John B. Cole

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Education

Ph.D., Animal, Dairy, and Poultry Science, Louisiana State University, Baton Rouge (May 2003)

Advisor: D. E. Franke

Dissertation: *Population structure and genetics of longevity in a colony of dog guides*

M.S., Animal and Dairy Science (Minor: Applied Statistics), Louisiana State University, Baton Rouge (August 1996)

Advisor: R. W. Adkinson

Thesis: *The effect of single and multiple trait selection on somatic cell count and clinical mastitis in dairy cattle*

B.S., Animal Systems (Dairy Production) (Minor: Microbiology), Louisiana State University (May 1994)

Work Experience

January 2011–Present Legislative Fellow

Senator Mark L. Pryor, United States Senate, Washington, DC

Worked with staff to support the Senator's legislative agenda, with an emphasis on regulatory reform. Prepared background memos, briefing materials, and vote recommendations. Met with representatives of trade and interest groups. Authored legislation on regulatory reform, scientific publishing, research funding, and tax incentives for volunteer fire and rescue personnel. Provided expert knowledge on issues related to science and agriculture.

Worked closely with Senator Portman's staff on S.1606, the Regulatory Accountability Act of 2011, which was co-sponsored by Senator Pryor and introduced with bipartisan support in the Senate and House of Representatives.

December 2003–Present Research Geneticist (Animal)

Animal Improvement Programs Laboratory, Agricultural Research Service, United States Department of Agriculture, Beltsville, MD

Conducted research to develop procedures to enhance genetic improvement in the efficiency of the nation's dairy population for health and fitness traits.

- Derived bounds on selection limits and Mendelian sampling effects using haplotypes.
- Implemented genetic evaluations for age at first calving.
- Developed methods for visualizing high-dimensionality genomics data, including implementation of new reports on the AIPL website to display chromosomal breeding values for net merit and its component traits, as well as SNP marker effects.

- Calculated multiplicative adjustment factors to correct milk, fat, and protein test-day data for effects of region- and season-of-calving. Showed that they are easier to calculate than region- and season-specific standard lactation curves and provide similar benefits.
- Revised the net merit, fluid merit, and cheese merit selection indices to reflect current and near-term economic conditions. Increased emphasis was placed on longevity, fertility, and efficiency relative to previous revisions.
- Identified a quantitative trait locus (QTL) associated with dystocia, conformation, longevity, and lifetime economic merit in Holsteins. Developed a physiological explanation for the QTL effect based on comparative bioinformatics with the human and the mouse.
- Enhanced best prediction methodology to account for lactations longer than 305 days. Updated 40 million lactation records in the national dairy database using the new calculations. Obtained industry and Interbull approval for routine use of the new methods for calculation of actual and mature equivalent lactation yields.
- Led a research project resulting in the implementation of a routine national genetic evaluation for stillbirth. Calculated economic values and variance components used to incorporate stillbirth into the USDA lifetime economic merit indices. Researched new models for genetic evaluation of dystocia and stillbirth.
- Conducted research into genetic evaluation of persistency of lactation for milk, fat, and protein. Demonstrated that 305 day mature equivalent yield and persistency can be used to predict yield beyond 305 days. Routine national evaluations for these traits have been requested by industry stakeholders.
- Extended the national calving ease genetic evaluation to provide proofs for Brown Swiss and Jersey bulls, as well as utilize records from crossbred offspring of Brown Swiss, Jersey, and Holstein sires. This was the first US evaluation to include data from crossbred animals.
- Developed data a exchange format for the collection of producer-recorded health and management traits. Supervised development of edits for incoming data and the beginning of routine national data collection.
- Discovered data sources and implemented daily collection of climate data from 238 stations in the United States. Worked with scientists at the University of Georgia to develop best practices for use of climate data in management and genetic evaluation programs.
- Routinely presented research findings to groups of industry stakeholders, including dairy records processing centers, artificial insemination firms, breed associations, and National DHIA.

June 2002–December 2003 Data Manager

Southern Regional Climate Center, Louisiana State University, Baton Rouge

Data manager for one of six regional climate centers. Discovered, collected, and managed climate data for the Southern United States. Designed and wrote several web-based systems for order management and delivery of climate data. Provided statistical and programming support to faculty in the Department of Geography and Anthropology.

