital management tool to aid management decisions on dairy farms. March 2018 – June 2019.

A. L. Lock and **J. P. Boerman**. Elwood Kirkpatrick Dairy Science Research Endowment. Determining the maximum amount of dietary fatty acids that can be incorporated into milk fat in the bovine mammary gland. September 2013 – August 2014.

**Additional Experience:** **Dairy Specialist** 2015 - Present  
*Cargill, Elk River, MN*  
Provide technical support for 11 dairy consultants in the upper Midwest. Provide thorough farm evaluations and recommendations to help improve production and farm income for farms in Ohio, Indiana, and Michigan. Plan and supervise intern projects related to dairy nutrition and management. Write newsletter articles on emerging topics in research and assist with new product development.

**Research Consultant** 2011  
*Benton Dairy, Ambia, IN*  
Designed experiment to evaluate effectiveness of floor cooling system in parlor holding area; compiled information and analyzed using SAS software; prepared report with recommendations.

**Marketing and Technical Dairy Intern** Summer 2008  
*Monsanto, St. Louis, MO*  
Developed dairy tours program through coordination with marketing agency; assisted with online organization of technical and marketing materials; executed address database clean up.

**Assistant Herdsman** 2007- 2008  
*Strathdale Dairy Farm, Fairlie, New Zealand*  
*Meon Valley Dairy, Timboon, Australia*  
Monitored health and production of 1000 and 600 cow dairy operations. Assisted with calvings and mating; managed youngstock; administered treatments and assisted with grassland management.

**Activities & Affiliations:** American Dairy Association of Indiana - advisor, 2018  
Indiana Dairy Producers - advisor, 2018  
Tri-State Dairy Nutrition Conference - co-chair, 2017  
American Dairy Science Association, 2010 - present  
Animal Science Graduate Research Forum - Chairperson, 2014  
Animal Science Graduate Student Association - Treasurer, 2013 - 2014; Fundraising Chair, 2011  
Cornell Dairy Judging Team, 2006  
Cornell Alpha Zeta Fraternity, Executive Board, 2006 - 2007

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**Honors & Awards:** American Dairy Science Association Young Scholar, 2015  
Tri-State Nutrition Conference, First Place Graduate Student Oral Competition, 2012 & 2013  
MSU Animal Science Graduate Student Fellowship, Michigan State University, 2012 - 2013  
Jonathan Baldwin Turner Fellowship, University of Illinois, 2009 - 2011  
Cornell Dairy Fellow, Cornell University, 2005 - 2007  
Cornell Tradition Fellowship, Cornell University, 2005 – 2007