

## Curriculum Vitae

October 2017

**Name**                    **Shogo Tsuruta**

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### I.     **ACADEMIC WORK HISTORY**

Present Rank                    Associate Research Scientist  
Date of Appointment: July 1, 2009

Address (work)                    425 River Rd.  
Animal and Dairy Science Department  
The University of Georgia  
Athens, GA 30602

Phone (work)                    706-583-0017

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#### **Academic positions:**

<b>Title</b>	<b>Employer</b>	<b>Dates</b>
Postdoctoral Research Associate	The University of Georgia	09 / 1998 to 01 / 2004
Assistant Research Scientist	The University of Georgia	01 / 2004 to 07 / 2009
Associate Research Scientist	The University of Georgia	07 / 2009 to present

#### **Current job duties:**

1.     Developing and updating statistical software for Linux, Windows, and Mac, using FORTRAN, C++, and R.
2.     Analyzing data on various animal species such as dairy cattle, beef cattle, swine, chicken, and fish for estimation of variance components and prediction of breeding values with statistical software including BLUPF90.
3.     Presenting results from the analysis in scientific meetings.
4.     Publishing papers in scientific journals.
5.     Supporting graduate students, research scientists, professors, visiting researchers, collaborators, and statistical software users.
6.     Maintaining and updating Linux servers.

**Education:**

<b>Degree</b>	<b>Major</b>	<b>Institution</b>	<b>Year</b>
Bachelor of Science	Dairy Science	Obihiro University of Agriculture and Veterinary Medicine	1981
Master of Science	Dairy Science	Obihiro University of Agriculture and Veterinary Medicine	1983
Doctor of Philosophy	Animal Science	University of Nebraska-Lincoln	1998

**II. INVITED PRESENTATIONS AND SHORT COURSES**

1. "Computational techniques in animal breeding" at Obihiro University in Japan, 1999.
2. "Dairy cattle genetic evaluation in USA" at Livestock Improvement Center in Japan, 1999.
3. "Application of mixed models in animal breeding" at Obihiro University in Japan, 2002.
4. "Animal breeding studies" at Tohoku University in Japan, 2002.
5. "Computational techniques in animal breeding" at University of Georgia, 2003.
6. "Fortran 90 on Linux in animal breeding and genetics" at University of Georgia, 2006.
7. "Variance component estimation" at Obihiro University in Japan, 2006.
8. "Studies in animal breeding and genetics" at Niigata University in Japan, 2006.
9. "Animal breeding studies" at Kyoto University in Japan, 2006.
10. "Threshold models" at Workshop, University of Berne in Switzerland, 2007.
11. "Computational techniques in animal breeding" at University of Georgia, 2008.
12. "Variance Component Estimation and Application of BGF90 Programs" at EMBRAPA in Brazil, 2009.
13. "Genetic Analysis using Application (BGF90) Programs in Animal Breeding" at Kyoto University in Japan, 2010.
14. "Computational techniques in animal breeding" at Aarhus University in Denmark, 2011.
15. "Programming and computer algorithm with focus on genomic selection in animal breeding" at University of Georgia, 2012.
16. "Genetic analysis using application (BGF90) programs in animal breeding" at Hankyong National University in South Korea, 2013.
17. "Programming and computer algorithm in animal breeding with focus on genomic selection and single-step GBLUP" at University of Georgia, 2014.
- 18.
19. "Programming and computer algorithms in animal breeding with focus on single-step GBLUP and reality of genomic selection" at University of Georgia, 2016.

**III. SCHOLARLY PUBLICATIONS**

**a. Book Chapter: (1 total)**

1. Sasaki, Y. (ed.), S. Tsuruta, K. Moriya, T. Miyake, H. Iwaisaki, H. Hirooka, T. Nomura, Y. Wada, M. Satoh, H. Oki, K. Wada, and Y. Matsuyama. 2007. Estimation of Random effects and BLUP. Kyoto University Press. Kyoto, Japan.