June 2000–June 2002 Computer Analyst 2

PT.NET, College of Education, Louisiana State University, Baton Rouge

Webmaster for a multi-million collaborative grant between LSU, Southern University, and the East Baton Rouge Parish School System. Developed interactive web-based systems for the grant as well as departments within the College of Education.

January 2001–May 2001 Instructor

Department of Dairy Science, Louisiana State University, Baton Rouge

Taught a sophomore-level introductory genetics course to 70 undergraduates in the College of Agriculture. Scored above the College of Agriculture average on the end-of-semester Student Perception of Teaching evaluation.

Summer 1998 & 1999 Seminar Coordinator

Life Sciences Summer Undergraduate Research Program, University of Minnesota, St. Paul

Mentored groups of 12 undergraduates participating in a seven week summer research program during which they participated in research projects in faculty laboratories. Taught presentation skills during weekly seminars and assisted students with preparation of posters describing their research at the end of the summer. Worked with students to resolve laboratory and administrative issues.

September 1996–May 2000 Graduate Assistant

Department of Animal Science, University of Minnesota, St. Paul

Planned and conducted research under the supervision of a faculty advisor. Lectured and assisted with laboratory exercises as needed for classes in introductory animal science, animal breeding, biometrics, and dairy production.

Research Interests

Economic impact of production diseases on lifetime profitability of dairy cattle

Accounting for traits with non-market values in the formulation of selection indices

Genetic improvement of health and longevity in livestock species

Population structure, systems of mating, and conservation genetics applied to livestock and companion animal species

Applications of genomic data in genetic evaluation; use of genomic data and bioinformatics to understand the biology of genes of large effect

Refereed Journal Articles

Appuhamy, J. A. D. R. N, B. G. Cassell, and **J. B. Cole**. 2009. Phenotypic and genetic relationships of common health disorders with milk and fat yield persistencies from producer-recorded health data and test-day yields. Journal of Dairy Science 92:1785–1795.

Appuhamy, J. A. D. R.N., B. G. Cassell, C. D. Dechow, and **J. B. Cole**. 2007. Phenotypic relationships of common health disorders in dairy cows to lactation persistency estimated from daily milk weights. Journal of Dairy Science 90:4424–4434.

Attalla, S. A., A. J. Seykora, **J. B. Cole**, and B. J. Heins. 2010. Genetic parameters of milk ELISA scores for Johne's disease. Journal of Dairy Science 93:1729–1735.

Bohmanova, J., I. Misztal, and **J. B. Cole**. 2007. Comparison of seven temperature humidity indices as indicators of milk production losses due to heat stress in semi-arid and humid climates. Journal of Dairy Science 90:1947–1956.

Cole, J. B. 2007. PyPedal: A package for pedigree analysis using the Python programming language. Computers and Electronics in Agriculture 57:107–113.

Cole, J. B., J. L. Ehrlich, and D. J. 2011. Short communication: Projecting milk yield using best prediction and the MilkBot lactation model. Journal of Dairy Science (Submitted).

Cole, J. B., D. E. Franke, and E. A. Leighton. 2004. Population genetic structure of a colony of German Shepherd and Labrador Retriever dog guides. Journal of Animal Science 82:2906–2912.

Cole, J. B., R. C. Goodling, Jr., G. R. Wiggans, and P. M. VanRaden. 2005. Genetic evaluation of calving ease for Brown Swiss and Jersey bulls from purebred and crossbred calvings. Journal of Dairy Science 88:1529–1539.

Cole, J. B., S. Newman, F. Foertter, I. Aguilar, and M. Coffey. 2011. Really big data: processing and analysis of large datasets J. Animal Sci. (Accepted).

Cole, J. B., and D. J. Null. 2009. Genetic evaluation of lactation persistency for five breeds of dairy cattle. Journal of Dairy Science 92:2248–2258.

Cole, J. B., D. J. Null, and A. de Vries. 2011. Short Communication: Best prediction of 305-day lactation yields with regional and seasonal effects. Journal of Dairy Science 94:1601–1604.

Cole, J. B., D. J. Null, and P. M. VanRaden. 2009. Best prediction of yields for long lactations. Journal of Dairy Science 92:1796–1810.

