

Benny E. Mote

Associate Professor, Swine Extension Specialist
60% Extension and 40% Research
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Education:

- 2003 – 2008 Ph.D. Interdepartmental Genetics/Animal Breeding and Genetics, Iowa State University; Ames, Iowa. Dissertation: The use of genetic markers to improve the often over looked traits of sow productive life and genetic abnormalities
- 1998 – 2002 B.S. Animal Science, University of Nebraska-Lincoln; Lincoln, Nebraska

Professional Experience:

- 2022-present *Associate Professor-Swine Extension Specialist*, University of Nebraska-Lincoln; Lincoln, Nebraska
- 2015-2022 *Assistant Professor-Swine Extension Specialist*, University of Nebraska-Lincoln; Lincoln, Nebraska

Honors and Awards Received:

Omtvedt Innovation Award for Team: NUtrack Livestock Monitoring Team. Team members: Ty Schmidt, Benny Mote and Eric Psota. UNL IANR, 2019.

EXTENSION:

Major Extension Deliverables:

Nebraska Department of Agriculture – Depopulation

- Depopulation exercise utilizing novel foaming agents
- Depopulation of nursery facility (n=1188 pigs) experiencing catastrophic disease related losses

Joint Nebraska Department of Agriculture, National Pork Board, USDA, Nebraska Pork Producers Association, and UNL foreign animal disease exercise (2022)

- Identified and worked with a producer to participate in the exercise
- Coordinated the live fire exercise at UNL’s ENREC facility with 70 multi-state and national veterinarians and animal health officials learning from the exercise
- Utilized the euthanasia trailer that was built previously for the exercise
- Coordinated and participated in the on-farm exercise critical for state and national animal health officials to understand modern multi-site swine production
- Parlayed exercise into \$150,000 grant for Dr. Amy Schmidt to research composting of a FAD site

Secure Pork Supply (2021-2023)

- Hosted 14 joint meetings with Nebraska Pork Producers to prepare for a foreign animal disease event
- 127 producers initiated Secure Pork Supply plans for 232 sites

Codeveloped Farrowed and Owned 4H swine cohort (2021-2023)

- Program specifically for youth raising their own show swine
- Direct engagement with 48 youth and their families
- Developed and delivered six, web-based seminars on health, nutrition, genetics, and biosecurity per year
- Critical liaison between both UNL and Nebraska Pork Producers Association with youth swine programming for biosecurity and industry recruitment

Codeveloped Swine Euthanasia Trailer for the mass depopulation of Swine (2020)

- Tested and validated trailer purchased by Nebraska Department of Agriculture for use in Nebraska if a Foreign Animal Disease outbreak occurs

Codeveloped Disaster Community Aid Resource Exchange (CARE) disastercare.unl.edu/ (2020)

- Web-based resource to link producers' needs to available resources during natural disasters or foreign animal diseases at state, regional, and national levels

COVID-19 Crisis Response (2020)

- Coordinated efforts with Nebraska Department of Agriculture, Nebraska Department of Energy and Environment, USDA Natural Resources Conservation Services, Nebraska Pork Producers Association, and University of Nebraska
- Re-formatted and added revised content to the UNL Swine Extension Website including guidelines regarding growth mitigation strategies to avoid depopulation, approved depopulation methods, regulation of the disposal of euthanized animals, and mental health help
- Utilized county extension, Pork Quality Assurance Plus® (PQA Plus) advisors, and Swine Veterinarians to reach producers in need

Pork Quality Assurance Plus® State Trainer (2016-present)

- Retrain/certify PQA Plus advisors every 3 years
- Trained 76 PQA Plus advisors (primarily veterinarians and senior level commercial employees)
- Personally trained additional 323 individuals for PQA Plus certification
- 3,988 individuals PQA Plus certified in Nebraska through training pyramid
- Lead statewide recertification efforts for all pork producers every 3 years
- Conduct PQA Plus Site Assessments as needed allowing producers to market their swine

National Swine Improvement Federation (NSIF) (2017-present)

- Secretary for the organization
- Website coordinator. Coordinated website transition, specifically historic conference proceedings, Swine Genetics Handbook, and Swine Improvement Guidelines needed by swine geneticists
- Factsheets committee chair
- Annual meeting planning, meeting organizer, registration (online and onsite), and onsite meeting coordination

FFA Livestock Management CDE, Swine Management (2017-present)

- Swine Business Management, Marketing, and Product Evaluation. (2017) (462 views, July 1, 2021)
- Swine Nutrition. (2018) (1009 views, July 1, 2021)
- Swine Genetics, Breeding, and Reproduction. (2019) (645 views, July 1, 2021)

Pork Talk Coordinator (2016-present)

- Ensure the latest swine related research from UNL swine researchers reaches Nebraska producers in Nebraska Pork Producers Association Pork Talk Magazine
- 40 articles to date

Extension Presentations (UNL 61)