**b. Refereed Journal Articles: (82 total)**

1. Suzuki, M., T. Mitsumoto, and S. Tsuruta. 1989. Joint evaluations for sires and cows using field data of Hokkaido Holstein population. *Jpn. J. Zootech. Sci.* 60:755-760.
2. Tsuruta, S., M. Suzuki, and T. Mitsumoto. 1990. Estimation of genetic and environmental trends from simultaneous genetic evaluation of bulls and cows using Hokkaido dairy herd milk records. *Jpn. J. Zootech. Sci.* 61:1051-1056.
3. Kuchida, K., M. Fukaya, S. Miyoshi, M. Suzuki, and S. Tsuruta. 1999. Nondestructive prediction method for yolk:albumen ration in chicken eggs by computer image analysis. *Poultry Sci.* 78:909-913.
4. Kuchida, K., S. Tsuruta, L. D. Van Vleck, M. Suzuki, and S. Miyoshi. 1999. Prediction method of beef marbling standard number using parameters obtained from image analysis for beef ribeye. *Anim. Sci. J.* 70:107-112.
5. Tsuruta, S., J. F. Keown, L. D. Van Vleck, and I. Misztal. 2000. Bias in genetic evaluation by records of cows treated with bovine somatotropin. *J. Dairy Sci.* 83:2650-2656.
6. Tsuruta, S., I. Misztal, and I. Strandén. 2001. Use of the preconditioned conjugate gradient algorithm as a generic solver for mixed model-equations in animal breeding applications. *J. Anim. Sci.* 79:1166-1172.
7. Pereira, J. A. C., M. Suzuki, K. Hagiya, T. Yoshizawa, S. Tsuruta, and I. Misztal. 2001. Method R estimates of heritability and repeatability for milk, fat, and protein yields of Japanese Holstein. *Anim. Sci. J.* 72:372-377.
8. Duangjinda, M., I. Misztal, J. K. Bertrand, and S. Tsuruta. 2001. The empirical bias of estimates by restricted maximum likelihood, Bayesian method, and Method R under selection for additive, maternal, and dominance models. *J. Anim. Sci.* 79:2991-2996.
9. Hagiya, K., M. Suzuki, T. Kawahara, Pereira, J. A. C., Y. Domon, S. Tsuruta, and I. Misztal. 2002. Estimation of heritability and genetic correlation for lifetime production and first lactation traits of Holstein cows. *Anim. Sci. J.* 73:1-8.
10. Tsuruta, S., I. Misztal, L. Klei, and T. J. Lawlor. 2002. Analysis of age-specific predicted transmitting abilities for final scores in Holsteins with a random regression model. *J. Dairy Sci.* 85:1324-1330.
11. Strandén, I., S. Tsuruta, and I. Misztal. 2002. Simple preconditioners for the conjugate gradient method: experience with test day models. *J. Anim. Breed. Genet.* 119:166-174.
12. Nobre, P. R. C., I. Misztal, S. Tsuruta, J. K. Bertrand, L. O. C. Silva, and P. S. Lopez. 2003. Analyses of growth curves of Nelore cattle by multiple-trait and random regression models. *J. Anim. Sci.* 81:918-926.
13. Nobre, P. R. C., I. Misztal, S. Tsuruta, J. K. Bertrand, L. O. C. Silva, and P. S. Lopez. 2003. Genetic evaluation of growth in Nelore cattle by multiple-trait and random regression models. *J. Anim. Sci.* 81:927-932.
14. Oseni, S., I. Misztal, S. Tsuruta, and R. Rekaya. 2003. Seasonality of days open in US Holsteins. *J. Dairy Sci.* 86:3718-3725.

15. Tsuruta, S., I. Misztal, and T. J. Lawlor. 2004. Genetic correlations among production, body size, udder and productive life traits over time in Holsteins. *J. Dairy Sci.* 87:1457-1468.
16. Oseni, S., I. Misztal, S. Tsuruta, and R. Rekaya. 2004. Genetic components of days open under heat stress. *J. Dairy Sci.* 87:3022-3028.
17. Oseni, S., S. Tsuruta, I. Misztal, and R. Rekaya. 2004. Genetic parameters for days open and pregnancy rates in US Holsteins using different editing criteria. *J. Dairy Sci.* 87:4327-4333.
18. Tsuruta, S., I. Misztal, T. J. Lawlor, and L. Klei. 2004. Modeling final scores in US Holsteins as a function of year of classification using random regression models. *Livest. Prod. Sci.* 91:199-207.
19. Tsuruta, S., I. Misztal, and T. J. Lawlor. 2005. Changing definition of productive life — Effect on genetic correlations in US Holsteins. *J. Dairy Sci.* 88:1156-1165.
20. Arango, J., I. Misztal, S. Tsuruta, M. Culbertson, and W. Herring. 2005. Threshold-linear estimation of genetic parameters for farrowing mortality, litter size and test performance of Large White sows. *J. Anim. Sci.* 83:499-506.
21. Iwaisaki, H., S. Tsuruta, I. Misztal, and J. K. Bertrand. 2005. Estimation of correlation between maternal permanent environmental effects of related dams in beef cattle. *J. Anim. Sci.* 83:537-542.
22. Iwaisaki, H., S. Tsuruta, I. Misztal, and J. K. Bertrand. 2005. Genetic parameters estimated with multi-trait and linear spline random regression model using Gelbvieh early growth data. *J. Anim. Sci.* 83:757-763.
23. Arango, J., I. Misztal, S. Tsuruta, M. Culbertson, and W. Herring. 2005. Estimation of variance components including competitive effects of Large White growing gilts. *J. Anim. Sci.* 83:1241-1246.
24. Arango, J., I. Misztal, S. Tsuruta, M. Culbertson, and W. Herring. 2005. Study of codes of disposal at different parities of Large White sows using a linear censored model. *J. Anim. Sci.* 83:2052-2057.
25. Oseni, S., I. Misztal, and S. Tsuruta. 2005. Genetic parameters for pregnancy rate in Holstein cattle under seasonal heat stress. *Nigerian Journal of Genetics.* 19:43-57.
26. Arango, J., I. Misztal, S. Tsuruta, M. Culbertson, J. W. Holl, and W. Herring. 2006. Genetic study of individual preweaning mortality and birth weight in Large White piglets using threshold-linear models. *Livest. Prod. Sci.* 101:208-218.
27. Zumbach, B., I. Misztal, S. Tsuruta, J. Holl, W. Herring, and T. Long. 2007. Genetic correlations between two strains of Durocs and crossbred from differing production environments for slaughter traits. *J. Anim. Sci.* 85:901-908.
28. Ríos-Utrera, A., G. Martínez-Velázquez, S. Tsuruta, J. K. Bertrand, V. E. Vega-Murillo, and M. Montaña-Bermúdez. 2007. Estimates of genetic parameters for growth traits of Mexican Charolais cattle. *Téc. Pec. Méx.* 45:121-130.
29. Huang C., S. Tsuruta, J. K. Bertrand, I. Misztal, T. J. Lawlor, and J. S. Clay. 2008. Environmental effects on conception rate of Holsteins in New York and Georgia. *J. Dairy Sci.* 91:818-825.
30. Bohmanova J., I. Misztal, S. Tsuruta, H. D. Norman, and T. J. Lawlor. 2008. Genotype by environment interaction due to heat stress. *J. Dairy Sci.* 91:840-846.
31. Pribyl, J., H. Krejčova, J. Pribylova, I. Misztal, S. Tsuruta, N. Mielenz. 2008. Models for valuation of growth of performance tested bulls. *Czech J. Anim. Sci.*, 53:45-54.

