

Victor E. Gomez Leon
Assistant Professor/ Dairy Extension Specialist
Department of Animal Sciences and Industry
Kansas State University
135 Call Hall, Manhattan, KS, 66506
7855322652 – 6086929098 – vgomezleon@ksu.edu

SUMMARY

DVM and Animal Scientist with experience in research, teaching, and extension related to the areas of assisted reproduction and biotechnologies. Expertise in designing and developing research projects, managing laboratory techniques, and applying research results in the field. Proactive worker with excellent interpersonal skills, time management, and teamwork capabilities.

EDUCATION AND TRAINING

B.S. – Veterinary Medicine and Animal Science, 2006 – 2011
Department of Veterinary Medicine and Animal Science,
Universidad de Córdoba, Colombia.

M.S. – Veterinary Sciences/ reproduction, 2012 – 2014
Science Center in Biology and Health,
Universidade Federal de Viçosa. MG, Brazil.

Ph.D. – Veterinary Sciences/ reproduction, 2014 – 2018
Science Center in Biology and Health,
Universidade Federal de Viçosa. MG, Brazil.

Ph.D. research development and thesis 2017 – 2018
elaboration as a Research Assistant,
College of Agriculture & Life Science,
Department of Dairy Science,
University of Wisconsin-Madison, US.

Post-doctoral Research Assistant, 2018 – 2021
College of Agriculture & Life Science,
Department of Animal and Dairy Sciences,
University of Wisconsin – Madison, US.

PROFESIONAL EXPERIENCE

Assistant Professor/ Dairy Extension Specialist 2021 to present
College of Agriculture
Dept. of Animal Sciences & Industry, Kansas State University

AREAS OF RESEARCH

- Reproduction physiology
- Dairy cattle reproduction

SCHOLARSHIPS

- 2015 – 2017. Scholarship – COLFUTURO scholarship/ credit program. Colombia.
- 2014 – 2017. Doctorate scholarship from the Coordination for the Improvement of Higher Education Personnel (CAPES; Brazil).
- 2012 – 2014. Master scholarship from the graduate student program partnership between Colombia and Brazil (PEC-PG).

SOCIETIES

- 2019 - current. Member of the Society for the Study of Reproduction (SSR).
- 2020 - current. Member of the Dairy Cattle Reproduction Council (DCRC).
- 2021 - current. Member of the American Dairy Science Association (ADSA).

HIGHLIGHTS

- Conceptual understanding of reproductive physiology and skills in reproductive techniques.
- Active roles in research and teaching (i.e., lectures, laboratories, and short courses).
- Motivated and enthusiastic.
- Languages: Spanish, Portuguese, English.

ARTICLES IN PEER-REVIEWED JOURNALS

- Ginther OJ, Silva PN, **Gomez-León VE**, Domingues RR, Inskoop EK. Side of ovulation at each end of a two- and three-wave interovulatory intervals and before and after pregnancy in cattle. *Animal Reproduction Science* 2021; 229. DOI: 10.1016/j.anireprosci.2021.106758
- **Gomez-León VE**, Kirkpatrick BW, Andrade JP, Sadrollah M, Garcia-Guerra A, Ginther OJ, Wiltbank MC. Selection of fewer dominant follicles in Trio carriers given GnRH antagonist and LH action replaced by nonpulsatile hCG. *Biology of Reproduction* 2020. DOI: 10.1093/biolre/ioaa167
- Madureira G, **Gomez-León VE**, Grillo GF, Andrade JP, Lett B, Moghbeli SM, Wiltbank MC, Kirkpatrick BW. Practical application of an impractical bovine genotype; creating bilateral twin pregnancies in Trio allele carriers. *Journal of Animal Science* 2020. DOI: 10.1093/jas/skaa292.
- Andrade JP, **Gomez-León VE**, Andrade FS, Carvalho BP, Lacouth KL, Garcia FZ, Jacob JF, Sales JNS, Wiltbank MC, Mello MRB. Development of a novel 21-day reinsemination program, ReBreed21, in *Bos indicus* heifers. *Theriogenology* 2020; 150: 125-31. DOI: 10.1093/jas/skaa292.
- Ginther OJ, **Gomez-León VE**. Intraovarianism and differences in ovulation frequency between left and right ovaries in heifers. *Reproductive biology* 2020; 20: 333-7. DOI: 10.1016/j.repbio.2020.05.006.
- **Gomez-León VE**, Ginther OJ, Domingues RR, Guimaraes JD, Wiltbank MC. Necessity for LH in selection and continued growth of the bovine dominant follicle. *Reproduction* 2020; 159:559-69. DOI: 10.1530/REP-19-0342.

