

CURRICULUM VITAE

Name: Fuller Warren Bazer, Ph.D.

Current Positions: Regents Fellow, Distinguished Professor and O.D. Butler Chair, Department of Animal Science, 442 Kleberg Center,; Telephone: 979-862-2659; Facsimile: 979-862-2662; email: fbazer@cvm.tamu.edu; Telephone 979-862-6559, Texas A&M University, College Station, Texas 77843-2471 and

Professor, WCU Major in Biomodulation, Department of Agricultural Biotechnology, Seoul National University, 599Gwanak-ro, Gwanak-gu, Seoul 151-921, Korea.

Joint Appointments: Departments of Veterinary Integrative Biosciences and Veterinary Physiology and Pharmacology

Previous Employment: University of Florida (1968-1992); Vice President for Research and Interim Dean of the Graduate School of Biomedical Sciences, The Texas A&M University System Health Science Center, January 1, 1999-December 31, 2000. Director, Institute of Biosciences and Technology, Texas A&M University System Health Science, Texas Medical Center, Houston, October 1994-May 31, 2001; Associate Vice Chancellor and Executive Associate Dean, College of Agriculture and Life Sciences, and Associate Director Texas Agricultural Experiment Station, January 1, 2001-December 31, 2004; Associate Vice President for Research, Texas A&M University, January 1, 2005 to December 31, 2008; Interim Head, Department of Veterinary Pathobiology, 2008-2009.

Training: B.S., Biology, Centenary College of Louisiana, Shreveport, LA, 1960; M.S., Animal Science, Louisiana State University, Baton Rouge, LA, 1963; Ph.D. Animal Science (Reproductive Biology), North Carolina State University, Raleigh, NC, 1969

Research Interests: Reproductive biology with emphasis on uterine biology and pregnancy. Mechanisms of action of pregnancy recognition signals from the conceptus to the maternal uterus, including interferon tau and estrogen from ruminant and pig conceptuses, respectively, are studied at the molecular and cellular levels. The roles of uterine secretions as transport proteins, regulatory molecules, growth factors and enzymes and endocrine regulation of their secretion is another major research interest. The endocrinology of pregnancy, especially the roles of lactogenic and growth hormones in fetal-placental development and uterine functions are being studied. The mechanism(s) of action and potential therapeutic value of conceptus interferons and uterine-derived hematopoietic growth factors are areas of research with both pigs and sheep as models for human disease.

Honors: American Society of Animal Science Physiology and Endocrinology Award (1980); University of Florida Gamma Sigma Delta Research and Teaching Awards (1976 and 1982); University of Florida Sigma Xi Research Award (1976); University of Florida Alpha Zeta "Professor of the Year" (1977-1978); Florida Blue Key Distinguished Faculty Award (1985); Fellow, American Association for the Advancement of Science (1988-

present); Goding Lecturer, Australian Society for Reproductive Biology and Fertility Society of Australia (1988); Society for the Study of Reproduction Research Award (1990); Sir John Hammond Lecturer, Society for the Study of Fertility and Societe Francaise pour le Etude de la Fertilité (1991); Biotechnology 94 Award (1994); American Society of Animal Science L.E. Casida Award for Graduate Education (1995); Gamma Sigma Delta International Distinguished Achievement Award in Agriculture (1996); Texas A&M University System Regents Fellow (1998); Society for the Study of Reproduction Distinguished Service Award (2000); Texas A&M University and the Association of Former Students Distinguished Achievement Award in Research (2000); Alexander von Humboldt Research Award in Agriculture (2000); Vice Chancellor for Agriculture Award in Excellence for Research (2000); Member, External Advisory Board, The Kansas Biomedical Research Infrastructure Network (2001-); Member, International Scientific Advisory Committee, European Placenta Group (2002-2003); Elected Deputy Editor, *Reproductive Biology and Endocrinology* (2002 - present, an electronic journal from BioMed Central; C.E. Byrd High School Hall of Fame, Shreveport, Louisiana (2002); 2002-2003 Wolf Prize in Agriculture; Honorary Member, American College of Theriogenologists, 2003); Doctor of Science, *honoris causa*, University of Guelph, June 17, 2004, Society for the Study of Reproduction Carl Hartman Award (2004); Texas A&M University Distinguished Professor (2004); Vice Chancellor for Agriculture Award for Team Research in Uterine Biology and Pregnancy (2006); Society for Research and Fertility Distinguished Research Award (2007); E. T. York Lecturer, University of Florida (2007); Society for the Study of Reproduction Trainee Mentoring Award (2009); Doctor of Science, *honoris causa*, University of Florida, December 2009; Pioneer Award, International Society for Ruminant Reproduction (2010); Distinguished Alumnus Award, North Carolina State University (2010); Vice Chancellor's Award for Excellence in Diversity (2011).