32. Zumbach, B., S. Tsuruta, I. Misztal, and K. J. Peters. 2008. Use of a test day model for dairy goat milk yield across lactations in Germany. *J. Anim. Breed. Genet.* 125:160-167.
33. Tsuruta, S. and I. Misztal. 2008. Computing options for genetic evaluation with a large number of genetic markers. *J. Anim. Sci.* 86:1514-1518.
34. Wiggans, G. R., S. Tsuruta, and I. Misztal. 2008. Adaptation of an animal-model method for approximation of reliabilities to a Sire-Maternal Grand sire Model. *J. Dairy Sci.* 91: 4058-4061.
35. Zumbach, B., I. Misztal, S. Tsuruta, J. P. Sanchez, M. Azain, W. Herring, J. Holl, T. Long, and M. Culbertson. 2008. Genetic components of heat stress in finishing pigs: Parameter estimation. *J. Anim. Sci.* 86:2076-2081.
36. Zumbach, B., I. Misztal, S. Tsuruta, J. P. Sanchez, M. Azain, W. Herring, J. Holl, T. Long, and M. Culbertson. 2008. Genetic components of heat stress in finishing pigs: Development of a heat load function. *J. Anim. Sci.* 86:2082-2088.
37. Tsuruta, S., I. Misztal, C. Huang, and T. J. Lawlor. 2009. Bivariate analysis of conception rates and test-day milk yields using a threshold-linear model with random regressions. *J. Dairy Sci.* 92:2922-2930.
38. Chen, C. Y., I. Misztal, S. Tsuruta, W. Herring, J. Holl, and M. Culbertson. 2008. Estimation of genetic parameters of feed intake and daily gain in Durocs using data from electronic swine feeders. *J. Anim. Breed. Genet.* 127:230-234.
39. Huang, C., S. Tsuruta, J. K. Bertrand, I. Misztal, T. Lawlor, J. Clay. 2008. Trends for conception rate of Holsteins over time in Southeastern USA. *J. Dairy. Sci.* 92:4641-4647.
40. Aguilar, I., I. Misztal, and S. Tsuruta. 2009. Heat tolerance in production traits for multiple lactations: variance components. *J. Dairy. Sci.* 92:5702-5711.
41. Chen, C. Y., I. Misztal, S. Tsuruta, W. Herring, J. Holl, and M. Culbertson. 2009. Influence of heritable social status on daily gain and feeding pattern in pigs. *J. Anim. Breed. Genet.* 127:101-112.
42. Aguilar, I., I. Misztal, and S. Tsuruta. 2010. Short Communication: Genetic trends of milk yield under heat stress for US Holsteins. *J. Dairy Sci.* 93:1754-1758.
43. Zumbach, B., I. Misztal, S. Tsuruta, Lukaszewicz, M., B. W. O. Herring, J. Holl, and M. Culbertson. 2010. Use of serial pig body weights for genetic evaluation of daily gain. *J. Anim. Breed. Genet.* 127:93-99.
44. Aguilar, I., S. Tsuruta, and I. Misztal. 2010. Computing options for multiple trait test-day random regression models while accounting for heat tolerance. *J. Anim. Breed. Genet.* 127:235-241.
45. Aguilar, I., I. Misztal., D. L. Johnson, A. Legarra, S. Tsuruta, and T. J. Lawlor. 2010. A unified approach to utilize phenotypic, full pedigree, and genomic information for genetic evaluation of Holstein final score. *J. Dairy Sci.* 93:743-752.
46. Chen, C. Y., I. Misztal, S. Tsuruta, W.O. Herring, J. Holl, and M. Culbertson. 2010. Genetic analyses of stillbirth in relation to litter size using random regression models. *J. Anim. Sci.* 88:3800-3808.
47. Chen, C. Y., I. Misztal, I. Aguilar, S. Tsuruta, T. H. E. Meuwissen, S. E. Aggrey, T. Wing, and W. M. Muir. 2011. Genome-wide marker-assisted selection combining all pedigree phenotypic information with genotypic data in one step: An example using broiler chickens. *J Anim. Sci* 2011 89: 23-28.

