Lawrence R. Schaeffer

Employment History

1965	-1969	Undergraduate training in Animal Science, Purdue University, Lafayette, Indiana, Truman Martin, advisor.
1969	-1971	M.Sc. program in Animal Breeding, Cornell University, Ithaca, New York, Charles R. Henderson, advisor.
1971	-1973	Ph.D. program in Animal Breeding, Cornell University, Ithaca, New York, Charles R. Henderson, advisor.
1973		Infantry Officer Basic Course, Fort Benning, Georgia, March 1 to May 30.
1973	-1975	Research Associate with Dr. Jim Wilton, University of Guelph, Dept. Animal & Poultry Science.
1975	-1979	Assistant Professor of Animal Breeding, University of Guelph.
1979	-1987	Associate Professor of Animal Breeding, University of Guelph.
1979	-1980	Director of Computer Services, Semex Canada, Part time basis (75% Semex, 25% University).
1987	-present	Professor of Animal Breeding, University of Guelph.

Awards

Received the J. L. Lush Award in Animal Breeding and Genetics from the American Dairy Science Association in 1988. The meeting was held in Edmonton, Alberta.

TEACHING

International Courses

No.	Year	Dates	Subject	Place/Students
1	1976	August	Dairy Sire Evaluation Dr. Knut Ronningen	Uppsala, Sweden 20
2	1976	August	Dairy Sire Evaluation Dr. Nicolas Kunzi	Zurch, Switz. 32
3	1985	February 13-15	Variance Components Dr. R. Politiek	Wageningen 25
4	1985	March 18-29	Advanced Topics in An. Brd. Dr. Werner Schlote	Berlin 33
5	1985	April 15-26	Advanced Topics in An. Brd. Dr. O. Syrstad	Asker, Norway 25
6	1987	October 26 2 weeks	Topics in Animal Brd. Dr. F. Orozco	Zaragoza, Spain 52
7	1993	July 12-23	Linear Models and Computing CGIL Summer Course	Guelph 30
8	1993	July 26- Aug. 6	Variance Components CGIL Summer Course	Guelph 30
9	1995	July 31- Aug. 11	Quantitative Genetics CGIL Summer Course	Guelph 30
10	1995	Aug. 21- Sep. 1	Linear Models CGIL Summer Course	Prague, Czech Rep 40
11	1996	May 29- June 1	Topics in Animal Brd. Drs. Lucia and Luiz	Jaboticabal, Brazil 35
12	1997	June 23- 26	Random Regression Models with Julius van der Werf	Guelph 45
13	1998	Jan. 5- 9	Variance Components Sabbatical course	Armidale, NSW 40
14	1998	July 13- 17	Random Regression Models Dr. Ab Groen	Wageningen 35

GRADUATE STUDENTS

Advisor To

Number	Name	Country	Degree	Date Completed
1	Paolo Serventi	Italy	M.Sc.	December 1978
2	G. F. Spencer Hudson	England	M.Sc.	December 1979
3	Alanna Kerr	Canada	M.Sc.	May 1983
4	Anne McClelland	Canada	M.Sc.	April 1983
5	Dan Dwyer	USA	M.Sc.	June 1984
6	Brian Van Doormaal	Canada	M.Sc.	June 1984
7	Phil McEwen	Canada	M.Sc.	July 1984
8	Daib Aziz	Iraq	Ph.D.	January 1986
9	Tag Ali	Sudan	Ph.D.	June 1986
10	Anne Winkelman	Canada	M.Sc.	September 1987
11	Peter Sullivan	Canada	M.Sc.	September 1988
12	Jennifer Tierney	USA	M.Sc.	December 1992
13	Fabiola Canavesi	Italy	M.Sc.	July 1993
14	Alfred Archer	Canada	M.Sc.	December 1994
15	Hector Uribe	Chile	Ph.D.	July 14, 1997
16	Gerrit Kistemaker	Netherlands	Ph.D.	August 20, 1997
17	Gladys Huapaya	Peru-Canada	M.Sc.	August 21, 1997
18	Mohammed Shahrbaback	Iran	Ph.D.	August 22, 1997
19	Flavio Schenkel	Brazil	Ph.D.	August 25, 1998
20	Xuelu Liu	China	M.Sc.	December 9, 1998
21	Yamato Atagi	Japan	M.Sc.	December 6, 1999
22	Longyang Wu	China	Ph.D.	May 25, 2000
23	Fiona Galbraith	Canada	M.Sc.	
24	Renate van Dorp	Netherlands	Ph.D.	
25	Bethany Muir	Canada	Ph.D.	
26	Mahyar Heydarpour	Iran	Ph.D.	