Committees: Editorial Boards of *Biology of Reproduction* (1983-1986; 1999-2003), *Journal of Animal Science* (1974-1977; 1980-1983; 2002-2005), *Domestic Animal Endocrinology* (1983-1986; 2010-), *Theriogenology* (1980-1990); *Endocrine* (1993-2010); *Journal of Reproductive Immunology* (1993-2008); *Endocrinology* (2001-2005), *Reproduction in Domestic Animals* (2002- present); Deputy Editor, *Reproductive Biology and Endocrinology* (2002 - 2005), *American Journal of Reproductive Immunology* (2003-present), Associate Editor, *Biology of Reproduction* (2004-2009); Director, Society for the Study of Reproduction (1984-1987); Ad Hoc Member of Reproductive Biology Study Section (1978-present); Member of U.S.D.A. Competitive Grants Program in Animal Science (1985; 1999); Member of International Advisory Panel for *Journal of Reproduction, Fertility and Development* (1988-1993); Member of Editorial Board of *Oxford Reviews in Reproductive Biology* (1990-1995); Member of National Advisory Committee for Kansas Mental Retardation Research Center, University of Kansas (1989-1995); Member, Executive Committee, Center for Diabetes, University of Florida (1990-1993); Member, Medical Advisory Committee for Stop! Children's Cancer, Gainesville, FL (1990-1994); Member National Food Animal Integrated Research '95 Program Committee (1993-1995); President-Elect (1995-1996), President (1996-1997), and Past-President (1997-1998), Society for the Study of Reproduction; Consultant, Louisiana State University Board of Regents, Gordon Cain Endowed Chair (1999-2001); Member,

External Advisory Committee, University of Maryland Center for Studies in Reproduction Research Forum (1999-2009); Member, Southwest Bio Steering Committee (2000); Member, Israel-U.S.A. Binational Agricultural Research and Development Program Technical Advisory Committee for Competitive Grants (1997-2003); Member, External Advisory Board, The Kansas Biomedical Research Infrastructure Network (2001-); Member, International Scientific Committee, European Placenta Group (2002-2003); Member, National Academy of Sciences Committee on Identifying and Assessing Unintended Effects of Genetically Engineered Foods on Human Health (2002-2003); Member, U.S.D.A. Interagency Working Group on Animal Genomics (2002); Member, Federation of Animal Science Societies Scientific Advisory Committee on Biotechnology (2003-2006); Member, Texas Department of Agriculture-Texas Israel Exchange/Binational Agricultural Research and Development Program Joint Advisory Committee (2004-); Board of Directors, Texas Society for Biomedical Research (2005-2009); Member, USDA-NIH Research Committee (2005-); Chair, External Advisory Committee, Reproductive Biology Research Cluster, University College Dublin, Dublin, Ireland, 2005-; Associate, NIH Council of Public Representatives (2006-); Member, USDA Advisory Committee on Biotechnology and 21st Century Agriculture (2007-2009); Texas A&M University Biotechnology Program Advisory Council (2007-2008); USDA Cooperative States Research, Education and Extension Service Panel (2009-); Member, Faculty of World Class University Program in Biomodulation, Seoul National University (2009-); Chair, Scientific Advisory Board, Texas Enterosorbents, Inc., 2008 – present; Member, Scientific Advisory Board of TauMedix, 2010 -; Member, Scientific Advisory Board of Pregmama, 2010-.

