

TAMI M. BROWN-BRANDL, PhD

PROFESSOR, DR. WILLIAM E AND ELEANOR L. SPLINTER CHAIR
BIOLOGICAL SYSTEMS ENGINEERING
UNIVERSITY OF NEBRASKA-LINCOLN
LINCOLN, NE 68583

EDUCATION

PhD	1998	Agricultural and Biosystems Engineering, University of Kentucky, Lexington, KY. <i>Dissertation title: "Bioenergetics and growth in high-lean growth swine under thermal stress"</i>
MS	1995	Agricultural and Biological Systems Engineering and Animal Science, University of Nebraska-Lincoln, Lincoln, NE. <i>Thesis title: "Temperature-Humidity Index for Growing Tom Turkeys"</i>
BS	1993	Biological Systems Engineering, University of Nebraska-Lincoln, Lincoln, NE
AS	1990	Math, Chemistry, and Biology. McCook Community College, McCook, NE.

EMPLOYMENT HISTORY

1/2019 to Present	Professor and Splinter Endowed Chair – University of Nebraska-Lincoln
5/1998 to 12/2018	USDA-ARS-MARC, Agricultural Engineer (GS-0890 GS12 – GS15)
8/1995 to 5/1998	University of Kentucky, Graduate Research Assistant
8/1993 to 8/1995	University of Nebraska-Lincoln, Graduate Research Assistant
7/1991 to 8/1993	University of Nebraska-Lincoln, Undergraduate Research Technician

PROFESSIONAL ACTIVITIES

2023-Present	Conference Organizer – 3 rd US Precision Livestock Farming Conference
2022-Present	Katholic University of Leuven, Leuven, Belgium. External Advisor Board for the Department of Biosystems
2021- 2023	Program Chair – 2 nd US Precision Livestock Farming Conference
2020-2021	Chair of the NC1211 - Precision Management of Animals for Improved Care, Health, and Welfare of Livestock and Poultry
2020	Guest Editor – Animals Special Issue "Information Technology Applied to Animal Management"
2020 – Present	Associate Editor – Frontiers in Animal Science -Precision Livestock Farming
2020 – Present	Science Advisory Body (SAB) for Swine Innovation Pork (Canadian Board)
2019 – 2020	ASABE Nomination Committee (elected 2018)
2019-Present	ASABE Foundation Board
2018	Program Co-Chair – 10 th International Livestock Environment Symposium and the 1 st US Precision Livestock Farming Conference
2014 – Present	CIGR Section II Committee - US Representative and Secretary
2011 – 2012	ASABE Path Forward Committee
2011 – 2012	ASABE Future Thinking Committee
2011	Program Co-Chair – 9 th International Livestock Environment Symposium
2008 – 2010	ASABE Board of Trustees
2004	Proceeding Co-Chair – 7 th International Livestock Environment Symposium
2000 – Present	ASABE Associate Editor
1997 – Present	ASABE Committees Membership in multiple Plant and Animal Systems Committees – including many leadership roles.

PROFESSIONAL SOCIETIES

American Society of Agricultural Engineers (ASABE)
International Commission for Agricultural Engineers (CIGR)

International Society of Biometeorology (ISB)
American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE)

AWARDS AND HONORS

2023 ASABE Henry Giese Award
2022 UNL College of Engineering Excellence in Research Award
2022 Outstanding Mentor Award – Nebraska FIRST Lego League
2020 Merck Outstanding Innovation Swine Production
2020 Outstanding Professional – University of Kentucky, Biosystems and Agricultural Engineering Department
2019 ASABE Fellow
2019 Outstanding Paper Award – American Society of Agricultural and Biological Engineers “Dimensions of Modern Swine”
2018 ARS Certificate of Merit
2017 ARS Certificate of Merit
2016 ARS Certificate of Merit
2015 Outstanding Presentation/Paper Award – American Society of Heating Refrigeration and Air Conditioning Engineers. “Heat and Moisture Production of Modern Swine”.
2013 ASABE President’s citation for exceptional service to the profession and the society by developing a new organizational structure aimed at better describing ASABE and its constituents
2012 ASABE President’s citation for exceptional service to the profession and the society in examining evolving opportunities for ASABE to meet the needs of its members
2010 President’s sub-committee to investigate the reorganization of the ASABE society
2009 ASABE President’s citation for providing leadership for the ongoing International Livestock Environment Symposium series.
2008 Promoted to adjunct associate professor: Biological Systems Engineering
2006 ARS Certificate of Merit – outstanding research efforts in the area of livestock environment

