Jeremy Block
University of Wyoming
Department of Animal Science
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EDUCATION

2003-2007 Ph.D., Animal Molecular and Cellular Biology, University of Florida, Gainesville, FL
Dissertation: Effects of insulin-like growth factor-1 on development and post-transfer survival of bovine embryos produced in vitro
Advisor: Peter J. Hansen

2000-2003 M.S., Animal Sciences, University of Florida, Gainesville, FL
Thesis: Strategies to improve post-transfer survival of bovine embryos produced in vitro
Advisor: Peter J. Hansen

1995-1999 B.S., Animal Sciences, University of Missouri-Columbia, Columbia, MO

PROFESSONAL EXPERIENCE

Current Position

2020-pres Assistant Professor, Department of Animal Science, University of Wyoming, Laramie, WY
(60% Research, 37.5% Teaching, 2.5% Service)

Previous Academic Positions

2010-2016 Research Assistant Professor, Department of Animal Sciences, University of Florida, Gainesville, FL
2008-2010 Courtesy Research Asst. Professor, Department of Animal Sciences, University of Florida, Gainesville, FL
2007-2008 Postdoctoral Research Associate, Reproductive Physiology and Embryology, University of Florida, Gainesville, FL

Previous Non-Academic Positions

2016-2020 Principal Scientist, Livestock Wellness and Performance, Zoetis, Inc., Kalamazoo, MI
2007-2016 Sole proprietor, OvaTech, LLC, Gainesville, FL

RESEARCH SUPPORT

Extramural Competitive

USDA-NIFA Animal Reproduction: Functional role of embryonic progesterone receptor membrane component-1 in conceptus survival and pregnancy establishment in cattle. Funded (2025-2027) – $299,950. **J. Block (PI)** and M.S. Ortega.

USDA-NIFA Animal Reproduction: Mechanisms of preimplantation developmental programming by choline. Funded (2023-2026) – $650,000 (UW sub-award $69,815.77). P. J. Hansen, Z. Jiang, and **J. Block (Co-PI)**.

USDA-National Sheep Industry Improvement Center (NSIIC): Effects of choline supplementation on reproductive outcomes in ewe lambs and growth performance and carcass characteristics of their offspring. Funded (2022-2023) – $15,122. **J. Block (PI)**, C. Gifford, W. Stewart, T. Murphy.

National Association of Animal Breeders Doak Graduate Fellowship: Funding for graduate assistantship and research in male reproductive physiology. Funded (2022-2024) – $86,690. **J. Block (PI)** and S.A. Retherford.

USDA-NIFA National Needs Fellowships: Reproductive Biotechnology Concentration at University of Florida. Funded (2021-2026) – 259,500 (UW sub-ward $40,000). P. J. Hansen, **J. Block (Co-PI)**, M. Binelli, R. Bisinotto, J. J. Bromfield, R. Chebel, B. W. Daigneault, K. N. Galvao, A.G. Diaza, J. E. Santos.

Zoetis, Inc.: Development of a platform for generating embryos using oocytes derived from stem cells. Funded (2021-2023) – $352,443. **J. Block (PI).**

USDA-AFRI Animal Reproduction: The role of dickkopf-1 to enhance embryonic competence for establishment of pregnancy in cattle. Funded (2017-2020) – $480,000. P. J. Hansen, G. E. Dahl, and **J. Block (Co-PI)**.

NIH-USDA Dual purpose with dual benefit: Uterine infection and infertility: how microbial infection of the reproductive tract causes ovarian dysfunction. Funded (2017-2021) – $1,650,000. J. J. Bromfield, J. E. Santos, **J. Block (Co-PI)**, I. M. Sheldon.

Binational Agriculture and Development Fund (BARD): Improving oocyte competence in dairy cows exposed to heat stress. Funded (2014-2017) – $275,000. P. J. Hansen, Z. Roth, **J. Block (Co-PI)**.

Select Sires, Inc.: Improving calving rates in dairy cows by infusion of seminal plasma proteins at the time of artificial insemination. Funded (2015-2016) – $10,000. J. J. Bromfield, P. J. Hansen, G. C. Lamb, and J. Block **(Co-PI)**.

NIH-USDA Dual purpose with dual benefit: Developmental programming during preimplantation development. Funded (2011-2015) – $1,700,000. P. J. Hansen, **J. Block (Co-PI)**, A D. Ealy, S. E. Johnson, M. Ozawa, N. Terada, P. Hyttel, O. Ostrup.

USDA-AFRI Animal Reproduction: Improving fertility during heat stress in lactating dairy cows. Funded (2010-2014) – $1,000,000. P. J. Hansen, **J. Block (Co-PI)**, G. E. Dahl, A. de Vries, A. D. Ealy, J. E. Santos, C. R. Staples; T. R. Bilby, J. B. Cole, R. J. Collier.

Pending applications

NIH Centers of Biomedical Excellence (COBRE) Phase 1: Center of reproductive and regenerative biology. Under review – $10,505,760. J.K. Pru, J.F. Pinello, **J. Block (Co-PI)**, D.R. Bruns, and B.D. Cherrington.

Extramural Non-Competitive

Zoetis, Inc.: Material transfer agreement for bovine embryonic stem cell lines and associated technical know-how. Funded (2024) – $15,000. **J. Block (PI).**

Zoetis, Inc.: Effects of administration of mycobacterium cell wall fraction (MCWF) prior to mating on reproductive outcomes in mice. Funded (2021-2022) – $39,254. **J. Block (PI).**

Zoetis, Inc.: Proposal to confirm TLR-7/8 agonist sorting of swine semen and test thawed frozen cattle semen. Funded (2021) – $3,568. **J. Block (PI).**

Renova Life, Inc. Non-invasive method to evaluate human oocytes and embryos. Funded (2013) – $10,000. **J. Block (PI).**

Intramural Competitive

Wyoming NASA Space Grant Undergraduate Fellowship AY 2025-2026. Effects of insulin-like growth factor-1 on embryo development and differentiation following dissociation. Funded - $5,000. Ryley Mauer (Undergraduate) – **J. Block mentor/supervisor**.

Wyoming Research Scholars Program AY 2025-2026. Effects of insulin-like growth factor-1 on embryo development and differentiation following dissociation. Funded - $4,500. Ryley Mauer (Undergraduate) – **J. Block mentor/supervisor**.

Y-Cross Foundation Graduate Student Tuition and Fee Award AY 2025-2026. University of Wyoming College of Agriculture, Life Science, and Natural Resources. Funded - $11,955. Samuel Hincapie (**M.S. student advised by J. Block**).

Y-Cross Foundation Graduate Student Tuition and Fee Award AY 2025-2026. University of Wyoming College of Agriculture, Life Science, and Natural Resources. Funded - $11,955. Ali Zaib (**M.S. student advised by J. Block**).

Y-Cross Foundation Graduate Student Tuition and Fee Award AY 2024-2025. University of Wyoming College of Agriculture, Life Science, and Natural Resources. Funded - $10,500. Olivia Ohm (**M.S. student advised by J. Block**).

Y-Cross Foundation Graduate Student Tuition and Fee Award AY 2023-2024. University of Wyoming College of Agriculture, Life Science, and Natural Resources. Funded - $10,037. Olivia Ohm (**M.S. student advised by J. Block**).

Wyoming INBRE Sequencing and Bioinformatics Analysis Program. Metagenomic sequencing to determine the composition of the male reproductive microbiome and its relationship to the gut microbiome. Funded (2023) – $9,900. **J. Block (PI).**

Biomedical Sciences Graduate Program Assistantship – Program in Reproductive Biology AY 2021-2022. Funded – $21,943. Whitney Brown (**M.S. student advised by J. Block**).