Cole, J. B., P. M. VanRaden, J. R. O'Connell, C. P. Van Tassell, T. S. Sonstegard, R. D. Schnabel, J. F. Taylor, and G. R. Wiggans. 2009. Distribution and location of genetic effects for dairy traits. Journal of Dairy Science 92:2931–2946.

Cole, J. B., and P. M. VanRaden. 2006. Genetic evaluation and best prediction of lactation persistency. Journal of Dairy Science 89:2722–2728.

Cole, J. B., and P. M. VanRaden. 2010. Visualization of results from genomic evaluations. Journal of Dairy Science 93:2727–2740.

Cole, J. B., and P. M. VanRaden. 2011. Use of haplotypes to estimate Mendelian sampling effects and selection limits. Journal of Animal Breeding and Genetics doi: 10.1111/j.1439-0388.2011.00922.x.

Cole, J. B., G. R. Wiggans, L. Ma, T. S. Sonstegard, T. J. Lawlor, Jr., B. A. Crooker, C. P. Van Tassell, J. Yang, S. Wang, L. K. Matukumalli, and Y. Da. 2011. Genome-wide association analysis of thirty one production, health, reproduction and body conformation traits in contemporary U.S. Holstein cows. BMC Genomics 12:408.

Cole, J. B., G. R. Wiggans, and P. M. VanRaden. 2007. Genetic evaluation of stillbirth in United States Holsteins using a sire-maternal grandsire threshold model. Journal of Dairy Science 90:2480–2488.

Cole, J. B., G. R. Wiggans, P. M. VanRaden, and R. H. Miller. 2007. Stillbirth (co)variance components for a sire-maternal grandsire threshold model and development of a calving ability index for sire selection. Journal of Dairy Science 90:2489–2496.

Dikmen, S., **J. B. Cole**, D. J. Null, and P. J. Hansen. 2011. Heritability of rectal temperature and genetic correlations with production and reproduction traits in dairy cattle. Journal of Dairy Science. (Submitted).

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. Journal of Dairy Science 82:795–801.

Ma, L., G. R. Wiggans, S. Wang, T. S. Sonstegard, J. Yang, B. A. Crooker, **J. B. Cole**, C. P. Van Tassell, and Y. Da. 2011. Effect of sample stratification on dairy GWAS results. BMC Genomics (Submitted).

Miller, R. H., H. D. Norman, J. R. Wright, and **J. B. Cole**. 2009. Impact of genetic merit for milk somatic cell score of sires and maternal grandsires on herdlife of their daughters. Journal of Dairy Science 92:2224–2228.

Norman, H. D., J. R. Wright, M. T. Kuhn, S. M. Hubbard, **J. B. Cole**, and P. M. VanRaden. 2009. Genetic and environmental factors that impact gestation length. Journal of Dairy Science 92:2259–2269.

Rohli, R. V., M. M. Russo, A. J. Vega, and **J. B. Cole**. 2004. Atmospheric and statewide anomalously-high tropospheric ozone concentrations in Louisiana. Journal of Applied Meteorology 43:1438–1451.

VanRaden, P. M., M. E. Tooker, **J. B. Cole**, G. R. Wiggans, and J. H. Megonigal, Jr. 2007. Genetic evaluations for mixed breed populations. Journal of Dairy Science 90:2434–2441.

VanRaden, P. M., K. M. Olson, G. R. Wiggans, **J. B. Cole**, and M. E. Tooker. 2011. Genomic inbreeding and relationships among Holsteins, Jerseys, and Brown Swiss. Journal of Dairy Science 94:5673–5680.

Wiggans, G. R., T. A. Cooper, P. M. VanRaden, and **J. B. Cole**. 2011. Adjustment of traditional cow evaluations to improve accuracy of genomic predictions. Journal of Dairy Science (Accepted.)

Wiggans, G. R., **J. B. Cole**, and L. L. M. Thornton. 2007. Multiparity evaluation of calving ease and stillbirth with separate genetic effects by parity. Journal of Dairy Science 91:3173–3178.

Book Chapters and Technical Reports

Cole, J. B. 2005. AIPL Research Report CE1: Brown Swiss and Holstein calving ease. Available: http://aipl.arsusda.gov/reference/fertility/ce2005.htm.