* Indicates presenting author when multiple authors listed

1. **Mote B.** 2023. Resiliency Challenges Associated with High Consequence Pathogen Outbreaks. National Strategic Research Institute. Lincoln, Nebraska. Invited.
2. **Mote B.** 2023. The use of *NUtrack* to provide insights on novel phenotypes for genetic and management considerations. Iowa State University. Ames, Iowa. Invited.
3. **Mote B.** 2023. Genetic Selection For Reproduction Success. Online Webinar Penn State. Invited.
4. **Mote B.** 2023. Nebraska Swine Research Innovations. Smithfield Producers Meeting. Crete, Nebraska. Invited.
5. **Mote B.** 2023. Youth Swine Shows. Animal Science 101 – UNL Extension. Online Webinar. Lincoln, Nebraska.
6. **Mote B.** 2023. Secure Pork Supply, Foreign Animal Disease Preparedness, and UNL Swine Research. NPPA Regional Producer Meeting. York, Nebraska. Invited.
7. **Mote B.** 2023. Secure Pork Supply, Foreign Animal Disease Preparedness, and UNL Swine Research. NPPA Regional Producer Meeting. West Point, Nebraska. Invited.
8. **Mote B.** 2023. Secure Pork Supply, Foreign Animal Disease Preparedness, and UNL Swine Research. NPPA Regional Producer Meeting. Lindsey, Nebraska. Invited.
9. **Mote B.** 2022. Secure Pork Supply, Foreign Animal Disease Preparedness, and UNL Swine Research. NPPA Regional Producer Meeting. Lindsey, Nebraska. Invited.
10. **Mote B.** 2022. Things you didn't know about gilt development and selection. SwineTalks 2022. Online Webinar. Invited.
11. Millburn S.* and **Mote B.** 2022. Identifying Early-Life Behavior to Predict Influence on Sow Performance Utilizing *NUtrack* System. National Swine Improvement Federation. Kansas City, Kansas.
12. Obermier D.* and **Mote B.** 2022. The Impact of Sire EBV for Growth and Feed Intake on Pig Activity Level Using *NUtrack*. National Swine Improvement Federation. Kansas City, Kansas.
13. **Mote B.** 2022. *NUtrack*: Animal Movement Tracking. Western Canadian Association of Swine Veterinarians. Saskatoon, Saskatchewan Canada. Invited.
14. **Mote B.** 2022 Electrical Euthanasia Trailer for Mass Depopulation of Swine. State and National FAD swine exercise. ENREC, Ithaca, Nebraska. Invited.
15. **Mote B.** 2022. Panelist on emergencies related to animals. The Midwest Resilience and Emergency Preparedness Conference. Lincoln, Nebraska. Invited
16. **Mote B.** 2022. Evaluation of Measures to Predict and Manage Sow Longevity. Leman Swine Conference. St. Paul, Minnesota. Invited.
17. Trenhaile-Grannenmann M, Xiong Y, Liang W, Brown-Brandl T, Stalder K, **Mote BE.*** Automatic classification of sow knee angle for optimized sow selection. European Conference on Precision Livestock Farming 2022. Vienna, Austria.
18. Ostrand L*, Trenhaile-Grannenmann M, Schmidt T, Psota E, Rohrer G, **Mote BE.** 2022. Automatic phenotyping of activity traits with *NUtrack* to enhance gilt selection. European Conference on Precision Livestock Farming. Vienna, Austria.

19. Xiong Y, Psota E*, Brown-Brandl T, **Mote BE**, Schmidt T, Erickson G. 2022. A volumetric depth imaging method for feed estimation in beef cattle. European Conference on Precision Livestock Farming. Vienna, Austria.
20. Obermier, D, Rathje T, Schmidt T, **Mote BE**. The impact of sire EBV for growth and feed intake on pig activity level using NUtrack. 2022 National American Society of Animal Science Meetings. Oklahoma City, Oklahoma.
21. **Mote B**. 2022. UNL Animal Science Overview. Nebraska Pork Producers Annual Meeting. York, Nebraska. Invited.
22. **Mote B**. 2022. Secure Pork Supply. Nebraska Pork Producers Annual Meeting. York, Nebraska. Invited.
23. **Mote B**. 2022. Evaluation of Measures to Predict Gilt Longevity. Midwest American Society of Animal Science. Omaha, Nebraska. Invited.
24. **Mote B.*** Woiwode R. 2022. Electrical Euthanasia Trailer for Mass Depopulation of Swine. Iowa Department of Agriculture. Invited.
25. **Mote B.*** Woiwode R. 2022. Electrical Euthanasia Trailer for Mass Depopulation of Swine. Minnesota Department of Agriculture. Invited.
26. **Mote B**. 2022. Sow Lameness. SowBridge Webinar Series. Invited
27. **Mote B.*** and Stowel R. 2021. Ventilation Considerations in Swine Barns. Columbus, Nebraska.
28. Millburn S.* and **Mote B**. 2021. Early Life Swine Behavior on Mothering Ability. NSIF St. Louis, Missouri.
29. Obermier, D.* and **Mote B**. 2021. Understanding Toe Growth and Wear of Sows. NSIF St. Louis, Missouri.
30. **Mote B.*** Woiwode R. 2021. Electrical Euthanasia Trailer for Mass Depopulation of Swine. USDA-APHIS. Invited
31. **Mote B.*** Woiwode R. 2021. Electrical Euthanasia Trailer for Mass Depopulation of Swine. Indiana Department of Agriculture. Invited
32. **Mote B**. 2021. Artificial Intelligence in the Future of Animal Genetics. Visions Conference. Ames, Iowa. Invited.
33. **Mote B**. 2021. Electrical Euthanasia Trailer for Mass Depopulation of Swine. Swine Extension Educators Conference. Omaha, Nebraska. Invited
34. **Mote B.*** Woiwode R. 2021. Electrical Euthanasia Trailer for Mass Depopulation of Swine. Livestock Emergency Disease Response System LEDRS Veterinary Corps Annual Conference. Broken Bow, Nebraska. Invited
35. **Mote B**. 2021. Phenotyping of individual pigs utilizing computer vision offers insights for novel trait generation. National Animal Science Meetings. Invited
36. **Mote B**. 2021. Individual Pig Activity Tracking Utilizing NUtrack Provides Deep Phenotyping of Novel Traits. Thomas Livestock Company. Invited
37. **Mote B**. 2021. Individual Pig Activity Tracking Utilizing NUtrack Provides Deep Phenotyping of Novel Traits. Iowa State University Breeding and Genetics. Invited
38. **Mote B**. 2021. Individual Pig Activity Tracking Utilizing NUtrack For Nucleus and Commercial Swine Production. DNA Genetics. Invited.
39. **Mote B**. 2020. The use of automated technologies for novel phenotype discovery and use in genetic selections. Iowa State University Breeding and Genetics Graduate Student seminar. Invited