Wyoming INBRE Equipment Grant. Agilent Fragment Analyzer. Funded (2020) – $73,337.44. H.C Cunningham-Hollinger, B. Bisha, **J. Block (Co-PI)**, C. Gifford, and K. Austin.

Intramural Non-Competitive

Hatch/Multistate Proposal. Effects of supplemental choline feeding on the blood metabolome of ewe lambs. Reproductive performance in domestic ruminants. Funded (2025) – $5,390. **J. Block**, W. Stewart, and C. Gifford.

Hatch/Multistate Proposal. Request for undergraduate lab research assistant. Reproductive performance in domestic ruminants. Funded (2025) – $9,600. **J. Block.**

Hatch/Multistate Proposal. Effects of administration of an immunostimulant prior to timed artificial insemination on pregnancy per AI in mature beef cows. Reproductive performance in domestic ruminants. Funded (2024) – $15,200. **J. Block.**

Hatch/Multistate Proposal. Effects of embryonic ablation of progesterone membrane component-1 on bovine embryo development and survival. Reproductive performance in domestic ruminants. Funded (2024) – $9,020. **J. Block.**

Hatch/Multistate Proposal. Collaborative request for undergraduate lab research assistant. Reproductive performance in domestic ruminants. Funded (2024) – $8,400. **J. Block**, S. Rosasco, and H. C. Cunningham-Hollinger.

Hatch/Multistate Proposal. Request for laboratory research equipment. Reproductive performance in domestic ruminants. Funded (2024) – $2,200. **J. Block.**

Hatch/Multistate Proposal. Evaluation of the metabolome in semen and rumen fluid of mature bulls. Reproductive performance in domestic ruminants. Funded (2024) – $5,265. **J. Block.**

Hatch/Multistate Proposal. Effects of administration of CXCL12 on pregnancy rates following embryo transfer in ewes. Reproductive performance in domestic ruminants. Funded (2023) – $8,040. **J. Block.**

Hatch/Multistate Proposal. Collaborative Request for laboratory equipment. Reproductive performance in domestic ruminants. Funded (2023) – $4,024.27. C. Gifford, **J. Block**, H. C. Cunningham-Hollinger, S. Rosasco, B. Alexander, and W. Stewart.

Hatch/Multistate Proposal. Collaborative request for laboratory equipment. Reproductive performance in domestic ruminants. Funded (2023) – $15,050.90. B. Alexander, B., C. Gifford, S. Rosasco, H. C. Cunningham-Hollinger, W. Stewart, and **J. Block**.

Hatch/Multistate Proposal. Effects of administration of an immunostimulant prior to timed artificial insemination on pregnancy per AI in mature beef cows. Reproductive performance in domestic ruminants. Funded (2023) – $14,200. **J. Block.**

Hatch/Multistate Proposal. Effects of interleukin-1 beta on the expression of proinflammatory cytokines and chemokines in bovine endometrial and oviductal cells. Reproductive performance in domestic ruminants. Funded (2023) – $18,767.40. **J. Block.**

Hatch/Multistate Proposal. Accessory equipment for supporting gene editing capabilities. Funded (2023) – $25,063. **J. Block** and J.K. Pru.

Hatch/Multistate Proposal. Request for purchase of equipment for computer-assisted semen analysis. Reproductive performance in domestic ruminants. Funded (2022) – $73,443. J.K. Pru and **J. Block**.

Hatch/Multistate Proposal. Enhancing departmental capabilities for micromanipulation and gene editing. Reproductive performance in domestic ruminants. Funded (2021) – $126,682. J.K. Pru and **J. Block**.

Hatch/Multistate Proposal. Purchase of epifluorescence microscope. Reproductive performance in domestic ruminants. Funded (2021) – $33,875. J.K. Pru, **J. Block**, B. Alexander, and C. Gifford.

PUBLICATIONS

*****_Indicates publications as corresponding or senior author_

Peer-reviewed journal articles

*Brown, W., M. Oliveira, R. R. Silva, D. Demetrio, and **J. Block**. 2024. Effects of administration of mycobacterium cell wall fraction during the periovulatory period on embryo development following superovulation in virgin dairy heifers. JDS Commun. 5:361-365. doi:10.3168/jdsc.2023-0462.

*Brown, W., M. Oliveira, R. Reis Silva, K. Woodruff, B. Bisha, D. Demetrio, and **J. Block**. 2024. Effects of mycobacterium cell wall fraction on embryo development following in

vitro embryo production and pregnancy rates following embryo transfer in virgin dairy heifers. Theriogenology. 215:334–342. doi:10.1016/j.theriogenology.2023.12.019.

Cuellar C.J., T.F. Amaral, P. Rodriguez-Villamil, F. Ongaratto, D.O. Martinez, R. Labrecque, J.D.A. Losano, E. Estrada-Cortés, J.R. Bostrom, K. Martins, D.O. Rae, **J. Block**, Q.A. Hoorn, B.W. Daigneault, J. Merriam, M. Lohuis, S. Dikmen, J.H. Bittar, T.S. Maia, D.F. Carlson, S. Larson, T.S. Sonstegard and P.J. Hansen. 2024. Consequences of gene editing of *PRLR* on thermotolerance, growth, and male reproduction in cattle. FASEB Bioadv. 6:223-234. doi: 10.1096/fba.2024-00029.

Haimon M.L., E. Estrada-Cortés, T.F. Amaral, **J. Block**, S. Jeensuk, T.S. Maia, Q.A. Hoorn, M. Sagheer, J.H. Bittar and P.J. Hansen. 2024. A low concentration of choline chloride alters the developmental program of the bovine preimplantation embryo. Reprod Fertil. 5:e240058. doi: 10.1530/RAF-24-0058.

Haimon, M.L.J., E. Estrada-Cortés, T.F. Amaral, H. Martin, S. Jeensuk, **J. Block**, D. Heredia, M. Venturini, C. Santos Rojas, A. Gonella-Diaza, N. DiLorenzo, T. Scheffler, P. Dufour, M.A. Sirard, G.D. de Melo, K.G. Pohler and P.J Hansen. 2024. Provision of choline chloride to the bovine preimplantation embryo alters postnatal body size and DNA methylation. Biol Reprod. 10:ioae092. doi: 10.1093/biolre/ioae092.

*Carrascal-Triana E.L., A.M. Zolini, A.R. de King AR, J.M. Penitente-Filho, P.J. Hansen, C.A.A. Torres, and ***J. Block**. 2022. Effect of addition of ascorbate, dithiothreitol or a caspase-3 inhibitor to cryopreservation medium on post-thaw survival of bovine embryos produced in vitro. Reprod. Domest. Anim. 57:1074-1081. doi: 10.1111/rda.14182. Epub ahead of print.

Estrada-Cortés, E., W. Ortiz, M. B. Rabaglino, **J. Block**, O. Rae, E. A. Jannaman, Y. Xiao, and P. J. Hansen. 2021. Choline acts during preimplantation development of the bovine embryo to program postnatal growth and alter muscle DNA methylation. FASEB J. 35:e21926. doi:10.1096/fj.202100991R.

Estrada-Cortés, E., E. A. Jannaman, **J. Block**, T. F. Amaral, and P. J. Hansen. 2021. Programming of postnatal phenotype caused by exposure of cultured embryos from Brahman cattle to colony-stimulating factor 2 and serum. J. Anim. Sci. 99:1-9. doi:10.1093/jas/skab180.

