

CURRICULUM VITAE

Udaya DeSilva

Associate Professor

Phone: +1 405 744 8847

FAX: +1 267 220 5936

E-Mail: udaya.desilva@okstate.edu

Department of Animal Science

329P Noble Research Center

Oklahoma State University

Stillwater, OK 74078-6051

U.S.A.

Education

Ph.D., 1998 Molecular Genetics, Washington University, St. Louis, MO
M.S., 1992 Animal Genetics, Kansas State University, Manhattan, KS
B.V.Sc. 1986 Veterinary Medicine, University of Peradeniya, Sri Lanka

Professional Experience

Associate Professor 2006- Department of Animal Science, OSU
Adjunct Associate Professor 2009 - Department of Biochemistry and Molecular Biology, OSU
Assistant Professor 2001 – 2006, Department of Animal Science, Oklahoma State University, Stillwater, OK
Adjunct Graduate Faculty 2004- Present, Facultad de Zootecnia, Universidad Autonoma de Chihuahua, Chihuahua, Mexico
Research Scientist 2000-2001, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Sydney, Australia
Postdoctoral Fellow 1998-2000, CSIRO, Sydney, Australia
Graduate Assistant 1993-1998, National Human genome Research Institute (NHGRI), NIH, Bethesda, MD
1992-1993, Washington University, St. Louis, MO
Graduate Student 1990-1992, Kansas State University, Manhattan, KS
Veterinary Research Officer 1990, Veterinary Research Institute, Sri Lanka
Assistant Lecturer 1989-1990, Ruhuna University, Sri Lanka
Veterinarian 1986-1989, Mahaweli Authority, Sri Lanka

Awards and Honors

2010 - Alpha Zeta Outstanding Teacher Award
2009 - Tyler Award for Outstanding Faculty – Department of Animal Science
2008 - Outstanding Faculty Award - OSU Interfraternity and Panhellenic Council
2008 - Honorary Inductee – Golden Key Honor Society
2007 - Gamma Sigma Delta
2006 - Sigma Xi Young Investigator Award
2003 - Sigma Xi Scientific Honor Society
1991 - Phi Kappa Phi National Honor Society
1990 - Fulbright Fellowship
1989 - Postgraduate Scholarship by the Sri Lanka President's Scholarship Fund
1987 - Cuba - Sri Lanka Bilateral Scientific Exchange Scholarship

- 1986 - Second Class Upper Division Honors Degree in Veterinary Medicine
- 1980 - Government of India Cultural Exchange Scholarship

Teaching Assignment

ANSI3423 Animal Genetics
ANSI4843 Applied Biotechnology in Animal Science
HONR1000 – Science and the Movies
Academic Advisor for 31 Animal Science students
Chair or member of 16 graduate (MS or PhD) committees

Departmental, College and University Responsibilities

Departmental Strategic Planning Committee - 2004
Faculty Council – 2007-2010, 2010-2013
Faculty Committee of the Faculty Council 2007-2010
Chair-Faculty Committee of the Faculty Council 2008-2010
Honors Council 2007-2009
General Faculty Representative – Diversity Advisory Board 2005-2008
Faculty advisor – Sri Lanka Student Association
Treasurer – Asian American Faculty and Staff Association 2006-2008
General Faculty Council Representative - Library Advisory Committee 2002-2005
Chair Library Advisory Committee 2004-2005
Member – Agriculture Faculty Council 2004-2006
Chair-elect Reappointment, Promotion and Tenure Committee of AFC – 2004-2005
AFC Liaison for the DASNR Curriculum and Academic Standards Committee - 2005-2006