40. **Mote B.** 2020. Precision Livestock Farming Technologies Upcoming for Commercial Pork Production. PorkBridge Webinar Series. Invited
41. **Mote B.** 2020. Precision Livestock Farming Technologies Upcoming for Commercial Pork Production. SowBridge Webinar Series. Invited
42. **Mote B.** 2020. Precision Livestock Technology in swine operations. National FFA Convention Workshop. Invited
43. **Mote B.** 2020. Individual Pig Activity Tracking Utilizing NUtrack Provides Deep Phenotyping of Novel Traits. UNL Animal Breeding and Genetics Seminar Series. Invited.
44. **Mote B.** 2020. How COVID-19 Impacted Pork Production. Buffalo County Lottery Pig Program. Invited.
45. **Mote B.** 2020. COVID-19 Impacts on Packing Plants and Swine Producers. *Chat with Chuck* Extension Series. Invited.
46. **Mote B.** 2020. Swine Genetics Research at Nebraska. Norsvin Research Meeting. Norway.
47. Lancaster J, Psota E, Hulbert L, Schmidt T, **Mote B.*** 2020. Individual Pig Activity Tracking in Group-Housed Swine Offers a Deeper Understanding of Swine Production. Banff Pork Seminar. Banff, Alberta, Canada. Invited
48. Trenhaile-Grannemann M*, **Mote B.** 2019. Quantification and repeated measurements of structural traits in replacement females to optimize sow longevity. NSIF Indianapolis, Indiana.
49. Ostrand L*, **Mote B.** 2019. Identification and Prevention of Lameness in Sows via Early Detection Utilizing Gait4 and NUtrack Systems. NSIF Indianapolis, Indiana.
50. See, G*, **Mote E.** 2019. Including Crossbred Information in Commercial Swine Breeding Schemes. NSIF Indianapolis, Indiana.
51. **Mote B.** 2019. The Development and Evolution of Individual Pig Tracking In Group Housing. Swine Innovation Summit. Indianapolis, Indiana. Invited
52. **Mote B.** 2019. Panelist for National Pork Board's African Swine Fever/Biosecurity for Youth Exhibition Animals. Des Moines, Iowa. Invited
53. **Mote B.** 2019. Genetic Improvement of Sow Longevity and its Economic Impact on Commercial Pork Production. Ensminger Pig Symposium. Johannesburg, South Africa. Invited
54. **Mote B.** 2019. Individual pig tracking in group housing. Pig Breeders Roundtable. University of Kent. Canterbury, England.
55. **Mote B.** 2019. Swine Genetic Programs For a US/China Genetics Program. Waldo Genetics. DeWitt, Nebraska.
56. **Mote B.** 2019. Show Pig Biosecurity. Saunders County Extension. (virtual)
57. **Mote B.** 2019. National Swine Improvement Federation Discussion of Joint Meeting. Poultry Breeders Roundtable. St. Louis, Missouri. Invited
58. Schmidt T*, Psota E, **Mote B.**, Perez L. 2019. Deep-Feature Detection and Tracking Platform. Midwest Animal Science Meeting. Omaha, Nebraska. Invited.
59. **Mote B.** 2019. Individual Pig Tracking in Group Housing. Nebraska Pork Producer Association's Annual Meeting. Lincoln, Nebraska. Invited.
60. **Mote B.** 2019. Progress on individual pig tracking technologies. Animal Welfare Committee of National Pork Board. Phoenix, Arizona. Invited.
61. **Mote B.** 2019. Biosecurity Practice Considerations for Manure Handling with Emerging

Disease Evermore Present. Recorded. Manure handling license workshops.

Industry Reports/Popular Press: (Career total 14)

1. Obermier D, Mote BE. (2023). Utilizing NUtrack to determine activity levels in pigs with varying degrees of genetic potential for growth and feed intake. Nebraska Pork Talk. Volume 55 No.3. <https://nepork.org/wp-content/uploads/2023/07/Pork-Talk-July-Aug-Sept-23-Web-1.pdf>
2. **Mote BE.** (2022). PRRS and Biosecurity. Nebraska Pork Talk. Volume 54 No.3. <https://www.nepork.org/wp-content/uploads/2022/07/Pork-Talk-July-Aug-Sept-Web.pdf>
3. Obermier D, **Mote BE.** (2021). Animal Science 150 – Animal Production Skills. Nebraska Pork Talk. Volume 53 No.2. <https://www.nepork.org/wp-content/uploads/2022/04/Pork-Talk-Apr-May-Jun-21-1.pdf>
4. See G, Spangler M, **Mote BE.** (2021). Can genotyping commercial pigs benefit producers? Nebraska Pork Talk. Volume 53 No.1. <https://www.nepork.org/wp-content/uploads/2021/01/Pork-Talk-Jan-Feb-Mar-21-1.pdf>
5. **Mote BE,** Woiwode R. (2020). Humane Euthanasia Prototype Shows Promise In Early Testing. Nebraska Pork Talk. Volume 52 No.6. <https://www.nepork.org/wp-content/uploads/2020/11/Pork-Talk-Nov-Dec-Web.pdf>
6. Sutton KM, Lahmers KK, Harris SP, Wijesena HR, **Mote BE,** Kachman SD, Borza T, Ciobanu DC. (2020). UNL Research Team Uncovers Novel Strains of Atypical Porcine Pestivirus Associated with Severe Congenital Tremor and High Mortality in Newborn Piglets. Nebraska Pork Talk. Volume 52 No.2. <https://www.nepork.org/wp-content/uploads/2020/03/Pork-Talk-March-April-2020.pdf>
7. Sutton KM, Lahmers KK, Harris SP, Wijesena HR, **Mote BE,** Kachman SD, Borza T, Ciobanu DC. (2020). Sluthing piglet tremors – Atypical porcine pestivirus genome detected in newborn piglets. National Hog Farmer. <https://www.nationalhogfarmer.com/animal-health/sleuthing-piglet-tremors>.
8. Trenhaile-Grannemann M, **Mote BE.** (2020). Assessment of Conformational Changes Across Three Parities In Sows. Nebraska Pork Talk. Volume 52 No.1. <https://www.nepork.org/wp-content/uploads/2020/01/Pork-Talk-Jan-Feb-20-Web-002.pdf>
9. Psota E, Schmidt T, **Mote BE,** Perez L. (2019). UNL Researchers Provide World-leading Precision Tracking Technology for Group-housed Pigs. Nebraska Pork Talk. Volume 51. No. 3. <https://www.nepork.org/wp-content/uploads/2019/05/Pork-Talk-May-June-2019-Final-web-version.pdf>
10. Gruhot T and **Mote BE.** (2019). UNL Study Shows Benefits of Screening Boars for Semen Quality. Nebraska Pork Talk. Volume 51. No.5. <https://www.nepork.org/wp-content/uploads/2019/11/Pork-Talk-Sept-Oct-Web.pdf>
11. Dekkers J, Serão N, Harding J, Plastow G, Scanlan C, **Mote B,** Willson P., (2019) Genomic Prediction for Reproductive Traits of Commercial Sows in Health Challenged Herds, Iowa State University Animal Industry Report 16(1).
12. Trenhaile-Grannemann M, **Mote BE.** (2018). Effect of parity 1 gestation housing system and energy restriction during gilt development on feet lesions and productivity in parity 1. (1st ed., vol. 51). Nebraska Pork Talk. <http://www.nepork.org/wpcontent/uploads/2018/01/Pork-Talk-Jan-Feb-Web-1.pdf>