Dickson, M.J., R.L. Piersanti, R. Ramirez-Hernandez, E. Barros de Oliveira, J.V. Bishop, T.R. Hansen, Z. Ma, K.C. Jeong, J.E.P. Santos, I.M. Sheldon, **J. Block** and J.J. Bromfield. 2020. Experimentally induced endometritis impairs the developmental capacity of bovine oocytes. Biol. Reprod. 103:508-520. doi:10.1093/biolre/ioaa069.

Horlock, A.D., R.L. Piersanti, R. Ramirez-Hernandez, F. Yu, Z. Ma, K.C. Jeong, M.J.D. Clift, **J. Block**, J.E.P. Santos, J.J. Bromfield and I.M. Sheldon. 2020. Uterine infection alters the transcriptome of the bovine reproductive tract three months later. Reproduction 160:93-107. doi: 10.1530/REP-19-0564.

Piersanti, R.L., **J. Block**, Z. Ma, K.C. Jeong, J.E.P. Santos, F. Yu, I.M. Sheldon, and J.J. Bromfield. 2020. Uterine infusion of bacteria alters the transcriptome of bovine oocytes. FASEB BioAdvances 2:506-520. doi: 10.1096/fba.2020-00029

Sosa, F., **J. Block**, Y. Xiao and P.J. Hansen. 2020. Determinants of survival of the bovine blastocyst to cryopreservation stress: treatment with colony stimulating factor 2 during the morula-to-blastocyst transition and embryo sex. CABI Agric. Biosci. 1:1-10. doi:10.1186/s43170-020-00012-9

Zolini, A.M., **J. Block**, M.B. Rabaglino, G. Rincon, M. Hoelker, J.J. Bromfield, D. Salilew-Wondim and P.J. Hansen. Genes associated with survival of female bovine blastocysts produced in vivo. Cell Tissue Res. 382:665-678. https://doi.org/10.1007/s00441-020-03257-y

Zolini, A.M., **J. Block**, M.B. Rabaglino, P. Tribulo, M. Hoelker, G. Rincon, J.J. Bromfield and P.J. Hansen. 2019. Molecular fingerprint of female bovine embryos produced in vitro with high competence to establish and maintain pregnancy. Biol. Reprod. 102:292-305. doi: 10.1093/biolre/ioz190.

*Zolini, A.M., E. Carrascal-Triana, A. Ruiz de King, P.J. Hansen, C.A. Alves Torres and **J. Block**. 2019. Effect of the addition of L-carnitine to media used for oocyte maturation and embryo culture on development and cryotolerance of bovine embryos produced in vitro. Theriogenology 133:135-143. doi: 10.1016/j.theriogenology.2019.05.005.

Piersanti, R.L., A.D. Horlock, **J. Block**, J.E.P. Santos, I.M. Sheldon and J.J. Bromfield. 2019. Persistent effects on bovine granulosa cell transcriptome after resolution of uterine disease. Reproduction 158:35-46. doi: 10.1530/REP-19-0037.

Kaniyamattam, K., **J. Block**, P.J. Hansen and A. De Vries. 2018. Economic and genetic performance of various combinations of in-vitro produced embryo transfers and artificial insemination in a dairy herd. J. Dairy Sci. 101:1540-1553. doi: 10.3168/jds.2017-13475.

Kaniyamattam, K., **J. Block**, P.J. Hansen and A. De Vries. 2017. Comparison between an exclusive in-vitro produced embryo transfer system and artificial insemination for genetic, technical and financial herd performance. J. Dairy Sci. 100: 5729-5745. doi: 10.3168/jds.2016-11979.

Bromfield, J.J., J.E. Santos, **J. Block**, R.S. Williams and I.M. Sheldon. 2015. Uterine infection: Linking infection and innate immunity with infertility in the high-producing dairy cow. J. Anim. Sci. 93:2021-2033.

Denicol, A.C., **J. Block**, D.E. Kelley, K.G. Pohler, K.B. Dobbs, C.J. Mortensen, M.S. Ortega and P.J. Hansen. 2014. The WNT signaling antagonist Dickkopf-1 directs lineage commitment and promotes survival of the preimplantation embryo. FASEB J. 28:3975-3986.

Dobbs. K.B., D. Gagne, E. Fournier, I. Dufort, C. Robert, **J. Block**, M.A. Sirard, L. Bonilla, A.D. Ealy, B. Loureiro and P.J. Hansen. 2014. Sexual dimorphism in developmental programming of the bovine preimplantation embryo caused by colony stimulating factor 2. Biol. Reprod. 80:1-12.

Bonilla, L., **J. Block**, A.C. Denicol and P.J. Hansen. 2014. Consequences of transfer of an in vitro produced embryo for the dam and resultant calf. J. Dairy Sci. 97:229-239.

Sakatani, M., L. Bonilla, K.B. Dobbs, **J. Block**, M. Ozawa, S. Shanker, J.-Q. Yao and P.J. Hansen. 2013. Changes in the transcriptome of morula-stage bovine embryos cause by heat shock: relationship to developmental acquisition of thermotolerance. Reprod. Biol. Endocrinol. 11:3.

Rasmussen S., **J. Block**, G.E. Seidel, Jr., Z. Brink, K. McSweeney, P.W. Farin, L. Bonilla and P.J. Hansen. 2012. Pregnancy rates of lactating cows after transfer of in vitro produced embryos using X-sorted sperm. Theriogenology 79:453-461.

You, J., E. Lee, L. Bonilla, J. Francis, J. Koh, **J. Block**, S. Chen and P.J. Hansen. 2012. Treatment with the proteasome inhibitor MG132 during the end of oocyte maturation improves oocyte competence for development after fertilization in cattle. PLOS One 7:e48613.

Block, J., B. Loureiro, L. Bonilla and P.J. Hansen. 2011. Improving post-transfer survival of bovine embryos produced in vitro: Actions of insulin-like growth factor-1, colony stimulating factor-2 and hyaluronan. Theriogenology 76:1602-1609.

Loureiro, B., **J. Block**, M.G. Favoreto, S. Carambula, K. Pennington, A.D. Ealy, and P.J. Hansen. 2011. Consequences of conceptus exposure to colony-stimulating factor 2 on survival, elongation, interferon-τ secretion and gene expression. Reproduction 141:617-624.

Stewart, B., **J. Block**, P. Morelli, A.E. Navarette, M. Amstalden, L. Bonilla, P.J. Hansen, and T.R. Bilby. 2011. Efficacy of embryo transfer in lactating dairy cows during summer using fresh or vitrified embryos produced in-vitro with sex-sorted semen. J. Dairy Sci. 94:3437-3445.

Block, J., L. Bonilla, and P.J. Hansen. 2010. Efficacy of in-vitro embryo transfer in lactating dairy cows using fresh or vitrified embryos produced in a novel embryo culture medium. J. Dairy Sci. 93:5234-5242.

Hansen, P.J., **J. Block**, B. Loureiro, L. Bonilla, and K.E. Hendricks. 2010. Effects of gamete source and culture conditions on the competence of in vitro-produced embryos for post-transfer survival in cattle. Reprod. Fertil. Dev. 22:59-66.

Loureiro, B., L. Bonilla, **J. Block**, J.M. Fear, A.Q. Bonilla, and P.J.Hansen. 2009. Colony-stimulating factor 2 (CSF2) improves development and posttransfer survival of bovine embryos produced in vitro. Endocrinology. 150:5046-5054.

Block, J., L. Bonilla, and P.J. Hansen. 2009. Effect of addition of hyaluronan to embryo culture medium on survival of bovine embryos in vitro following vitrification and establishment of pregnancy after transfer to recipients. Theriogenology. 71:1063-1071.