VISITING RESEARCHERS

There have been a number of visitors and postdocs that have worked with me during the years. Only visitors that stayed for more than a few days are listed.

Name	Country	Period
Janusz Jamrozik	Poland	1987-1988 and 1994-1997
Carmen Periera	Brazil	1989-1990
Yoshitaka Nagamine	Japan	1989-1990
Wilfried Brade	Germany	1991
Ewa Ptak	Poland	1991-1992
Reinhard Reents	Germany	1993
Fernando Grignola	Uruguay	1996-1997
C. R. Henderson	Cornell	1981-1984
Ignacy Misztal	Poland	1985
Henrik Solbu	Norway	1986
Bjarne Gjerde	Norway	1986-1987
Henner Simianer	Germany	1986-1987
Carmen Valdovinos	Spain	1988
Erling Strandberg	Sweden	1988
Suzan Horst	Netherlands	1991-1992
Yoshiyuki Sasaki	Japan	1993
Jan Schouten	Netherlands	1994
Luiz Otavio Campo da Silva	Brazil	1996
Aiguo Wang	China	1996-1997
Bjarne Gjerde	Norway	1997
Sander de Roos	Netherlands	1997
Marc Rutten	Netherlands	1999
Mario Calus	Netherlands	2000
Ernest Gasarabwe	Rwanda	2000
Hossein Yazdi	Iran	2001
Zhiqun Guo	China	2001
Runqing Yang	China	2002
Ludmilla Dedkova	Czech Rep.	2002

PUBLISHED PAPERS
From 1995 to Present

111 Canavesi, F., L. R. Schaeffer, E. B. Burnside, G. B. Jansen, and P. Rozzi. 1995. Sire-by-herd interaction effect when variances across herds ae heterogeneous. I. Expected genetic progress. J. Anim. Breed. Genet. 112:95-106.

112 Canavesi, F., L. R. Schaeffer, E. B. Burnside, G. B. Jansen, and P. Rozzi. 1995. Sire-by-herd interaction effect when variances across herds ae heterogeneous. II. Within-herd variance component estimates. J. Anim. Breed. Genet. 112:107-116.

113 Reents, R., J. Jamrozik, L. R. Schaeffer, and J. C. M. Dekkers. 1995. Estimation of genetic parameters for test day records of somatic cell score. J. Dairy Sci. 78:2847-2857.

114 Reents, R., J. C. M. Dekkers, and L. R. Schaeffer. 1995. Genetic evaluation for somatic cell score with a test day model for multiple lactations. J. Dairy Sci. 78:2858-2870.

115 Schaeffer, L. R., R. Reents, and J. Jamrozik. 1996. Factors influencing international comparisons of dairy sires. J. Dairy Sci. 79:1108-1116.

116 Schaeffer, L. R. and J. Jamrozik. 1996. Multiple-trait prediction of dairy cattle lactation yields. J. Dairy Sci. 79:2044-2055.

117 Jamrozik, J. and L. R. Schaeffer. 1997. Estimates of genetic parameters for a test day model with random regressions for yield traits of first lactation Holsteins. J. Dairy Sci. 80:762-770.

118 Jamrozik, J., L. R. Schaeffer, and J. C. M. Dekkers. 1997. Genetic evaluation of dairy cattle using test day yields and random regression model. J. Dairy Sci. 80:1217-1226.