Media Outreach on Swine Education: (Career total 24)

1. Mote B. (2023) Nebraska 4H Farrowed and Owned Program. Pure Nebraska. Aired live statewide 1-6-2023.
2. Mote B. (2022) European Conference of Precision Livestock Farming. Nebraska Pork Producers weekly radio report. Aired statewide 9-10-2022.
3. Mote B. (2022) Nebraska 4H Farrowed and Owned Program. Nebraska Pork Producers weekly radio report. Aired statewide 1-22-2022
4. Mote B. (2022) SowBridge Educational Series. Nebraska Pork Producer's weekly radio report. Aired statewide 1-8-2022.
5. Mote B. (2021) Depopulation trailer for National Pork Board. Nebraska Pork Producer's weekly radio report. Aired statewide 4-3-2021.
6. Mote B. (2020) Banff Pork Congress highlights for producers. Nebraska Pork Producer's weekly radio report. Aired statewide 2-1-2020.
7. Mote B. (2020) Swine production and genetics in Norway. Nebraska Pork Producer's weekly radio report. Aired statewide 3-14-2020.
8. Mote B. (2020). FDA approval of transgenic swine for food production. Nebraska Pork Producer's weekly radio report. Aired statewide 12-19-2020.
9. Mote B. (2019) UNL Research Report on gilt development. Nebraska Pork Producer's weekly radio report. Aired statewide 2-23-2019.
10. Mote B. (2019). African Swine Fever. Aired nationally 3-22-2019 on Market Journal. Uploaded to YouTube March 22, 2019.
https://www.youtube.com/watch?v=UGs_j1kLla0. 18,309 views 7-1-2021.
11. Mote B. (2019). Pig Breeders Roundtable report. Nebraska Pork Producer's weekly radio report. Aired statewide 5-11-2019.
12. Mote B. (2019). Youth Exhibition Biosecurity. Nebraska Pork Producer's weekly radio report. Aired statewide 6-25-2019.
13. Mote B. (2019). Swine conference and pig production in South Africa. Nebraska Pork Producer's weekly radio report. Aired statewide 6-29-2019.
14. Mote B. (2018). Pork and Sow Bridge educational resources. Nebraska Pork Producer's weekly radio report. Aired statewide 1-13-2018.
15. Mote B. (2018). Sow farm survey on sow longevity. Nebraska Pork Producer's weekly radio report. Aired statewide 6-16-2018.
16. Mote B. (2018). Animal Health in the Heartland Gene Editing Technology. Nebraska Pork Producer's weekly radio report. Aired statewide 8-04-2018

RESEARCH:

Research Interest:

My research focuses in using deep phenotyping of novel traits in conjunction with applied and functional genetics to enhance commercially relevant traits of economic importance in swine production.

Peer Reviewed Journal Articles: (UNL 24, prior to UNL 14)

