

John B. Cole

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Education

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| 2014 | Georgetown University, Washington, DC
Certificate in Legislative Studies |
| 2003 | Louisiana State University, Baton Rouge, LA
Ph.D. in Animal, Dairy, and Poultry Science |
| 1996 | Louisiana State University, Baton Rouge, LA
M.S. in Animal and Dairy Science (Minor: Applied Statistics) |
| 1994 | Louisiana State University, Baton Rouge, LA
B.S. in Animal Systems (Dairy Production) (Minor: Microbiology) |
| 1990 | Louisiana School for Math, Science, and the Arts, Natchitoches, LA
Humanities Focus |

Appointments

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| January 2021–
Present | PEAK Sr. VP of Research & Development , URUS Group LP, Madison, WI |
| January 2016–
December 2020 | Acting Research Leader , Animal Genomics and Improvement Laboratory,
Henry A. Wallace Beltsville Research Center, Agricultural Research
Service, USDA, Beltsville, MD |
| January 2013–
Present | Courtesy Sustaining Professor , Department of Animal Sciences,
University of Florida, Gainesville |
| May 2014–
December 2015 | Research Geneticist (Animals) , Animal Genomics and Improvement
Laboratory, Henry A. Wallace Beltsville Research Center, Agricultural
Research Service, USDA, Beltsville, MD |
| January 2011–
Present | Adjunct Professor , Department of Animal Science, North Carolina State
University, Raleigh. |
| January 2011–
December 2011 | Legislative Fellow , Office of Senator Mark L. Pryor (AR), United States
Senate, Washington, DC (Training detail from USDA) |

December 2003– April 2014	Research Geneticist (Animals) , Animal Improvement Programs Laboratory, Henry A. Wallace Beltsville Research Center, Agricultural Research Service, USDA, Beltsville, MD
June 2002– December 2003	Data Manager , Southern Regional Climate Center, Louisiana State University, Baton Rouge, LA
June 2000–June 2002	Computer Analyst 2 , College of Education, Louisiana State University, Baton Rouge, LA
1998, 1999	Seminar Coordinator , University of Minnesota (Life Sciences Summer Undergraduate Research Program), St. Paul, MN
August 1996– May 2000	Graduate Assistant , University of Minnesota (Department of Animal Science), St. Paul, MN, 1996–2000
June 1994–May 1996	Graduate Research Assistant , Louisiana State University (Department of Dairy Science), St. Paul, MN, 1996–2000

Grants Received

2020	NIFA Agriculture and Food Research Initiative proposal “Genetic Mechanism of Reproductive Heterosis in Dairy Cattle” for \$500,000 (Y. Da et al.; Proposal #: 2019-05312; recommended for funding on 01/03/2020).
	NIFA Agriculture and Food Research Initiative proposal “Big-data Genomic Investigation to Improve Dairy Cattle Health” for \$500,000 (L. Ma et al.; Proposal #: 2019-05928; recommended for funding on 02/26/2020).
2019	Minnesota Agricultural Experiment Station Rapid Agricultural Response Fund grant “Reducing Mastitis in the Dairy Cow by Increasing the Prevalence of Beneficial Polymorphisms in Genes Associated with Mastitis Resistance” for \$233,324 (Crooker et al.; 07/01/2019–06/30/2021)
	NIFA Food and Agriculture Cyberinformatics and Tools Initiative Program grant “Enhanced Prediction of Dairy Cattle Performance Combined with a Tool to Improve Replacement and Breeding Decisions” for \$500,000 (De Vries et al.; 09/01/2019–08/31/2023)
	NIFA Animal Breeding and Functional Annotation of Genomes (A1201) grant “Enabling Tools for Microbiome-Based Trait Selection in Dairy Cows” for \$500,000 (Proposal #: 2019-05592; Suen et al.; recommended for funding on 10/09/2019).

2018	NIH and USDA-NIFA Dual Purpose R01 grant “Physiological and Genetic Insights into Pregnancy Loss” for \$1,851,398 (Accession #: 4097656; T.E. Spencer et al.; 07/01/2018–06/30/2023)
2017	AFRI Competitive Grant “Moving Livestock Research Forward” for \$50,000 (Grant #: 2017-67015-26907; Reecy et al.; 08/15/2017–08/14/2019)
2016	AFRI Foundational grant “Sequence-Based Big Data Genomic Discovery and Application to Improve Dairy Fertility” for \$350,000 (Grant #: 2016-67015-24886; L. Ma, et al.; 02/15/2016–02/14/2019)
2014	Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) “Ciências sem Fronteiras” grant “Genomic Selection for Dairy Cattle in Brazil” for \$174,000 (Grant #: 301025/2014-2; M.V.G.B. da Silva and J.B. Cole; 2014–2017)
	NSF grant “ABI Innovation: An Integrative Approach to Identifying Highly Heritable Subtypes of Complex Phenotypes” for \$585,717 (Grant #: 1356655; J. Bi et al.; 07/02/2014–04/01/2016)
2013	AFRI Integrated grant “Improving Fertility of Dairy Cattle Using Translational Genomics” for \$3,000,000 (Grant #: 2013-68004-20365; T.E. Spencer, et al.; 01/01/2013–12/31/2015)
2011	Southeast Milk, Inc. Milk Checkoff Program grant “Development of tools to select cattle that are genetically resistant to heat stress” for \$18,000 (P.J. Hansen, S. Dikmen, and J.B. Cole, 7/1/2011–6/30/2012)
2010	AFRI Integrated grant “Improving Fertility During Heat Stress in Lactating Dairy Cows” for \$1,000,000 (Grant #: 2010-85122-20623; P.J. Hansen et al.; 03/01/2010–02/28/2014)
2008	NRI grant “Genome Signature of Artificial Selection and Genome-Wide Association Analysis in Holstein Cows” for \$450,000 (Grant #: 2008-35205-18846; Y. Da et al.; 04/01/2008–08/31/2010)
2001	The Seeing Eye, Inc. grant “Genetic Analysis in a Colony of Guide Dogs” for \$500 (J.B. Cole; 2001-2002)

Awards and Honors

2021	100 Most Highly Cited Papers (2018-2021) , “Symposium review: Possibilities in an age of genomics: The future of selection indices” (Cole and VanRaden; corresponding author), Journal of Dairy Science, August 2021.
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- 100 Most Highly Cited Papers (2018-2021)**, “Invited review: Genetics and claw health: Opportunities to enhance claw health by genetic selection” (Heringstad et al.; co-author), Journal of Dairy Science, August 2021.
- 100 Most Highly Cited Papers (2018-2021)**, “Symposium review: Genetics, genome-wide association study, and genetic improvement of dairy fertility traits” (Ma et al.; co-author), Journal of Dairy Science, August 2021.
- 2020 **Research Award**, National Association of Animal Breeders
- 100 Most Highly Cited Papers (2017-2020)**, “Invited review: Genetics and claw health: Opportunities to enhance claw health by genetic selection” (Heringstad et al.; co-author), Journal of Dairy Science, August 2020.
- Editor’s Choice Article of the Month**, Production: Genetics and Genomics (corresponding author), Journal of Dairy Science, November 2020
- 2019 **Editor’s Choice Article of the Month**, Production: Breeding, Genetics, and Genomics (corresponding author), Journal of Dairy Science, December 2019
- Editor’s Choice Article of the Month**, Production: Breeding, Genetics, and Genomics (co-author), Journal of Dairy Science, June 2019
- Editor’s Choice Article of the Month**, Production: Breeding, Genetics, and Genomics (co-author), Journal of Dairy Science, May 2019
- 2018 **Outstanding Service Award**, National Dairy Herd Information Association
- 2017 **Editor’s Choice Article of the Month**, Production: Management and Economics (co-author), Journal of Dairy Science, June 2017
- Editor’s Choice Article of the Month**, Production: Breeding, Genetics, and Genomics (co-author), Journal of Dairy Science, May 2017
- Editor’s Choice Article of the Month**, Production: Breeding, Genetics, and Genomics (co-author), Journal of Dairy Science, April 2017
- 2016 **Editor’s Choice Article of the Month**, Genetics and Breeding (co-author), Journal of Dairy Science, October 2016
- Editor’s Choice Article of the Month**, Genetics and Breeding (corresponding author), Journal of Dairy Science, September 2016