Block, J., and P.J. Hansen. 2007. Interaction between season and culture with insulin-like growthfactor-1 on survival of in vitro produced embryos following transfer to lactating dairy cows. Theriogenology. 67:1518-1529.

***Block, J.** 2007. Use of insulin-like growth factor-1 to improve post-transfer survival of bovine embryos produced in vitro. Theriogenology. 68 Suppl. 1:S49-55.

Block. J., A.E. Fischer-Brown, T.M. Rodina, A.D. Ealy, and P.J. Hansen. 2007. The effect of in vitro treatment of bovine embryos with IGF-1 on subsequent development in utero to Day 14 of gestation. Theriogenology. 68:153-161.

Block, J., C. Wrenzycki, H. Niemann, D. Herrmann, and P.J. Hansen. 2008. Effects of insulin-like growth factor-1 on cellular and molecular characteristics of bovine blastocysts produced in vitro. Mol. Reprod. Dev. 75:895-903.

Jousan, F.D., L.A. de Castro e Paula, **J. Block**, and P.J. Hansen. 2007. Fertility of lactating dairy cows administered recombinant bovine somatotropin during heat stress. J. Dairy Sci. 90:341-351.

Bilby, T.R., **J. Block**, B.C. do Amaral, O. Sa Filho, F.T. Silvestre, P.J. Hansen, C.R. Staples, and W.W. Thatcher. 2006. Effects of dietary unsaturated fatty acids on oocyte quality and follicular development in lactating dairy cows in summer. J. Dairy Sci. 89:3891-3903.

Franco, M., **J. Block**, F.D. Jousan, L.A. de Castro e Paula, A.M. Brad, J.M. Franco, F. Grisel, R.L. Monson, J.J. Rutledge, and P.J. Hansen. 2006. Effect of transfer of one or two in vitro-produced embryos and post-transfer administration of gonadotropin releasing hormone on pregnancy rates of heat-stressed dairy cattle. Theriogenology. 66:224-233.

Block, J., R.M. Rivera, M. Drost, F.D. Jousan, C.R. Looney, F.T. Silvestre, F.F. Paula-Lopes, O.M. Ocon, H. Rosson, T.R. Bilby, R.L. Monson, J.J. Rutledge, and P.J. Hansen. 2005.

Effects of bovine somatotropin and timed embryo transfer on pregnancy rates in non-lactating cattle. Vet Rec. 156:175-176.

Hansen P.J., and **J. Block**. 2004. Towards an embryocentric world: the current and potential uses of embryo technologies in dairy production. Reprod. Fertil. Dev. 16:1-14.

Block, J., M. Drost, R.L. Monson, J.J. Rutledge, R.M. Rivera, F.F. Paula-Lopes, O.M. Ocon, C.E. Kriniger III, J. Liu, and P.J. Hansen. 2003. Use of insulin-like growth factor-1 during embryo culture and treatment of recipients with GnRH to increase pregnancy rates following the transfer of in vitro produced embryos to heat-stressed, lactating cows. J. Anim. Sci. 81:1590-1602.

Kriniger III, C.E., **J. Block**, Y.M. Al-Katanani, R.M. Rivera, C.C. Chase Jr., and P.J. Hansen. 2003. Differences between Brahman and Holstein cows in response to estrus synchronization, superovulation and resistance of embryos to heat shock. Anim. Repod. Sci.78:13-24.

Al-Katanani, Y.M., M. Drost, R.L. Monson, J.J. Rutledge, C.E. Kriniger III, **J. Block**, W. W. Thatcher and P.J. Hansen. 2002. Pregnancy rates following timed embryo transfer with fresh or vitrified in vitro produced embryos in lactating dairy cows under heat stress conditions. Theriogenology 58:171-182.

Block, J., C.C. Chase, Jr., and P.J. Hansen. 2002. Inheritance of resistance of bovine preimplantation embryos to heat shock: relative importance of the maternal versus paternal contribution. Mol. Reprod. Dev. 63:32-37.

Peer-reviewed journal articles – under review (submitted)

*Brown, W., M. Kuzniar, S. Retherford, B. Mitrisin, A. Ingols, J.K. Tena, S.C. Sucheta and **J. Block**. Administration of a non-specific immunostimulant prior to mating does not affect pregnancy establishment or fetal and placental development in mice. Biochem. Biophys. Rep. (submitted June 4th, 2025; initial decision: revise and resubmit July 16th, 2025; revised manuscript submitted September 21st, 2025)

*Retherford, S.A., K.L. Woodruff, D.K. Dittoe and **J. Block**. 2025. The Bull Reproductive Microbiome: Characterization of Microbial Communities within Semen and Organs of the Reproductive system. Biol. Reprod. (submitted July 17th, 2025; initial decision: revise and resubmit August 29th, 2025; revised manuscript due November 26th, 2025)

Seekford, Z.K., A. Tariq, M.L.J. Haimon, Q.A. Hoorn, G.A. Macay, Y. Zhai, **J. Block**, M.B. Rabaglino, K.C. Jeong, P.J. Hansen and J.J. Bromfield. 2025. Induced uterine infection alters bovine endometrial function and embryonic competence. Reproduction. (submitted May 1st, 2025; initial decision: revise and resubmit August 4th, 2025; revised manuscript submitted August 13th, 2025)

Macay, G.A., T.D. Gonzalez, Z.K. Seekford, R. Ramirez-Hernandez, P.C.C. Molinari, M.J. Dickson, B.R. Harstine, **J. Block** and J.J. Bromfield. 2025. Induced uterine infection alters bovine endometrial function and embryonic competence. Reproduction. (submitted September 19th, 2025)

*Kuzniar, M., R. White, J.J. Bromfield and **J. Block**. 2025. Interleukin-1 beta alters the expression of uterine and oviductal inflammatory mediators and indirectly enhances in vitro embryo development in the bovine. Theriogenology. (submitted October 6th, 2025)

Book chapters

Estrada-Cortes, E., L. Gustavo-Siqueira and **J. Block**. 2024. Developmental programming and assisted reproductive technologies in cattle. In: J.C. Gardon and K. Satue Ambrojo, editors, Assisted Reproductive Technologies in Animals Volume 1. Springer, Cham, CH. doi.org/10.1007/978-3-031-73079-5_4

Proceedings

**Indicates publications as corresponding or senior author*
†*Indicates peer-reviewed proceeding*

***Block, J.** Potential opportunities to improve the efficacy of in vitro embryo production in cattle, Proceedings of the American Embryo Transfer Association Annual Convention, 2024

†***Block, J.**, B. Loureiro, L. Bonilla and P.J. Hansen. 2011. Improving post-transfer survival of bovine embryos produced in vitro: Actions of insulin-like growth factor-1, colony stimulating factor-2 and hyaluronan. Theriogenology 76:1602-1609.

†Hansen, P.J., **J. Block**, B. Loureiro, L. Bonilla, and K.E. Hendricks. 2010. Effects of gamete source and culture conditions on the competence of in vitro-produced embryos for post-transfer survival in cattle. Reprod. Fertil. Dev. 22:59-66.

†***Block, J.** 2007. Use of insulin-like growth factor-1 to improve post-transfer survival of bovine embryos produced in vitro. Theriogenology. 68 Suppl. 1:S49-55.

†Hansen P.J., and **J. Block**. 2004. Towards an embryocentric world: the current and potential uses of embryo technologies in dairy production. Reprod. Fertil. Dev. 16:1-14.

Peer-reviewed abstracts

**Indicates publications as senior author*

*Ohm. O. and **J. Block**. 2025.Effects of modifying pre-culture conditions on differentiation of bovine embryonic stem cells toward a primordial germ cell-like lineage. International Embryo Technology Society.