ORCID: 0000-0003-2234-8844

1. Millburn S., Schmidt T., Rohrer G.A., **Mote B.** 2023. Identifying Early-Life Behavior to Predict Mothering Ability in Swine Utilizing NUtrack System. *Animals*. 13(18):2897. <https://doi.org/10.3390/ani13182897>
2. Obermier D., Trenahile-Grannemann M., Schmidt T., Rathje T., **Mote B.** 2023. Utilizing NUtrack to Access the Activity Levels in Pigs with Varying Degrees of Genetic Potential for Growth and Feed Intake. *Animals*. 13(10):1581. <https://doi.org/10.3390/ani13101581>
3. Bortoluzzi, E.M.; Goering, M.J.; Ochoa, S.J.; Holliday, A.J.; Mumm, J.M.; Nelson, C.E.; Wu, H.; **Mote, B.E.**; Psota, E.T.; Schmidt, T.B.; Jaber-Douraki, M.; Hulbert, L.E. (2023). Evaluation of Precision Livestock Technology and Human Scoring of Nursery Pigs in a Controlled Immune Challenge Experiment. *Animals*, 13, 246. <https://doi.org/10.3390/ani13020246>
4. Schmidt TB, Lancaster J, Psota E, Mote BE, Hulbert LE, Holliday A, Woiwode W, Pérez LC. (2022). Evaluation of a novel computer vision-based livestock monitoring system to identify and track specific behaviors of individual nursery pigs within a group-housed environment, *Translational Animal Science*, Volume 6, Issue 3, July 2022, txac082, <https://doi.org/10.1093/tas/txac082>
5. Sutton KM, Eaton CW, Borza T, Burkey TE, **Mote BE**, Loy JD, Ciobanu DC. (2022). Genetic diversity and detection of atypical porcine pestivirus infections. *J Anim Sci*. 100(1):skab360. doi: 10.1093/jas/skab360.
6. See GM, **Mote BE**, Spangler ML. (2021). Bias in variance component estimation in swine crossbreeding schemes using selective genotyping and phenotyping strategies. *J Anim Sci*. 99(11):skab293. doi: 10.1093/jas/skab293.
7. See GM, **Mote BE**, Spangler ML. (2021). Selective genotyping strategies of crossbred progeny for combined crossbred and purebred selection schemes in swine breeding programs. *J. Anim. Sci*. 99:3. doi: 10.1093/jas/skab041
8. See GM, **Mote BE**, Spangler ML. (2020). Impact of inclusion rates of crossbred phenotypes and genotypes in nucleus selection programs. *J. Anim. Sci*. 98:12. doi: 10.1093/jas/skaa360
9. Sanglard L, PigGen Canada, **Mote BE**, Willson P, Harding J, Plastow G, Dekkers J, Serão N. (2020). Genomic analysis of IgG antibody response to common pathogens in commercial sows in health-challenged herds. *Frontiers in Genetics*. 11:593804. doi: 10.3389/fgene.2020.593804
10. Psota ET, Schmidt T, **Mote BE**, Perez LC. (2020). Long-term tracking of group-housed livestock using keypoint detection and MAP estimation for individual animal identification. *Sensors*. 20(13), 3670. <https://doi.org/10.3390/s20133670>
11. **Mote BE**, Serenius TV, Supakorn C, Stalder KJ. (2020). Genetic improvement of sow longevity and its economic impact on commercial pork production. *South African Journal of Animal Science*. 49(6):1036-1046. DOI: [10.4314/sajas.v49i6.8](https://doi.org/10.4314/sajas.v49i6.8)
12. Gruhot TR, Remple LA, White BR, **Mote BE**. (2020). The effect of varicocele on semen quality in boars exposed to heat stress. *Translational Animal Science*. 10.1093/tas/txaa003.
13. Sutton KM, Lahmers KK, Harris SP, Wijesena HR, **Mote BE**, Kachman SD, Borza T, Ciobanu DC. (2019). Detection of atypical porcine pestivirus genome in newborn piglets affected by congenital tremor and high preweaning mortality. *J Anim Sci*. 97(10):4093-4100. doi: 10.1093/jas/skz267.
14. See G, Trenhaile-Grannemann MD, Spangler ML, Ciobanu DC, **Mote BE**. (2019). A

genome-wide association study for gestation length in swine. *Anim Genet*, 50: 539-542. doi:[10.1111/age.12822](https://doi.org/10.1111/age.12822)

15. Gruhot T, Gray K, Brown V, Huang Y, Kachman S, Spangler M, **Mote BE**. (2019). Genetic relationships among semen quality traits of Duroc boars collected during the summer season. *Animal Reproduction Science*. 206, 85-92.
16. Psota ET, Mittek M, Pérez LC, Schmidt T, **Mote BE**. (2019). Multi-Pig Part Detection and Association with a Fully-Convolutional Network. *Sensors*. 19(4):852.

Manuscripts in Progress

1. Wu, H., L. E. Hulbert, T. B. Schmidt, B. E. Mote, E. M. Bortoluzzi and M. Jaber-Douraki. 2023. Development of an early alert system using linear or non-linear regression models of a precision livestock technology for visual tracking compromised nursery pigs. *Submitted: 22 Dec 2022*
2. Holliday A, **Mote BE**, Psota E, Hulbert L, Jaber-Douraki M, Goering M, Bortoluzzi E, Schmidt T. 2023 Evaluating changes in behaviors of group housed nursery pigs following lipopolysaccharide challenge. *Animals*. (Invited submission)
3. Holliday A, **Mote BE**, Psota E, Hulbert L, Jaber-Douraki M, Goering M, Bortoluzzi E, Schmidt T. Utilization of the NUtrack system to autonomously identify and track the occurrence of aggressive behavior in group housed grow/finish pigs. *J. Anim. Sci*.
4. Schmidt T, **Mote BE**, Heath K. 2023. Pilot Study: Determination of dosage and route of lipopolysaccharide administration for initiation of sustained immune challenge of nursery pigs. *Amer. Vet. Med*.
5. Trenhaile-Grannemann M, See G, Miller P, Ciobanu D, Lewis R, Kachman S, Stalder K, **Mote BE**. Changes in objectively measured structural traits over time and association with longevity in sows. *Translational Animal Science*.
6. Trenhaile-Grannemann M, Miller P, Ciobanu D, Lewis R, Kachman S, Stalder K, **Mote BE**. Effect of developmental diet and gestation housing system on sow longevity, production, and structure. *Translational Animal Science*.
7. Trenhaile-Grannemann M, Lewis R, Kachman S, Stalder K, **Mote BE**. Objective measurements of sow conformation traits are reliable between evaluators. *Translational Animal Science*.