48. Koduru, V. K. R., S. Tsuruta, M. Lukaszewicz, I. Misztal, and T. J. Lawlor. 2011. How to limit PTATs fluctuation from 1st to 2nd daughter crop in Holsteins. *J. Applied Genetics*. 52:81-88.
49. Aguilar, I., S. Tsuruta, and I. Misztal. 2011. Efficient computations of genomic relationship and other matrices used in the single-step evaluation *J. Anim. Breed. Genet*. 128:1-7.
50. Johanson, J. M., P. J. Berger, S. Tsuruta, and I. Misztal. 2011. A Bayesian threshold-linear model evaluation of perinatal mortality, dystocia, birth weight, and gestation length in a Holstein herd. *J. Dairy Sci*. 94:450-460.
51. Aguilar, I., I. Misztal., S. Tsuruta, and G. R. Wiggans. 2011. Multiple trait genomic evaluation of conception rate in Holsteins. *J. Dairy Sci*. 94:2621-2624.
52. Tsuruta, S., I. Misztal., I. Aguilar, and T. J. Lawlor. 2011. Multiple-trait genomic evaluation of linear type traits using genomic and phenotypic data in Holsteins. *J. Dairy Sci*. 94:4198-4204.
53. Negussie, E., I. Strandén, S. Tsuruta, and E. A. Mäntysaari 2012. Longitudinal threshold model analysis of clinical mastitis using linear splines. *Livest. Prod. Sci*. 149:173-179.
54. Misztal, I., S. Tsuruta, I. Aguilar, A. Legarra, P. M. VanRaden, and T. J. Lawlor. 2013. Methods to approximate reliabilities in single-step genomic evaluation. *J. Dairy Sci*. 96:647-654.
55. Tsuruta, S., I. Misztal, and T. J. Lawlor. 2013. Genomic evaluations of final score for US Holsteins benefit from the inclusion of genotypes on cows. *J. Dairy Sci*. 96:3332-3336.
56. Lourenco, D. A. L., I. Misztal, H. Wang, I. Aguilar, S. Tsuruta, and K. J. Bertrand. 2013. Prediction accuracy for a simulated maternally affected trait of beef cattle using different genomic evaluation models. *J. Anim. Sci*. 91:4090-4098.
57. Dufrasne, M., I. Misztal, S. Tsuruta, J. Holl, K. A. Gray, and N. Gengler. 2013. Estimation of genetic parameters for birth weight, preweaning mortality, and hot carcass weight of crossbred pigs. *J. Anim. Sci*. 91:5565-5571.
58. Lourenco, D. A. L., I. Misztal, S. Tsuruta, I. Aguilar, E. Ezra, M. Ron, A. Shirak, and J. Weller. 2014. Methods for genomic evaluation of a relatively small genotyped dairy population and effect of genotyped cow information in multiparity analyses. *J. Dairy Sci*. 97:1742-1752.
59. Lourenco, D. A. L., I. Misztal, S. Tsuruta, I. Aguilar, T. J. Lawlor, S. Forni, and J. I. Weller. 2014. Are evaluations on young genotyped animals benefiting from the past generations? *J. Dairy Sci*. 97:3930-3942.
60. Tokuhisa, K., S. Tsuruta, A. De Vries, J. K. Bertrand, and I. Misztal. 2014. Genetic and phenotypic aspects of cow mortality in three parties and three US regions. *J. Dairy Sci*. 97:4497-4502.
61. Dufrasne, M., I. Misztal, S. Tsuruta, N. Gengler, and K. A. Gray. 2014. Genetic analysis of pig survival up to commercial weight in a crossbred population. *Livestock Sci*. 167:19-24.
62. Tsuruta, S., I. Misztal, D. A. L. Lourenco, and T. J. Lawlor. 2014. Assigning unknown parent groups to reduce bias in genomic evaluations of final score in US Holsteins. *J. Dairy Sci*. 97:5814-5821.
63. Forneris, N. S., A. Legarra, Z. G. Vitezica, S. Tsuruta, I. Aguilar, I. Misztal, and R. J. C. Cantet. 2015. Quality Control of genotypes using heritability estimates of gene content at the marker. *Genetics*. 199: 675-681.
64. Lukaszewicz, M., R. A. Davis, J. K. Bertrand, I. Misztal, and S. Tsuruta. 2015.