***Block, J.**, E. Moreno, B. Chasi, S. Hincapie and M.S. Ortega. 2025. Effect of zygotic ablation of progesterone receptor membrane component-1 on development and differentiation of bovine embryos produced in vitro. International Embryo Technology Society.

*Block, J. S. Reil, A.L. Zezeski and T.W. Geary. 2025. Effects of administration of a non-specific immunostimulant prior to timed artificial insemination on pregnancy per artificial insemination in mature beef cows. J. Anim. Sci. 103 Suppl. 3.

*Retherford, S., K.L. Woodruff, D.K. Dittoe and **J. Block**. 2024. Characterization of the extent and composition of the bull reproductive microbiome. Reprod. Fertil. Dev. 37:158.

*Brown, W., M. Oliveira, R. Reis Silva, D. Demetrio and **J. Block**. 2023. Effect of administration of mycobacterium cell wall fraction during follicle superstimulation on oocyte numbers and embryo development following ovum pick-up and in-vitro embryo production in virgin dairy heifers. Reprod. Fertil. Dev. 35:230.

*Brown, W., M. Oliveira, R. Reis Silva, D. Demetrio and **J. Block**. 2023. Effect of administration of mycobacterium cell wall fraction during the peri-ovulatory period on the proportion of pregnancies obtained in virgin dairy heifers receiving in-vitro produced embryos. Reprod. Fertil. Dev. 35:194.

*Brown, W., M. Oliveira, R. Reis Silva, D. Demetrio, and **J. Block**. 2023. Effect of administration of mycobacterium cell wall fraction during the peri-ovulatory period on embryo production following superovulation in virgin dairy heifers. Animal - science proceedings. 14:517–518. doi:10.1016/j.anscip.2023.03.139.

*Brown, W. M. Kuzniar, S. Retherford, B. Mitrisin, A Ingols, J.K. Tena, S.C. Sucheta and **J. Block**. 2023. Effects of administration of mycobacterium cell wall fraction during the peri-ovulatory period in mice on pregnancy establishment and fetal development. SSR 56th Annual Meeting.

Cuellar, C., T.F. Amaral, P. Villamil, F. Ongaratto, D.O. Martinez, J.D. de Agostini Losano, E. Estrada Cortes, Q. Hoorn, O. Rae, **J. Block**, B.W. Daigneault, S. Dikmen, J.H. Bittar, T. Sonstegard, and P.J. Hansen. 2023. Consequences of gene editing of PRLR on thermotolerance, growth and male reproduction in cattle. SSR 56th Annual Meeting.

*Kuzniar, M., R. White, J.J. Bromfield and ***J. Block**. 2023. Treatment of bovine endometrial explants with interleukin-1 beta increases the relative abundance of transcripts for pro-inflammatory cytokines. Reprod. Fertil. Dev. 35:172.

*Kuzniar, M., W. Brown, S. Retherford, B. Mitrisin and ***J. Block**. 2023. Effect of intrauterine administration of recombinant bovine interleukin-1 beta during the peri-ovulatory period in beef cattle on corpus luteum development and conceptus survival following embryo transfer. SSR 56th Annual Meeting.

*Kuzniar, M., and ***J. Block**. 2023. Bovine embryo development in vitro following culture in the presence of cell culture supernatant derived from oviductal epithelial cells treated with interleukin-1 beta. Animal - science proceedings. 14:482–483. doi:10.1016/j.anscip.2023.03.084.

*Retherford, S. A., M. Kuzniar, B. Mitrisin, and ***J. Block**. 2023. Effects of ascorbate on blastocyst development following bisection or quadrisection of bovine morula stage embryos produced in vitro. Animal - science proceedings. 14:484. doi:10.1016/j.anscip.2023.03.086.

Gonzalez, T.D., **J. Block**, P.J. Hansen, J.J. Bromfield, G.A. Macay, Z.K. Seekford, J.R. Rizo and W.G. Ortiz. 2022. Evaluation of bovine embryo morphology and subsequent postnatal phenotype following conception in the presence of seminal plasma. Reprod. Fertil. Dev. 34:315-316.

Macay, G.A., Z.K. Seekford, J.R. Rizo, W.G. Ortiz, T.D. Gonzalez, **J. Block**, P.J. Hansen and J.J. Bromfield. 2021. Evaluation of bovine embryo morphology and subsequent postnatal phenotype following conception in the presence of seminal plasma. Reprod. Fert. Dev. 34:315-316.

Haimon, M.L., E. Estrada-Cortes, T.F. Amaral, S. Jeensuk, F. Sosa, J. Bittar, **J. Block**, D.C. Heredia, A.M. Gonella-Diaza, N. Di Lorenzo and P.J. Hansen. 2021. Exposure to 1.8 mM choline does not impact development to the blastocyst stage or pregnancy rate after transfer of bovine embryos produced in vitro. J. Anim. Sci. 99:361-362 Suppl. 3.

Estrada-Cortes E., W. Ortiz, E. Jannaman, C.R. Staples, **J. Block** and P.J. Hansen. 2019. Developmental programming of bovine preimplantation embryos by choline chloride. SSR 52nd Annual Conference P461.

Dickson, M., **J. Block**, J.E.P. Santos, I.M. Sheldon and J.J. Bromfield. 2019. Induced uterine disease reduces oocyte quality and embryo development in the cow. SSR 52nd Annual Conference P512.

Piersanti, R., J. Block, J.E.P. Santos, I.M. Sheldon and J.J. Bromfield. 2019. Short- and long-term effects of uterine disease on oocyte transcriptome in dairy cows. SSR 52nd Annual Conference P521.

*Zolini, A.M., P.J. Hansen and **J. Block**. 2017. Effect of addition of L-carnitine during culture on pregnancy rate obtained after transfer of cryopreserved bovine embryos produced in vitro. J. Dairy Sci. 100:76 Suppl. 2.

*Zolini, A.M., P.J. Hansen, C.A. Torres and **J. Block**. 2016. Effect of the timing of addition of *trans*-10, *cis*-12 conjugated linoleic acid and L-carnitine during culture on development and cryotolerance of bovine embryos produced in vitro. J. Animal Sci. 94:540 E-Suppl. 5.

Kaniyamattam, K., **J. Block**, P.J. Hansen and A. De Vries. 2016. Estimation of genetic progress and profitability of dairy herds using varying proportions of in-vitro produced sexed embryos. J. Dairy Sci. 99:181 E-Suppl. 1.

***Block, J.**, A.M. Zolini, E. Carrascal-Triana, A. Ruiz, P.J. Hansen and C.A.A. Torres. 2016. Effects of L-carnitine and trans-10, cis-12 conjugated linoleic acid supplementation during maturation on development and cryotolerance of bovine embryos produced in vitro. Reprod. Fertil. Dev. 28:147.

*Carrascal-Triana, E.L., A.M. Zolini, A. Ruiz, J.M. Penitente-Filho, C.A.A. Torres and **J. Block**. 2016. Post-thaw viability of bovine embryos produced in vitro following treatment with ascorbic acid, dithiothreitol, and caspase-3 inhibitor during cryopreservation. Reprod. Fertil. Dev. 28:146-147.

*Zolini, A., E.L. Carrascal-Triana, A. Ruiz, J.M. Penitente-Filho, P.J. Hansen, C.A.A. Torres and **J. Block.** 2016. Effects of serum and L-carnitine on development and cryotolerance of bovine embryos produced in vitro. Reprod. Fertil. Dev. 28:211-212.