2005 Outstanding Paper Award – American Society of Agricultural and Biological Engineering
2005 in Outstanding Young Scientist in the field of Animal Biometeorology
2005 Merit Award – ARS
2002 International Society of Biometeorology Award in Outstanding Young Scientist in the field of Animal Biometeorology
2001 Honorable Mention Paper Award – American Society of Agricultural Engineering

INVITATIONS, PRESENTATIONS, AND VISITORS

Technology in the Barn to Monitor Health - Manitoba Swine Seminar – Feb 6-9th

Future of animal production and implications on design - VII International Precision Ambience Workshop Brazil – Nov. 9, 2023

Data driven implementation of precision ag on the sow farm – Sow Summit 2023 Iowa – Nov 1.
Sensor Systems for Managing Livestock IEEE -Oct 26., 2023

Technology in Swine Production – Swine Education & Outreach Professionals – Minnesota. Oct 24-25, 2023

Precision Animal Management – Future for Animal Agriculture – Livestock and Poultry Learning Community Aug 2023

Enhancing Swine Management: Precision Tech Solutions. – Swine it Podcast (Swine Campus by Wisenetix) July 2023

The Places we will go - vision of animal ag in the future – American Society of Agricultural and Biological Engineers – July 2023

Creating Sensor Systems for Real Time Animal Management – American Society of Animal Science – July 2023

Research in Precision Livestock Farming – Nebraska Extension Educators April 2023

Next Generation Grow-Finish- Swine Health and Growth – American Society of Swine Veterinarians March 2023.

Why consider applying technology to livestock? – Iowa State University, Dept of Animal Science February 2023

Sensor Systems for Precision Animal Management – International Conference on Agri-photonics and Smart Agricultural Sensing Technologies – *Virtual Zhengzhou China* – August 2022

Precision Livestock Farming Precision Animal Management. – Precision Ag Conference, Virtual Ukraine. June 2022

Development of Precision Animal Management Techniques – VII Workshop on Precision Environmental Control for Animals. Campinas, Brazil. June 2022

Precision Animal Management - understanding data streams and detecting illnesses – NIAMRRE conference, May, 2022

Emerging Technologies to Maximize your Herd's Health Science Talks National Hog Farmer Merck Animal Health. May 2022

Using Precision Animal Management Data For Genetics/Genomics Research – Advances in Genome Biology and Technology, April 2022

Practical Considerations for Precision Animal Management Applications. AI in Ag conference Auburn, AL – March 2022

Changing the trajectory of the future of animal agriculture using dairy as a model. Nebraska Dairy – Columbus, NE – February 2022

Advanced phenotyping using digital technology, what is needed and what does the future look like? Poultry Breeder's Roundtable & National Swine Improvement Federation Joint Meeting Nov 2021

Future of Swine Production. Advancing Animal Welfare – Merck. Nov 2021

Impacts of Modern Housing Designs on Animal Thermal Responses. International Congress on Biometeorology Sept 2021

Basic Imaging Technologies and Application for Farm University of Georgia Evonik Precision Poultry Farming Sept. 2021

Working together to ensure the sustainability of animal agriculture. IEEE 7th World Forum on Internet of Things

Precision Animal Management and Beyond. International Symposium on Sustainable Animal Production and Health June 2021

Animal Housing and ventilation. Panel. American Society of Heating Air Conditioning, and Reirrigation Engineers. June 2021

Precision Livestock Farming. University of Sao Paulo May 2021

Precision Agriculture Comes to Animal Production. PVAMU Research Seminar. Dec 2020.