National International Responsibilities

Member NRSP-8 National Animal Genome Research Program of the US Department of Agriculture and participate in cattle, sheep and swine committees.
Cattle and Sheep Organizing Committee
Secretary 2004-2005
Chair 2005-2006
Participant of multi-state project NC-1004, Genetic and Functional Genomic Approaches to Improve Production and Quality of Pork
Secretary, Organizing Committee 2005-06
Panel member USDA-PRRS grant review panel 2008
Panel member USDA-CSREES 43.0 Animal Genome grant review panel 2005, 2008
Panel member USDA-CSREES 43.1 Animal Genome Reagents and Tools grant review panel 2005
Ad Hoc reviewer – USDA-CSREES 41.0 Animal Reproduction– 2005
Ad Hoc reviewer – Animal Genetics, Genetics Selection and Evolution, Journal of General Virology, Gene, Cytogenetics and Genome Research, DNA and Cell Biology and Journal of Animal Science,
Ad Hoc reviewer – BARD, The United States – Israel Binational Agricultural Research and Development Fund, 2003, 2005-2006
Ad Hoc reviewer – Indian Academy of Sciences, 2003
Member Sri Lanka Veterinary Council

Publications:

Book Chapters

Geisert, R. D., Ross, J. W., Ashworth, M.D., White, F. J., Johnson, G. A., Hu, J., and **DeSilva U.** 2005 Maternal recognition of pregnancy signal or endocrine disruptor: The two faces of oestrogen during establishment of pregnancy in the pig. In: Control of Pig Reproduction VII. R. Kraeling and C. Ashworth, Eds, Nottingham University Press, pp 131-145

Peer-reviewed publications in the last five years

Fernando, S.C., Purvis II, H.T., Najar, F.Z., Sukharnikov, L.O., Krehbiel, C.R., Nagaraja, T.G., Roe, B.A., and **DeSilva, U.** (2010) Rumen Microbial Population Dynamics during Adaptation to a High Grain Diet. Applied and Environmental Microbiology 76, 7482-90

Long, N. M., Prado-Cooper, M. J., Krehbiel, C. R., **DeSilva, U.**, and Wettemann, R. P. (2010) Effects of nutrient restriction of calves during early gestation on postnatal growth, carcass and organ characteristics and regulation of plasma glucose. Journal of Animal Science, 88, 3251-61

Mohan, S., Davis, R. L., **DeSilva, U.**, and Stevens, C. W. (2010) Dual regulation of μ opioid receptors in SK-N-SH neuroblastoma cells by morphine and interleukin-1 β : Evidence for opioid-immune crosstalk. Journal of Neuroimmunology 227, 26-34

Ashworth, M. D., Ross, J. W., Stein, D. R., White, F. J., **DeSilva, U.**, and Geisert, R. D. Endometrial caspase 1 and interleukin-18 expression during the oestrous cycle and peri-implantation period of pregnancy and response to early exogenous oestrogen administration. (In press). Reproductive Biology and Endocrinology 2010

James, M. M., **DeSilva, U.** and Gilliland, S. E., (2009) A Diagnostic method to allow strain-level identification of enterotoxigenic *Staphylococcus aureus* based on the nucleotide sequence of enterotoxin gene and the amino acid sequence of its enterotoxin (submitted)

Talley, J. L., Wayadande, A. C., Wasala, L. P., Gerry, A. C., Fletcher, J., **DeSilva, U.**, and Gilliland, S. E. (2009) Association of *E.coli* O157:H7 with flies (Muscidae, Calliphoridae) captured in leafy green fields and experimental transmission to spinach leaves by house flies (Diptera: Muscidae). Journal of Food Protection 72, 1547-1552

Reddy, A.R., Zheng, Y., Jagadeeswaran, G., Macmil, S., Wiley, G., Roe, B.A., **DeSilva, U.**, Zhang, W., and Sunkar, R. 2009. Cloning, characterization and expression analysis of porcine microRNAs. BMC Genomics 10:65

Davis, R. L., Buck, D. J., Saffarian, N., Mohan, S., Fernando, S. C., **DeSilva, U.** and Stevens, C. W. (2008) β -Funaltrexamine inhibits inducible nitric-oxide synthase expression in human astroglial cells. *Journal of Neuroimmunology* 203, 150-153.

Ross, J. W., Ashworth, M. D., White, F. J., Johnson, G. A., Ayoubi, P. J., **DeSilva, U.**, Whitworth, K. M., Prather, R. S., and Geisert, R. D. (2007) Premature estrogen exposure alters endometrial gene expression to disrupt pregnancy in the pig. *Endocrinology* 148, 4761-4773.