*Ruiz, A., P.J. Hansen and **J. Block**. 2014. Effects of lipid metabolic regulators during bovine embryo culture on blastocyst development and cryosurvival. Reprod. Fertil. Dev. 27:119-120.

Block, J., A. Ruiz, A.M. Reeg, L.K. Mamedova, B.J. Bradford and T.R. Bilby. 2013. Expression of niacin receptor GPR109A in bovine oocytes and preimplantation embryos and effect of addition of niacin during embryo culture on development following exposure to heat shock. J. Dairy Sci. 96:590 E-Suppl. 1.

Denicol, A.D., D.E. Kelley, **J. Block**, K.G. Pohler, C.J. Mortensen and P.J. Hansen. 2013. Exposure of bovine embryos to WNT antagonist dickkopf-1 and to colony stimulating factor 2 enhances embryo survival and pregnancy rate following embryo transfer in lactating dairy cows. Biol. Reprod. 46:285 Suppl. 1.

De Vries, A., F. Du, K.D. Gay, T.R. Bilby, **J. Block** and P.J. Hansen. 2013. Optimization of breeding decisions for dairy cattle subject to long periods of seasonal heat stress. J. Dairy Sci. 96:642 E-Suppl. 1.

Bonilla, L., **J. Block** and P.J. Hansen. 2012. Consequences of embryo transfer using in vitro produced embryos for characteristics of the offspring and recipient after calving. Reprod. Fertil. Dev. 47:456.

Bilby, T.R., **J. Block**, B.M. Stewart, P. Morelli, L. Bonilla and P.J. Hansen. 2011. Efficacy of embryo transfer in lactating dairy cows during summer using fresh or vitrified embryos produced in vitro with sex-sorted semen. II. Calving data. J. Dairy Sci. 94:351 E-Suppl. 1.

De Vries, A., T.R. Bilby, **J. Block** and P.J. Hansen. 2011. Economic evaluation of embryo transfer in dairy cows during the summer using linear programming. J. Dairy Sci. 94:351 E-Suppl. 1.

Block, J., L. Bonilla, and P.J. Hansen. 2010. Use of a novel bovine embryo culture medium to improve blastocyst development and survival following vitrification. Reprod. Fertil. Dev. 22:231.

Sanders, A.H., A. De Vries, and **J. Block**. 2010. Prediction of pregnancy by increased physical activity measured prior to timed insemination. J. Dairy Sci. 93:695 E-Suppl. 1.

Sanders, A.H., A. De Vries, and **J. Block**. 2010. Predicting probability of pregnancy using all activity signals prior to pregnancy diagnosis. J. Dairy Sci. 93:829 E-Suppl. 1.

Stewart, B.M., **J. Block**, P. Morelli, A.E. Navarrette, M. Amstalden, L. Bonilla, P.J. Hansen and T.R. Bilby. 2010. Efficacy of embryo transfer in lactating dairy cows during summer using fresh or vitrified embryos produced in-vitro with sex-sorted semen. J. Dairy Sci. 93:821 E-Suppl. 1.

Bonilla, L., **J. Block**, and P.J. Hansen. 2008. Effect of the addition of hyaluronan to bovine embryo culture on in vitro survival after cryopreservation and in vivo survival following transfer to recipients. J. Anim. Sci. 86:462 E-Suppl. 2.

Block, J., L. Bonilla, and P.J. Hansen. 2008. Optimization of culture conditions for *in-vitro*-produced bovine embryos to enhance blastocyst yield and survival following vitrification. Reprod. Fertil. Dev. 20:142.

Block, J., C. Wrenzycki, D. Herrman, T.M. Rodina, H. Niemann, A.D. Ealy, A.E. Fischer-Brown, and P.J. Hansen. 2007. Effect of insulin-like growth factor-1 during culture on blastocyst mRNA abundance and survival in utero to day 14 of bovine embryos produced in vitro. J. Anim. Sci. 85:531 Suppl. 1.

Block, J., and P.J. Hansen. 2006. Effect of the addition of insulin-like growth factor-1 to embryo culture medium on pregnancy rates following timed embryo transfer in lactating dairy cows. J. Anim. Sci. 84:287 Suppl. 1.

Jousan, F.D., L.A. de Castro e Paula, **J. Block**, and P.J. Hansen. 2006. Fertility of lactating dairy cows administered bovine somatotropin during heat stress. J. Anim. Sci. 84:287 Suppl. 1.

Franco M., **Block J**., Jousan F.D., de Castro e Paula L.A., Brad A.M., Franco J.M., Grisel F., Monson R.L., Rutledge J.J., and P.J. Hansen. 2006. Pregnancy rates in heat-stressed dairy cattle receiving one or two in vitro produced embryos in a timed embryo transfer program. Reprod. Fertil. Dev. 18:202

do Amaral B.C., Staples C.R., Sa Filho O., Bilby T.R., **Block J.**, Silvestre F.T., Cullens F.M., Alosilla, Jr. C.E., Badinga L., and W.W. Thatcher. 2005. Effect of supplemental fat source on production, immunity, and reproduction of periparturient Holstein cows in summer. J. Dairy Sci. 88: 178 Suppl. 1.

Bilby T.R., **Block J**., Sa Filho O., Silvestre F.T., do Amaral B.C., Hansen P.J., Staples C.R., and W.W. Thatcher. 2005. Effect of supplemental fats on oocyte quality and embryo development in lactating Holstein dairy cows in summer. Biol. Reprod. Special Issue.

Franco M., **Block J**., Jousan F.D., de Castro e Paula L.A., Brad A., and P.J. Hansen. 2005. Effectiveness of administration of gonadotrophin releasing hormone at day 11 or 14 post-ovulation for increasing fertility of lactating dairy cows and non-lactating heifers. Biol. Reprod. Special Issue.

Block, J., R.L. Monson, J.J. Rutledge, R.M. Rivera, F.F. Paula-Lopes, O.M. Ocon, H. Rosson, Y.M. Al-Katanani, and P.J. Hansen. 2003. Effect of bovine somatotropin and breed of

recipient on pregnancy rates following timed embryo transfer with in vitro produced embryos. J. Anim. Sci. 81:179 Suppl. 1.

Block, J., C.C. Chase, Jr. and P.J. Hansen. 2002. Importance of maternal versus paternal contributions for resistance of bovine preimplantation embryos to heat shock. Biol. Reprod. 66:154 Suppl. 1.

Block, J., M. Drost, R.L. Monson, J.J. Rutledge, R.M. Rivera, F.F. Paula-Lopes, O.M. Ocon and P.J. Hansen. 2002. Use of insulin-like growth factor-1 in culture and administration of GnRH to recipients to improve pregnancy rates following timed embryo transfer of in vitro-produced embryos to lactating dairy cows. J. Dairy Sci. 85:20 Suppl. 1.

Al-Katanani, Y.M., M. Drost, R.L. Monson, J.J. Rutledge, C.E. Krininger III, **J. Block** and P.J. Hansen. 2001. Pregnancy rates in lactating dairy cows following timed embryo transfer under heat stress conditions. J. Dairy Sci. 84:464 Suppl.1.

Krininger III, C.E., **J.Block**, Y.M. Al-Katanani, R.M. Rivera, C.C.Chase, Jr., and P.J. Hansen. 2001. Differences in resistance to heat shock between 2-4 cell Brahman and Holstein embryos produced in vivo. J. Anim. Sci. 79:10 Suppl. 1.

Dissertation and thesis

Block, J. Effect of insulin-like growth factor-1 on development and post-transfer survival of bovine embryos produced in vitro (Doctoral dissertation). Gainesville, FL, University of Florida, 2007.