Refereed Abstracts: (UNL total 22)

1. Archer, C., Hilbrands A, **Mote BE**, Schmidt TB, Johnson L, and Li Y. 2023. Influence of Group Size on Performance and Tail Damage Caused by Tail Biting in Undocked Growing-Finishing Pigs, *Journal of Animal Science*, Volume 101, Issue Supplement_2, November 2023, Pages 4–5, <https://doi.org/10.1093/jas/skad341.004>
2. Peters L, Mote BE, Woiwode R. 2022. Perceptions of Insurgence: an automated single-step electrocution device developed for on-farm euthanasia and depopulation. Advancing Animal Welfare Together Symposium. Des Moines, Iowa. Accepted.
3. Obermier, D, Rathje T, Schmidt T, Mote BE. The impact of sire EBV for growth and feed intake on pig activity level using NUtrack. 2022 National American Society of Animal Science Meetings. Oklahoma City, Oklahoma. Accepted.
4. Eaton C, Sutton K, Mote BE, Burkey TE, Borza T, Loy JD, Ciobanu DC. 2022. 2.5' Untranslated Region-Based Detection of Genetically Diverse APPV Strains in US Midwest, *Journal of Animal Science*, Volume 100, Issue Supplement_2, May 2022,

Pages 6–7, <https://doi.org/10.1093/jas/skac064.007>

5. Trenhaile-Grannenmann M, Xiong Y, Liang W, Brown-Brandl T, Stalder K, **Mote BE**. (Submitted 2020, Conference postponed). Automatic classification of sow knee angle for optimized sow selection. European Conference on Precision Livestock Farming 2021.
6. Ostrand L, Trenhaile-Grannenmann M, Schmidt T, Psota E, Rohrer G, **Mote BE**. (Submitted 2020, Conference postponed.) Automatic phenotyping of activity traits with NUtrack to enhance gilt selection. European Conference on Precision Livestock Farming 2021.
7. Peace J, Psota E, Schmidt T, **Mote BE**. (Submitted 2020, Conference postponed). A Dataset and Method for Group-Housed Pig Reidentification. European Conference on Precision Livestock Farming 2021.
8. Xiong Y, Psota E, Brown-Brandl T, **Mote BE**, Schmidt T, Erickson G. (Submitted 2020, Conference postponed). A volumetric depth imaging method for feed estimation in beef cattle. European Conference on Precision Livestock Farming 2021.
9. Ostrand LM, Trenhaile-Grannemann MD, See GM, Schmidt TB, Psota ET, Rohrer GA, **Mote BE**. (2021). Utilization of NUtrack to assess heritability of activity traits. 2021 Midwest Animal Science Meetings. Accepted.
10. Hauxwell K, Ostrand LM, Schmidt TB, Psota ET, **Mote BE**, Rohrer GA. (2021). Activity and bone lesion analysis on gilt retention to the breeding herd. 2021 Midwest Animal Science Meetings undergraduate competition. Accepted.
11. Holliday A, Psota E, **Mote BE**, Hulbert L, Jaber-Douraki M, Schmidt T. (2021). Utilization of the NUtrack Livestock Monitoring System to identify changes in general and spatial behaviors of newly weaned nursery exposed to an endotoxin challenge. 2021 Midwest Animal Science Meetings. Accepted.
12. Eickhoff M, Obermier D, **Mote BE**, Uitermarkt A, Frobose H, Borg B. (2021) The impact of functional teat number on piglet survival and sow efficiency. 2021 Midwest Animal Science Meetings undergraduate competition. Accepted.
13. Obermier D, Uitermarkt A, Frobose H, **Mote BE**, Eickhoff M, Kibler J. (2021). The effect of pre-farrow mealtime on onset of parturition in swine. Midwest Animal Science Meetings. Accepted
14. See GM, **Mote BE**, Spangler ML. (2020). Impact of inclusion rates of crossbred phenotypes and genotypes in nucleus selection programs. *J. Anim. Sci.* 98: Suppl. 4.
15. Park SB, Gruhot TR, Liao SF, Rude BJ, **Mote BE**, Feugang JM. (2019). Favorable seminal plasma environment to sperm fertility following dietary L-arginine supplementation of boar. International Conference of Boar Semen Preservation. Australia.
16. Gruhot TR, **Mote BE**. (2019). Heritability and correlations of novel boar fertility traits. Pig Breeders Roundtable. University of Kent. Canterbury, England.
17. Schmidt T, Psota E, **Mote BE**, Perez L, Mittek M. (2019). Deep Frame-based tracking on nursery pigs, *J. Anim. Sci.* Volume 97, Issue Supplement_2, July 2019, Page 1, <https://doi.org/10.1093/jas/skz122.000>
18. Scanlan C, PigGen Canada, **Mote BE**, Willson P, Harding JCS, Plastow GS, Dekkers JCM, Serão NVL. (2019). Genomic prediction of reproductive performance of commercial sows in health challenged herds, *J. Anim. Sci.* Volume 97, Issue Supplement_2, July 2019, Page 166, <https://doi.org/10.1093/jas/skz122.293>
19. See G, Trenhaile-Grannenmann M, Ciobanu D, Spangler M, **Mote BE**. (2019). A

genome-wide association study for gestation length in swine. *Anim. Genet.*, Volume 97, Issue Supplement_2, July 2019, Page 40, <https://doi.org/10.1093/jas/skz122.071>

20. Trenhaile-Grannemann MD, **Mote, BE**. (2018). Comparison of Group and Individual Housing on Incidence and Severity of Feet Lesions, Productivity, and Survivability in First Parity Gilts. *J Anim Sci* 96(suppl_2):9-10. DOI: 10.1093/jas/sky073.016
21. Lancaster J, Psota E, **Mote BE**, Perez L, Fricke L, Mittek M, Kett L, Schmidt T. (2018). Evaluation of a Novel Computer Vision Systems' Ability to Continuously Identify and Track the Activities of Newly Weaned Pigs. *Journal of Animal Science*, Volume 96, Issue suppl_2, p69–70, <https://doi.org/10.1093/jas/sky073.129>

Proceedings (Peer reviewed): (UNL 4)