- Correlations between purebred and crossbred body weight traits in Limousin and Limousin-Angus populations. *J. Anim. Sci.* 93: 1490-1493.
65. Fragomeni, B. O., D. A. L. Lourenco, S. Tsuruta, Y. Masuda, I. Aguilar, A. Legarra, T. J. Lawlor, and I. Misztal. 2015. Use of genomic recursions in single-step genomic BLUP with a large number of genotypes. *J. Dairy Sci.* 98: 4090-4094.
  66. Tsuruta, S., D. A. L. Lourenco, I. Misztal, and T. J. Lawlor. 2015. Genotype by environment interactions on culling rates and 305-d milk yield of Holstein cows in three US regions. *J. Dairy Sci.* 98: 5796-5805.
  67. Fragomeni, B. O., D. A. L. Lourenco, S. Tsuruta, Y. Masuda, I. Aguilar, and I. Misztal. 2015. Use of Genomic Recursions and Algorithm for Proven and Young Animals for Single-Step Genomic BLUP Analyses – a simulation study. *J. Anim. Breed. Genet.* 132: 340-345.
  68. Lourenco, D. A. L., S. Tsuruta, B. O. Fragomeni, Y. Masuda, I. Aguilar, A. Legarra, J. K. Bertrand, D. Moser, and I. Misztal. 2015. Genomic evaluation using single-step genomic best linear unbiased predictor in American Angus. *J. Anim. Sci.* 93:2653-2662.
  69. Lourenco, D. A. L., I. Misztal, B. O. Fragomeni, S. Tsuruta, I. Aguilar, B. Zumbach, R. J. Hawken, and A. Legarra. 2015. Accuracies of estimated breeding values with genomic information on males, females, or both: an example on broiler chicken. *Genet. Sel. Evol.* 47:56.
  70. Masuda, Y., I. Aguilar, S. Tsuruta, and I. Misztal. 2015. Technical note: Acceleration of sparse operations for average-information REML analyses with supernodal methods and sparse-storage refinements *J. Anim. Sci.* 93: 4670-4674.
  71. Masuda, Y., I. Misztal, S. Tsuruta, A. Legarra, I. Aguilar, D. A. L. Lourenco, B. O. Fragomeni, and T. J. Lawlor. 2016. Implementation of genomic recursions in single-step genomic BLUP for US Holsteins with a large number of genotyped animals. *J. Dairy. Sci.* 99: 1968-1974.
  72. Lourenco, D. A. L., I. Misztal, B. O. Fragomeni, S. Tsuruta, I. Aguilar, B. Zumbach, R. J. Hawken, and A. Legarra. 2016. Crossbred evaluations in single-step genomic BLUP using adjusted realized relationship matrices. *J. Anim. Sci.* 94: 909-919.
  73. Engblom, L., J. A. Calderón Díaz, M. Nikkilä, K. Gray, P. Harms, J. Fix, S. Tsuruta, J. Mabry, and K. Stalder. 2016. Genetic analysis of sow longevity and sow lifetime reproductive traits using censored data. *J. Anim. Breed. Genet.* 133: 138-144.
  74. Fragomeni, B. 2016. Modeling response to heat stress in pigs from nucleus and commercial farms in different locations in the United States. *J. Anim. Sci.* 94: 4789-4798
  75. Andonov, S., D. Lourenco, B. Fragomeni, Y. Masuda, I. Pocrnic, S. Tsuruta, and I. Misztal. 2017. Accuracy of breeding values in small genotyped populations using different sources of external information — A simulation study. *J. Dairy. Sci.* 100: 395-401.
  76. Fragomeni, B. O., D. A. L. Lourenco, S. Tsuruta, K. Gray, Y. Huang, and I. Misztal. 2016. Using single-step genomic BLUP to enhance the mitigation of seasonal losses due to heat stress in pigs. *J. Anim. Sci.* 94: doi:10.2527/jas.2016-0820.
  77. van der Heide, E. M. M., D. A. L. Lourenco, C. Y. Chen, W. O. Herring, R. L. Sapp, D. W. Moser, S. Tsuruta, Y. Masuda, B. J. Ducro, and I. Misztal. 2016. Sexual dimorphism in livestock species selected for economically important traits. *J. Animal Sci.* 94: 3684-3692.
  78. Tsuruta, S., D. A. L. Lourenco, I. Misztal, and T. J. Lawlor. 2017. Genomic analysis of cow mortality and milk production using a threshold-linear model. *J. Dairy Sci.* 100: 7295–7305.

79. Zhang, X., S. Tsuruta, S. Andonove, D. Lourenco, R. Sapp, C. Wang, and I. Misztal. 2017. Relationships among mortality, performance, and disorder traits in broiler chickens: a genetic and genomic approach. *Poultry Science*.
80. Masuda, Y., I. Misztal, A. Legarra, S. Tsuruta, D. A. L. Lourenco, B. Fragomeni, and I. Aguilar. 2017. Technical note: Avoiding the direct inversion of the numerator relationship matrix for genotyped animals in single-step genomic BLUP solved with preconditioned conjugate gradient. *J. Anim. Sci.* 95: 1: 49-52.
81. Oliveira, D. P., F. R. Araújo Neto, R. R. Aspilcueta-Borquis, D. J. d. A. Santos, L. G. Albuquerque, G. M. F. d Camargo, D. A. L. Lourenco, S. Tsuruta, I. Misztal, H. Tonhati. 2017. Reaction norm for yearling weight by single-step methodology in beef cattle. *J. Anim. Sci.* (submitted).
82. Lourenco, D. A. L., I. R. Menezes, B. O. Fragomeni, H. L. Bradford, J. B. S. Ferraz, I. Aguilar, S. Tsuruta, and I. Misztal. 2017. Implications of SNP selection in single-step genomic BLUP for genetic prediction and GWAS. *J. Anim. Sci.* (submitted).