Cole, J. B. 2007. AIPL Research Report SB1: Genetic evaluation of stillbirth. Available: http://aipl.arsusda.gov/reference/fertility/sb2006.html.

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.

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.

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.

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.

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.

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.

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.

Popular Press Articles

Cole, J. B. 2009. Using Python to study pedigrees with PyPedal. Python Magazine 3:12–20.

Cole, J. B. 2005. How can we genetically improve dairy cattle health? The Dairy Focus 6(4):3.

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.

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.

Seykora, A. J., P. M. VanRaden, and **J. B. Cole**. 2006. Net Merit receives face-lift. Hoard's Dairyman 151(14):557.

Proceedings

Appuhamy, J. A. D. R. N., B. G. Cassell, and **J. B. Cole**. 2006. Effect of mastitis and postpartum metabolic diseases on lactation persistency of Holstein and Jersey cows. Journal of Dairy Science 89(Suppl. 1):398(abstr. 476).

Attalla, S. A., A. J. Seykora, **J. B. Cole**, and B. J. Heins. 2009. Estimation of genetic parameters and transmitting ability for Minnesota Johne's milk ELISA test. Journal of Dairy Science 92(E-Suppl. 1):20(abstr. M56).

Cole, J. B. 2011. Data structure and visualization. Journal of Dairy Science 94(E-Suppl. 1):226(abstr. 198).

Cole, J. B. 2009. Visualization of results from genomic predictions. Journal of Dairy Science 92(E-Suppl. 1):314(abstr. 281).

Cole, J. B. 2009. Data collection ratings and best prediction of lactation yields. ICAR Tech Series 13:403–406.

Cole, J. B., and D. E. Franke. 2002. PyPedal: A package for pedigree analysis using the Python programming language. Journal of Animal Science 80 (Suppl. 1):323(abstr. 1291).

Cole, J. B., D. E. Franke, and E. A. Leighton. 2003. Genetic parameters for longevity in a colony of German Shepherd dog guides. Journal of Animal Science 81 (Suppl. 1):197(abstr. M76).

Cole, J. B., D. E. Franke, and E. A. Leighton. 2003. Population genetic structure of a colony of German Shepherd and Labrador Retriever dog guides. Journal of Animal Science 81 (Suppl. 1):69(abstr. 272).

Cole, J. B., L. B. Hansen, and G. D. Marx. 1997. Productive life, reasons for disposal, and body dimensions and weights of Holsteins selected for large versus small body size. Journal of Dairy Science 80(Suppl. 1): 252(abstr. P423).

Cole, J. B., and E. A. Leighton. 2004. Linear versus threshold model analysis of trainability in a colony of German Shepherd dog guides. Journal of Animal Science 87(Suppl. 1):391(abstr. 648).

Cole, J. B., H. D. Norman, and P. D. Miller. 2004. Genetic improvement of dairy cattle health *in* Proceedings of the 12th International Conference on Production Diseases in Farm Animals, July 19–22, 2004, East Lansing, MI. p. 78.

Cole, J. B., and D. J. Null. 2010. Age at first calving in U.S. Holsteins. Journal of Dairy Science 93(E-Suppl. 1):594(abstr. W28).

Cole, J. B., and D. J. Null. 2009. Best prediction of lactation yields accounting for regional and seasonal differences. Journal of Dairy Science 92(E-Suppl. 1):209(abstr. T38).

Cole, J. B., and D. J. Null. 2007. Genetic evaluation of lactation persistency estimated by best prediction for Ayrshire, Brown Swiss, Guernsey, and Milking Shorthorn dairy cattle. Journal of Dairy Science 90(Suppl. 1):20(abstr. M52).

Cole, J. B., D. J. Null, and L. R. Bacheller. 2008. A data exchange format and national database for producer-recorded health event data from on-farm management software. Journal of Dairy Science 91(E-Suppl. 1):2–3(abstr. T6).

Cole, J. B., A. H. Sanders, and J. S. Clay. 2006. Use of producer-recorded health data in determining incidence risks and relationships between health events and culling. Journal of Dairy Science 89(Suppl. 1):10(abstr. M7).