1. Trenhaile-Grannemann MD, Stock JD, See GM, Ciobanu D, Lewis R, Stalder KJ, **Mote BE**. (2018). Quantification and repeated measurements of structural traits in sows. Quantification and repeated measurements of structural traits in sows. World Congress on Genetics Applied to Livestock Production.
2. Gruhot TR, Rempel LA, Spangler M, **Mote BE**. (2018). The heritability of vessel size of the pampiniform plexus as a means to assess the genetic component of varicocele. World Congress on Genetics Applied to Livestock Production.
3. Gruhot T, Park, SB, Popoola MA, Liao SF, **Mote BE**, Feugang JM. (2018). Dietary L-arginine supplementation affects boar seminal plasma proteome. *Reproduction, Fertility and Development*, 31, 203-204. <https://doi.org/10.1071/RDv31n1Ab157>

Book Chapters: (UNL 1)

1. **Mote BE**, Rothschild MF. (2019). Modern Genetic and Genomic Improvement of the Pig, in Bazer, FW, Lamb, GC, and Wu G (ed) *Animal Agriculture: Challenges, Innovations, and Sustainability*. San Diego, California: Academic Press, pp 249-262.

US Patent: (UNL 2)

1. Psota, Eric T., Perez, Lance C., Schmidt, Ty, **Mote, Benny**. Materials and Methods for long-term tracking of group-housed livestock. Board of Regents of the University of Nebraska (Lincoln, NE, US) 20230230258.
2. Psota, Eric T., Perez, Lance C., Schmidt, Ty, **Mote, Benny**. 2020. Animal Detection Based on Detection and Association of Parts. Board of Regents of the University of Nebraska (Lincoln, NE, US) 20200410669.

Graduate Student Advising (career total):

Graduate Committees (Current): M.S.= 2; Ph.D.=3

Graduate Committees (Completed): M.S.=3

Graduate Committees (Completed) M.A.S.=1

Graduate Student Advisor (Current): M.S.=1; Ph.D.=1

Graduate Student Advisor (Completed): M.S. = 2; Ph.D.=3

Current Graduate Students:

Dalton Obermier (Ph.D. projected graduation August 2024) – Committee Chair

Emily Joie (M.S. projected graduation May 2025) – Committee Chair

Caitlyn Ross (Ph.D.) – Committee Member
Kassandra Durazo Martinez – (Ph.D.) – Committee Member
Grace Moeller – (Ph.D. Iowa State University) – Committee Member
Gustavo Castro Garcia – (M.S.) – Committee Member
Kuljit Bhatti (M.S.) – Committee Member (graduated December 2023)
Daniel Ahern – (M.S.) – Committee Member (graduated December 2023)
Avery Vieregger – (M.S.) – Committee Member
Brooke Parrish – (Ph.D) – Committee Member
Maura Eddy – (MAS) – Committee Member

Previous Graduate Students:

Lexi Ostrand (MS.; Graduation August 2023) – Committee Chair
Dissertation Title: Identification and assessment of lameness in sows through the utilization of NUtrack and GaitFour Systems.
Current Position: Nucleus Support. DNA Genetics. Columbus, Nebraska.
Savannah Millburn (MS.; Graduation December 2022) – Committee Chair
Dissertation Title: Identifying early-life behavior to predict mothering ability in swine utilizing NUtrack System.
Current Position: Technical Services. PIC. Hendersonville, Tennessee.
Melanie Trenhaile-Grannemann (Ph.D.; Graduation August 2021) – Committee Chair
Dissertation Title: Quantification and repeated measurements of conformation traits in replacement females to optimize sow longevity
Current Position: Geneticist at Cobb-Vantress, Monticello, Kentucky.
Garrett See (Ph.D.; Graduation December 2020) – Co-Committee Chair
Dissertation Title: Strategies for using commercial data to inform genomic prediction in swine breeding
Current position: Geneticist at Acuity Genetics, Carlyle, Illinois.
Tasha Gruhot (Ph.D.; Graduation August 2019) – Committee Chair
Dissertation Title: Genetic components and relationships of boar semen quality and fertility Traits
Current position: Senior Research Scientist at Vytelle, Kansas City, Kansas.

Undergraduate Mentorship:

Undergraduate students directly mentored in swine management and research 32.
Rwandan Undergraduate Summer Project Advisor (Completed) = 2
Undergraduate UCARE Advisor (Completed)=1

Honors and Awards of Graduate Students Under My Direction:

Larry Sitzman Scholarship Winner 2022 (1).
NSIF Lauren Christian Graduate Student Award Winner 2022 (1).
NSIF Graduate Student Poster Competition Winner 2022 (1).
Milton E. Mohr Fellowship in Agriculture 2021 (1).
Pork Checkoff Student Travel Award for the National Swine Improvement Federation meetings 2016 (2), 2017 (2), 2018 (3), 2019 (3), 2021 (2), 2022 (1).
Gamma Sigma Delta, inducted for membership, 2020.

Swine Extension and Education Travel Award, 2019 (2).

SYNERGISTIC ACTIVITIES:

Teaching Accomplishments:

Animal Production Skills, ASCI-150 (2019-2023)

Animal Welfare, ASCI 370, Guest Lecture (2021, 2022)

AGRI 042, US Swine Production (2021, 2022)

Animal Science Major Orientation Seminar, ASCI 095, Guest Lecture (2019)

Academic Service:

Reviewer

Translational Animal Science, ad hoc reviewer, 2020 – present

Molecular Reproduction and Development, ad hoc reviewer, 2018 – present

PLOS ONE, ad hoc reviewer, 2018 – present

Livestock Science, ad hoc reviewer, 2018

Journal of Animal Science, ad hoc reviewer, 2017 - present

Animal Genetics, ad hoc reviewer, 2017 – present

Foundation for Food and Agriculture Research, ad hoc reviewer, 2017

BMC Genomics, ad hoc reviewer, 2015

University of Nebraska

Department of Animal Science, Faculty Supervisor of ENREC Swine Facility, 2022

Microbiology Major. Undergraduate and graduate poster judge, 2022

CASNR Lunch in the Lobby grill master, 2021-present

Departmental Animal Science Alumni Weekend Committee Member, University of Nebraska
Animal Science Dept., 2019-present