Block, J. Strategies to improve post-transfer survival of bovine embryos produced in vitro (Master's thesis). Gainesville, FL, University of Florida, 2003.

INVITED PRESENTATIONS

2024	Invited Speaker, "Potential opportunities to improve the efficacy of in vitro embryo production in cattle," American Embryo Transfer Association Annual Convention, Toronto, Canada
2023	Invited Seminar, "Effects of proinflammatory stimulation on embryo development and survival in cattle." Animal Reproduction and Biotechnology Laboratory Seminar, Colorado State University
2023	Invited Speaker, "Embryo transfer basics: How to produce embryos and factors affecting success." Applied Reproductive Strategies in Beef Cattle, Cheyenne, WY
2022	Invited Speaker, "Implementation of embryo transfer programs: methods for embryo production and factors affecting success." Applied Reproductive Strategies in Beef Cattle, San Antonio, TX
2013	Invited Speaker, "Effects of heat stress on reproduction in dairy cattle and strategies for mitigation," IV Simposio Internacional de Bovinocultura Leiteira, Universidade de Viçosa, Viçosa, Brazil
2013	Invited Speaker, "Strategies to improve post-transfer survival of bovine embryos produced in-vitro," IV Simposio Internacional de Bovinocultura Leiteira, Universidade de Viçosa, Viçosa, Brazil
2013	Invited Speaker, "Adverse effects of heat stress on reproduction in lactating dairy cows and strategies for mitigation," European Federation of Animal Science Annual Meeting, Nantes, France

2012 Invited Speaker, "In-vitro produced embryo transfer as a tool for improving fertility: Results, economics and logistical considerations," International Embryo Transfer Society Innovation Workshop, St. Augustine, FL

2011 Invited Speaker, "Improving post-transfer survival of bovine embryos produced in vitro: Actions of insulin-like growth factor-1, colony stimulating factor-2 and hyaluronan," International Embryo Transfer Society Pre-Conference Symposium, Orlando, FL

2007 Invited Speaker, "Use of insulin-like growth factor-1 to improve post-transfer survival of bovine embryos produced in vitro," International Conference on Farm Animal Reproduction, Rolduc, The Netherlands

TEACHING EXPERIENCE

University of Wyoming, Laramie, WY

Core courses taught

ANSC 4120/5120 – Principles of Mammalian Reproduction (Fall Semester)

- 2020 – present
- 4 credits (course includes laboratory sections for undergraduate students; graduate students participate in a semester long paper discussion and/or writing assignment (i.e., mini-literature review)
- 40-60 undergraduate students; 1-5 graduate students
- Course objectives: To provide students with foundational knowledge in the areas of reproductive anatomy, function, physiology and endocrinology of mammalian species (particularly domesticated animals) such that students will be able to explain the interrelationships between the neuro/endocrine system and reproductive system that regulate reproductive function through development of written communication and critical thinking skills.

ANSC 4130 – Management of Reproduction (Spring Semester)

- 2021 – present
- 3 credits
- 10-15 undergraduate students
- Course objective: To introduce and actively discuss key management factors in livestock production systems (particularly ruminant species) that affect reproductive efficiency and to provide hands-on exposure to assisted reproductive technologies, including artificial insemination, embryo transfer, and in vitro fertilization.

ANSC 1010 – Introduction to Animal Science (Fall Semester)

- 2020 – present
- Guest instructor – animal reproduction section
- 3 credits
- 80-100 undergraduate students
- Responsible for teaching 4 lectures and 1 laboratory

ANSC 5890 – Advanced Seminar (Fall and Spring Semesters)

- 2022 – present
- 1-3 students
- 1-2 credits
- Course objective: To provide graduate students with the opportunity to prepare and present a seminar to the department on their research project or a scientific topic within

one of the disciplines of animal science. The course also provides students with the opportunity to hear seminars from both internal and external faculty speakers and interact directly with leading researchers in the field of animal science.

ANSC 5870 – Reproductive Biology Seminar (Fall and Spring Semesters)

- 2021 – present
- Co-instructor
- 2-5 students
- 1 credit
- Course objective: The course alternates from semester to semester between student seminars and a journal club format. The course objectives are to provide students with the opportunity to prepare and present a scientific seminar in an area of reproductive physiology unrelated to their own research project and to develop skills for critical evaluation of scientific content, particularly in the area of reproductive biology.

Other teaching activities

ANSC4090 – Precision Livestock Management

- 2025
- Provided a lecture on technologies for precision management of reproduction in livestock

ANSC4220 – Advanced Beef Production and Management (Spring Semester)

- 2024
- Assisted with laboratory on breeding soundness exams and semen evaluation in bulls

ANSC4230 – Advanced Sheep Production and Management (Fall Semester)

- 2022 – 2024: Assisted with laboratory on semen collection and evaluation
- 2023: Provided lecture on reproductive management in sheep

University of Florida, Gainesville, FL

Core courses taught

ANS6704 – Mammalian Endocrinology (Fall Semester)

- 2012-2013
- 2 credits
- 10-15 graduate students
- Course objective: As an introductory graduate course on endocrinology, the primary objective is to provide students with foundational knowledge on the mammalian endocrine system and how it is regulated with emphasis on building student knowledge in the areas of hormone action and intracellular signaling mechanisms.

ANS6751 – Physiology of Reproduction (Fall Semester)

- 2010-2014
- Co-instructor (team taught course)
- 3 credits
- 10-15 graduate students
- Responsible for teaching 2-3 lectures

MENTORING

Thesis/Dissertation advisor

2023-2025 **Olivia Ohm** (M.S. student)

Mentor and Graduate Committee Chair, Department of Animal Science, University of Wyoming
Thesis: *Effects of modifying pre-culture conditions on differentiation of bovine embryonic stem cells toward a primordial germ cell-like lineage*
Recipient: USDA National Needs Fellowship – Reproductive Biotechnologies; 2025 Department of Animal Science Outstanding Graduate Student Award

2022-2024 **Sarah Retherford** (M.S. student)
Mentor and Graduate Committee Chair, Department of Animal Science, University of Wyoming
Thesis: *An Exploration of the Extent of the Bull Reproductive Microbiome and its Relationship with the Rumen Microbiome*
Recipient: Doak Graduate Fellowship from National Association of Animal Breeders
Present position: Medical student, University of Wyoming WWAMI program

2021-2024 **Michaela Kuzniar** (M.S. student)
Mentor and Graduate Committee Chair, Department of Animal Science, University of Wyoming
Thesis: *Effects of Interleukin-1 Beta on Bovine Endometrial and Oviductal Gene Expression, Blastocyst Development, and Conceptus Survival*
Present position: Doctoral candidate, Department of Animal Sciences, University of Tennessee

2021-2023 **Brooke Mitrisin** (M.S. student)
Mentor and Graduate Committee Chair, Department of Animal Science, University of Wyoming
Thesis: *Effects of Activin A and Fibroblast Growth Factor 2 on Bovine Embryonic Stem Cell Differentiation*
Present position: Doctoral candidate, Interdisciplinary Graduate Program in Biomedical Sciences, University of Kansas Medical Center

2021-2023 **Whitney Brown** (M.S. student)
Mentor and Graduate Committee Chair, Department of Animal Science, University of Wyoming
Thesis: *Effects of mycobacterium cell wall fraction on embryo development, pregnancy establishment, and fetal survival*
Present position: Doctoral candidate, Department of Animal and Dairy Sciences, University of Wisconsin-Madison

2013-2015 **Antonio Ruiz de King** (M.S. student)
Mentor and Graduate Committee Chair, Department of Animal Sciences, University of Florida
Thesis: *Effect of the addition of metabolic regulators during culture on development and cryotolerance of bovine embryos produced in vitro*