Cole, J. B., and A. H. Sanders. 2005. Genetic evaluation of clinical mastitis in U.S. dairy cattle *in* Lamont, S.J., M. F. Rothschild, and D. L. Harris, editors. Proceedings of the Third International Symposium on Genetics of Animal Health, July 13–15, 2005, Ames, Iowa. p. 112.

Cole, J. B., T. S. Sonstegard, L. Ma, G. R. Wiggans, B. A. Crooker, C. P. Van Tassell, J. Yang, L. K. Matukumalli, and Y. Da. 2010. High resolution QTL map of 13 dairy traits from genome-wide association analysis in contemporary U.S. Holstein cows. Proceedings of the Plant and Animal Genome XVII Conference, San Diego, CA, Jan. 9-13, abstr. P565.

Cole, J. B., B. R. Southey, D. E. Franke, and E. A. Leighton. 2007. Discrete time survival analysis of longevity in a colony of dog guides *in* Proceedings of 5th International Working Dog Breeding Conference, San Antonio, TX.

Cole, J. B., B. R. Southey, D. E. Franke, and E. A. Leighton. 2005. Discrete time survival analysis of longevity in a colony of dog guides. Journal of Animal Science 83 (Suppl. 1):103(abstr. 136).

Cole, J. B., M. E. Tooker, P. M. VanRaden, and J. H. Megonigal. 2004. Breed composition codes for crossbred dairy cattle in the United States. Journal of Dairy Science 87(Suppl. 1):284(abstr. 536).

Cole, J. B., and P. M. VanRaden. 2010. Use of haplotypes to estimate Mendelian sampling effects and selection limits. Proceedings of the 9th World Congress on Genetics Applied to Livestock Production, Leipzig, Germany, Aug. 1–6. Comm. 498, 4 pp.

Cole, J. B., and P. M. VanRaden. 2010. Use of haplotypes to predict selection limits and Mendelian sampling. Journal of Dairy Science 93(E-Suppl. 1):535(abstr. 623).

Cole, J. B., and P. M. VanRaden. 2005. Genetic evaluation and best prediction of lactation persistency. Journal of Dairy Science 88 (Suppl. 1):379–380(abstr. 651).

Cole, J. B., P. M. VanRaden, and C. M. B. Dematawewa. 2007. Estimation of yields for long lactations using best prediction. Journal of Dairy Science 90(Suppl. 1):421(abstr. 558).

Cole, J. B., P. M. VanRaden, J. R. O'Connell, C. P. Van Tassell, T. S. Sonstegard, R. D. Schnabel, J. F. Taylor, and G. R. Wiggans. 2009. Distribution and location of genetic effects for dairy traits. ICAR Tech Series 13:355–360.

Cole, J. B., G. R. Wiggans, L. Ma, T. S. Sonstegard, B. A. Crooker, C. P. Van Tassell, J. Yang, L. K. Matukumalli, and Y. Da. 2010. High-resolution QTL maps of 31 traits in contemporary U.S. Holstein cows. Proceedings of the 9th World Congress on Genetics Applied to Livestock Production, Leipzig, Germany, Aug. 1–6. Comm. 464, 4 pp.

Cole, J. B., G. R. Wiggans, and P. M. VanRaden. 2006. Genetic evaluation of stillbirth in United States Holsteins using a sire-maternal grandsire threshold model. Comm. 01-28 *in* Proceedings of the 8th World Congress on Genetics Applied to Livestock Production, Belo Horizonte, Brazil.

Cole, J. B., G. R. Wiggans, P. M. VanRaden, and R. H. Miller. 2006. Stillbirth (co)variance components for a sire-maternal grandsire threshold model. Journal of Dairy Science 89(Suppl. 1):273(abstr. 339).

Dikmen, S., **J. B. Cole**, D. J. Null, and P. J. Hansen. 2011. Heritability of rectal temperature and genetic correlations with production and reproduction traits in dairy cattle. Journal of Dairy Science 94(E-Suppl. 1):255(abstr. 275).

Egger-Danner, C., K. Stock, **J. Cole**, A. Bradley, J. Pryce, N. Gengler, L. Andrews, and E. Strandberg. 2011. Registration of health traits – strategies of phenotyping, aspects of data quality and possible benefits. 37th ICAR Meeting, Bourg-en-Bresse, France, June 22-24, 2011.