Animal Engineering Research Then, Now and in the Future. USDA Meat Animal Research Center. Sept 2020

Understand Animal Behavior and Improving Animal Facilities Michigan State University Virtual Workshop on PLF. Sept 2020

Using Precision Animal Management Data to Improve Engineering Design. Virtual Workshop on PLF, University of Campinas-Brazil. Sept 2020

Future of Animal Agriculture. Professional Engineers of Nebraska. June 2020

Using Data Streams to Create Management Information. American Society of Swine Veterinarians. March 2020.

Precision Animal Management. The Future of Animal Ag? ADSA ASAS Midwest Meeting in Omaha, Nebraska. March 2020.

Bringing Technology to Animal Production Facilities. University of Nebraska-Omaha Seminar Series. Department of Biomechanics, and the Center for Research in Human Movement Variability Oct. 2019.

Developing your passion into a career. Biological Systems Engineering Department Colloquium. Oct. 2019

Monitoring Animal Health and Welfare with Data Streams. International Symposium on Precision Systems and Data Analysis in Animal Agriculture Sept 2019.

Precision Animal Management. Nebraska Pork Board. April 2019.

Using RFID in Animal Management and More. ADSA ASAS Midwest Meeting in Omaha, Nebraska. March 2019.

Future of engineering in livestock housing – ARS- National Program Leaders. Feb 2019

Precision Livestock Farming. Nebraska Pork Board. Feb 2019

Precision Animal Management and Beyond. Precision Livestock Farming Conference Ames, IA. December 2018.

RFID – Tracking Livestock Populations and Beyond. IV International Workshop on Precision Environmental Control. Campinas Brazil November 2018

Imagine Images Managing Livestock IV International Workshop on Precision Environmental Control. Campinas Brazil November 2018

Using RFID and Imaging to Understand Animal Behavior. High Through Put Phenotyping Conference, Washington, D.C., November 2017

The Future of Animal Agriculture Digital Ag Summit, Universidade de São Paulo - Escola Superior de Agricultura "Luiz de Queiroz", Piracicaba, Brazil, Oct 2017

Understanding Thermal Stress. Guest Lecture for a Graduate Class; Universidade de São Paulo, Campus de Pirassununga, Faculdade de Medicina Veterinária e Zootecnia Pirassununga, Brazil, August 2017

Applications of Precision Agriculture in Livestock. Agriculture Technology and Economic Summit, Kearney, NE, June 2017

Managing heat stress in cattle. Iowa Extension Producer Days. Spirit Lake, IA, June, 2017

Overview of Precision Animal Management Research at USMARC. Invited presentation for NEDAP, PIC, Thomas Livestock. June 2016

Calorimetry Methods. Second Precision Animal Environment Conference, University of Campinas, Campinas, Brazil, November 2016

Heat stress in beef cattle. International Meeting of Animal Sciences. Animal Science of UNESP, Jaboticabal Campus, Jaboticabal, Brazil, June 2016

Precision Animal Management. Beltsvilles Animal Research Center. Beltsville, MD. May 2015

Techniques for Measuring Animal Physiological and Behavioral Responses with Respect to the Environment. International Symposium on Animal Environment and Welfare China, October, 2015

Analysis of feeding behavior and Understanding heat stress in beef cattle. First Precision Animal Environment Conference, University of Campinas, Campinas, Brazil. May 2015.

Heat production in modern poultry and swine. AviSue Conference in Florianopolis, Brazil, May 2014

Using RFID technology to monitor feeding behavior. RFID conference, Orlando, FL, April 2014

Heat stress in feedlot cattle. Temuco and Valdivia, Chile, September 2013.

Heat stress in feedlot cattle. American Veterinary Consultants, August 2013

Animal stress and well-being research Pork Board Meeting, June 2012

Management of Heat Stress in the Livestock Industry. Mid-West Animal Science Meetings, March, 2012.

Applying precision livestock farming technics identify heat stress in feedlot cattle and finishing swine. Leuven, Belgium, June 2011.

Understanding heat stress in feedlot cattle. Melle, Belgium, June 2011.

Effect of the Thermal Environment on Nutrient and Management Requirements of Cattle. 18th Discovery Conference, "Effect of the Thermal Environment on Nutrient and Management of Cattle," American Dairy Science Association. November 2009.

Managing Heat Stress in Feedlot Cattle. Beef Feedlot Roundtable, UNL Extension. February 2008.