DeSilva, U. and Pillai, A. T. V. Genetic control of fat deposition in cattle. 1-8. 2007. Amarillo, TX, Texas A&M University Agricultural Research and Extension Center. Plains Nutrition Council Spring Conference. 3-29-0007.

Fernando, S. C., Najjar, F. Z., Guo, X., Zhou, L., Fu, Y., Geisert, R. D., Roe, B. A., and **DeSilva, U***. 2007 Isolation and Characterization of the Porcine Kallikrein Gene Family: Genomic Structure, Radiation-Hybrid Mapping and Differential Expression Analysis. *Genomics* 89: 429-438

Bommineni, Y.R., Dai, H., Gong, Y. X., Soulages, J. L., Fernando, C. S., **DeSilva, U.**, Prakash, O., and Zhang, G. 2007 Fowlicidin-3 is an alpha-helical cationic host defense peptide with potent antibacterial and lipopolysaccharide-neutralizing activities. *FEBS Journal* 274 (2): 418-428

Geisert, R. D., Ross, J. W., Ashworth, M. D., White, F. J., Johnson, G. A., and **DeSilva, U.** (2006) Maternal recognition of pregnancy signal or endocrine disruptor: the two faces of oestrogen during establishment of pregnancy in the pig. *Soc Reprod Fertil Suppl* 62:131-45

Ashworth, M. D., White, F. J., Ross, J. W., Hu, J., **DeSilva, U.**, Johnson, G. A., and Geisert, R. D., 2006 Expression of porcine endometrial prostaglandin synthase during the estrous cycle and early pregnancy, and following endocrine disruption of pregnancy. *Biology of Reproduction* 74, 1007-1015

Fernando, S. C., Ashworth, M.S., Ross, J. W., Geisert, R. D., and **DeSilva, U***. 2006 Porcine endometrial and conceptus tissue kallikrein 1,4,11 and 14 gene expression. *Reproduction* 132,1-10

Ross, J. W., Smith, T. K., Krehbiel, C. R., Malayer, J. R., **DeSilva, U.**, Morgan, J. B., White, F. J., Hersom, M. J., Horn, G. W., and Geisert, R. D. (2005). Effects of grazing program and subsequent finishing on gene expression in different adipose tissue depots in beef steers. *Journal of Animal Science* 83, 1914-1923.

Abstracts (Last five years):

Carlos-Valdez, L., L. O. Burciaga-Robles, D. L. Step, A. W. Confer, R. W. Fulton, **U. DeSilva**, X. Gou and C. R. Krehbiel. 2009. Effect of timing of Bovine Viral Diarrhea Virus exposure in relation to Mannheimia haemolytica challenge on immune response and muscle and fat gene expression changes in growing steers. Plains Nutr. Council Spring Conf. Publ. p. 106. Texas A&M Research and Extension Center, Amarillo.

Carlos-Valdez, L., L. Burciaga-Robles, D. L. Step, R. W. Fulton, A. W. Confer, **U. DeSilva**, and C. R. Krehbiel. 2009. Effect of timing of Mannheimia haemolytica challenge following short-term exposure to bovine viral diarrhea virus type 1b on serum cytokine concentrations and muscle and fat gene expression changes in growing beef steers. J. Anim. Sci. 87(E-Suppl. 2/J. Dairy Sci. Vol. 92, E-Suppl. 1):392.

Johnson, J., D. R. Stein, L. O. Burciaga-Robles, B. P. Holland, D. L. Step, **U. DeSilva**, and C. R. Krehbiel. 2009. Use of microarray to determine genes differentially expressed in muscle and subcutaneous fat of heifers never treated or considered chronically morbid after a 63-d preconditioning program. J. Anim. Sci. 87(E-Suppl. 3):65.