Publications in Refereed Journals (2009-2010) from total of 432

2009

1. Sitzlar MA, Mora MA, Flemming JW, Bazer FW, Bickham HW, Matson CW. Potential effects of environmental contaminants on P450 aromatase activity and DNA damage in swallows from the Rio Grande and Somerville, Texas. *Ecotoxicology*. 2009; 18:15-21.
2. Gao H, Wu G, Spencer TE, Johnson GA, Li X, Bazer FW. Select nutrients in the ovine uterine lumen: I. Amino acids, glucose and ions in uterine luminal fluid of cyclic and pregnant ewes. *Biol Reprod* 2009 80:86-93.
3. Gao H, Wu G, Spencer TE, Johnson GA, Bazer FW. Select Nutrients In The Ovine Uterine Lumen: II. Glucose Transporters in the Uterus and Peri-Implantation Conceptuses. *Biol Reprod* 2009 80:94-104
4. Gao H, Wu G, Spencer TE, Johnson GA, Bazer FW. Select nutrients in the ovine uterine lumen: III Cationic amino acid transporters in the ovine uterus and peri-implantation conceptuses. *Biol Reprod*. 2009; 80:602-609.
5. Song G, Satterfield MC, Kim J, Bazer FW, Spencer TE. Progesterone and interferon tau regulate leukemia inhibitory factor receptor and interleukin 6 signal transducer in the ovine uterus during early pregnancy. *Reproduction* 2009;137:553–565.
6. Fleming JGW, Song G, Choi Y, Spencer TE, Bazer FW. Interferon regulatory factor 6 (IRF6) is expressed in the ovine uterus and functions as a transcriptional activator. *Mol Cell Endocrinol* 2009; 299:252–260

7. Song G, Dunlap KA, Kim J, Bailey DW, Spencer TE, Burghardt RC, Johnson GA, Bazer FW. Progesterone and estrogen limit luminal epithelial expression of stanniocalcin 1 to the implantation period of pregnancy in pigs. *Endocrinology* 2009; 150:936-945.
8. Bazer FW, Burghardt RC, Johnson GA, Spencer TE, Wu G. Interferons and progesterone for establishment and maintenance of pregnancy: Interactions among novel cell signaling pathways. *Reprod Biol* 2008; 8:179-211.
9. Wu G, Bazer FW, Davis TA, Kim SW, Li P, Rhoads JM, Satterfield MC, Smith SB, Spencer TE, Yin Y. Arginine metabolism and nutrition in growth, health and disease. *Amino Acids* 2009; 37:153-168.
10. Lassala A, Bazer FW, Cudd TA, Li X, Satterfield MC, Spencer TE, Wu G. Intravenous administration of citrulline to pregnant ewes is more effective than arginine for increasing arginine availability in the fetus. *J Nutr* 2009;139:660-665.
11. Bazer FW, Spencer TE, Johnson GA. Interferons and uterine receptivity. *Seminars in Reprod Med* 2009; 27:90-102.
12. Gao H, Wu G, Spencer TE, Johnson GA, Bazer FW. Select Nutrients in the Ovine Uterine Lumen: IV. Expression of Neutral and Acidic Amino Acid Transporters in Ovine Uteri and Periimplantation Conceptuses. *Biol Reprod* 2009;80 1196-1208.
13. Gao H, Wu G, Spencer TE, Johnson GA, Bazer FW. Select Nutrients in the Ovine Uterine Lumen: V. Nitric Oxide Synthase, GTP Cyclohydrolase and Ornithine Decarboxylase in Ovine Uteri and Peri-Implantation Conceptuses. *Biol Reprod.* 2009; 81:67-76.
14. Gao H, Wu G, Spencer TE, Johnson GA, Bazer FW. Select Nutrients in the Ovine Uterine Lumen: VI. Expression of FK506-Binding Protein 12-Rapamycin Complex-Associated Protein 1 (FRAP1) and regulators and effectors of mTORC1 and mTORC2 complexes in ovine uteri and conceptuses *Biol Reprod.* 2009; 81:87-100.
15. Li X, Bazer FW, Gao H, Jobgen W, Li P, McKnight JR, Satterfield MC, Spencer TE, Wu G. Amino acids and gaseous signaling. *Amino Acids* 2009; 37:65-78.
16. Bazer FW, Spencer TE, Johnson GA, Burghardt RC, Wu G. Comparative aspects of implantation. *Reproduction* 2009; 138:195-209.
17. Simmons RM, Erikson DW, Kim J, Burghardt RC, Bazer FW, Johnson GA, Spencer TE. Insulin-like growth factor binding protein-1 in the ruminant uterus: potential endometrial marker and regulator of conceptus elongation. *Endocrinology* 2009; 150:4295-4305.
18. Forde N, Carter F, Fair T, Crowe MA, Evans ACO, Spencer TE, Bazer FW, McBride R, Boland MP, O'Goara P, Lonergan P, Roche JF. Progesterone-Regulated Changes in Endometrial Gene Expression Contribute to Advanced Conceptus Development in Cattle. *Biol Reprod* 2009; 81:784-794.
19. Roberts RM, Smith GW, Bazer FW, Cibelli J, Seidel GE Jr, Bauman DE, Reynolds LP, Ireland JJ. Research priorities. Farm animal research in crisis. *Science.* 2009;324:468-469.
20. Satterfield MC, Song G, Kochan L, Riggs P, Simmons RM, Elsik C, Adelson D, Bazer FW, Zhou H, Spencer TE. Discovery of candidate genes and pathways in the endometrium regulating ovine blastocyst growth and conceptus elongation. *Physiol Genomics* 2009;39:85-99.