Indicators and risk factors associated with heat stress in feedlot cattle. Rural Veterinarian Association. September 2004.

Dynamic responses of feeder cattle to simulated heat waves. Energy and Protein Metabolism Symposium. Rostock-Warnemunde, Germany September 13-18, 2003.

Electronic Monitoring and Measuring Systems for Animal Behavior and Physiological Response. Workshop held at ASAE annual meeting. July 2000.

Contributed Presentations

American Society of Agricultural and Biological Engineers (1997-present). Attended sixteen ASABE meetings, **presented 24** papers.

International Livestock Environment Symposium. Conference is held approximately every 4 years. Have attended 4 (Minneapolis, MN 1997; Louisville, KY, 2001; Beijing, China, 2005; Iguassu Falls, Brazil, 2008; Valencia, Spain, 2012; Omaha, NE 2018); prepared **9 conference proceeding papers**, and made **11 presentations**.

Precision Livestock Farming. Conference is held approximately every 2 years. Have attended 5 (Prague, Czech Republic July 2011; Leuven, Belgium Sept. 2013; Milan, Italy Sept. 2015; Nance, France, Sept 2017; Cork, Ireland, Sept 2019; Vienna, Austria. Sept 2022). **7 conference proceeding papers**.

TEACHING EXPERIENCE

Guest Lecture - Universidade de São Paulo, Campus de Piracicaba Nov. 2023

Guest Lecture - Universidade de São Paulo, Campus de Pirassununga Nov. 2023

Bioenvironmental Engineering BSEN 943. Fall 2022-Current University of Nebraska-Lincoln

Computer-Aided Problem-Solving BSEN/AGEN 112. Co-taught University of Nebraska-Lincoln Spring 2021

Agricultural Engineering and Biological Systems Engineering Senior Design 470/480 Co-taught University of Nebraska-Lincoln. (Fall 2019-Current; Spring 2020-Current)

Understanding Thermal Stress. Guest Lecture for a Graduate Class. Universidade de São Paulo, Campus de Pirassununga, Faculdade de Medicina Veterinária e Zootecnia Pirassununga, Brazil, October 2018 (1-week class – 40 hrs)

Understanding Thermal Stress. Guest Lecture for a Graduate Class. Universidade de São Paulo, Campus de Pirassununga, Faculdade de Medicina Veterinária e Zootecnia Pirassununga, Brazil, August 2017 (1-week class – 40 hrs)

Guest Lectures University of Campinas. Undergraduate class 318 Thermal Comfort for Animals and Graduate class FA 778 - Design for Animal Structures, first one for under and second for graduate students. May 2015

Guest Lectures University of Campinas. Undergraduate class 318 Thermal Comfort for Animals and Graduate class FA 778 - Design for Animal Structures, first one for under and second for graduate students. May 2014

Heat Transfer in Animals to a class in the Department of Biological Systems Engineering at the University of Nebraska, Lincoln, NE. Fall 2002.

Introduction to Biomechanics, presented one section of the course. University of Nebraska-Lincoln, Biological System Engineering Department, Fall 2000

Controlled Environment Co-authored a course on for an ASAE/USDA challenge grant. University of Kentucky. 1996

Environmental Control for Plants and Animals. Teaching assistant BSE 344 - University of Nebraska-Lincoln, Biological System Engineering Department. 1994

Anatomy and Physiology of Domestic Animals. Teaching assistant Animal Science 240 - University of Nebraska-Lincoln, Department of Animal Science. 1994

Natural Ventilation section taught. MSYM 342. University of Nebraska-Lincoln, Biological System Engineering Department. 1993

K-12 Education

FIRST Lego League Coach. 2010-present. Goals for the team – 1) Learn the engineering design process, 2) Understand Gracious Professionalism, 3) Apply math in an age appropriate manner (ie. Circumference, Proportional control, PID control) 4) Basics of programing. 5) Public speaking. The program has directly engaged close to 75 kids. Older kids have taught camps and engaged over 150 additional youth. Teams have won various awards at the regional and state level, and International Events.

