Tami Brown-Brandl
Agricultural Engineer
USDA, ARS Meat Animal Research Center
100% Research (1998 – Current)

Education:

- AS McCook Community College, 1990 — Math, Chemistry, and Biology
- BS University of Nebraska-Lincoln, 1992 — Biological Systems Engineering
- MS University of Nebraska-Lincoln, 1995 — Biological Systems Engineering/Animal Sciences
- PhD University of Kentucky, 1998 — Agricultural and Biosystems Engineering

Contributions to Research:

- Peer-reviewed papers – 63
- Conference Proceedings Papers – 78
- Abstracts– 29
- Peer Reviewed book chapters– 2
- Book Chapters and Invited Publications – 4
- Invited Presentations – 10
- Served on 8 Graduate student committees
- Reviewed multiple manuscripts from 12 journals
- Currently serving on the editorial board for two journals

Honors and Awards:

- 2014 ASHRAE Technical Paper Award
- 2013 ASABE Presidential Citation
- 2012 ASABE Presidential Citation
- 2009 ASABE Presidential Citation
- 2006 ARS Certificate of Merit
- 2005 Outstanding Paper Award
- 2005 ISB Young Scientist Award
- 2005 ARS Merit Award
- 2002 ISB Young Scientist Award
- 2001 Honorable Mention Paper Award

Grants:

- $104,500 NCBA - "Effects of pond ash as a feedlot pen surface and animal stress-level on the prevalence, levels, and persistence of E. coli O157:H7 and Salmonella spp. in feces, on hides, and in manure of feedlot cattle" Berry, Arthur, Wells, Brown-Brandl
- $180,000 ASHRAE – "Updating heat and moisture standards for modern swine" Brown-Brandl, Xin, Nienaber
- $50,000 Nebraska Beef Council – "Evaluation of housing systems effects on beta-agonist, Zilmax, usage" Erickson, Hales, Brown-Brandl, Shackelford, Wheeler, Pollak -- *Active*
- $60,755 UNL-MARC - "Development and deployment of tracking system for improved animal management" Brown-Brandl, Keeshani, Luck, Pitla -- *Active*
- $498,921 USDA/AFRI – "Impact of dietary protein reduction and amino acid balance on the effieciency of nitrogen utilization and heat production in lactating sows", Trottier, Powers, de Lange, Bequette, Brown-Brandl -- *Active*

Research Focus:

- Dr. Brown-Brandl has research program that is focused on an engineering approach to improved animal well-being and production efficiency. This is accomplished employing by several uniquely focus areas including: *Precision Animal Management* as a method of reducing animal stress and improving animal well-being by collecting and utilizing electronic data collected on individual animal, while being housed in typical industry sized pens. *Prediction of individual animal susceptibility to heat stress* as a method of maximizing animal performance and well-being while minimizing the negative aspects associated with many heat stress interventions. *Calorimetry and animal energetics* of cattle, sheep, and swine to evaluate both thermal and nutritional factors. *Development of sensors and control systems* to provide objective measurements of dynamic animal responses. *Forecasting feedlot cattle heat stress* developed a web-based cattle heat stress forecast, and currently developing a smart phone application "app" get the forecast information to producers on the go.

Publications:

1. **Brown-Brandl, T.M.**, G.A. Rohrer, R.A. Eigenberg. 2013. Analysis of feeding behavior of group housed growing-finishing pigs. Computers and Electronics in Agriculture 96:246-252.

2. **Brown-Brandl, T.M**., R.A. Eigenberg, and J.A. Nienaber. 2013. Benefits of providing shade to feedlot cattle of different breeds. Transactions of the ASABE. 56(4):1563-1570

3. **Brown-Brandl, T.M.,** R.A. Eigenberg, and J.L. Purswell. 2013. Using thermal imaging as a method of investigating thermal thresholds in finishing pigs. Biosystems Engineering. 114:327:333.

4. Freetly, H.C. and **T.M. Brown-Brandl**. 2013. Enteric methane production from beef cattle that vary in feed efficiency. Journal of Animal Science. 91(10): 4826-4831.

5. Hales, K.P, **T.M. Brown-Brandl**, H.C. Freetly. 2013. Effects of decreased dietary roughage concentration on energy metabolism and nutrient balance in finishing beef cattle. Journal of Animal Science. 92(1): 264-271.

6. Spiehs, M.J., **T.M. Brown-Brandl**, D.B. Parker, D.N. Miller, J.P. Jaderborg, A. DiCostanzo, E.D. Berry, J.E. Wells. 2013. Use of wood-based materials in beef bedded manure packs: Part 1: Effect on ammonia, total reduced sulfide, and greenhouse gas concentrations. Journal of Environmental Quality 43:1187-1194.

7. Spiehs, M.J., **T.M. Brown-Brandl**, E.D. Berry, J.E. Wells, D.B. Parker, D.N. Miller, J.P. Jaderborg, A. DiCostanzo. 2013. Use of wood-based materials in beef bedded manure packs: Part 2: Effect on odorous volatile organic compounds, odor activity value, Escherichia coli, and nutrient concentrations. Journal of Environmental Quality 43:1195-1206

8. Rohrer, G.A., **T.M. Brown-Brandl**, L.A. Rempel, J.F. Schneider, and J. Holl. 2013. Genetic analysis of behavior traits in swine production. Livestock Science 157(1):28:37

9. Hales, K.P., **T.M. Brown-Brandl,** H.C. Freetly. 2014. Effects of decreased dietary roughage concentration on energy metabolism and nutrient balance in finishing beef cattle. 92(1):264:271.

10. Hales, K.P., A.P. Foote, **T.M. Brown-Brandl,** H.C. Freetly. 2014. Effects of dietary glycerin inclusion at 0%, 5%, 10%, 15% of dry matter on energy metabolism and nutrient balance in finishing beef steers. Journal of Animal Science (Accepted 4/2014)

11. **Brown-Brandl, T.M.**, M.D. Hayes, H. Xin, J.A. Nienaber, H. Li, R.A. Eigenberg, J.P. Stinn, and T. Shepherd. 2014. Heat and moisture production of modern swine. American Society of Heating, Refrigerating and Air-Conditioning Engineers Transactions 120(1):469-489

12. Hales, K.P., S.D. Shackelford, J. Wells, D.A. King, M.D. Hayes, **T.M. Brown-Brandl,** L.A. Kuehn, H.C. Freetly, T.L. Wheeler. 2014. Effects of feeding dry-rolled corn-based diets with and without wet distillers grains with solubles and zilpaterol hydrochloride on performance characteristics, and heat stress in finishing beef steers. Journal of Animal Science 92:4023-4033.

13. **Brown-Brandl, T.M.,** and D.D. Jones. 2014. Characterizing stress in shaded and unshaded feedlot heifers. Biological Systems Engineering (Submitted 7/15/ 2014).

14. **Brown-Brandl, T.M.** and R.A. Eigenberg. 2014. Determination of minimum meal interval and analysis of feeding behavior in shaded and open lot feedlot heifers. Transactions of ASABE (Submitted 9/10/2014)