- 2015 **Jay L. Lush Award in Animal Breeding and Genetics**, American Dairy Science Association, for outstanding research in animal breeding with the potential for improvement of dairy cattle
- Award of Recognition**, Council on Dairy Cattle Breeding, for international development of genomic predictions for dairy cattle (group award)
- 2014 **Editor's Choice Article of the Month**, Our Industry Today (co-author), Journal of Dairy Science, July 2014
- Editor's Choice Article of the Month**, Genetics and Breeding (corresponding author), Journal of Dairy Science, May 2014
- High-Impact Research Publication** (one of eight publications selected, co-author), Institute of Food and Agricultural Sciences, University of Florida
- 2013 **Editor's Choice Article of the Month**, Genetics and Breeding (co-author), Journal of Dairy Science, February 2013
- 2010 **USDA Secretary's Honor Award**, Cattle Genomics Consortium, for helping America promote sustainable agricultural production and biotechnology exports as America works to increase food security (group award)
- 2008 **President's Volunteer Service Award**, Silver Award
- 1994 **Southern ADSA-SAD Undergraduate Paper Presentation Contest**, Production, 3rd Place
- 1993 **Southern ADSA-SAD Undergraduate Paper Presentation Contest**, Manufacturing, 1st Place
- 1990 **Recipient of the J. B. Frye, Jr. Scholarship in Dairy Science**

Peer-Reviewed Publications

- 2022 Al-Khudhair, A.S., D.J. Null, **J.B. Cole**, C.W. Wolfe, D.J. Steffen, and P.M. VanRaden. 2022. Inheritance of a mutation causing neuropathy with splayed forelimbs in Jersey cattle. Journal of Dairy Science. 105:1338–1345. <https://doi.org/10.3168/jds.2021-20600>.
- Cole, J.B.** 2022. Are there too many traits in selection indices? Journal of Dairy Science. (In preparation.)
- Brink, Amber A., Wanda J. Weber, John D. Lippolis, **John B. Cole**, Sandra M. Godden, Anthony Seykora, and Brian A. Crooker. 2022. Effect of Holstein genotype on ex-vivo innate immune response to lipopolysaccharide (LPS) and lipoteichoic acid (LTA) during the

periparturient period. *Veterinary Immunology and Immunopathology*. (In preparation.)

Gao, Y., S. Liu, R.L. Baldwin, VI, E.E. Connor, **J.B. Cole**, L. Ma, C.-J. Li, L. Fang, and G.E. Liu. 2022. Functional annotation of regulatory elements in cattle genome reveals the roles of extracellular interaction and dynamic change of chromatin states in rumen development during weaning. *Genomics*. 114:110296. <https://doi.org/10.1016/j.ygeno.2022.110296>.

Liu, S., Y. Gao, O. Canela-Xandri, S. Wang, Y. Yu, W. Cai, B. Li, E. Pairo-Castineira, K. D'Mellow, K. Rawlik, C. Xia, Y. Yao, X. Li, Z. Yan, C.J. Li, B.D. Rosen, C.P. Van Tassell, S. Zhang, L. Ma, **J.B. Cole**, G.E. Liu, A. Tenesa, and L. Fang. 2022. A comprehensive catalogue of regulatory variants in the cattle transcriptome. *Nature Genetics*. (Accepted 02/11/2022.) (Preprint on bioRxiv: <https://doi.org/10.1101/2020.12.01.406280>)

Lozada-Soto, Emmanuel A., Christian Maltecca, Jicai Jiang, **John B. Cole**, Paul VanRaden, and Francesco Tiezzi. 2022. Genomic characterization of autozygosity and recent inbreeding trends in all major breeds of US dairy cattle. *Journal of Dairy Science*. (In preparation.)

Ortega, M. Sofía, Derek M. Bickhart, Kelsey N. Clark, *Daniel J. Null*, *Jana L. Hutchison*, Jennifer C. McClure, and **John B. Cole**. 2022. Truncation of IFT80 causes early embryonic loss in Holstein cattle associated with the HH2 haplotype. *Journal of Dairy Science*. (Submitted 01/21/2022.) (Preprint on bioRxiv: <https://www.biorxiv.org/content/10.1101/2021.07.02.450952v2>)

Yang, Liu, Yahui Gao, Mingxun Li, Ki-Eun Park, *Shuli Liu*, Xiaolong Kang, Mei Liu, Adam Oswald, Bhanu P. Telugu, Charles G. Sattler, Cong-jun Li, **John B. Cole**, Eyal Seroussi, Lingyang Xu, Lv Yang, Yang Zhou, Li Li, Hongping Zhang, Benjamin D. Rosen, Curtis P. Van Tassell, Li Ma, and George E. Liu. 2022. Genome-wide recombination analysis of in cattle single sperm. *BMC Genomics*. 23:181. <https://doi.org/10.1186/s12864-022-08415-w>.

Yao, Yuelin, *Shuli Liu*, Charley Xia, Yahui Gao, Zhangyuan Pan, Oriol Canela-Xandri, Ava Khamseh, Sheng Wang, Bingjie Li, Jianbin Li, Gaozhan Cai, Yi Zhang, Erola Pairo-Castineira, Kenton D'Mellow, Konrad Rawlik, Xiujin Li, Ze Yan, Congjun Li, Ying Yu, Shengli Zhang, Li Ma, Paul M. Vanraden, **John B. Cole**, Pablo J. Ross, Huaijun Zhou, Chris Haley, George E. Liu, Lingzhao Fang, Albert Tenesa. 2022. Comparative transcriptome in large-scale human and cattle populations. *Genome Biology*. (Submitted 12/17/2020.)