FIRST Tech Challenge Coach. 2013-2016. Goals for the team– 1) Learn the engineering design process, 2) Learn about the engineering notebook and the importance of documenting your work, 3) Apply design in an age-appropriate manner, 4) Intermediate Programing, 5) Public speaking. The program directly engaged 10 kids. The team won various awards including Design Award, Think Award (notebook), Inspire Award. This team was invited to attend the North Super Regional Event.

FIRST Robotics Competition Coach/Mentor. 2017-Present. Goals for the team. 1) Learn the engineering design process, 2) Learn 3D modeling, 3) Learn how to use various machining tools 4) Advanced Programming 5) Learn the basics of business planning, grant writing, fund raising, 6) Public speaking, 7) teamwork. The program has directly engaged 25 kids. Members of this team have taught more than 150 kids in various robotics camps and presented robotics to thousands of professionals and the general public alike. This team won the rookie inspire award, highest ranked rookie, and Creativity Award; we have been invited to an alliance at 80% of attended events and has been invited to competed at the World's event in Houston.

Career Fairs and engaging high school youth. I enjoy working with students and have been invited to attend various career fairs for the last 10 years. In addition, numerous high school students have spent a day at work with me to discuss career opportunities.

GRANTS

2023	Kononoff, P. (Principal Investigator) "Understanding Host, Microbial, Environmental, and Management Factors Towards Methane Mitigation in Ruminants" Sponsored by Dept of Agriculture-NIFA, \$5,000,000. (Jan 2024 - Dec 2027.)
2022	Morris, D., Benjamin M., Brown-Brandl, T. Sharma, S.R. and Rohrer, G., "Swine health and growth monitoring," Sponsored by Dept of Agriculture-NIFA, \$181,000. (Aug 2022 - Aug 31, 2025.)
2021	Brown-Brandl, T. (Principal Investigator) Swine Health and Growth Monitoring, Nebraska Innovation Fund. \$121,735
2021	Brown-Brandl, T. (Principal Investigator), Xiong, Y. (Investigator), Sharma, R. (Investigator), "Swine Health and Growth Monitoring," Sponsored by Merck & Company, Industry, \$164,342. (September 27, 2021 - December 31, 2022).
2021	Shi, Y. (Principal Investigator), Brown-Brandl, T. (Investigator), "Cyber Tool for Sow Phenotyping," Sponsored by Dept of Agriculture-NIFA, Federal, \$ 261,179. (March 15, 2021 - March 14, 2024).
2021	Brown-Brandl, T. (Principal Investigator), Psota, E. (Investigator), "FACT-CIN for Precision Livestock Farming," Sponsored by Michigan State University, Universities, \$286,058. (March 1, 2021 - February 28, 2026).
2021	Vuran, M. C. (Principal Investigator), Vuran, M. C. (Investigator), Brown-Brandl, T. (Investigator), Pitla, S. (Investigator), "Planning Grant: ERC for ARC," Sponsored by NSF, Federal, \$100,000. (September 1, 2021 - August 31, 2022).
2020	Brown-Brandl, T. (Principal Investigator), "Updating Swine Ventilation Guidelines," Sponsored by Iowa State University, Universities, \$50,359. (September 1, 2020 - August 31, 2022).

- 2020 Vuran, M. (Principal Investigator), ...Brown-Brandl T. (Investigator), 136635, PAWR Platform Full Proposal: NEXTT: Nebraska Experimental Testbed of Things. (\$300,000)
- 2020 Brown-Brandl, T. (Principal Investigator), 135784, "Effect of Rearing Conditions on Behavioral and Metabolic Responses of Poultry. \$218,023 (Start 8/01/2020, end 07/31/2024)
- 2020 Brown-Brandl, T. (Principal Investigator), 135927, "UNO-NASA Space Grant: Engaging Youth in STEM through Robotics", University of Nebraska, \$5,000. (Start 9/01/2020, end 04/30/2021)
- 2020 Brown-Brandl, T. (Principal Investigator), 135788, \$34,500 "Electronic Monitoring of Swine for Precision Livestock Management and Novel Phenotype Development", Dept of Agriculture-ARS (Start 4/01/2020, end 12/31/2021)
- 2019 National Pork Board – "Assessing the effects of farrowing crate design and mothering phenotype on pre-weaning piglet survival and performance using imaging technologies." (\$443,091)
- 2019 National Pork Board – "Prevention of Lameness in Sows: Early Detection and Mitigation" (\$432,111)