Search committee member: Precision Livestock Management, 2019-2020

Swine Committee Nebraska State Fair, 2018-present

Academic Quadrathlon, Swine Section, 2018-present

Block and Bridle Faculty Advisor, 2016-present

Animal Science Graduate Student Association Faculty Advisor, 2016-2018

Swine facility upgrades (on campus and research unit) compliance with space and welfare
standards and general modernizations, 2016-present

Discipline

ARS National Program Stakeholder Session, US MARC, 2021

US MARC Blue Ribbon Panel for Animal Husbandry in Swine, 2020

Midwest section of ASAS, Translational Swine Committee, 2019 – 2022

Industry/Extension

Nebraska Department of Agriculture Animal Health Committee, 2023-present

FAES Strategic Advisory Council, 2023-present

National Pork Board Secure Pork Supply Leaders, 2022- present

Swine Health Information Center's Taskforce for Wean to Harvest Biosecurity Program 2022

Swine Education & Outreach Professionals Board Member, 2021-present
Aksarben Swine Show Superintendent, 2021-present
Pork Quality Assurance Plus® Continuing Program Advancement Task Force, 2020
National Pork Board Needle Task Force, 2019
Long Range Planning Committee on Pedigreed Pigs Board Member, 2018-2019
NCERA-57, Swine Reproductive Physiology, 2017-present
Pork Quality Assurance Plus®, State Trainer, 2016-present
Nebraska Pork Producers Association Ex Officio Board Member (UNL), 2016-present
Nebraska Pork Producers Association Scholarship Committee, 2016-2020
NCERA-219, Swine Production Management to Enhance Animal Welfare, 2016-present
 Secretary 2016-2017
 President 2017-2019
PorkBridge Planning Committee, 2015-2021
SowBridge Planning Committee, 2015-present
National Swine Improvement Federation, 2015- present
 Secretary, 2016-present
 Fact Sheet/Guidelines Committee Chair, 2017-present
 Ultrasound Committee Chair, 2016-present
 Ex Officio Board Member (Land Grant), 2015-2016

Training:

Pork Quality Assurance Plus®, 2016, 2019, and 2022
Transport Quality Assurance, 2019 and 2022
Swine ultrasound measurements for backfat, loineye, and intramuscular fat, 2018

Professional Society:

American Society of Animal Science

GRANTS AND EXTERNAL FUNDING:

Awarded (Funding received as PI - \$506,540. Funding received at Co-PI \$972,054):

1. Use of NUtrack System to Evaluate Behavioral Changes in Nursery Pigs following Vaccination and Post Immune Challenge. Zoetis. 2022. PI: Ty Schmidt, Co-PI **Benny Mote**. Awarded \$173,373. Novel phenotypes research objective.
2. PRRS Transmission Risk Associated with Exposure to Slurry Manure or Effluent from a PRRS-positive Swine Herd. 2022. PI: Amy Schmidt. Co-PI Hiep Vu and **Benny Mote**. Awarded \$62,465. Novel phenotypes research objective.
3. Developing Future Swine Professionals in Genetics and Beyond for Sustainable Farm to Table Pork Production. National Pork Board. 2022. PI: Benny Mote. Awarded \$60,000. Novel phenotypes research objective.
4. Utilization of Computer Vision as a means to understanding the etiology of tail biting outbreaks in growing-finishing pigs. USDA-NIFA. 2022. PI: Ty Schmidt, Co-PI **Benny Mote**. Awarded \$299,423. Novel phenotypes research objective.
5. NEDED: UNL – DNA Genetics: Prediction of feed intake using activity data. 2022. PI: Benny Mote, Co-PI Ty Schmidt, Ben Riggan. Awarded \$125,000. Novel phenotypes research objective.

6. SaFIRE (Small Animal Feed Intake Recording Equipment) System. Osborn Industries. 2020. PI: Thomas Burkey, Co-PI **Benny Mote**. Awarded \$10,000. Novel phenotypes research objective.
7. COVID: Validation of a Mobile Electrocutation System for Humane Mass Depopulation of Swine. 2020. PI **Benny Mote**, Co-PI Ruth Woiwode. Awarded \$75,000. Mass depopulation of swine research objective.
8. NEDED: UNL – WholeStone: Pig Counting using NUtrack. NEDED: Academic Research and Development Grant. 2020. PI: Jerry Hudgins (financial lead), Co-PI **Benny Mote** (project lead), Eric Psota, Ty Schmidt. Awarded: \$125,000. Novel phenotypes research objective.
9. Prevention of Lameness in Sows: Early Detection and Mitigation. National Pork Board. 2019. PI: **Benny Mote**, Co-PI Tami Brown-Brandl, Lance Perez, Ty Schmidt, Eric Psota, Yeyin Shi. Awarded: \$246,540. Novel phenotypes research objective.
10. Utilization of an Advanced Computer Vision Platform to Identify Changes in the Physiological and Behavioral Changes Associated with Illness and Aggressive/Damaging Behavior during the Nursery and Finisher Phase. National Pork Board 2019. PI: Ty Schmidt, Co-PI **Benny Mote**, Lance Perez, Eric Psota. Awarded. \$301,793. Novel phenotypes research objective.
11. Farrowing Management. Nebraska Pork Producers Association. 2018. PI: **Benny Mote**. Awarded \$10,000. Swine extension objective.
12. Automated Computer Vision System for Tracking Individual Pig Activity and Locomotion in Nursery/Finisher Group Housing. National Pork Board. 2018. PI: **Benny Mote** Co-PI Lance Perez, Ty Schmidt, Eric Psota. Awarded \$99,998. Novel phenotypes research objective.