Graduate committee member

2025-pres **Janelle Grant**
M.S. student – Animal & Veterinary Science, University of Wyoming
Graduate advisor: Brenda Alexander

2025-pres **Ashley Leilinski-Schleogel**

Ph.D. student – Molecular and Cellular Life Science Program, University of Wyoming
Graduate advisor: James K. Pru

2025-pres **Arpita Saha**
Ph.D. student – Molecular and Cellular Life Science Program, University of Wyoming
Graduate advisor: James K. Pru

2025-pres **Lydia Looby**
M.S. student – Animal & Veterinary Science, University of Wyoming
Graduate advisor: James K. Pru

2023-pres **Courtney Blake**
M.S. student – Animal & Veterinary Science, University of Wyoming
Graduate advisor: Brenda Alexander

2023-pres **Ari Tourtellot**
Ph.D. Student – Zoology & Physiology, University of Wyoming
Graduate advisor: Brian D. Cherrington

2022-pres **Nikhil Srivastava**
Ph.D. student – Molecular and Cellular Life Sciences Program, University of Wyoming
Graduate advisor: James. K Pru

2019-2022 **Froylan Sosa**
Ph.D. student – Animal Molecular and Cellular Biology Program, University of Florida
Graduate Advisor: Peter J. Hansen
Served as external committee member while at University of Wyoming

2016-2019 **Adriana Moreira Zolini**
Ph.D. student – Animal Molecular and Cellular Biology Program, University of Florida
Graduate Advisor: Peter J. Hansen
Served as external committee member while at Zoetis, Inc.

2013-2016 **Sofia Ortega**
Ph.D. student – Animal Molecular and Cellular Biology Program, University of Florida
Graduate Advisor: Peter J. Hansen

2012-2016 **Karun Kaniyamattam**
Ph.D. student – Animal Sciences, University of Florida
Graduate advisor: Albert de Vries

2009-2012 **Sarah Fields (Cochran)**
Ph.D. student – Animal Molecular and Cellular Biology Program, University of Florida
Graduate Advisor: Peter J. Hansen

Visiting scholars

2024 **Ximena Vargas**
Ph.D. Student – Department of Biological Sciences, Universidade de Guadalajara (Mexico)

Research project: Effects of treatment of bovine in vitro produced embryos with ixabepilone prior to cryopreservation on subsequent post-thaw survival

2015 **Erly Carrascal-Triana**
Ph.D. student – Department of Animal Science, Universidade Federal de Viçosa (Brazil)
Research project: Effects of supplementation of embryo freezing medium with ascorbate on the cryosurvival of bovine embryos produced in vitro

2014-2015 **Adriana Moreira Zolini**
M.S. student – Department of Animal Science, Universidade Federal de Viçosa (Brazil)
Research project: Effects of addition of L-carnitine to medium used for oocyte maturation and embryo culture on the cryotolerance of bovine embryos produced in vitro

Undergraduate student researchers

2025-pres **Ryley Maurer**
B.S. Animal & Veterinary Science, University of Wyoming
Research project: Effects of insulin-like growth factor-1 on development and differentiation of bovine in vitro produced embryos following dissociation
Recipient: Wyoming NASA Space Grant Fellowship and Wyoming Research Scholars Fellowship

2022 **Allison Ingols**
B.S. Animal & Veterinary Science, University of Wyoming
Research project: Effects of dissociation of bovine in vitro produced embryos at the 8-cell stage on subsequent development to the blastocyst stage
Present position: Veterinary student, Louisiana State University

2021 **Sarah Retherford**
B.S. Animal & Veterinary Science, University of Wyoming
Research project: Effects of ascorbate on survival of bovine morula stage embryos produced in vitro following either bisection or quadrisection
Scientific presentations: Abstract and poster, International Ruminant Reproduction Symposium, Galloway, Ireland 2023
Present position: Medical student, University of Wyoming WWAMI Program

2013-2014 **Katie Schilling**
B.S. Animal Sciences, University of Florida
Research project: Effects of supplementation of culture medium with metabolic regulators on the expression of genes involved in lipid metabolism in bovine embryos produced in vitro

Undergraduate research assistants

2024-pres Ryley Maurer, B.S. Animal & Veterinary Science
2024-pres Emily Nettleton, B.S. Animal & Veterinary Science
2024 Emi Ramirez, B.S. Animal & Veterinary Science
2023-2024 Maitri Foley, B.S. Biology
2024-2024 Shayna Skaar, B.S. Animal & Veterinary Science
2023-2024 Maddox Moore, B.S. Animal & Veterinary Science

2023-2024	Camden Foley, B.S. Zoology & Physiology
2023	Saige Morton, B.S. Animal & Veterinary Science
2023	Lauren Anderson, B.S. Animal & Veterinary Science
2022	Allison Ingols, B.S. Animal & Veterinary Science
2021	Sarah Retherford, B.S. Animal & Veterinary Science

PROFESSIONAL INVOLVEMENT

Scientific societies

- **Society for the Study of Reproduction** (Member)
  - Public Affairs Committee, Member – 2025 to present
  - Development Committee, Member – 2022 to 2025
- **American Society of Animal Science** (Member)
  - Physiology and Endocrinology Symposium Program Committee, Chair – 2025 to 2026
  - Physiology and Endocrinology Symposium Program Committee, Member – 2023 to 2025
  - Biennial Reproduction Symposium Program Committee, Member – 2021 to 2022
  - ASAS-Western Section (Member)
- **Internation Embryo Technology Society** (Member)
  - Annual Meeting Local Organizing Committee, Member – 2023 to 2024
  - Section Editor, Annual Meeting Abstracts – 2015 to present
- **American Embryo Transfer Association** (Member)
- **American Dairy Science Association** (Member)
- **Hatch-Multistate W4112 Reproduction in Domestic Ruminants** (Member)
  - Secretary – 2025 to 2026
  - Member at Large – 2024 to 2025

Grant review panels

2024 USDA-AFRI: Engineering for Agricultural Production and Processing, Panelist
2023 USDA-AFRI: Engineering for Precision Crop and Waste Management, Panelist
2023 USDA-AFRI: Engineering for Agricultural Production and Processing, Panelist

Ad hoc reviewer

Biology of Reproduction, *Reproduction*, *Theriogenology*, *Reproduction Fertility and Development*, *Scientific Reports*, *FASEB Journal*, *Animal Reproduction Science*, *Journal of Animal Science*, *Journal of Dairy Science*, *Livestock Science*, *Animal Reproduction*

SERVICE AND AWARDS

University committees

2025-pres	Member, Graduate Council, University of Wyoming
2025-pres	Member, Committee on Graduate Teaching Assistantship Allocation, College of Agriculture, Life Sciences, and Natural Resources, University of Wyoming
2022-pres	Member, Graduate Committee, Department of Animal Science, University of Wyoming

Faculty search committees

2022-pres	Member, Faculty Search Committee for positions in veterinary pathology, Department of Veterinary Science, University of Wyoming
2022-2023	Member, Faculty Search Committee for joint position in reproductive/nutritional physiology, Departments of Animal Science and Zoology and Physiology, University of Wyoming

Other service activities

2022-pres	Coordinator, Department of Animal Science Seminar Series, University of Wyoming

Honors and Awards

2025	Nominee, Early Career Research Award, University of Wyoming Agricultural Experiment Station
2004	Outstanding Graduate Student, Department of Animal Sciences, University of Florida
2003-2007	Graduate Alumni Fellow, Institute of Food and Agricultural Sciences, University of Florida