119 Jamrozik, J., G. J. Kistemaker, J. C. M. Dekkers, and L. R. Schaeffer. 1997. Comparison of possible covariates for use in a random regression model for analyses of test day yields. J. Dairy Sci. 80:2550-2556.

120 Jairath, L., J. C. M. Dekkers, L. R. Schaeffer, Z. Liu, E. B. Burnside, and B. Kolstad. 1998. Genetic evaluation for herd life in Canada. J. Dairy Sci. 81:550-562.

121 Mehrabani-Yeganeh, H., J. P. Gibson, and L. R. Schaeffer. 1999. Using recent versus complete pedigree data in genetic evaluation of a closed nucleus broiler line. Poultry Sci. 78:937-941.

122 Mehrabani-Yeganeh, H., J. P. Gibson, and L. R. Schaeffer. 1999. Effect of more stringent convergence criterion of estimated breeding values on response to selection. J. Anim. Breed. Genet. 116:339-350.

123 Mehrabani-Yeganeh, H., J. P. Gibson, and L. R. Schaeffer. 2000. Including coefficients of inbreeding in BLUP evaluation and its effect on response to selection. J. Anim. Breed. Genet. 117:145-152.

124 Schaeffer, L. R., J. Jamrozik, G. J. Kistemaker, and B. J. Van Doormaal. 2000. Experience with a test day model. J. Dairy Sci. 83:1135-1144.

125 Grignola, F., L. R. Schaeffer. 2000. Relationships between evaluations of Canadian and USA Holstein bulls for longevity and somatic cell score. Livest. Prod. Sci. 65:161-165.

126 Schenkel, F. S., L. R. Schaeffer. 2000. Effects of nonrandom parental selection on estimation of variance components. J. Anim. Breed. Genet. 117:225-240.

127 Uribe, H., L. R. Schaeffer, J. Jamrozik, and T. J. Lawlor. 2000. Genetic evaluation of dairy cattle for conformation traits using random regression models. J. Anim. Breed. Genet. 117:247-260.

128 Jamrozik, J., L. R. Schaeffer, and G. B. Jansen. 2000. Approximate accuracies of prediction from random regression models. Livest. Prod. Sci. 66:85-92.

129 Schaeffer, L. R., J. Jamrozik, R. Van Dorp, D. F. Kelton, D. W. Lazenby. 2000. Estimating daily yields of cows from different milking schemes. Livest. Prod. Sci. 65:219-228.

130 Collard, B. L., P. J. Boettcher, J. C. M. Dekkers, D. Petitclerc, L. R. Schaeffer. 2000. Relationships between energy balance and health traits of dairy cattle in early lactation. J. Dairy Sci. 83:2683-2690.

131 Jamrozik, J., L. R. Schaeffer. 2000. Comparison of Two computing algorithms for solving mixed model equations for multiple trait random regression test day models. Livest. Prod. Sci. 67: 143-153.

132 Wu, L., L. R. Schaeffer. 2000. Reducing the effect of parent averages from animal solutions in mixed model equations. J. Anim. Breed. Genet. 117: 361-374.

133 Luo, M. F., P. J. Boettcher, L. R. Schaeffer, J. C. M. Dekkers. 2001. Bayesian inference for categorical traits with an application to variance component estimation. J. Dairy Sci. 84:694-704.

134 Schaeffer, L. R. 2001. Multiple trait international bull comparisons. Livest. Prod. Sci. 69:145-153.

135 Schaeffer, L. R., M. Calus, X. Liu. 2001. Comparison of alternative genetic evaluation methods for conformation traits. Livest. Prod. Sci. 69:129-137.

136 Jamrozik, J., D. Gianola, L. R. Schaeffer. 2001. Bayesian estimation of genetic parameters for test day records in dairy cattle using linear hierarchical models. Livest. Prod. Sci. 71:223-240.