**c. Experimental Station Publications: (4 total)**

1. Tsuruta, S. 1999. Use of records of bovine somatotropin treated cows in genetic evaluation. Dairy Report, University of Nebraska Cooperative Extension MP74-A. pg. 24.
2. Tsuruta, S., and I. Misztal. 2000. Application of a random regression model at different ages for final scores in Holsteins. *Animal and Dairy Science Annual Report*, The University of Georgia. pg. 75-82.
3. Oseni, S., I. Misztal, S. Tsuruta, and R. Rekaya. 2004. Effect of heat stress on days open in Holstein cows — Genetic analysis. *Animal and Dairy Science Annual Report*, The University of Georgia. pg. 217-225.
4. Tsuruta, S., and I. Misztal. 2004. Correlated traits of indirect prediction of transmitting abilities of productive live in Holsteins. *Animal and Dairy Science Annual Report*, The University of Georgia. pg. 235-243.

**d. Journal Abstracts: (102 total)**

1. Mitsumoto, T., S. Tsuruta, and M. Suzuki. 1983. Estimation of extension factors for milk and fat lactation records of dairy cattle in Hokkaido. *The Vth World Conference on Animal Production*.
2. Tsuruta, S., M. Suzuki, and T. Mitsumoto. 1991. Environmental effects of somatic cell counts in Holsteins. *Jpn. Zootech. Sci. Meeting*.
3. Tsuruta, S., M. Suzuki, and T. Mitsumoto. 1992. Influence of somatic cell counts on milk production in Holsteins. *Jpn. Zootech. Sci. Meeting*.
4. Tsuruta, S., J. F. Keown, L. D. Van Vleck, and I. Misztal. 1999. Genetic evaluation using test-day records of bovine somatotropin treated cows. *J. Dairy Sci.* 82 (Suppl. 1).
5. Klei, L., T. J. Lawlor, I. Misztal, and S. Tsuruta. 2000. Modelling accuracy of final score observations at different ages. *J. Dairy Sci.* 83 (Suppl. 1).
6. Tsuruta, S., I. Misztal, and I. Strandén. 2000. Preconditioned conjugate gradient method by iteration on data for solving mixed model equations. *J. Dairy Sci.* 83 (Suppl. 1).

7. Nobre, P. R. C., I. Misztal, S. Tsuruta, D. Lee, J. K. Bertrand, L. O. C. Silva, and P. S. Lopes. 2001. Analyses of sequential weights of Brazilian Zebu cattle using a multiple trait model by REML and Bayesian method. *J. Anim. Sci.* 79 (Suppl. 1).
8. Klei, L., S. Tsuruta, I. Misztal, and T. J. Lawlor. 2001. Evaluations for final score at different ages. *J. Dairy Sci.* 84 (Suppl. 1).
9. Tsuruta, S., I. Misztal, L. Klei, and T. J. Lawlor. 2001. Genetic correlation between final scores over time in Holsteins. *J. Dairy Sci.* 84 (Suppl. 1).
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11. Fujii, C., M. Suzuki, and S. Tsuruta. 2003. Analysis of persistency for milk production in first lactation. Japanese Society of Animal Science Meeting, Tokyo, Japan.
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33. Misztal, I., I. Aguilar, S. Tsuruta, J. P. Sanchez, and B. Zumbach. 2010. Studies on heat stress in dairy cattle and pigs. Proc. 9th WCGALP, Leipzig, Germany.
34. Aguilar, I., I. Misztal, A. Legarra, and S. Tsuruta. 2010. Efficient computations of genomic relationship matrix and other matrices used in the single-step evaluation. Proc. 9th WCGALP, Leipzig, Germany.
35. Lawlor, T. J., I. Misztal, S. Tsuruta, I. Aguilar, and A. Legarra. 2010. Decomposition and interpretation of genomic breeding values from a unified one-step national evaluation. Proc. 9th WCGALP, Leipzig, Germany.
36. Boonkum, W., I. Misztal, S. Tsuruta, M. Duangjinda, V. Pattarajinda, S. Tumwasorn, J. Sanpote, and S. Buaban. 2010. Proc. 9th WCGALP, Leipzig, Germany.
37. Aguilar, I., I. Misztal, D. L. Johnson, A. Legarra, S. Tsuruta, and T. J. Lawlor. 2010. Uso de información genómica en evaluaciones genéticas. *Agrociencia* 14:43-47.
38. Misztal, I., S. Tsuruta, I. Aguilar, A. Legarra, and T. J. Lawlor. 2011. Approximation of Genomic Accuracies in Single-Step Genomic Evaluation. INTERBULL meeting, Stavanger, Norway.
39. Aguilar, I., A. Legarra, S. Tsuruta, and I. Misztal. 2013. Genetic evaluation using unsymmetric single step genomic methodology with large number of genotypes. INTERBULL meeting, Nantes, France.
40. Tsuruta, S., I. Misztal, and T. J. Lawlor. 2014. Genome Wide Association Study on Cow Mortality in Three US Regions. Proc. 10th WCGALP, Vancouver, Canada.
41. Fragomeni, B. O., I. Misztal, D. A. L. Lourenco, S. Tsuruta, Y. Masuda, and T. J. Lawlor. 2014. Use of Genomic Recursions and Algorithm for Proven and Young Animals for Single-Step Genomic BLUP Analyses with a Large Number of Genotypes. Proc. 10th WCGALP, Vancouver, Canada.
42. Masuda, Y., I. Aguilar, S. Tsuruta, and I. Misztal. 2014. Acceleration of computations in AI REML for single-step GBLUP models. Proc. 10th WCGALP, Vancouver, Canada.