GRADUATE ADVISING / VISITING SCIENTISTS / POST-DOCTORAL FELLOWS

Research Advisor:

Undergraduate

- Lukas Stelzle, *Development and installation of a feeding behavior system*. 2022
- Carson Mikkelsen, *Assessment Feeding Behavior Data*. 2020-2021
- Junior Gustavo Armando Ariza Guerrero, *Condition Score of Sows*. 2021
- Kathlyn Hauxwell, *Condition Score Changes during lactation*. 2020-2021
- Magdalene O'Brien. *Understanding sow lameness*. 2020-2021
- Austin Brown, Penn State. *Assessment of thermal environment of farrowing crates*. Summer 2020
- Nathan Olsufka, University of Nebraska-Lincoln. *Assessing sow stress throughout lactation*. 2017.
- Isabella Condotta, University of Sao Paulo, Piracicaba, Brazil. *Evaluation of Depth Cameras*. 2015
- Alyssa Rippe, Undergraduate Research. *Determining heat tolerance in finishing pigs using thermal imaging*. 2010

MS

- Shubham Bery, University of Nebraska-Lincoln. *Automated well-being assessment of swine*. (Major Professor) Current Student
- Jean Niwenshuti, University of Nebraska-Lincoln, *Characterizing feedlot feed using depth cameras and imaging technology*. (Committee Member) Grad Dec 2023.
- Kujit Bhatti, University of Nebraska-Lincoln. *Impacts of feeder spacing allowance on well-being of grow-finish swine*. (Major Professor) Grad Dec 2023.
- Gatum Takoo, University of Nebraska-Lincoln *Impacts of three different ventilation strategies on laying behavior of broiler breeders*. (Major Professor) Grad. Aug 2023
- Asya Macon, University of Nebraska-Lincoln. *Evaluating lactating sow postures and activities using accelerometers* (Major Professor) Grad 2022
- Brian Barnes, University of Nebraska-Lincoln. *Deployment and evaluation of a tracking system for improved animal management in a finishing pig facility*. (Responsible for 60% of the research), Grad. 2017

- Isabella Condotta, University of Sao Paulo, Piracicaba, Brazil. *Using depth images to measure pig dimensions and predict weight.* (Responsible for 100% of the research). Grad. 2017
- Cathy Bernhard, University of Missouri. (Committee Member) Grad 2017
- Jason Felver-Gant, Purdue University. *Heat Stress in Chickens: Genetic Variation and the Use of Antioxidant Supplementation in Prevention of Oxidative Damage.* (Committee Member) Grad 2011.
- Jacob Mayer, Mississippi State University. *Quantifying physiological responses of beef cattle using a tympanic temperature measurement device.* (Responsible for 50% of the research) Grad 2011
- M. Shane Davis, Master's Student, University of Nebraska-Lincoln. *Management strategies to reduce heat stress in feedlot cattle.* Grad. 2004
- Renee Hunt, Master's Student, University of Nebraska-Lincoln, Lincoln, Nebraska. *Quantifying physiological responses of laying hens to summer time.* Did not Grad