Hansen, L. B., **J. B. Cole**, and G. D. Marx. 1998. Body size of lactating dairy cows: Results of divergent selection for over 30 years. Proceedings of the 6th World Congress on Genetics Applied to Livestock Production, Armidale, NSW, Australia XXV:35–38.

Ma, L., T. S. Sonstegard, **Cole, J. B.**, G. R. Wiggans, B. A. Crooker, C. P. Van Tassell, J. Yang, L. K. Matukumalli, and Y. Da. 2010. X chromosome SNPs were heavily involved in epistasis effects of net merit component traits in contemporary U.S. Holstein cows. Proceedings of the Plant and Animal Genome XVII Conference, San Diego, CA, Jan. 9-13, abstr. P542.

Macciotta, N.P.P., and **J. B. Cole**. 2011. Multivariate factor analysis of genomic correlation matrices in three US dairy cattle breeds. Journal of Dairy Science 94(E-Suppl. 1):i-ii(abstr. LB3).

McClure, M., E.-S. Kim, **J. Cole**, G. R. Wiggans, L. K Matukumalli, S. Schroeder, C. Van Tassell, and T. Sonstegard. 2011. Hunting for the Weaver causative mutation in Brown Swiss cattle. Plant and Animal Genome XX Proceedings, San Diego, CA.

Norman, H. D., J. R. Wright, M. T. Kuhn, S. M. Hubbard, and **J. B. Cole**. 2007. Genetic and environmental factors that affect gestation length. Journal of Dairy Science 90(Suppl. 1):264 (abstr. T73).

Norman, H. D., J. R. Wright, and **J. B. Cole**. 2007. Effect of temperature and humidity on gestation length. Journal of Dairy Science 90(Suppl. 1):16(abstr. M38).

Norman, H. D., J. R. Wright, P. M. VanRaden, and **J. B. Cole**. 2007. Effect of service sire and cow sire on gestation length. Journal of Dairy Science 90(Suppl. 1):194(abstr. 230).

Sonstegard, T. S., L. Ma, **J. B. Cole**, G. R. Wiggans, C. P. Van Tassell, G. Liu, B. D. Mariani, B. A. Crooker, P. M. VanRaden, M. V. da Silva, and Y. Da. 2008. Genomic signatures of artificial selection in U.S. Holstein cows. International Society for Animal Genetics Proceedings (Poster 638 2098) Available: http://www.isag2008.nl/p2000.pdf.

Sonstegard, T. S., L. Ma, **J. B. Cole**, G. R. Wiggans, B. A. Crooker, C. P. Van Tassell, B. D. Mariani, and Y. Da. 2008. Genome signature of artificial selection for high milk yield in Holstein cattle. Plant and Animal Genome XV Proceedings, San Diego, CA.

Sonstegard, T. S., L. Ma, C. P. Van Tassell, **J. B. Cole,** G. R. Wiggans, B. A. Crooker, J. Yang, and Y. Da. 2011. Selection signature in the DGAT1-NIBP region of chromosome 14 In U.S. Holstein cattle. Plant and Animal Genome XIX Proceedings, San Diego, CA.

Sonstegard, T. S., L. Ma, C. P. Van Tassell, E.-S. Kim, **J. B. Cole,** G. R. Wiggans, B. A. Crooker, B. D. Mariani, J. R. Garbe, S. C. Fahrenkrug, G. Liu, and Y. Da. 2010. Forty years of artificial selection in U.S. Holstein cattle had genome-wide signatures. Proceedings of the 9th World Congress on Genetics Applied to Livestock Production, Leipzig, Germany, Aug. 1–6. Suppl. Comm., 4 pp.

VanRaden, P. M., M. E. Tooker, and **J. B. Cole**. 2004. Heterosis and breed differences for daughter pregnancy rate in crossbred dairy cows. Journal of Dairy Science 87(Suppl. 1):284(abstr. 532).

VanRaden, P. M., M. E. Tooker, **J. B. Cole**, G. R. Wiggans, and J. H. Megonigal, Jr. 2006. Genetic evaluations for mixed breed populations. Journal of Dairy Science 89(Suppl. 1):98(abstr. 40).