43. Aguilar, I., I. Misztal, S. Tsuruta, A. Legarra, and H. Wang. 2014. PREGSF90 – POSTGSF90: Computational tools for the implementation of single-step genomic selection and genome-wide association with ungenotyped individuals in BLUPF90 programs. Proc. 10th WCGALP, Vancouver, Canada.
44. Lourenco, D. A. L., I. Misztal, S. Tsuruta, I. Aguilar, T. J. Lawlor, and J. I. Weller. 2014. Are evaluations on young genotyped dairy bulls benefiting from the past generations? Proc. 10th WCGALP, Vancouver, Canada.
45. Forneris, N. S., A. Legarra, Z. G. Vitezica, S. Tsuruta, I. Aguilar, R. J. C. Cantet, and I. Misztal. Quality control of genotypes using heritability estimates of gene content. 2014. Proc. 10th WCGALP, Vancouver, Canada.
46. Misztal, I., H. Wang, I. Aguilar, A. Legarra, S. Tsuruta, D. A. L. Lourenco, B. O. Fragomeni, X. Zhang, W. M. Muir, H. H. Cheng, R. Okimoto, T. Wing, R. R. Hawken, B. Zumbach, and R. Fernando. 2014. GWAS using ssGBLUP. Proc. 10th WCGALP, Vancouver, Canada.
47. Lourenco, D. A. L., I. Misztal, S. Tsuruta, B. Fragomeni, I. Aguilar, Y. Masuda, and D. Moser. 2015. Direct and indirect genomic evaluations in beef cattle. INTERBULL meeting, Orlando, Florida.
48. Masuda, Y., I. Misztal, S. Tsuruta, D. A. L. Lourenco, B. O. Fragomeni, A. Legarra, I. Aguilar, and T. J. Lawlor. 2015. Single-step genomic evaluations with 570K genotyped animals in US Holsteins. INTERBULL meeting, Orlando, Florida.
49. Lourenco, D. A. L., S. Tsuruta, I. Misztal, B. Fragomeni, I. Aguilar, Y. Masuda, A. Legarra, D. W. Moser., and J. K. Bertrand. 2015. Large-scale single-step genomic BLUP evaluation for American Angus. INTERBULL meeting, Warsaw, Poland.
50. Masuda, Y., I. Misztal, S. Tsuruta, D. A. L. Lourenco, B. O. Fragomeni, A. Legarra, I. Aguilar, and T. J. Lawlor. 2015. Genomic predictions with approximated G-inverse from large-scale genotyping data. 2015. INTERBULL meeting, Warsaw, Poland.
51. Lourenco, D. A. L., S. Tsuruta, I. Misztal, B. Fragomeni, I. Aguilar, Y. Masuda, A. Legarra, D. W. Moser., and J. K. Bertrand. 2015. Use of genomic recursions in single-step genomic BLUP with a large number of genotypes. INTERBULL meeting, Warsaw, Poland.
52. Lawlor, T. J., S. Tsuruta, D. A. L. Lourenco, B. O. Fragomeni, Y. Masuda, I. Misztal, and I. Aguilar. 2016. Model  $R^2$  in single-step evaluation for udder depth in US Holsteins with different number of genotyped animals and use of external information from Interbull. INTERBULL meeting, Puerto Varas, Chile.
53. Tsuruta, S. 2017. Genetic Selection on Animals using Pedigree, Phenotypic, and Genomic Information. Bull. Jap. Fish. Res. Edu. Agen. No. 45, 41-46.
54. Misztal, I., H. L. Bradford, D. A. L. Lourenco, S. Tsuruta, Y. Masuda, A. Legarra, and T. J. Lawlor. 2017. Studies on inflation of GEBV in single-step GBLUP for type. INTERBULL meeting, Tallinn, Estonia.