21. Lassala A, Bazer FW, Cudd TA, Datta S, Keisler DH, Satterfield MC, Spencer TE, Wu G. Parenteral Administration of L-Arginine Prevents Fetal Growth Restriction in Undernourished Ewes. *J Nutr* 2009;139:660-665.
22. Wu G, Bazer FW, Burghardt RC, Johnson GA, Kim SW, Knabe DA, Li X, Satterfield MC, Smith SB, Spencer TE. *Functional amino acids in swine nutrition and production*. Wageningen Academic Publishers 2009;
28. Ahn HW, Farmer JL, Bazer FW, Spencer TE. Progesterone and interferon tau-regulated genes in the ovine uterine endometrium: identification of periostin as a potential mediator of conceptus elongation. *Reproduction* 2009; 138 813–825
29. Avison DL, DeFaria W, Tryphonopoulos P, Tekin A, Attia GR, Takahashi H, Jin Y, Palaios E, Pararas N, Carreno MR, Santiago S, Bazer F, Ruiz P, Tzakis A. Heterotopic uterus transplantation in a swine model. *Transplantation* 2009; 88:465-469.

2010

1. Kim J, Erikson DW, Burghardt RC, Spencer TE, Wu G, Bayless KJ, Johnson GA, Bazer FW. Secreted phosphoprotein 1 binds integrins to initiate multiple cell signaling pathways, including FRAP1/mTOR, to support attachment and force-generated migration of trophectoderm cells. *Matrix Biology* 2010; 29:369-382
2. Song G, Bailey DW, Burghardt RC, Dunlap KA, Spencer TE, Bazer FW, Johnson GA. Cathepsin B, Cathepsin L and Cystatin C in the porcine uterus and placenta: A model for fluid-phase transport of proteins secreted by uterine epithelia, across placental areolae and neonatal gut. *Biol Reprod* 2010;82:854-864.
3. Dunlap KA, Kwak H, Burghardt RC, Bazer FW, Magness RR, Johnson GA, Bayless KJ. Evidence for sphingosine-1-phosphate (S1P) signaling pathway regulation of endometrial and placental angiogenesis during pregnancy in sheep. *Biol Reprod* 2010;82:876-887.
4. Satterfield MC, Gao H, Li X, Wu G, Johnson GA, Spencer TE, Bazer FW. Select nutrients and their associated transporters are increased in the ovine uterus following early progesterone administration. *Biol Reprod* 2010;82:224-231.
5. Satterfield MC, Bazer FW, Spencer TE, Wu G. Sildenafil citrate treatment enhances aminoacid availability in the conceptus and fetal growth in an ovine model of intrauterine growth restriction. *J Nutr* 2010;140:1–8.
6. Simmons RM, Satterfield MC, Welsh TH, Bazer FW, Spencer TE. HSD11B1, HSD11B2, PTGS2 and NR3C1 expression in the peri-implantation ovine uterus: effects of pregnancy, progesterone and interferon tau. *Biol Reprod* 2010;82:35-43.
7. Bott RC, Ashley RL, Henkes LE, Antoniazzi AQ, Bruemmer JE, Niswender GD, Bazer FW, Spencer TE, Smirnova NP, Anthony RV, Hansen TR. Uterine vein infusion of interferon tau (IFNT) extends luteal lifespan in ewes. *Biol Reprod* 2010; 82:725-735.
8. Bazer FW, Wu G, Spencer TE, Johnson GA, Burghardt RC, Bayless K. Novel Pathways for Implantation and Establishment and Maintenance of Pregnancy in Mammals. *Mol Hum Reprod* 2010;16:135-152.
9. Avison DL, DeFaria W, Tryphonopoulos P, Tekin A, Attia G, Takahashi H, Jin Y, Palaios E, Pararas N, Carreno MR, Santiago S, Bazer FW, Ruiz P, Tzakis A. Heterotopic uterus transplantation in a swine model. *Transplantation* (in press)
10. Pereira FTV, Braga FC, Burioli KC, Kfoury JR, Oliveira LJ, Papa PC, Carvalho AF, Ambrósio CE, Bazer FW, Miglino MA. Transplacental transfer of iron in the water