Johnson, J., D. R. Stein, L. O. Burciaga-Robles, B. P. Holland, D. L. Step, **U. DeSilva**, and C. R. Krehbiel. 2009. Use of microarray to determine genes differentially expressed in muscle and subcutaneous fat of heifers never treated or considered chronically morbid after a 63-d preconditioning program. Plains Nutr. Council Spring Conf. Publ. p. 95. Texas A&M Research and Extension Center, Amarillo.

Johnson, J., D. R. Stein, L. O. Burciaga-Robles, B. P. Holland, D. L. Step, J. W. Ritchey, **U. DeSilva**, and C. R. Krehbiel. 2009. Effect of times treated for bovine respiratory disease during preconditioning on gene expression in muscle and adipose tissue of beef heifers. J. Anim. Sci. 87(E-Suppl. 2/J. Dairy Sci. Vol. 92, E-Suppl. 1):527.

Lancaster, P. A., E. D. Sharman, G. W. Horn, C. R. Krehbiel, D. R. Stein, and **U. DeSilva**. 2009. Effects of starch versus fiber-based supplements on adipose tissue gene expression of stocker cattle grazing dormant native range. J. Anim. Sci. 87(E-Suppl. 3):115.

Mills, R. L., L. Carlos-Valdez, L. O. Burciaga-Robles, D. Stein, D. L. Step, R. W. Fulton, **U. DeSilva**, and C. R. Krehbiel. 2009. Microarray analysis of muscle tissue from beef calves using an experimental model of acute bovine respiratory disease. Page 83 in Proc. Bovine Respiratory Disease Symposium, Colorado Springs, CO.

Mills, R. L., L. Carlos-Valdez, L. O. Burciaga-Robles, D. Stein, D. L. Step, R. W. Fulton, **U. DeSilva**, and C. R. Krehbiel. 2009. Transcriptome analysis of muscle tissue from calves infected with bovine viral diarrhea virus and Mannheimia haemolytica. J. Anim. Sci. 87(E-Suppl. 2/J. Dairy Sci. Vol. 92, E-Suppl. 1):526.

Sharman, E. D., P. A. Lancaster, G. G. Hilton, C. R. Krehbiel, H. T. Purvis, D. R. Stein, **U. DeSilva**, and G. W. Horn. 2009. Effects of type and amount of supplementation on performance, carcass characteristics, and gene expression of adipose tissue in steers

wintered on dormant native range. Plains Nutr. Council Spring Conf. Publ. p. 103. Texas A&M Research and Extension Center, Amarillo.

Stein, D., A. Pillai, U. DeSilva, C. R. Krehbiel, G. W. Horn, M. McCurdy, J. J. Wagner, P. Ayoubi, J. B. Morgan, and R. D. Geisert. 2009. Effects of different winter growing programs and subsequent finishing on gene expression in different adipose tissue depots in beef steers. *J. Anim. Sci.* 87(E-Suppl. 3):75.

Prasad, S., **DeSilva, U.**, Mireless DeWitt, C. Overexpression of Recombinant Sheep Prion Protein (RecShPrPc) using SK-N-SH cells and its detection using Western Blotting. 2009. IFT09 meeting, Anaheim, CA

DeSilva, U., Fernando, S. C., Krehbiel, C. R., Najar, F. Z., Wiley, G., Macmil, S., Nagaraja, T. G., and Roe, B. A. Community transcriptomics-based meta-functional genomic analysis of rumen microflora. 2008. 6th INRA-RRI Gut Microbiome Symposium, Clermont-Ferrand, France

Stein, D. R., Pillai, A., **DeSilva, U.**, Krehbiel, C.R. Morgan, J.B., Horn, G. W., McCurdy, M.P., Wagner, J. J., Ayoubi, P. and Geisert, R.D. Effects of different winter growing programs and subsequent finishing on gene expression in different adipose tissue depots in beef steers. 2008 ASAS mid-west meetings, Ames, Iowa

Mohan, S., Fernando, S.C., **DeSilva, U.**, Davis, R.L., and Stevens, C.W. 2008. Signaling pathways involved in IL-1 beta-induced regulation of hMOR expression in neurons. *Journal of Neuroimmunology* 203:151