- **Gomez-León VE**, Ginther OJ, Domingues RR, Guimaraes JD, Wiltbank MC. Hormonal mechanisms regulating follicular wave dynamics II: Progesterone decreases diameter at follicle selection regardless of whether circulating FSH or LH are decreased or elevated. *Theriogenology* 2020; 143:148-56. DOI: 10.1016/j.theriogenology.2019.11.003.
- Domingues RR, Ginther OJ, **Gomez-León VE**, Wiltbank MC. Up-regulation of endometrial oxytocin receptor determines the timing of luteolysis in heifers with two and three follicular waves. *Biology of Reproduction* 2020; 102(2):316-26. DOI: 10.1093/biolre/ioz165.
- Sanglard LP, Leach RJ, **Gomez-León VE**, Serão NVL. Relationship between the testis size in male pigs and reproductive traits in their progeny. *Livestock Science* 2019; 228:72-5. DOI: 10.1016/j.livsci.2019.08.002.
- Andrade JPN, Sonnewend F, Guerson YB, Domingues RR, **Gomez-León VE**, Cunha TO, Jacoba JCF, Martins JPN, Sales JN, Mello MRB. Early pregnancy diagnosis at 21 days post artificial insemination using corpus luteum vascular perfusion compared to corpus luteum diameter and/or echogenicity in Nellore heifers. *Animal Reproduction Science* 2019; 209:106144. DOI: 10.1016/j.anireprosci.2019.106144.
- Okano DS, Penitente JM, **Gomez-León VE**, Maitan PP, Silveira CO, Waddington B, Diaz-Miranda EA, P da Costa E, Guimarães SEF, Guimarães JD. *In vitro* evaluation of cryopreserved bovine sperm and its relation to field fertility in fixed-time artificial insemination. *Reproduction in Domestic Animals* 2019;54:604-12. DOI: 10.1111/rda.13401.
- **Gomez-León VE**, Ginther OJ, Araujo ER, Guimarães JD, Wiltbank MC. Hormonal mechanisms regulating follicular wave dynamics I: Comparison of follicle growth profiles under different physiological conditions in heifers. *Theriogenology* 2019;123:194-201. DOI: 10.1016/j.theriogenology.2018.09.006.
- Penitente-Filho JM, Silva FFE, Guimarães SEF, Waddington B, da Costa EP, **Gomez-León VE**, Siqueira JB, Okano DS, Maitan PP, Guimarães JD. Relationship of testicular biometry with semen variables in breeding soundness evaluation of Nellore bulls. *Animal Reproduction Science* 2018;196:168-75. DOI: 10.1016/j.anireprosci.2018.07.010.
- Penitente JM, Villadiego FAC, Silva FFE, Camilo BS, **Gomez-León VE**, Peixoto T, Diaz E, Okano D, Maitan P, Lima D, Guimarães SEF, Siqueira JB, Pinho R, Guimarães JD. Can scrotal circumference-based selection discard bulls with good productive and reproductive potential? *Plos One* 2018;13(3): e0193103. DOI: 10.1371/journal.pone.0193103.
- Villadiego FAC, Guimarães JD, Da Costa EP, Álvarez JAC, **Gomez-León VE**, López CJR. Sêmen sexado através de citometria de fluxo e centrifugação por gradiente de concentração. *Revista de Medicina Veterinaria* 2018:121-33. DOI: 10.19052/mv.5178.
- **Gomez-León VE**, Pereira J, Okano D, Dos Santos G, Marcondes M, Benjamin L, Guimarães JD, Ramirez C. Metodologia para avaliação ultrassonográfica da biometria uterina na fêmea bovina. *Revista Colombiana de Ciencia Animal-RECIA* 2017;122-8. DOI: 10.24188/recia.v9.n2.2017.549.
- López CJR, Pinto CR, Villadiego FAC, **Gomez-León VE**, Neto TM, Guimarães JD. Estadio de madurez sexual en toros de la raza nellore. *Revista de Medicina Veterinaria* 2016;11-22.