buffalo (*Bubalus bubalis*): Uteroferrin and erythrophagocytosis. *Reprod Domest Anim* 2010;45:907-914.

11. Forde N, Spencer TE, Bazer FW, Song G, Roche JF, Lonergan P. Effect of pregnancy and progesterone concentration on expression of genes encoding for transporters or secreted proteins in the bovine endometrium. *Physiol Genomics*. 2010;41:53-62.
12. Wu G, Bazer FW, Burghardt RC, Johnson GA, Kim SW, Li XL, Satterfield MC, Spencer TE. Impacts of amino acid nutrition on pregnancy outcome in pigs: mechanisms and implications for swine production. *J Anim Sci* 2010; 88:E195-204.
13. Bailey DW, Dunlap KL, Erikson DW, Patel A, Bazer FW, Burghardt RC and Johnson GA. Effects of Long-Term Progesterone Exposure on Porcine Uterine Gene Expression: Progesterone Alone Does Not Induce Secreted Phosphoprotein 1 (Osteopontin) in Glandular Epithelium. *Reproduction* 2010; 140:595-604.
14. Bailey DW, Dunlap KA, Frank JW, Erikson DW, White BG, Bazer FW, Burghardt RC and Johnson GA. Effects of long-term progesterone on developmental and functional aspects of porcine uterine epithelia: progesterone alone does not support glandular development of pregnancy. *Reproduction* 2010;140:583-594.

2011

1. Bazer FW, Spencer TE, Johnson GA, Burghardt RC. Uterine receptivity to implantation of blastocysts in mammals. *Frontiers in Bioscience* 2011; S3:745-767.
2. Kim J, Burghardt RC, Wu G, Johnson GA, Spencer TE, Bazer FW. Select Nutrients in the ovine uterine lumen: VII. Effects of arginine, leucine, glutamine and glucose on trophoblast cell signaling, proliferation and migration. *Biol Reprod* 2011; 84 70-78.
3. Kim J, Burghardt RC, Wu G, Johnson GA, Spencer TE, Bazer FW. Select Nutrients in the ovine uterine lumen: VIII. Arginine stimulates proliferation of ovine trophoblast cells through mTOR-RPS6K-RPS6 signaling cascade and synthesis of nitric oxide and polyamines. *Biol Reprod* 2011; 84 62-69.
4. Song G, Fleming JGW, Kim J, Spencer TE, Bazer FW. Pregnancy and interferon tau regulate N-myc interactor in the ovine uterus. *Dom Anim Endocrinol* 2011; 40:87-97.
5. Kim J, Burghardt RC, Wu G, Johnson GA, Spencer TE, Bazer FW. Select Nutrients in the ovine uterine lumen: IX. Differential effects of arginine, leucine, glutamine and glucose on interferon tau, ornithine decarboxylase and nitric oxide synthase in the ovine conceptus. *Biol Reprod* 2011; 84:1139-1147.
6. Wu G, Bazer FW, Burghardt RC, Johnson GA, Kim SW, Knabe DA, Li P, Li XL, McKnight JR, Satterfield MC, Spencer TE. Proline and hydroxyproline: biochemistry and nutrition in animals. *Amino Acids*. 2011; 40:1053-1063.
7. Song G, Fleming JGW, Kim J, Spencer TE, Bazer FW. Pregnancy and interferon tau regulate DDX58 and PLSCR1 in the ovine uterus during the peri-implantation period. *Reproduction* 2011; 141:127-138.
8. Wu G, Bazer FW, Johnson GA, Knabe DA, Burghardt RC, Spencer TE, Li XL, Wang JJ. Important roles for L-glutamine in swine nutrition and production. *J Anim Sci*. 2011; 89:2017-2030.
9. Lassala A, Bazer FW, Cudd TA, Datta S, Keisler DH, Satterfield MC, Spencer TE, Wu G. Parenteral Administration of L-Arginine Enhances Fetal Survival and Growth in Sheep Carrying Multiple Fetuses. *J Nutr* 2011;141:849-855.