137 Schenkel, F. S., L. R. Schaeffer, P. J. Boettcher. 2002. Comparison between estimation of breeding values and fixed effects using Bayesian and empirical BLUP estimation under selection on parents and missing pedigree information. Genet. Sel. Evol. 34:41-59.

138 Jamrozik, J., L. R. Schaeffer, K. A. Weigel. 2002. Genetic evaluation of bulls and cows with single and multiple country test day models. J. Dairy Sci. 85:1617-1622.

139 Jamrozik, J., L. R. Schaeffer, K. A. Weigel. 2002. Estimates of genetic parameters for single and multiple country test day models. J. Dairy Sci. 85:3131-3141.

CONTRIBUTIONS TO BOOKS

1 Kennedy, B. W. and L. R. Schaeffer. 1990. Reproductive technology and genetic evaluation. In: *Advances in Statistical Methods for Genetic Improvement of Livestock*, editted by D. Gianola andK. Hammond, AGBU, University of New England, Armidale, Australia.

2 Henderson, C. R. 1984. *Applications of Linear Models in Animal Breeding*. University of Guelph, Guelph, ON. Third edition editted by L. R. Schaeffer.

3 Searle, S. R. 1998. *Notes on C. R. Henderson's book*. University of Guelph, Guelph, ON. Editted by L. R. Schaeffer.

4 Schaeffer, L. R. 2002. The Test Day Model: A Case Study. In *Intellectual Property.* editted by M. F. Rothschild and S. Newman for a CRC publication.

PRESENTATIONS

Invited Papers at Scientific Meetings

1 Schaeffer, L. R. 1979. Estimation of variance and covariance components for average daily gain and backfat thickness in swine. Henderson Conference, Ithaca, NY - July 16-17.

2 Schaeffer, L. R. 1983. Sire and cow evaluation under multiple trait models. ADSA, Madison, WI.

3 Schaeffer, L. R. 1990. The Legacy of C. R. Henderson: Contributions to prediction of genetic merit. ADSA, Raleigh, NC.

4 Schaeffer, L. R. 1990. Problems in estimating covariance matrices in multitrait animal models. 4^{th}WCGALP, Edinburgh.

5 Schaeffer, L. R., R. Reents, and J. Jamrozik. 1995. Factors influencing international comparisons of dairy sires. ADSA, Ithaca, NY.

6 Schaeffer, L. R., F. S. Schenkel, and L. A. Fries. 1998. Selection bias in animal model evaluations. 6th WCGALP, Armidale.

7 Schaeffer, L. R., J. Jamrozik, G. J. Kistemaker, and B. J. Van Doormaal. 1999. Experience with a test day model. ADSA, Memphis, TN.

8 Schaeffer, L. R. 2002. Random regression models in animal breeding. ADSA, Quebec City, PQ.

At Scientific Meetings - From 1995

66 Reents, R., J. C. M. Dekkers, and L. R. Schaeffer. 1995. Genetic evaluation for SCC with a multiple-lactation test day model. ADSA, Ithaca, NY.

67 Jamrozik, J. and L. R. Schaeffer. 1995. Genetic parameters for first lactation milk, fat, and protein yields of Canadian Holsteins with random regression model. ADSA, Ithaca, NY.

68 Jamrozik, J., L. R. Schaeffer, and J. C. M. Dekkers. 1995. Genetic evaluation of dairy cattle using test day yields and random regression model. ADSA, Ithaca, NY.

69 Weigel, D. J., M. M. Lohuis, and L. R. Schaeffer. 1995. MACE for the conformation traits for six countries. INTERBULL, Prague, Czech Rep.

70 Reents, R., J. C. M. Dekkers, and L. R. Schaeffer. 1995. Genetic evaluation with a multiple lactation test day model for SCS and production traits. INTERBULL, Prague, Czech Rep.

71 Miglior, F., G. B. Jansen, and L. R. Schaeffer. 1995. Inclusion of time-region-age-parity effect in the Canadian genetic evaluation for production traits. INTERBULL, Prague, Czech Rep.