- Osorio JP, Álvarez JAC, **Gomez-León VE**, Arroyo RJO. Relação entre o perímetro escrotal e parâmetros da qualidade do sêmen em machos da raça Guzerá, da puberdade até os 36 meses de idade. *Revista Ciencia y Agricultura* 2016;13:29-38.
- Villadiego FAC, Pereira JV, da Costa EP, Marcondes MI, **Gomez-León VE**, Maitan PP, Nogueira AR, et al. Productive and reproductive parameters of dairy cows in free stall. *Pesquisa Veterinaria Brasileira* 2016;36:55-61.
- Blanco RD, Patarroyo JH, Vargas MI, Cardona JA, Araujo LS, **Gomez-León VE**. Occurrence of anti-Neospora spp. antibodies in donkeys (*Equus asinus*) in the state of Sucre-Colombia. *Arquivo Brasileiro De Medicina Veterinaria E Zootecnia* 2014;66:450-4.
- Patarroyo J, Vargas M, Cardona J, Blanco R, **Gomez-León VE**. Frequency of antibodies anti-Neospora caninum in sheeps from the department of Cordoba, Colombia. *Revista Mvz Cordoba* 2013;18:3886-90.
- Cardona Álvarez JA, Montes Vergara JC, Castaño Villadiego FA, Blanco Martínez RD, **Gomez-León VE**. Frecuencia de dermatobiosis cutânea bovina en vacas Holstein de un hato lechero en Viçosa (MG, Brasil). *CES Medicina Veterinaria y Zootecnia* 2013;8:82-94.

ARTICLES IN PREPARATION OR SUBMITTED TO PEER-REVIEWED JOURNALS

- **Gomez-León VE**, Ginther OJ, Domingues RR, Guimaraes JD, Wiltbank MC. Gonadotropin pulses at the onset of diameter deviation during increased or minimum progesterone concentration. In preparation.
- **Gomez-León VE**, Ginther OJ, Wiltbank MC. Progesterone-induced complexities in follicle selection. In preparation.
- **Gomez-León VE**, Andrade JP, Madureira G, Grillo GF, Sartori L, Cunha T, Martins JP, Sala R, Fosado M, Wiltbank MC. Progesterone effetc pregnancy losses in recipients of fresh IVP and clone embryos. In preparation.

ABSTRACTS

- **Gomez-León VE**, Pereira J, Ginther OJ, Domingues RR, Guimaraes JD, Wiltbank MC. Progesterone decreases follicle diameter at F1 and F2 size separation regardless of whether circulating FSH or LH are low or high. 52nd annual meeting of the Society for the Study of Reproduction (SSR) 2019. San Jose, California, US.
- **Gomez-León VE**, Ginther OJ, Araujo ER, Guimaraes JD, Wiltbank MC. Follicle and hormone profiles during selection of the dominant follicle under different physiologic conditions in Holstein heifers. *Animal Reproduction* 2018;15(Suppl.1):1025. International ruminant reproduction symposium (IRRS). Foz do Iguaçu, Brazil.
- Diaz-Miranda EA, Maitan PP, Machado TP, Penitente-Filho JM, Araújo Lima DM, Camilo BS, **Gomez-León VE**, Guimarães JD. Flow cytometry analysis of the mitochondrial membrane potential using two incubation times of JC1 probe in fresh bovine semen. *Anim Reprod* 2018;15(Suppl.1):1117. International ruminant reproduction symposium (IRRS). Foz do Iguaçu, Brazil.