10. Forde N, Carter F, Spencer TE, Bazer FW, Sandra O, Mansouri-Attia N, Okumu LA, McGettigan PA, Mehta JP, McBride R, O'Gaora P, Roche JF, Lonergan P. Conceptus-Induced Changes in the Endometrial Transcriptome: How Soon Does the Cow Know She Is Pregnant? *Biol Reprod*. 2011; 85: 144-156.
11. Dorniak P, Bazer FW, Spencer TE. Prostaglandins Regulate Conceptus Elongation and Mediate Effects of Interferon Tau on the Ovine Uterine Endometrium. *Biol Reprod* 2011; 84, 1119-1127.
12. Wu G, Bazer FW, Burghardt RC, Johnson GA, Kim SW, Knabe DA, Li P, Li X, McKnight JR, Satterfield MC, Spencer TE. Proline and hydroxyproline metabolism: implications for animal and human nutrition *Amino Acids* 2011; 40:1053–1063.
13. Bazer FW. Contributions of an animal scientist to reproductive biology. *Biol Reprod* 2011; 85:228-242.
14. Kong X, Tan B, Yin Y, Gao H, Li X, Jaeger LA, Bazer FW, Wu G. L-Arginine stimulates the mTOR signaling pathway and protein synthesis in porcine trophectoderm cells. *J Nutr Biochem* 2011 (Accepted)
15. Lim W, Jeong W, Kim JH, Lee JY, Kim J, Bazer FW, Han JY, Song G. Differential expression of alpha 2 macroglobulin in response to diethylstilbesterol and in ovarian carcinomas in chickens. 2011: *Reprod Biol Endocrinol* (Submitted)
16. Bazer FW, Wu G, Johnson GA, Kim J, Song G. Uterine histotroph and conceptus development: Select nutrients and secreted phosphoprotein 1 affect MTOR cell signaling in ewes. *Biol Reprod* 2011: (In Press)
17. Bazer FW, Song G, Kim J, Erikson DW, Johnson GA, Burghardt RC, Gao H, Satterfield MC, Spencer TE, Wu G. Mechanistic mammalian target of rapamycin (MTOR) cell signaling: Effects of select nutrients and secreted phosphoprotein 1 on development of mammalian conceptuses. *Mol Cellular Endocrinol* 2011: (In Press)
18. Kim M, Seo H, Choi Y, Shim J, Bazer FW, Ka H. Swine leukocyte antigen-DQ expression and its regulation by interferon-gamma at the maternal-fetal interface in pigs. *Biol Reprod* 2011: (submitted)
19. Lim W, Jeong W, Kim JH, Shin J, Kim J, Bazer FW, Han JY, Song G. Differential expression of secreted phosphoprotein 1 in response to estradiol-17beta and in ovarian tumors in chickens. *Biol Reprod* 2011; (submitted)
20. Mamo S, Mehta JP, McGettigan P, Fair T, Spencer TE, Bazer FW, Lonergan P. RNA sequencing reveals novel gene clusters in bovine conceptuses associated with maternal recognition of pregnancy and implantation. *Biol Reprod* 2011: Published ahead of print 27 July 2011
21. Lim W, Kim JH, Ahn SE, Jeong W, Kim J, Lee GY, Choi JW, Bazer FW, Han JY, Song G. Avian *SERPINB11* gene: Characteristics, tissue specific expression and regulation of expression by estrogen. *Biol Reprod* 2011: (submitted)
22. Dunlap KA, White BG, Li X, Satterfield MC, Erikson DW, Halvorsen ML, Pfarrer C, Wu G, Bazer FW, Burghardt RC, Bayless KC, Johnson GA. Antagonism of the sphingosine 1-phosphate (S1P) signaling pathway in pregnant ewes alters placentome architecture, amino acid transport and fetal growth. *Placenta* 2011; (submitted).
23. Lim W, Kim HS, Kim YB, Kim MA, Kim J, Ahn SE, Jeong W, Park YS, Park NH, Bazer FW, Song YS, Han JY, Song G. SERPINB3 in the chicken model of ovarian cancer: a novel biomarker for predicting platinum resistance and survival in patients with epithelial ovarian cancer. *J Clinical Oncology* (Submitted)