72 Handley, J. A., J. W. Wilton, L. R. Schaeffer, I. B. Mandell, and R. A. Kemp. 1996. Ultrasound measurements for evaluating carcass merit in performance tested bulls. CSAS, Lethbridge, AB.

73 Handley, J. A., J. W. Wilton, L. R. Schaeffer, I. B. Mandell, and R. A. Kemp. 1996. Beef carcass trait EPD adjusted for backfat, age or weight. CSAS, Lethbridge, AB.

74 Jamrozik, J., L. R. Schaeffer, and J. C. M. Dekkers. 1996. Comparison of two random regression models applied to Canadian Holstein first lactation test day records. INTERBULL, Netherlands.

75 Schaeffer, L. R. 1996. Explanation of new de-regression procedure. INTERBULL, Verden, Germany.

76 Schenkel, F. S. and L. R. Schaeffer. 1998. Effects of non translation invariant selection on estimates of variance components. 6th WCGALP, Armidale.

77 Jamrozik, J., L. R. Schaeffer, and F. Grignola. 1998. Parameters for production traits and somatic cell score of Canadian Holsteins with multiple trait random regression model. 6th WCGALP, Armidale.

78 Kistemaker, G. J. and L. R. Schaeffer. 1998. Adjustment for heterogeneous herd-test-day variances. INTERBULL, Rotorua, NZ.

79 Jamrozik, J., G. B. Jansen, L. R. Schaeffer, and Z. Liu. 1998. Analysis of persistency of lactation calculated from a random regression test day model. INTERBULL, Rotorua, NZ.

80 Luo, M. F., P. J. Boettcher, J. C. M. Dekkers, and L. R. Schaeffer. 1998. Variance component estimation of calving ease and stillbirth of Canadian Holstein using Bayesian analysis. ADSA,ASAS, Denver, CO.

81 Muir, B. L., P. J. Boettcher, J. C. M. Dekkers, L. R. Schaeffer, B. W. McBride, and D. Petitclerc. 1998. Relationships of energy balance in early lactation with health and reproductive traits in Holstein cattle. ADSA,ASAS, Denver, CO.

82 Atagi, Y., G. B. Jansen, L. R. Schaeffer. 1999. Impact of Japanese imported semen evaluations on international bull evaluations. INTERBULL, Zurich, Switzerland.

83 Jamrozik, J., L. R. Schaeffer, K. A. Weigel. 2001. International genetic evaluation of dairy sires and cows using first lactation test day yields. INTERBULL, Budapest, Hungary.

84 van Dorp, T. E., L. R. Schaeffer, P. J. Boettcher, D. Kelton, M. M. Shoukri. 2002. Genetic selection programs for resistance to mastitis. 7th WCGALP, Montpellier, France.

85 Yazdi, M. H., L. R. Schaeffer. 2002. Prediction of single locus effects using gametic models. 7th WCGALP, Montpellier, France.

86 McKay, L. R., L. R. Schaeffer, I. McMillan. 2002. Analysis of growth curves in rainbow trout using random regression. 7th WCGALP, Montpellier, France.

87 Guo, Z., L. R. Schaeffer. 2002. Random regression submodel comparison. 7th WCGALP, Montpellier, France.

88 Jamrozik, J., L. R. Schaeffer. 2002. Bayesian comparison of random regression models for test-day yields in dairy cattle. 7th WCGALP, Montpellier, France.

89 Szkotnicki, W. J., L. R. Schaeffer. Tests of random number generators. 7th WCGALP, Montpellier, France.

At Other Events - From 1995

12 Schaeffer, L. R. 1996. Animal models - Why, When, and How to Use Them. Brazilian Society of Animal Breeders. Ribierao Preto, S.P., Brazil.

13 Schaeffer, L. R. 1999. Multiple Across Country Evaluation (MACE) of Beef Cattle. Genetic Prediction Workshop, BIF. Kansas City, Missouri, December 4, 1999.