Bakshy, K., D. Heimeier, J.C. Schwartz, E.J. Glass, S. Wilkinson, R.A. Skuce, A.R. Allen, J. Young, J.C. McClure, **J.B. Cole**, *D.J. Null*, J.A. Hammond,

- T.P.L. Smith, and D.M. Bickhart. 2021. Development of polymorphic markers in the immune gene complex loci of cattle. *Journal of Dairy Science*. 104:6897–6908. <https://doi.org/10.3168/jds.2020-19809>.
- Cole, J.B.**, J.W. Dürr, and E.L. Nicolazzi. 2021. Invited Review: The future of selection decisions and breeding programs: What are we breeding for, and who decides? *Journal of Dairy Science*. 104:5111–5124. <https://doi.org/10.3168/jds.2020-19777>.
- Cole, J.B.**, and P.J. Hansen. 2021. Dairy cattle fertility after 12 years of genomic selection: Lessons learned, current applications, and future development. *Proceedings of the Dairy Cattle Reproduction Council Annual Meeting (Submitted 09/10/2020.)*
- Gao, Y., L. Fang, R.L. Baldwin, E.E. Connor, **J.B. Cole**, L. Ma, C.J. Li, and G.E. Liu. 2021. Single-cell transcriptomic analyses of cattle ruminal epithelial cells during weaning. *Genomics*. 113:2045–2055. <https://doi.org/10.1016/j.ygeno.2021.04.039>.
- Houlahan, Kerry, Flavio S. Schenkel, Dagnachew Hailemariam, Jan Lassen, Morten Kargo, **John B. Cole**, Erin E. Connor, Silvia Wegmann, Gerson A. Oliveira, Jr., Filippo Miglior, Allison Fleming, Tatiane C.S. Chud, and Christine F. Baes. 2021. Effects of incorporating dry matter intake and residual feed intake into a selection index for dairy cattle using deterministic modeling. *MDPI Animals*. 11:1157. <https://www.mdpi.com/2076-2615/11/4/1157>.
- Li, B.*, P.M. VanRaden, *D.J. Null*, J.R. O’Connell, and **J.B. Cole**. 2021. Major quantitative loci influencing milk production and conformation traits in Guernsey dairy cattle detected on BTA19. *Journal of Dairy Science* 104:550–560. <https://doi.org/10.3168/jds.2020-18766>.
- Lozada-Soto, E.A., C. Maltecca, D. Lu, S. Miller, **J.B. Cole**, and F. Tiezzi. 2021. Trends in genetic diversity and the effect of inbreeding in American Angus cattle under genomic selection. *Genetics, Selection, Evolution*. 53:50. <https://doi.org/10.1186/s12711-021-00644-z>.
- Mueller, M.L.*, **J.B. Cole**, N.K. Connors, D.J. Johnston, I.A.S. Randhawa, and A.L. Van Eenennaam. 2021. Comparison of gene editing versus conventional breeding to introgress the POLLED allele into the tropically adapted Australian beef cattle population. *Frontiers in Genetics*. 12:593154. <https://doi.org/10.3389/fgene.2021.593154>.
- Shen, Botong, Ellen Freebern, Jicai Jiang, Christian Maltecca, **John B. Cole**, George E. Liu, and Li Ma. 2021. Effect of temperature and maternal age on recombination rate in cattle. *Front. Genetics*. 12:682718. <https://doi.org/10.3389/fgene.2021.682718>.

2020

Wu, Xiao-Lin, Kristen L. Parker Gaddis, Javier Burchard, H. Duane Norman, Ezequiel Nicolazzi, Erin E. Connor, **John B. Cole**, and João Dürr. 2021. An alternative Interpretation of residual feed intake by phenotypic recursive relationships in dairy cattle. *JDS Communications*. 2:371–375. <https://doi.org/10.3168/jdsc.2021-0080>.

Cole, J.B., S.A.E. Eaglen, C. Maltecca, H.A. Mulder, and J.E. Pryce. 2020. The future of phenomics in dairy cattle breeding. *Animal Frontiers* 10:37–44. <https://doi.org/10.1093/af/vfaa007>.

Cole, J.B., and P.J. Hansen. 2020. Dairy cattle fertility after 12 years of genomic selection: Lessons learned, current applications, and future development. *Proceedings of the Dairy Cattle Reproduction Council Annual Meeting* (In press.)

Fang, L., W. Cai, S. Liu, J. Jiang, *B. Li*, S.G. Schroder, B.D. Rosen, C. Li, T.S. Sonstegard, L.J. Alexander, C.P. Van Tassell, P.M. VanRaden, **J.B. Cole**, Y. Yu, S. Zhang, L. Ma, and G.E. Liu. 2020. Comprehensive analyses of 723 transcriptomes enhance GWAS biological interpretation and genomic prediction for complex traits in cattle. *Genome Research* 30:790–801. <https://doi.org/10.1101/gr.250704.119>.

Freebern, E., D.J.A. Santos, L. Fang, J. Jiang, K.L. Parker Gaddis, C. Maltecca, **J.B. Cole**, and L. Ma. 2020. GWAS and fine-mapping of livability and six health traits in Holstein cattle. *BMC Genomics* 21:4. <https://doi.org/10.1186/s12864-020-6461-z>.

Li, B., P.M. VanRaden, E. Gunal, *D.J. Null*, E.E. Connor, M.J. VandeHaar, R.J. Tempelman, K.A. Weigel, and **J.B. Cole**. 2020. Genomic predictions of residual feed intake in US Holstein dairy cattle. *Journal of Dairy Science* 103:2477–2486. <https://doi.org/10.3168/jds.2019-17332>.

Liu, S., Y. Yu, S. Zhang, **J.B. Cole**, A. Tenesa, T. Wang, L. Ma, G.E. Liu, and L. Fang. 2020. Comparative epigenomics and genotype-phenotype association analyses revealed conserved genetic architecture underlying complex traits between cattle and human. *Nature Ecology and Evolution* 18:80. <https://doi.org/10.1186/s12915-020-00792-6>.

Maltecca, C., F. Tiezzi, **J. Cole**, and C. Baes. 2020. Exploiting homozygosity in the era of genomics—ROH, inbreeding and genomic mating programs. *Journal of Dairy Science* 103:5302–5313. <https://doi.org/10.3168/jds.2019-17846>.

McWhorter, T.M., *J.L. Hutchison*, H.D. Norman, **J.B. Cole**, G.C. Fok, D.A.L. Lourenço, and P.M. VanRaden. 2020. Investigating conception rate for beef service sires bred to dairy cows. *Journal of Dairy Science* 103:10374–10382. <https://doi.org/10.3168/jds.2020-18399>.

Nani, J.P., L.R. Bacheller, **J.B. Cole**, and P.M. VanRaden. 2020. Discovering ancestors and connecting relatives in large genomic databases. *Journal of Dairy Science* 103: 1729–1734. <https://doi.org/10.3168/jds.2019-17580>.

Parker Gaddis, K.L., P.M. VanRaden, **J.B. Cole**, H.D. Norman, E. Niccolazi, and J.W. Dürr. 2020. Development, implementation and future perspectives of health evaluations in the U.S. *Journal of Dairy Science* 103:5354–5365. <https://doi.org/10.3168/jds.2019-17687>.

Rosen, B.D., D.M. Bickhart, R.D. Schnabel, S. Koren, C.G. Elsik, E. Tseng, T.N. Rowan, P.M. VanRaden, D.J. Null, W.Y. Low, A. Zimin, C. Couldrey, R. Hall, W. Li, A. Rhie, J. Ghurye, S.D. McKay, F. Thibaud-Nissen, J. Hoffman, W.M. Snelling, W. Warren, T.G. McDanel, J.A. Hammond, J.C. Schwartz, W. Nandolo, S.G. Schroeder, A.M. Phillippy, **J.B. Cole**, C.P. Van Tassell, G. Liu, T.P.L. Smith, and J.F. Medrano. 2020. De novo assembly of the cattle reference genome with single-molecule sequencing. *GigaScience* 3:giaa021. <https://doi.org/10.1093/gigascience/giaa021>.

Santos, D.J.A., **J.B. Cole**, G.E. Liu, P.M. VanRaden, and L. Ma. 2020. gamevar.f90: A software package for calculating individual gametic diversity. *BMC Bioinformatics* 21:100. <https://doi.org/10.1186/s12859-020-3417-x>.