Editorials and Commentaries

Bazer FW. English-Only Lectures: A Necessary Step for Full Participation of Koreans in a Global Society, Published June 10, 2011 in The Korean Herald as Letter to the Editor

Bazer FW. Uterine adenogenesis and pregnancy: Multiple roles for Foxa2 in mice. *Biol Reprod.* 2010;83:319-321.

Bazer FW, Salamonsen LA. Let's Validate Those Cell Lines. *Biol Reprod* 2008; 79:585

Bazer FW, Slayden O. Progesterone-Induced Gene Expression in Uterine Epithelia: A Myth Perpetuated by Conventional Wisdom. *Biol Reprod* 2008; 79:1008–1009

Chapters in Book (2006-2011)

Bazer FW, Kraemer D, McHughen A. 2011. Welfare, Health, and Biological Efficiency of Animals Through Genetics And Biotechnology. In: *Animal Welfare in Animal Agriculture*. Pond W, Bazer FW, Rollins B, Eds., Taylor and Francis Group, LLC, Boca Raton, FL, pp

Bazer FW, Spencer TE. 2010. Hormones and Pregnancy. In: *Hormones and Reproduction in Vertebrates*. Norris DO, Lopez KH, Eds., Academic Press, San Diego, pp73-94

Johnson GA, Bazer FW, Burghardt RC, Spencer TE, Wu G and Bayless KJ. 2009. Conceptus-uterus interactions in pigs: Endometrial gene expression in response to estrogens and interferons from conceptuses. In: *Control of Pig Reproduction VIII*. Rodriguez-Martinez H, Vallet JL, Ziecik AJ, Eds. Nottingham University Press, pp321-332.

Bazer FW, Gao H, Johnson GA, Wu G, Bailey DW, Burghardt RC. 2009. Selected nutrients and glucose transporters in pig uteri and conceptuses. In: *Control of Pig Reproduction VIII*. Rodriguez-Martinez H, Vallet JL, Ziecik AJ, Eds. Nottingham University Press, pp335-336.

Bazer FW, Spencer TE, Ott TL, Johnson GA. 2008. Mediators of Maternal Recognition of Pregnancy. In: *The Endometrium*, 2nd Edition, Aplin JD, Fazleabas AT, Glasser SR, Giudice LC, Eds., Informa Healthcare, London, UK. pp268-285

Bazer FW, Cunningham W, Marsh D. 2007. Pregnancy Diagnosis. In: *Current Therapy in Large Animal Theriogenology*, Youngquist RS Ed., Elsevier Inc., St Louis, Chapter 89, pp 661-666.

Wu G, Bazer FW, Spencer TE, Yin Y-L, Kim SW. 2007. New Developments in Amino Acid Research. In: *Animal Production and Animal Science Worldwide: World Association for Animal Production Book of the Year 2006*, Wageningen Academic Publishers, Wageningen, The Netherlands, pp299-316.

Bazer FW, Spencer TE. 2006. Methods for Studying Interferon Stimulated Genes. In: *Methods in Molecular Methods, Vol 2: Placenta and Trophoblast: Methods and Protocols*, Soares M, Hunt JS, Eds., Human Press pp367-380.

Research Grants

ACTIVE

“Arginine and Secreted Phosphoprotein 1 Mediate mTOR Cell Signaling for Conceptus Development and Survival”

Principal Investigator: Fuller W. Bazer; Co-I: Drs. Guoyao Wu and Greg A. Johnson
USDA CSREES AFRI 2010-03220

Total Award: \$500,000

Area: Agriculture and Food Research Initiative; Period: 12/1/10-11/30/14

The specific aims are to determine: 1) cell signaling pathway(s) activated by Arg and/or SPP1 responsible for changes in cytoskeletal proteins required for elongation of conceptus trophoderm during the peri-implantation period of gestation; 2) effects of *in vitro* and *in vivo* functional knockdown of an Arg transporter (SLC7A1), nitric oxide synthase and β_3 integrin, and inhibition of mTORC1 and mTORC2 on ovine conceptus development; and 3) effects of feeding Arg on growth and development of embryos/fetuses and placentae during key periods of implantation and placentation, i.e., Days 15 to 75 of pregnancy.