PhD

- Kuljit Bhatti. Using RFID and Images to Manage Swine. (Major Advisor) Current Student
- Shiva Paudel. *Automation of animal parameters and identification in grow-finish swine.* University of Nebraska-Lincoln. (Major Advisor) Current Student
- Md Towfiquir Rahman. *Assessment of preweaning mortality and development of a mothering phenotype* University of Nebraska-Lincoln. (Co-advised Yeyin Shi) Current Student
- Rachel Reith, University of Nebraska -Lincoln (Committee Member) Current Student
- Addison Carroll, University of Nebraska-Lincoln (Committee Member) Current Student
- Kassidy Buse, University of Nebraska-Lincoln (Committee Member) Grad Dec 2023
- Pablo Grijalva, University of Nebraska (Committee Member) Grad Dec 2023
- Veronica Maderia Pacheco, University of Sao Paulo. Pirassumga, Brazil. *Using deep learning algorithms for the analysis of three farrowing crate designs.* (Responsible for 100% of the research) Grad Feb. 2023
- Junjie Han, Michigan State University, (Committee Member): Current Student Grad 2022
- Dennis Logan Morris, *Energy metabolism in Jersey cows: Improving our understanding of energy requirements and utilization.* University of Nebraska-Lincoln. (Research consultant, Committee Member) Grad. 2020
- Suzanne Leonard, Iowa State University, Ames, IA. *Characterizing lactating sow posture in farrowing crates utilizing automated image capture and analysis system.* (75% responsible for research); Grad. 2020
- Isabella Condotta, University of Sao Paulo, Piracicaba, Brazil. *Using depth images to evaluate sow well-being in a group housed gestation facility.* (100% responsible for research); Grad 2019
- Jessica Dewry, Doctoral Student, University of Wisconsin *A Comprehensive Computational Fluid Dynamics Model of Dairy Cow Housing: Development and Validation* (Committee Member) Grad 2016
- Curtis Tomasevicz, University of Nebraska-Lincoln. Lincoln Nebraska. *Comparison of drop jump and resisted squat jump.* (Committee Member) Grad. 2017
- Kisminantini, Doctoral Student, University of Nebraska, Lincoln, Nebraska. *Methods for detecting lags in temperature regulation.* (Committee Member) Grad. 2016
- Jessica Dewry, University of Wisconsin. *A model of methane and ammonia emissions from dairy barns-computational fluid dynamics model development and validation.* Grad. 2016

- Fan Yang, University of Nebraska, Lincoln, Nebraska. *Modeling the dynamic processes of challenge and recovery (stress and strain) over time.* (Committee Member) Grad. 2015
- Rimena Vercellino, Doctoral Student, University of Campinas, Campinas, Brazil. *Detection of behavioral patterns of broilers reared under different ammonia and temperature conditions for the development of a real-time monitoring system tool.* (Research Consultant)
- Jeremiah Davis, Doctoral Student, Iowa State University *Remote Characterization of Locomotion, Grazing and Drinking Behavior in Beef Cattle Using GPS and Ruminant Temperature Dynamics,* (Committee Member) Grad 2006
- Danilo Franco, Doctoral Student, University of Nebraska-Lincoln, Lincoln, NE. *Effect of heat stress on production, physiological, and metabolic parameters in three varieties of laying hens.* (Research Consultant, Committee Member) Grad 2004
- Shane Davis, Doctoral Student, University of Nebraska-Lincoln. *Management strategies to reduce heat stress in feedlot cattle.* (Committee Member) Grad. 2001
- Jeremiah Davis, Iowa State University, *Remote characterization of locomotion, grazing and drinking behavior in beef cattle using GPS and ruminant temperature dynamics.* (Committee Member) Grad. 2007.
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Visiting Scientists

- Dr. Rafeal Sousa, University of Sao Paulo, Pirassununga, Brazil
- Dr. Felix Adrion, University of Hohnheim, Germany *RFID systems to monitoring feeding behavior, and modeling techniques to detect illness.* (Responsible for 100% the research). 2017
- Dr. Yoshiyuki Abe, Visiting Scientist, National Agricultural and Food Research Organization, Tochigi, Japan. *Feedlot cattle heat stress monitoring and modelling techniques.* (Responsible for 100% the research)

Post-Doctoral Fellows

- Veronica Pacheco UNL 2023- Present
- Sudhendu Raj Sharma. UNL 2020-Present.
- Weizhen Liang. UNL. 2020-2021
- Isabella Condotta. UNL *Deep Learning algorithms to improve the prediction of weight from depth images.* 2019-2020
- Morgan Hayes. USDA. *Using Thermal Images to predict thermal neutral zone.* 2013-2014.