Young, J., J. Skarlupka, R. Tassinari, A. Bouche, K.F. Kalscheur, J.C. McClure, **J.B. Cole**, P.J. Weimer, G. Suen, and D.M. Bickhart. 2020. Random forest classification identifies candidate facultative aerobic community in cattle buccal swabs. *Applied and Environmental Microbiology* 86:e00861-20. <https://doi.org/10.1128/AEM.00861-20>. (Preprint on bioRxiv: <https://doi.org/10.1101/2020.04.10.036665>.)

Zhou, Y., S. Liu, Y. Hu, L. Fang, Y. Gao, H. Xia, S.G. Schroeder, B.D. Rosen, E.E. Connor, C. Li, R.L. Baldwin, **J.B. Cole**, C.P. Van Tassell, L. Yang, L. Ma, and G.E. Liu. 2020. Comparative whole-genome DNA methylation profiling of cattle tissues reveals global and tissue-specific methylation patterns. 18:85. <https://doi.org/10.1186/s12915-020-00793-5>.

2019

Bradford, H.L., Y.M. Masuda, **J.B. Cole**, I. Misztal, and P.M. VanRaden. 2019. Modeling pedigree accuracy and uncertain parentage in single-step genomic evaluations of simulated and US Holstein datasets. *Journal of Dairy Science* 102:2308–2318. <https://doi.org/10.3168/jds.2018-15419>.

Cole, J.B. 2019. Promotion of alleles by genome engineering. *CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources*. 14:1–15. <https://doi.org/10.1079/PAVSNNR201914015>.

- Cole, J.B.**, and *D.J. Null*. 2019. Short communication: Phenotypic and genetic effects of the polled haplotype on yield, longevity, and fertility in U.S. Brown Swiss, Holstein, and Jersey cattle. *Journal of Dairy Science* 102:8247–8250. <https://doi.org/10.3168/jds.2019-16530>.
- Connor, E.E., *J.L. Hutchison*, C.P. Van Tassell, and **J.B. Cole**. 2019. Determining the optimal period length and stage of growth or lactation to estimate residual feed intake in dairy cows. *Journal of Dairy Science* 102:6131–6143. <https://doi.org/10.3168/jds.2018-15407>.
- Fang, L., J. Jiang, B. Li, Y. Zhou, E. Freebern, P. VanRaden, **J. Cole**, and L. Ma. 2019. Genetic and epigenetic architecture of paternal origin contribute to gestation length in cattle. *Communications in Biology* 2(100). <https://doi.org/10.1038/s42003-019-0341-6>.
- Fang, L., Y. Zhou, S. Liu, J. Jiang, D.M. Bickhart, *D.J. Null*, *B. Li*, S.G. Schroeder, B.D. Rosen, **J.B. Cole**, C.P. Van Tassell, L. Ma, and G.E. Liu. 2019. Comparative analyses of sperm DNA methylomes among human, mouse and cattle provide insights into epigenomic evolution and complex traits. *Epigenetics* 3:260-276. <https://doi.org/10.1080/15592294.2019.1582217>.
- Fang, L., Y. Zhou, S. Liu, J. Jiang, D.M. Bickhart, *D.J. Null*, *B. Li*, S.G. Schroeder, B.D. Rosen, **J.B. Cole**, C.P. Van Tassell, L. Ma, and G.E. Liu. 2019. Integrating signals from sperm methylome analysis and genome-wide association study to understand male fertility in cattle. *Epigenomes* 3(2):10. <https://doi.org/10.3390/epigenomes3020010>.
- Guarini, A.R., M. Sargolzaei, L.F. Brito, V. Kroezen, D.A.L. Lourenco, C.F. Baes, F. Miglior, **J.B. Cole**, and F.S. Schenkel. 2019. Estimating the impact of the deleterious recessive haplotypes AH1 and AH2 on reproduction performance of Ayrshire cattle. *Journal of Dairy Science* 102:5315–5322. <https://doi.org/10.3168/jds.2018-15366>.
- Jiang, J., L. Ma, D. Prakapenka, P.M. VanRaden, **J.B. Cole**, and Y. Da. 2019. A large-scale genome-wide association study in U.S. Holstein cattle. *Front. Genet.* 10:412. doi:10.3389/fgene.2019.00412.
- Jiang, J., P.M. VanRaden, **J.B. Cole**, and L. Ma. 2019. Functional annotation and Bayesian fine-mapping reveals candidate genes for important agronomic traits in Holstein bulls. *Comm. Biol.* 2:212. <https://doi.org/10.1038/s42003-019-0454-y>.
- Koltjes, J.E., **J.B. Cole**, N.V.L. Serão, M. McCue, J. Woodward, H. Zhang, S. McKay, J. Lunney, L. Kramer, M. Schroeder, R. Clemmens, B. Murdoch, C. Rexroad, III, G.J.M. Rosa, R. Mateescu, S. White, M. Worku, and J.M. Reecy. 2019. A vision for development and utilization of high-throughput

phenotyping and big data analytics in livestock. *Front. Genet.*
doi:10.3389/fgene.2019.01197.

Li, B., L. Fang, D.J. Null, J.L. Hutchison, P.M. VanRaden, and J.B. Cole. 2019. High-density genome-wide association study for residual feed intake in Holstein dairy cattle. *J. Dairy Sci.* 102:11067–11080.
<https://doi.org/10.3168/jds.2019-16645>.

Liu, M., L. Fang, S. Liu, M.G. Pan, E. Seroussi, **J.B. Cole**, L. Ma, H. Chen, and G. Liu. 2019. Array CGH-based detection of CNV regions and their potential association with reproduction and other economic traits in Holsteins. *BMC Genomics.* 20:181. <https://doi.org/10.1186/s12864-019-5552-1>.

Liu, S., L. Fang, Y. Zhou, D. Santos, R. Xiang, H.D. Daetwyler, A.J. Chamberlain, **J.B. Cole**, Y. Yu, L. Ma, S. Zhang, G.E. Liu. 2019. Analyses of inter-individual variations in sperm DNA methylation reveal their regulatory role in gene expression and association with reproduction traits in cattle. *DNA Research.* 20:888. <https://doi.org/10.1186/s12864-019-6228-6>.

Ma, L., **J.B. Cole**, Y. Da, and P.M. VanRaden. 2019. Symposium review: Genetics, genome-wide association study, and genetic improvement of dairy fertility traits. *J. Dairy Sci.* 102:3735-3743.
<https://doi.org/10.3168/jds.2018-15269>.

Ma, L., T.S. Sonstegard, **J.B. Cole**, C.P. Van Tassell, G.R. Wiggans, B.A. Crooker, C. Tan, D. Prakapenka, G. Liu, and Y. Da. 2019. Genome changes due to artificial selection in U.S. Holstein cattle. *BMC Genomics* 20:128.
<https://doi.org/10.1186/s12864-019-5459-x>.

Mueller, M., **J. Cole**, T. Sonstegard, and A. Van Eenennaam. 2019. Comparison of gene editing vs. conventional breeding to introgress the POLLED allele into the U.S. dairy cattle population. *J. Dairy Sci.* 102:4215-4226. <https://doi.org/10.3168/jds.2018-15892>.

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1999 Hansen, L.B., **J.B. Cole**, G.D. Marx, and A.J. Seykora. 1999. Productive life and reasons for disposal of Holstein cows selected for large versus small body size. *J. Dairy Sci.* 82:795–801.