Waurich, B., M. Wensch-Dorendorf, **J. B. Cole**, and H. H. Swalve. 2011. Genetic evaluations for birth weight: A comparison of continuous and discrete definitions of birthweight under varying accuracies of recording. 62nd Annual Meeting of the European Association of Animal Production, Stavanger, Norway, August 29–September 2, 2011.

Wiggans, G. R., **J. B. Cole**, and L. L. M. Thornton. 2007. Multitrait evaluation for calving ease and stillbirth with separate genetic effects by parity. Journal of Dairy Science 90(Suppl. 1):377(abstr. 422).

Wiggans, G. R., L. Ma, T. S. Sonstegard, **J. B. Cole**, B. A. Crooker, C. P. Van Tassell, J. Yang, L. K. Matukumalli, and Y. Da. 2010. High resolution QTL map of body conformation traits from genome-wide association analysis in contemporary U.S. Holstein cows. Proceedings of the Plant and Animal Genome XVII Conference, San Diego, CA, Jan. 9-13, abstr. P547.

Wiggans, G. R., C. P. Van Tassell, **J. B. Cole**, and L. L. M. Thornton. 2006. Genetic correlations between first and later parity calving ease in a sire-maternal grandsire model. Comm. 01-92 *in* Proceedings of the 8th World Congress on Genetics Applied to Livestock Production, Belo Horizonte, Brazil.

Software

Cole, J. B. 2010. PyPedal: A package for pedigree analysis using the Python programming language, v. 2.0.0. Website: http://pypedal.sourceforge.net/.

Cole, J. B., and P. M. VanRaden. 2007. A Manual for Use of BESTPRED: A Program for Estimation of Lactation Yield and Persistency Using Best Prediction. Website: http://www.aipl.arsusda.gov/software/bestpred/.

Invited Presentations

July 2011. "Data Structures and Visualization", 2011 ADSA/ASAS Joint Annual Meeting, New Orleans, LA.

March 2011. National DHIA Annual Meeting, New Orleans, LA. (Declined due to conflict with Capitol Hill Fellowship)

February 2011. Select Sires, Inc. Sire Committee Meeting. (Declined due to conflict with Capitol Hill Fellowship)

November 2010. "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 2010. "Age at First Calving in Holstein Cattle in the United States", Dairy Cattle Reproduction Council, St. Paul, MN.

November 2009. "Biological Insights from the Implementation of a Genomic Selection Program in Dairy Cattle", Institute of Genetics, Vetsuisse Faculty, University of Berne, Switzerland.

November 2009. "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)

October 2009. "Visualization of Results from Genomic Evaluation", Department of Animal Sciences, Colorado State University, Fort Collins.

March, 2009. "Distribution and Location of Genetic Effects for Dairy Traits", CRI Genomics Emerging Markets Program, Washington, D.C.

June 2008. "Best Predictions of Daily and Lactation Yields and Data Collection Ratings", International Committee for Animal Recording, Niagara Falls, NY.

September 2007. “Best Prediction of Actual Lactation Yields”, AgriTech Analytics & Holstein Association USA Dairy Industry Event, Visalia, CA.

September 2007. “Overview of Animal Improvement Programs Laboratory”, Department of Animal Sciences, Louisiana State University, Baton Rouge.

September 2007. “Genetic Evaluation of Calving Traits in U.S. Holsteins”, Department of Animal Sciences, Louisiana State University, Baton Rouge.

June 2007. “Validation of Producer-Recorded Health Event Data and Use in Genetic Improvement of Dairy Cattle”, Department of Animal Sciences, University of Florida, Gainesville.

October 2006. “Genetic Evaluation of Calving Traits in U.S. Holsteins”, Breeding and Genetics group, Department of Animal Sciences, Colorado State University, Fort Collins.

October 2006. “Dairy Cattle Breeding in the United States”, Department of Animal Sciences, Colorado State University, Fort Collins.

February 2006. “Genetic Evaluation of Calving Traits”, Department of Animal and Dairy Science, University of Georgia, Athens.

August 2003. “Genetics Applied to the Working Dog”, International Seppala Siberian Sleddog Club Annual Meeting, Seeley, MT.