Fernando, S. C., Krehbiel, C. R., Najar, F. Z., Purvis, H. T., Wiley, G., Macmil, S., Nagaraja, T. G., Roe, B. A., and **DeSilva, U.** Meta-Functional Genomics of the Rumen: Towards understanding the complex metabolic pathways in nutrient digestion. 2008. Plant and Animal Genome XVI Conference, San Diego, CA

Fernando, S.C., Purvis, H.T., Najar, F.Z., Wiley, G., Macmil, S., Nagaraja, T.G., Krehbiel, C.R., Roe, B.A., and **DeSilva, U.** Meta-Functional Genomics of the Rumen Biome. 2007 *Journal of Animal Science* 90:569

Thomas, S., Fernando, S.C., **DeSilva, U.** and Mireless DeWitt, C., Production of recombinant sheep prion protein (RecShPrP) and its detection in muscle foods using Western blotting and Immuno-PCR. 2007 IFT Annual Meeting Technical Program Abstracts, Institute of Food Technologists, Chicago, IL. Poster Session: 053-15 Biotechnology

Thomas S, Fernando SC, **DeSilva U**, Mireles DeWitt C. Production of recombinant sheep prion protein (RecShPrP) and its detection in muscle foods using western blotting and immuno – PCR. 2007 FAPC/IFT-OK Research Symposium. Oral presentation # O-2

McLaughlin, B., Burciaga-Robles, L.O., Step, D.L., Krehbiel, C.R., Montelongo, M., Confer, A.W., Fulton, R.W., Richards, C.J., **DeSilva, U.**, and Zhang, G. 2007. Evaluation of a bovine respiratory pathogen exposure model on immune response and short-term performance of finishing cattle. *Journal of Dairy Science* 90:52

Fernando, S.C., Purvis, H.T., Najar, F.Z., Wiley, G., Macmil, S., Nagaraja, T.G., Krehbiel, C.R., Roe, B.A., and **DeSilva, U.** Meta-Functional Genomics of Rumen Microflora. Plant and Animal Genome XV Conference, San Diego, CA 2007.

Purvis II, H., Fernando, S., Rutz, K., Najar, F., Roe, B., and **DeSilva, U.** Evaluation of Rumen Microbial Fluctuations in Response to Sub Acute Rumen Acidosis Using 16S rDNA Profiles. 2006 *Journal of Animal Science* 84:86

Ross, J.W., Ashworth, D., Stein, D.R., **DeSilva, U.**, Ayoubi, P., Prather, R.S., Whitworth, K.M., Green, J.A., White, F.J., Johnson, G.A., et al. 2006. Alteration of porcine endometrial gene expression associated with conceptus loss following endocrine disruption with exogenous estrogen. *Biology of Reproduction*:108-109

Fernando, S. C., Rutz, K., Purvis, H. T., and **DeSilva, U.** 16s rDNA-based Evaluation of Fluctuations in Rumen Microbial populations in Response to Sub Acute Ruminal Acidosis in Cattle. Plant and Animal Genome XIV Conference, San Diego, CA 2006.

Vasudevan Pillai, A., Guo, X., Kupfer, D. M., Krehbiel, C.R., Wickramasinghe, Y. A. M. S., Ayoubi, P., Roe, B. A. and **DeSilva U.** Differential Expression Analysis of Adipogenesis in Cattle. Plant and Animal Genome XIV Conference, San Diego, CA 2006.

Bodine, T. N., Purvis, H. T., Goad, C. L. and **DeSilva, U.** 16S rDNA-Based Analysis Of Rumen Microbial Diversity In Steers Fed Diets Of Varying Quality. Plant and Animal Genome XIII Conference, San Diego, CA 2005.

Fernando, S. C., Roe, B. A., Geisert, R. D. and **DeSilva, U.** Isolation, Characterization, Mapping And Expression Analysis Of Porcine Tissue Kallikreins. Plant and Animal Genome XIII Conference, San Diego, CA 2005.

Last Updated November 29, 2010