Book Chapters and Technical Reports

2019 **Cole, J.B.** 2019. Chapter 13 - Advances in Dairy Cattle Breeding to Improve Resistance to Mastitis. In *Advances in Breeding of Dairy Cattle*. J. van der Werf and J. Pryce, ed. Burleigh Dodds Science Publishing Limited, Cambridge, UK.

2018 **Cole, J.B.**, P.M. VanRaden, D.J. Null, J.L. Hutchison, and S.M. Hubbard. 2018. AIP Research Report GENOMIC4: Haplotype tests for economically important traits of dairy cattle. Available: https://aipl.arsusda.gov/reference/haplotypes_ARR-G4.html.

VanRaden, P.M., **J.B. Cole**, and K.L. Parker Gaddis. 2018. AIP Research Report NM\$7: Net merit as a measure of lifetime profit: 2018 revision. Available: <https://aipl.arsusda.gov/reference/nmcalc-2018.htm>.

2017 **Cole, J.B.**, and D.M. Spurlock. 2017. Improving Production Efficiency through Genetic Selection. In *Large Dairy Herd Management*, 3rd Edition. D. Beede et al., ed. American Dairy Science Association, Champaign, IL. Available: <https://ldhm.adsa.org/>.

2014 **Cole, J.B.** 2014. Use of Gene Markers for Genetic Selection of Dairy Cattle. *Encyclopedia of Biotechnology in Agriculture and Food*, Taylor & Francis, Florence, KY. Published online May 7, 2014.

ICAR Functional Traits Working Group (Andrews, L., Bradley, A.J., **Cole, J.B.**, Egger-Danner, C., Gengler, N., Heringstad, B., Pryce, J., Stock, K., and Strandberg, E.). 2014. Section 7.1 – Guidelines for recording, evaluation and genetic improvement of health traits. *ICAR Recording Guidelines*. pp. 235–261. Int. Comm. Anim. Recording, Rome, Italy.

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- VanRaden, P.M., and **J.B. Cole**. 2014. AIP Research Report NM\$5: Net merit as a measure of lifetime profit: 2014 revision. Available: <http://aipl.arsusda.gov/reference/nmcalc-2014.htm>.
- 2013 **Cole, J.B.**, P.M. VanRaden, *D.J. Null*, J.L. Hutchison, and T.A. Cooper. 2013. AIPL Research Report GENOMIC3: Haplotype tests for recessive disorders that affect fertility and other traits. Available: http://aipl.arsusda.gov/reference/recessive_haplotypes_ARR-G3.html.
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- 2012 **Cole, J.B.**, and *D.J. Null*. 2012. AIPL Research Report GENOMIC2: Use of chromosomal predicted transmitting abilities. Available: http://aipl.arsusda.gov/reference/chromosomal_pta_query.html.
- 2011 De Vries, A., **J.B. Cole**, and D.T. Galligan. 2011. Economics of reproduction: the quality of the pregnancy. 2011 Dairy Cattle Reproduction Conference, Kansas City, MO, pp. 90–97.
- De Vries, A., D.T. Galligan, and **J.B. Cole**. 2011. Some ideas on the use and economic value of the 3K SNP genomic test for calves on dairy farms. Florida Cooperative Extension Publication AN270. Available: <http://edis.ifas.ufl.edu/an270>.
- 2010 Cooper, T.A., M.E. Tooker, P.M. VanRaden, G.R. Wiggans, and **J.B. Cole**. 2010. AIPL Research Report GENOMIC1: Imputation of Cow Genotypes and Adjustment of PTAs. Available: <http://aipl.arsusda.gov/reference/changes/aprilInformation.htm>.
- VanRaden, P.M., **J.B. Cole**, M.E. Tooker, and T.A. Cooper. 2010. AIPL Research Report BASE2: Genetic base changes for January 2010. Available: <http://aipl.arsusda.gov/reference/base2010.htm>.
- 2009 **Cole, J.B.**, P.M. VanRaden, and Multi-State Project S-1040. 2009. AIPL Research Report NM\$4: Net merit as a measure of lifetime profit: 2010 revision. Available: <http://aipl.arsusda.gov/reference/nmcalc-2010.htm>.
- De Vries, A., and **J.B. Cole**. 2009. Profitable dairy cow traits for hot climatic conditions. Pages 227–248 in *Breeding for robustness in cattle – EAAP 126*. M. Klopčič, R. Reents, J. Philipsson, and A. Kuipers, ed. Wageningen Academic Publishers, Wageningen, The Netherlands.
- 2007 **Cole, J.B.** 2007. AIPL Research Report SB1: Genetic evaluation of stillbirth. Available: <http://aipl.arsusda.gov/reference/fertility/sb2006.html>.

- VanRaden, P.M., M.E. Tooker, G.R. Wiggans, **J.B. Cole**, and J.H. Megonigal, Jr. 2007. AIPL Research Report AB1: All-breed evaluation. Available: <http://aipl.arsusda.gov/reference/all-breed-2007.htm>.
- 2005 **Cole, J.B.** 2005. AIPL Research Report CE1: Brown Swiss and Holstein calving ease. Available: <http://aipl.arsusda.gov/reference/fertility/ce2005.htm>.
- 2004 Lanting, F.L., and **J.B. Cole**. 2004. Chapter 13: Basics of Genetics. Pages 256–290 in *The Total German Shepherd Dog*, 2nd ed. Hoflin Publishing, Wheat Ridge, CO.

Popular Press Articles

- 2020 **Cole, J.B.**, S.A.E. Eaglen, T.J. Lawlor, and E.L. Nicolazzi. 2020. August 2020 calving traits will reflect lower breed averages. CDCB Connection. June 5, 2020.
- Reprinted in *The Bullvine*, June 10, 2020.
 - Published in *Hoard's Dairyman*, July 2020, Vol. 165, No. 12, p. 392.
- Eaglen, S.A.E., and **J.B. Cole**. 2020. What's going on with calving ease? CDCB Connection. May 7, 2020.
- Also published in *Progressive Dairy*, May 14, 2020.
- 2015 **Cole, J.B.** 2015. Data collection should be as simple as needed, and no more. *Dairy Herd Management*. (Submitted.)
- Cole, J.B.** 2015. Feedback: Calving outcomes on dairy farms: We've been collecting data for decades. *Dairy Herd Manage.*, Jan. 21, (Also published as *Dairy Herd Manage. Daily*, Thurs., Jan. 22, online; We've been collecting data for decades [excerpt as letter to editor], *Dairy Herd Manage.* 52(2):6) Available: <http://www.dairyherd.com/news/feedback-calving-outcomes-dairy-farms-weve-been-collecting-data-decades>.
- 2014 **Cole, J.B.** 2014. We need your help to breed healthier dairy cows! *DairyBusiness West*. 95(8):10. Available: <http://magazines.dairybusiness.com/dbwaug14/html5/>.
- Norman, H.D., P. VanRaden, **J. Cole**, and J. Dürr. 2014. Revisions to lifetime merit indexes will be incorporated in the December 2014 evaluations. Council on Dairy Cattle Breeding, Bowie, MD. (Also published as Director's Comments, *Ayrshire Digest* 100(6):4).