Grants

Co-principal investigator on a $500,000 Agriculture and Food Research Initiative proposal titled “Genomic selection for health traits in the US dairy population using producer-recorded data” (Proposal USDA-NIFA-AFRI-003397). (Under review)

Co-principal investigator on an $18,000 Southeast Milk, Inc. Milk Checkoff Program proposal titled “Development of tools to select cattle that are genetically resistant to heat stress” (P. J. Hansen, S. Dikmen, and J. B. Cole, 7/1/2011–6/32/2012).

Co-principal investigator on a $1,000,000 integrated Agriculture and Food Research Initiative proposal titled “Improving Fertility During Heat Stress in Lactating Dairy Cows” (Grant No. 2009-05159).

Co-principal investigator on a $450,000 Cooperative State Research, Extension, and Education Service National Research Initiative grant for a proposal titled “Genomic Signature of Artificial Selection and Genome-Wide Association Analysis in Holstein Cows” (Grant No. 2008-35205-18846).

Principal investigator on a $500 grant from The Seeing Eye, Inc., Morristown, NJ, USA, for a proposal titled “Genetic Analysis in a Colony of Guide Dogs”.

Teaching Experience

Guest Lecturer, ANEQ575: Computational Biology in Animal Breeding, Colorado State University, Spring 2009.

Instructor, DARY 2072: Introductory Agricultural Genetics, LSU, Spring 2001.

Lecturer, AGRI 2072: Plant and Animal Genetics, LSU, Spring 1996.

Lecturer, ANSC 1101: Introductory Animal Science, University of Minnesota, 1996–2000.

Lecturer, ANSC 2211: Biometrics for Livestock, University of Minnesota, 2000.

Lecturer, ANSC 3221: Animal Breeding, University of Minnesota, 1996–2000.

Lecturer, DARY 4018: Applied Animal Breeding and Genetics, LSU, 1995.

Training

"Preparing and Delivering Congressional Testimony", The Government Affairs Institute at Georgetown University, Washington, D.C., March 28 & 29, 2011.

"Executive-Legislative Branch Relations", The Government Affairs Institute at Georgetown University, Washington, D.C., February 24 & 25, 2011.

"Advanced Budget and Appropriations Process", The Government Affairs Institute at Georgetown University, Washington, D.C., January 20 & 21, 2011.

"Collateral Duty Course for Federal Employees (OSHA 6000)", SOHES-BARC-ARS-USDA, Beltsville, MD, June 9–29 , 2010.

"ARS Congressional Briefing Conference", The Government Affairs Institute at Georgetown University, Washington, D.C., March 8–11, 2010.

"Writing Winning Grants", University of Maryland, College Park, MD, November 13, 2008.

"Presenting Data and Information", Edward Tufte, Arlington, VA, May 24, 2007.

"Seminar for New Managers: Blended Course", United States Office of Personnel Management, Western Management Development Center, Aurora, CO, April 3–May 19. 2006.

"Fast Track to ColdFusion MX7", Fig Leaf Software, Washington, DC, June 6–8, 2005.

"Longitudinal Data Analysis with Continuous and Discrete Responses", The SAS Institute, Inc., Rockville, MD, September 16–17, 2004.

"Mixed Models Analysis Using the SAS System", The SAS Institute, Inc., Rockville, MD, November 17–19, 2004.

"Predictive Modeling Using Logistic Regression", The SAS Institute, Inc., Rockville, MD, December 2–3, 2004.

Professional Affiliations

Chair of the Breeding and Genetics Program Committee for the 2012 American Dairy Science Association Joint Annual Meeting (2011–2012)

Member of the American Dairy Science Association (2011–present)

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 Editorial Board for the Journal of Animal Science (2006–2010)

Member of the Functional Traits Working Group of the International Committee for Animal Recording (2010–present)

Member of Gamma Sigma Delta, The Honor Society of Agriculture (1998–present)

Member of the Breeding and Genetics Program Committee for the 2010 and 2011 American Dairy Science Association Joint Annual Meetings (2009–2011)

Non-voting member of Holstein Association USA's Genetic Advancement Committee (2006–2007)

Secretary and President of the S-1040 regional research project ("Genetic Selection and Crossbreeding to Enhance Reproduction and Survival of Dairy Cattle") (2009–2010)

Awards and Honors

2010 USDA Secretary's Honor Award, Cattle Genomics Consortium
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