PUBLICATIONS:

PEER REVIEWED JOURNAL ARTICLES

1. Brown, T.M., M.M. Beck, D.D. Schulte, D.D. Jones, J.H. Douglas, and S.E. Scheideler. 1995. Nipple waterers for chick batteries: design, efficiency, cost analysis. *Poultry Science* 74:457-462.
2. Brown-Brandl, T.M., M.M. Beck, D.D. Schulte, A.M. Parkhurst, and J.A. DeShazer. 1997a. Temperature humidity index for growing tom turkeys. *Transactions of the ASAE* 40(1):203-209.
3. Brown-Brandl, T.M., M.M. Beck, D.D. Schulte, A. Parkhurst, and J.A. DeShazer. 1997b. Physiological responses of tom turkeys to temperature and humidity change with age. *Journal of Thermal Biology* 22 (1):43-52.
4. Brown-Brandl, T.M., M.M. Beck, D.D. Schulte, A. Parkhurst, and J.A. DeShazer. 1998. Modification, operation, and error analysis of an indirect calorimeter for within-chamber control and data acquisition. *Transactions of the ASAE* 41(4):1115-1118.
5. Brown-Brandl, T.M., J.A. Nienaber, and L.W. Turner. 1998. Acute heat stress effects on heat production and respiration rate in swine. *Transactions of the ASAE* 41 (3):789-793.
6. Turner, L.W., T.C. Bridges, R.D. Coffey, R.S. Gates, G.R. Parker, T.M. Brown-Brandl, and D.G. Overhults. 1998. Comparison of observed and simulated grow-finish swine performance under summer conditions. *Applied Engineering in Agriculture* 14(4):419-423.
7. Eigenberg, R.A., G.L. Hahn, J.A. Nienaber, and T. Brown-Brandl. 2000. Development of a new respiration rate monitor for cattle. *Transactions of the ASAE* 43(3):723-728.
8. Brown-Brandl, T.M., J.A. Nienaber, L.W. Turner, and J.T. Yen. 2000. Manual and thermal induced feed intake restriction on finishing barrows. I: Effects on growth, carcass composition, and feeding behavior. *Transactions of the ASAE* 43(4):987-992.
9. Brown-Brandl, T.M., J.A. Nienaber, L.W. Turner, and J.T. Yen. 2000. Manual and thermal induced feed intake restriction on finishing barrows. II: Effects on heat production, activity, and organ weights. *Transactions of the ASAE* 43(4):993-997.
10. Brown-Brandl, T.M., R.A. Eigenberg, J.A. Nienaber, and S.D. Kachman. 2001. Thermoregulatory profile of a newer genetic line of pigs. *Livestock Production Science* 71(2-3):253-260.
11. Eigenberg, R.A., J.A. Nienaber, T.M. Brown-Brandl, and G.L. Hahn. 2002. Development of rugged environmental monitoring units for temperature and humidity. *Applied Engineering in Agriculture* 18(4):493-496.
12. Eigenberg, R.A., T. Brown-Brandl, and J.A. Nienaber. 2002. Development of a respiration rate monitor for swine. *Transactions of the ASAE* 45(5):1599-1603.
13. Freetly, H.C., J.A. Nienaber, and T.M. Brown-Brandl. 2002. Relationship between aging and nutritionally controlled growth rate on heat production of ewe lambs. *Journal of Animal Science* 80:27-2763.
14. Freetly, H.C., J.A. Nienaber, and T.M. Brown-Brandl. 2002. Relationships among heat production, body weight, and age in Finnsheep and Rambouillet ewes. *Journal of Animal Science* 80:825-832.

15. Bridges, T.C., T.M. Brown-Brandl, L.W. Turner, and J.A. Nienaber. 2002. Modeling the changing genetics of swine growth. *Applied Engineering in Agriculture* 18(4):497-502.
16. Brown-Brandl, T.M., J.A. Nienaber, R.A. Eigenberg, G.L. Hahn, and H. Freetly. 2003. Thermoregulatory responses of feeder cattle. *Journal of Thermal Biology* 28:149-157.
17. Brown-Brandl, T.M., T. Yanagi, H. Xin, R.S. Gates, R. Bucklin, and G.S. Ross. 2003. A new telemetry system for measuring core body temperature in livestock and poultry. *Applied Engineering in Agriculture* 19(5):583-589.
18. Freetly, H.C., J.A. Nienaber, and T.M. Brown-Brandl. 2003. Relationship between aging and nutritionally controlled growth rate on heat production of heifers. *Journal of Animal Science* 81:1847-1852.
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