- 2013 Parker Gaddis, K.L., C. Maltecca, and **J.B. Cole**. 2013. Genetic improvement of health and fitness traits. *Hoard's Dairyman*. 158(12):455.
- Parker Gaddis, K.L., C. Maltecca, and **J.B. Cole**. 2013. Verso il successo nella selezione per la salute della vacca [In Italian]. *Bianconero* (accepted.)
- 2011 De Vries, A., D.T. Galligan, and **J.B. Cole**. 2011. Some ideas on the use and economic value of the 3K SNP genomic test for calves on dairy farms. *Dairy Update* 11(3):5–9. Available: <http://dairy.ifas.ufl.edu/dairyupdate/DairyUpdateSummer2011.pdf>.
- 2009 De Vries, A., D.T. Galligan, and **J.B. Cole**. 2011. Some ideas on the use and economic value of the 3K SNP genomic test for calves on dairy farms. *Dairy Update* 11(3):5-9.
- 2006 **Cole, J.B.** 2009. Using Python to study pedigrees with PyPedal. *Python Magazine* 3:12–20.
- Cole, J.B.**, R.C. Goodling, Jr., G.R. Wiggans, and P.M. VanRaden. 2006. Genetic calving ease study on crossbreeds. *Jersey Journal* 53(5):83–84.
- Seykora, A.J., P.M. VanRaden, and **J.B. Cole**. 2006. Net Merit receives face-lift. *Hoard's Dairyman* 151(14):557.
- 2005 **Cole, J.B.** 2005. How can we genetically improve dairy cattle health? *The Dairy Focus* 6(4):3.

Software Packages

- 2017 **gene-editing**: Programs for simulation of strategies for managing multiple recessives in a dairy cattle population using gene editing. Website: <https://github.com/wintermind/gene-editing>.
- 2014 **multiple-recessives**: Programs for simulation of strategies for managing multiple recessives in a dairy cattle population. Website: <https://github.com/wintermind/multiple-recessives>.
- 2010 **PyPedal**: A package for pedigree analysis using the Python programming language, v. 2.0.0. Website: <http://pypedal.sourceforge.net/>.
- 2007 **BESTPRED**: A program for estimation of lactation yield and persistency using best prediction. Website: <http://www.aipl.arsusda.gov/software/bestpred/>.

Invited Presentations

- 2022
- July.* A panel discussion: Broadening learning by incorporating industry professionals in education. 12th World Congress on Genetics Applied to Livestock Production.
 - May.* Panel discussion: A closer look into the future of an industry driven by change. 43rd ADSA Discover Conference, Dairy Cattle Reproduction: Lessons Learned and Future Frontiers.
 - April.* A new look at genetic evaluation. 42nd ADSA Discover Conference, Managing Genetic Diversity for Future Dairy and Livestock Breeding.
- 2021
- November.* Exploring brave new worlds: Some thoughts on alternative protein sources. VISIONS III: Star Gazing into the Galaxy of Animal Genetics and Genomics.
 - March.* Dairy cattle fertility in 12 years of genomics: Lessons learned, current applications, and future development. Dairy Cattle Reproduction Council Webinar.
- 2020
- October.* Dairy cattle fertility in 12 years of genomics: Lessons learned, current applications, and future development. Dairy Cattle Reproduction Council Annual Meeting, Madison, WI.
 - August.* How to implement genomic selection. European Association for Animal Production Annual Meeting, Porto, Portugal.
 - July.* The future of phenomics in dairy cattle breeding. ASAS-CSAS Annual Meeting and Trade Show, Madison, WI.
 - June.* It's the little things: The future of selection decisions and breeding programs. ADSA 2020 Annual Meeting, West Palm Beach, FL.
 - May.* Breeding the cow of the future. SION 2020 Breeders Conference, Tel Aviv, Israel. (Postponed due to COVID-19 pandemic)
 - March.* 2020 AGIL-AIP Update. National DHIA 55th Annual Meeting, Savannah, GA.
 - January.* The new USDA Genome to Phenome Blueprint: A quantitative geneticist's perspective. Plant and Animal Genome XXVIII Conference Genomics Blueprint Implementation Workshop, San Diego, CA.
- 2019
- August.* Haplotype tests for recessive disorders that affect fertility and other traits in dairy cattle. American Angus Association, St. Joseph, MO.
 - June.* Pros and cons of hitchhiking: The truth about inbreeding in dairy cattle. 2019 National Genetics Conference, Appleton, WI.
 - June.* Bridging the gap: Opportunities and challenges for small breeds in the genomics era. World Guernsey Conference, Lancaster, PA.

- May.* Future of genomic evaluations of Holstein cattle. Foro Nacional Holstein (FONAHolstein), Querétaro, México.
- April.* Biotechnology and the progress of dairy production. Great Challenges to Science Workshop: How biotechnology can vanish world hunger (Como a biotecnologia pode acabar com a fome no mundo), Universidade de São Paulo, Pirassununga, Brazil.
- March.* Emerging technologies in dairy cow improvement programs & 2019 AGIL-AIP update, National DHIA Annual Meeting, San Diego, CA.
- January.* Benefits from adoption of a new reference genome assembly and use of a larger SNP set in genomic predictions for US dairy cattle. XXVII Plant & Animal Genome Conference, San Diego, CA. (Canceled due to government shutdown.)
- 2018 *October.* Strategies for managing genetic disorders in dairy cattle. Department of Animal and Avian Sciences, University of Maryland, College Park, MD.
- July.* Landscape of breeding in food and agriculture - from conventional to gene editing, Responsible Use of Gene Editing Steering Committee Meeting, Center for Food Integrity, Arlington, VA.
- June.* Possibilities in an age of genomics. The future of the breeding index, 21st International Conference of the World Jersey Cattle Bureau, Columbus, OH.
- 2017 *October.* How selection for better health impacts dairy profitability, National Dairy Herd Information Association Board Meeting, Rosemont, IL.
- October.* How selection for better health impacts dairy profitability, DHI-Provo Herd & Feed Management Conference, Las Vegas, NV.
- October.* The science of feeding 9 billion people. Connections Weekend, Louisiana School for Math, Science, and the Arts, Natchitoches, LA.
- October.* Management of Mendelian traits in breeding programs by gene editing, Department of Animal Science, University of Wisconsin, Madison.
- October.* How selection for better health impacts dairy profitability, Council on Dairy Cattle Breeding Industry Meeting: Discover New Dairy Genetics, Madison, WI.
- June.* Possibilities in an age of genomics. The future of the breeding index in the ADSA Multidisciplinary and International Leadership Keynote (MILK) Symposium: The dairy cow in 50 years. ADSA, Pittsburgh, PA.