#### **IV. SCIENTIFIC PRESENTATIONS**

##### **a. National/Regional: (29 total)**

1. Environmental effects of somatic cell counts in Holsteins. Jpn. Zootech. Sci. Meeting, Japan 1991.
2. Influence of somatic cell counts on milk production in Holsteins. Jpn. Zootech. Sci. Meeting, Japan, 1992.
3. Genetic evaluation using test-day records of bovine somatotropin treated cows. American Dairy Science Annual Meeting, Memphis, 1999.
4. Preconditioned conjugate gradient method by iteration on data for solving mixed model equations. ADSA ASAS Joint Annual Meeting, Baltimore, 2000.
5. Genetic correlation between final scores over time in Holsteins. ADSA ASAS PSA AMSA Joint Annual Meeting, Indianapolis, 2001.
6. Changes of genetic correlation between milk production and body size over time in Holsteins using random regression models. ADSA ASAS CSAS Joint Annual Meeting, Quebec, Canada, 2002.
7. Estimation of genetic correlations among production, body size, udder, and productive life traits over time in Holsteins. ADSA ASAS Joint Annual Meeting, Phoenix, Arizona, 2003.
8. Comparison of estimation methods for heterogeneous residual variances with random regression models. ADSA ASAS Joint Annual Meeting, Phoenix, Arizona, 2003.
9. Correlated traits used for indirect prediction of productive life in Holsteins. ADSA ASAS PSA Joint Annual Meeting, St. Louis, 2004.
10. Genetic parameters for conception rate and days open in Holsteins. EAAP Meeting, Uppsala, Sweden, 2006.
11. Genetic parameters for conception rate and days open in Holsteins. ADSA ASAS CSAS Joint Annual Meeting, Cincinnati, 2005.
12. THRGIBBS1F90 for estimation of variance components with threshold and linear models. ADSA ASAS Joint Annual Meeting, Minneapolis, 2006.
13. Computing options for genetic evaluation with a large number of genetic markers. Joint ADSA PSA AMPA ASAS Meeting, San Antonio, 2007.
14. Comparison of single and multiple trait random regression models for analyses of multi-parity test-days. Joint ADSA PSA AMPA ASAS Meeting, San Antonio, 2007.
15. Genetic correlations between conception rates and test-day milk yields using a threshold-linear random-regression model. ADSA ASAS Joint Annual Meeting, Indianapolis, 2008.
16. Use of low density SNP chip for parental verification in US Holsteins. ADSA CSAS ASAS Joint Annual Meeting, Montreal, Canada, 2009.
17. Multi breed genetic evaluation of calving ease and birth weight using a threshold-linear model in Gelbvieh cattle. ADSA PSA AMPA CSAS ASAS Joint Annual Meeting, Denver, Colorado, 2010.
18. Multiple trait genetic evaluation of linear type traits using genomic and phenotypic information in US Holsteins. ADSA PSA AMPA CSAS ASAS Joint Annual Meeting, Denver, Colorado, 2010.
19. Accuracy and bias of multiple-trait genomic evaluations for linear type traits in US Holsteins. ADSA-ASAS Joint Annual Meeting, New Orleans, Louisiana, 2011.
20. Multibreed genetic evaluation of calving ease and birth weight using a threshold-linear model in Brangus. ADSA-AMPA-ASAS-CSAS-WSASAS Joint Annual Meeting, Phoenix, Arizona, 2012.

21. Accuracy and bias for final score in US Holsteins from adding genomic information on bulls and cows. ADSA-AMPA-ASAS-CSAS-WSASAS Joint Annual Meeting, Phoenix, Arizona, 2012.
22. Bias in single-step genomic evaluations attributable to unknown parent groups. ADSA-ASAS Joint Annual Meeting, Indianapolis, Indiana, 2013.
23. Bias in single-step genomic evaluations attributable to unknown parent groups. EAAP Meeting, Nantes, France, 2013.
24. Genome-wide association study on dairy cow mortality in three US regions. ADSA-ASAS-CSAS Joint Annual Meeting. Kansas City, Missouri, 2014.
25. Genomic correlation between piglet preweaning mortality and individual birth weight using a bivariate threshold-linear maternal effect model. ADSA-ASAS Joint Annual Meeting, Orlando, Florida, 2015
26. Genome-wide association study on conception rate, milk production, and SCS in different stages of lactation for first three parities in US Holsteins. ADSA-ASAS Joint Annual Meeting, Orlando, Florida, 2015.
27. GWAS on conception rate and milk production in different stages of lactation for first three parities in US Holsteins. EAAP Meeting, Warsaw, Poland, 2015.
28. Practical approximation of accuracy in genomic breeding values for a large number of genotyped animals. ADSA-ASAS Joint Annual Meeting, Salt Lake City, Utah, 2016.
29. Genetic trends of linear type traits for validation of genomic evaluation in US Holsteins. ADSA Annual Meeting, Pittsburgh, Pennsylvania, 2017.

**b. International: (6 total)**

1. Estimation of changes of genetic parameters over time for type traits in Holsteins using random regression models. Proc. 7th WCGALP, Montpellier, France, 2002.
2. THRGIBBS1F90 for estimation of variance components with threshold and linear models. Proc. 8th WCGALP, Belo Horizonte, Brazil, 2006.
3. Variance components for conception rates in US Holsteins with threshold random regression models using different editing criteria. Proc. 8th WCGALP, Belo Horizonte, Brazil, 2006.
4. Multiple trait genetic evaluation of linear type traits using genomic and phenotypic data in US Holsteins. Proc. 9th WCGALP, Leipzig, Germany, 2010.
5. GWAS of mortality of US Holsteins in three regions in the US. Proc. 10th WCGALP, Vancouver, Canada, 2014.
6. Genetic selection in animals using pedigree, phenotypic, and genomic information. The 43rd Scientific Symposium of UJNR Aquaculture Pane, Nagasaki, Japan, 2015.

**V. AWARDS**

Gamma Sigma Delta, Honor Society of Agriculture, 1996

**VI. SERVICES IN PROFESSIONAL SOCIETIES**

**a. Membership:**

1. Sigma Xi, Scientific Research Society
2. American Dairy Science Association
3. Gamma Sigma Delta
4. American Society of Animal Science