"Arginine nutrition, placental angiogenesis, and fetal growth in pigs"

Principal Investigator: Guoyao Wu; Co-I: Drs. F.W. Bazer and G.A. Johnson
USDA-CSREES NRI CGP 2008-00547; Period: 9/1/08-8/31/11

Total Award; \$500,000

The specific aims are to: 1) Elucidate mechanisms for the role of arginine in stimulating placental NO synthesis; 2) Enhance placental growth (including vascular growth) as well as embryonic survival and growth through dietary supplementation with arginine during early- to mid-gestation; and 3) Determine a role for dietary supplementation with arginine on uterine blood flow and the transfer of nutrients from mother to fetus in pregnant gilts.

Bridges to the Doctorate in Reproductive Biology

Principle Investigator: Fuller W. Bazer; Co-PI: Drs. Michelle Garcia and Gary Newton
1R25 GM075300-01A1 09/01/06-08/31/10
NIH/ZRG1 IMM-A \$620,491

This grant will support the institutionalization of the MS-to-PhD transition of African American and Hispanic students in MS biomedical science disciplines from both Prairie View A&M University and Texas A&M University-Kingsville to Texas A&M University through a range of programmatic mechanisms implemented jointly by the partner institutions.

Physiological Roles of Prostaglandins and Interferon Tau in Conceptus Development and Endometrial Function

Principal Investigator: Thomas E. Spencer; Co-I: Fuller W. Bazer & Robert C. Burghardt
Agency: USDA CSREES

Type: AFRI 2009-01722

Period: 09/01/2009-08/31/2012

Total Award: \$340,000 total

COMPLETED

“Ovine Interferon-Tau Regulates Uterine Hormone Receptors”

Principal Investigator: Fuller W. Bazer; Co-PI: Thomas E. Spencer; Agency:NIH-NICHD; Type: 2R01 HD32534; Period: 02/28/01-02/27/08; Amount: \$ 1,309,500 total cost. Specific aims are to:(1) clone, sequence and functionally characterize the promoter of the ovine oxytocin receptor (OTR) gene; (2) determine which interferon regulatory factor (IRF) members are induced by IFN tau in the endometrial epithelium;(3) analyze effects of IFN tau t regulated IRFs on activity of the ovine estrogen receptor alpha (ER α -) and OTR promoters; and (4) test the hypothesis that STATs activated by IFN tau, in part, mediate the inhibitory effects of IFN tau on ovine ER α - and OTR promoter activity.

Research Completed: Results being published.

“Nutrient Sensing Via mTOR Cell Signaling for Conceptus Development and Survival”

Principal Investigator: Fuller W. Bazer; Co-I: Drs. G. Wu and G. Johnson
USDA-CSREES NRI CGP 2006-00863; Period: 09/01/06-08/31/10; \$349,129
The goal is to determine effects of selected nutrients (glucose, leucine, arginine and glucose) and secreted phosphoprotein 1 on conceptus development in sheep. **Research Completed and Results Being Published.**

PENDING (being revised for resubmission)

Progesterone and Inteferons Regulate Uterine Responses to Pregnancy

1 RO1 HD059905-01 Bazer (PI) 07/01/10 to 06/30/15
NIH/NICHD

This application is for funding to address the following specific aims: (1) Discover roles for FGFR2-, MET- and IFNT-regulated cell signaling pathways in gene expression within STAT1- and PGR-negative uterine LE/sGE; (2) Define the phenotype of the pregnant uterus of ewes following knockdown of IFNT and Type I IFN receptor (IFNAR) expression by conceptus trophectoderm and uterine LE/sGE, respectively; and (3) Discover uterine and conceptus phenotypes following knockdown of genes (CTSL, CST3, HIF2A) that are induced by P4 and stimulated by IFNT in LE/sGE and/or trophectoderm.