- May.* Improving production efficiency through genetic selection, Genetic improvement programs for U.S. dairy cattle, The role of phenotyping in dairy cattle improvement in the genomic era, and Genomic selection for traits other than production in dairy cattle, Symposium on Genetic and Genomic Selection in Dairy Cattle, St. Petersburg, Russia.
- March.* 2017 AGIL-AIP update, National DHIA Annual Meeting, Savannah, GA.
- February.* Managing recessive disorders in breeding programs by gene editing, Faculdade de Zootecnia e Engenharia de Alimentos, Universidade de São Paulo, Pirassununga, SP, Brasil.
- 2016 *October.* Updated guidelines for the recording, evaluation, and genetic improvement of udder health in dairy cattle. ICAR, Puerto Vargas, Chile.
- May.* The role of phenotyping in dairy cattle improvement in the genomic era, Department of Dairy Science, University of Wisconsin, Madison.
- May.* Improving production efficiency through genetic selection. Large Dairy Herd Management Conference, Oak Brook, IL.
- March.* What direction should US dairy research take in the future? 51st National DHIA Annual Meeting, Orlando, FL.
- 2015 *July.* Genomic selection in multiple-breed cattle populations. 52^a Reunião Anual da Sociedade Brasileira de Zootecnia, Belo Horizonte, Brasil.
- May.* Genomic selection for traits other than production in dairy cattle. XX ANEMBE International Congress, Burgos, Spain.
- May.* What should you expect from genomic selection? XX ANEMBE International Congress, Burgos, Spain.
- April.* Using genotypes to construct phenotypes for dairy cattle breeding programs and beyond. Final OptiMIR Scientific and Expert Meeting, Namur, Belgium.
- March.* If we would see further than others: research & technology today and tomorrow. 50th National DHIA Annual Meeting, Columbus, OH.
- 2014 *September.* Genetic improvement programs for US dairy cattle. Embrapa Gado de Leite, Juiz de Fora, MG, Brasil.
- September.* Using genotyping and whole-genome sequencing to identify causal variants associated with complex phenotypes. Universidade Federal de Viçosa, Viçosa, MG, Brasil.

2013

August. The hunt for a functional mutation affecting conformation and calving traits on chromosome 18 in Holstein cattle. 10th World Congress on Genetics Applied to Livestock Production, Vancouver, BC, Canada.

May. Phenotypes for novel functional traits of dairy cattle. International Committee for Animal Recording, Berlin, Germany.

March. Health and fitness data – what might be possible for dairy cattle? and AIPL Update National DHIA Annual Meeting, St. Louis, MO.

October. Opportunities for research on applied livestock genomics. Department of Animal Sciences, Purdue University, West Lafayette, IN.

September. Genomic evaluation of low-heritability traits: dairy cattle health as a model. 5th International Symposium on Animal Functional Genomics, Guarujá, SP, Brazil.

May. Genomic evaluation of dairy cattle health. ICAR 2013 Health Data Conference, Aarhus, Denmark.

May. Use of NGS to identify the causal variant associated with a complex phenotype. Wageningen University and Research Center, the Netherlands.

May. Genomic selection and systems biology – lessons from dairy cattle breeding. KeyGene nv, Wageningen, the Netherlands.

March. Opportunities for genetic improvement of health and fitness traits. 2013 National DHIA Annual Meeting, St. Pete Beach, Florida.

February. The use and economic value of genomic testing for calves on dairy farms. ANAFI Genomics Workshop, Cremona, Italy.

2012

November. Genomic selection – dairy cattle successes and challenges. National Swine Improvement Federation, Kansas City, MO.

August. Applications of haplotypes in dairy farm management. 63rd EAAP Meeting, Bratislava, Slovak Republic.

May. Use of dense SNP chips for gene discovery. 16th QTL-MAS Workshop, Alghero, Italy.

May. The U.S. genetic evaluation system. Department of Animal Sciences, University of Sassari, Sardinia, Italy.

May. New tools for genomic selection of livestock. Department of Animal Sciences, University of Sassari, Sardinia, Italy.

April. New tools for genomic selection of livestock. Department of Animal Science, North Carolina State University, Raleigh.

- March.* March 2012 AIPL update. Select Sires Holstein Sire Evaluation Committee, Columbus, OH.
- February.* Genomics beyond EBVs. 2nd International Workshop on Genomics Applied to Livestock, Araçatuba, SP, Brazil.
- 2011 *July.* Data structures and visualization. 2011 ADSA/ASAS Joint Annual Meeting, New Orleans, LA.
- 2010 *November.* What can we do with dairy cattle genomics other than predict more accurate breeding values? Department of Animal Science, North Carolina State University, Raleigh.
- November.* Age at first calving in Holstein cattle in the United States. Dairy Cattle Reproduction Council, St. Paul, MN.
- 2009 *November.* Biological insights from the implementation of a genomic selection program in dairy cattle. Institute of Genetics, Vetsuisse Faculty, University of Berne, Switzerland.
- November.* Identifying markers associated with thermal tolerance. 18th DISCOVER Conference on Food Animal Agriculture: Effect of the Thermal Environment on Nutrient and Management Requirements of Cattle, Nashville, IN. (Declined due to prior commitments.)
- October.* Visualization of results from genomic evaluation. Department of Animal Sciences, Colorado State University, Fort Collins.
- March.* Distribution and location of genetic effects for dairy traits. CRI Genomics Emerging Markets Program, Washington, D.C.
- 2008 *June.* Best predictions of daily and lactation yields and data collection ratings. International Committee for Animal Recording, Niagara Falls, NY.
- 2007 *September.* Best prediction of actual lactation yields. AgriTech Analytics & Holstein Association USA Dairy Industry Event, Visalia, CA.
- September.* Overview of Animal Improvement Programs Laboratory. Department of Animal Sciences, Louisiana State University, Baton Rouge.
- September.* Genetic evaluation of calving traits in U.S. Holsteins. Department of Animal Sciences, Louisiana State University, Baton Rouge.
- June.* Validation of producer-recorded health event data and use in genetic improvement of dairy cattle. Department of Animal Sciences, University of Florida, Gainesville.
- 2006 *October.* Genetic evaluation of calving traits in U.S. Holsteins. Breeding and Genetics group, Department of Animal Sciences, Colorado State University, Fort Collins.

2003	<p><i>October.</i> Dairy cattle breeding in the United States. Department of Animal Sciences, Colorado State University, Fort Collins.</p> <p><i>February.</i> Genetic evaluation of calving traits. Department of Animal and Dairy Science, University of Georgia, Athens.</p> <p><i>August.</i> Genetics applied to the working dog. International Seppala Siberian Sleddog Club Annual Meeting, Seeley Lake, MT.</p>
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University Teaching Experience

January 2001– May 2001	<p>Instructor, Department of Dairy Science, Louisiana State University, Baton Rouge, LA. <i>Taught sophomore-level introductory genetics course to 70 undergraduates; scored above the College of Agriculture average on the end-of-semester Student Perception of Teaching evaluation.</i></p>
Summer 1998 & 1999	<p>Seminar Coordinator, Life Sciences Summer Undergraduate Research Program, University of Minnesota, St. Paul, MN. <i>Mentored 12 undergraduate students from underserved communities; taught presentation skills during weekly seminars; assisted students with preparation of posters describing their research; worked with students to resolve laboratory and administrative issues.</i></p>
September 1996– May 2000	<p>Graduate Assistant, Department of Animal Science, University of Minnesota, St. Paul, MN. <i>Lectured and assisted with laboratory exercises for classes in introductory animal science, animal breeding, biometrics, and dairy production.</i></p>
June 1994–May 1996	<p>Graduate Research Assistant, Department of Dairy Science, Louisiana State University of Minnesota, Baton Rouge, LA. <i>Assisted with lectures and laboratory exercises for classes in introductory genetics and animal breeding.</i></p>
Courses	<p>“Computational Biology in Animal Breeding”, “Introductory Agricultural Genetics”, “Biometrics for Livestock”, “Animal Breeding”, “Introductory Animal Science”, “Plant and Animal Genetics”, “Applied Animal Breeding and Genetics”</p>

Service on Graduate Committees

2021–Present	<p>Pierce Rafter, University College Dublin, Ph.D. (Advisor: Donagh Berry) (Viva Voce Examiner)</p> <p>Bruna Santana, University of Connecticut, Ph.D. (Advisor: Breno Fragomeni)</p>
2020–Present	<p>Fiona L. Guinan, University of Georgia, M.S. (Advisor: Daniela Lourenço)</p>

	Emmanuel A. Lozada Soto, North Carolina State University, Ph.D. (Advisor: Christian Maltecca)
2019–Present	Ellen Freebern, University of Maryland College Park, Ph.D. (Advisor: Li Ma)
2018–2020	Maci L. Mueller, University of California, Davis, M.S. (Advisor: Alison L. van Eenennaam)
2016	Mike Donnelly, University of Minnesota, M.S. (Advisors: Leslie B. Hansen and Anthony J. Seykora) (External Reviewer)
	Allison Fleming, University of Guelph, Ph.D. (Advisor: Filippo Miglior) (External Reviewer)
2014–2016	Chen Yao, University of Wisconsin, Ph.D. (Advisor: Kent A. Weigel)
2012–2016	Sofía Ortega, University of Florida, Ph.D. (Advisor: Peter J. Hansen)
2010–2013	Kristen L. Parker Gaddis, North Carolina State University, Ph.D. (Advisor: Christian Maltecca)

Postdoctoral Scientists Supervised

2020	Dr. Shuli Liu (Current position: Jian Yang Laboratory, Westlake University)
2019–2020	Dr. Juan Pablo Nani (Current position: ABS Global)
2018–2019	Dr. Bingjie Li (Current position: SRUC Challenge Research Fellow)
2018	Dr. Heather L. Bradford (Current position: Beef Cattle Genetics, Department of Animal and Poultry Sciences, Virginia Tech)
2014–2016	Dr. Kristen L. Parker Gaddis (Current position: Geneticist, Council on Dairy Cattle Breeding)

Visiting Scientists Hosted

2021 (planned)	Irene Häfliger, University of Bern, Switzerland
2019	Alexandra Nin-Velez, Virginia Tech
	Patrícia Schmidt, UNESP, Jaboticabal, Brasil
2014	Sofía Ortega, University of Florida
2012	Dr. Serdal Dikmen, Uludag University, Turkey
	Adriana García-Ruiz, Instituto Nacional de Investigaciones Forestales Agrícolas y Pecuarias, México

2011 | Chen Yao, University of Wisconsin-Madison
Sarah Cochran, University of Florida
Dr. Serdal Dikmen, Uludag University, Turkey

Professional Affiliations and Service

2021 | Member of the Luxuriant Flowing Hair Club for Scientists
Member of the NAAB Research Award Selection Committee

2020 | Non-voting member of Holstein Association USA's Genetic Advancement Committee
Grant reviewer for the French National Institute for Agricultural Research (INRAE) AgreenSkills+ program

2019 | Member of the Organizing Committee for the Strategic Planning Workshop for the Future of Biomedical and Agricultural Research Programs using Large Animals, Rockville, MD

2017 | Member of the Organizing Committee for the Livestock High-Throughput Phenotyping and Big Data Analytics Meeting, Beltsville, MD

2016–2017 | Chair of the Jay L. Lush Award Selection Committee for the American Dairy Science Association

2016 | Grant reviewer for the Agriculture and Food Research Initiative (AFRI) Competitive Grants Program

2015–2016 | Member of the Jay L. Lush Award Selection Committee for the American Dairy Science Association

2015–2016 | Chair of the Breeding and Genetics Program Committee for the 2016 American Dairy Science Association/American Society for Animal Science Joint Annual Meeting

2015 | Peer reviewer for the Danish Council for Independent Research, Technology and Production Sciences

2014–2015 | Secretary and President of the SCC-084 coordinating committee ("Genetic selection and mating strategies to improve the well-being and efficiency of dairy cattle")

2013 | Grant reviewer for the French National Research Agency (L'Agence Nationale de la Recherche)
Key Opinion Leader for Pfizer Animal Genetics on genetic evaluation of functional traits and design and implementation of genetic evaluation programs for lowly heritable traits

2012–2013	Member of the Planning Committee for the 2013 International Committee for Animal Recording Health Data Conference in Aarhus, Denmark
2012	External reviewer for University of Minnesota Agricultural Experiment Station projects
2011–2012	Chair of the Breeding and Genetics Program Committee for the 2012 American Dairy Science Association/American Society for Animal Science Joint Annual Meeting
2010–2014	Member of the Dairy Health Data Recording Project Advisory Board
2010–present	Member of the Editorial Board for Frontiers in Livestock Genomics
2010–present	Member of the Functional Traits Working Group of the International Committee for Animal Recording
2010	Consulted with representatives from Embrapa, GenSys, and Conexão Delta G on the design and implementation of a genomic selection program for Nellore cattle in Brazil
2009–2011; 2013–2015	Member of the Breeding and Genetics Program Committee for the 2010, 2011, 2014, and 2015 American Dairy Science Association Joint Annual Meetings
2009; 2011	Grant reviewer for Der Wissenschaftsfonds (Austrian competitive-funding agency)
2009–2010	Secretary and President of the S-1040 regional research project (“Genetic Selection and Crossbreeding to Enhance Reproduction and Survival of Dairy Cattle”)
2009	Reviewer for Binational Agricultural Research and Development grants
2006–2010	Member of the Editorial Board for the Journal of Animal Science
2006–2007	Non-voting member of Holstein Association USA’s Genetic Advancement Committee
2004–present	Member of National Dairy Shrine
2000–present	Member of the American Dairy Science Association
1998–present	Member of Gamma Sigma Delta, The Honor Society of Agriculture

Special Assignments for USDA

2020	Selecting (hiring) official for a Research Geneticist (Animals) hiring panel for the Animal Genomics and Improvement Laboratory
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	Chair, BARC Translational 'Omics Vision Group
	Chair of a Research Biologist (Computational Bioinformatics) hiring panel for the Animal Biosciences and Biotechnology Laboratory
2019	Chair of an Animal Scientist hiring panel for the Animal Genomics and Improvement Laboratory
2017–Present	Member of the Beltsville Agricultural Research Center's Animal Research Advisory Group
2016–Present	Member of the Beltsville Agricultural Research Center's Research Leaders Board
2016	Selecting (hiring) official for a research biologist hiring panel for the Animal Genomics and Improvement Laboratory
2015	Selecting (hiring) official for an animal scientist hiring panel for the Animal Genomics and Improvement Laboratory
	Represented ARS at the ARS-RDA Animal Health Meeting in Jeonju, South Korea
2011–2013	Beltsville Agricultural Research Center Pamphlet Committee member
2012	Agricultural Research Service Office of Technology Transfer's technology transfer award panelist
	Animal and Natural Resources Institute Seminar Series Committee member
2010	Chair of computational biologist hiring panel for the Bovine Functional Genomics Laboratory
2007	Chair of 2 support scientist hiring panels for the Bovine Functional Genomics Laboratory
2005–2019	OSHA-certified Collateral Duty Safety Officer

Community Service

December 2020–Present	Auxiliary Member , Bowie Volunteer Fire Department and Rescue Squad, Inc., Bowie, MD.
July 2017–December 2020	Treasurer , Bowie Volunteer Fire Department and Rescue Squad, Inc., Bowie, MD.
March 2011–March 2017	Assistant Secretary , Company 19, Bowie Volunteer Fire Department and Rescue Squad, Inc., Bowie, MD.

December 2004–
March 2011

Auxiliary Member, Bowie Volunteer Fire Department and Rescue Squad,
Inc., Bowie, MD.