- Mezera MA, Hamm CS, Gamarra CA, Gennari RS, **Gomez-León VE**, Domingues RR, Prata AB, Toledo MZ, Wiltbank MC. Distinct mechanisms maintain the cl during early vs later pregnancy as highlighted by profiles of prostaglandin F2 metabolite (PGFM) in dairy cattle during the first and second months of pregnancy. 51st annual meeting of the Society for the Study of Reproduction (SSR) July 2018. New Orleans, Louisiana, US.
- **Gomez-León VE**, Pereira JVTN, Santos GM, Okano DS, Jimenez CR, Carrascal-Triana E, Benjamin LDA, Guimarães JD. Correlations between uterine biometry (diameter and endometrial thickness of the uterine horns) with the estrous phase in Nellore heifers submitted to AI synchronization protocols. XI international animal reproduction symposium. August 2015. IRAC, Córdoba, Argentina.
- Carrascal-Triana E, Rodriguez Jimenez C, Zolini AM, Penitente-Filho J, Azevedo JL, Silveira RG, **Gomez-León VE**, Alves Torres CA. Ultrastructural analysis of bovine preantral follicles cultivated in two different basic culture mediums. XI international animal reproduction symposium. August 2015. IRAC, Córdoba, Argentina.
- Okano DS, **Gomez-León VE**, Pereira JVTN, Blanco RDM, Santos GM, Marcondes MI, Benjamin LDA, Guimarães JD. Uterine and ovarian biometry of Holstein heifers in prepubertal and sexual maturity. XI International Animal Reproduction Symposium. August 2015. IRAC, Córdoba, Argentina.
- **Gomez-León VE**, symposium in Veterinary Medicine. 15 November 2014. Universidade Federal de Viçosa, Brazil.
- Vergara JCM, Soares B, Pinho R, Villadiego FAC, Shiomi H, Costa K, Faria V, **Gomez-León VE**, Cardoso R, Savio P, Guimarães SE, Guimarães JD. Placental efficiency in Piau breed and Commercial Line pregnant gilts. V International Symposium on Animal Biology of Reproduction (ISABR 2014). Brazilian College of Animal Reproduction (CBRA). October 2014. Campinas, Sao Paulo, Brazil.
- Mendes VRA, Pereira JVTN, Pereira ECM, Rodrigues ACF, Oliveira GD, Freitas PPT, Fernandes TS, **Gomez-León VE**, Costa EP. Cumulus oophorus complex recovery rate by OPU technique guided by ultrasound in bovine donors. Symposium on Research in Veterinary Medicine 2014. November 2014. Viçosa, Minas Gerais, Brasil.
- Mendes VRA, Pereira JVTN, Pereira ECM, Rodrigues ACF, Oliveira GD, Freitas PPT, Fernandes TS, **Gomez-León VE**, da Costa EP. Taxa de recuperação de complexos cumulus oophorus pela técnica de aspiração folicular guiada por ultrassom em doadoras da espécie bovina. Research symposium in Veterinary Medicine. 15 November 2014. Universidade Federal de Viçosa, Brasil.
- Pereira JVTN, **Gomez-León VE**, Mendes VRA, Villadiego FAC, Camilo BS, Lima DA, Vergara JCM, Okano DS, Moreira ARN, Maitan PP, dos Santos GM, Guimarães JD. Efeitos de diferentes protocolos de IATF sobre o crescimento e diâmetro do folículo pré-ovulatório e sobre a qualidade ovocitária.
- **Gomez-León VE**, Magalhaes G, Blanco R, Okano DS, Montes JC, Breno C, Castaño F, Cardoso R, dos Anjos L, Guimarães JD. Methodology for the measurement of the endometrial thickness and uterine diameter in female cattle. V International Symposium on Animal Biology

of Reproduction (ISABR 2014). Brazilian College of Animal Reproduction (CBRA). October 2014. Campinas, Sao Paulo, Brazil.

- Murta DVF, Martinez LCR, Pires FDS, **Gomez-León VE**; Blanco RD, Ker PG, Maia Filho EB, Pereira RRR, Alencar FJOB, Pimenta Junior EO, Gomes VCL. Desenvolvimento testicular de touros jovens da raça Sindi. Brazilian congress of Animal Reproduction. Brazilian College of Animal Reproduction (CBRA). 2013. Uberlândia, MG, Brazil.

TEACHING AND LECTURES

- Teaching Assistant: 2018, 2019, and 2020 for DYSCI534: Reproductive management of dairy cattle. In charge of laboratories and of two full lectures. Department of Dairy Science. College of Agriculture & Life Science. Professor: Dr. Milo Wiltbank.
- 2017, 2018, and 2020. Flushing, *in vitro* production, and embryo transfer lecture/lab. Farm and Industry Short Course (FISC). Animal Science Department. UW-Madison.
- 2018. Lecture on the use of biotechniques to improve reproductive efficiency. Reproduction workshop at the international dairy short course. Animal Science Department. UW-Madison.
- 2017. Practical training in the use of embryo transfer in bovine reproduction. Reproduction workshop at the international dairy short course. Animal Science Department. UW-Madison.
- 2016 II. VET 665: Ultrasonography applied to equine reproduction (labs). Graduate Program in Veterinary Medicine. Department of Veterinary Medicine. Science center in biology and health. Professor: Dr. José Domingos Guimarães.
- 2015. Lecture and lab on bovine artificial insemination. FACISA/UNIVIÇOSA.
- 2014. Impact of FTAI protocols on uterine physiology and reproductive efficiency in cattle and its association with uterine biometry in Nellore female. Reproduction symposium. FACISA/UNIVIÇOSA.
- 2015. Lecture on strategies and reproductive biotechniques applied to livestock as a tool to improve genetic gain. Short course in reproduction. Reproduction study group. Department of Veterinary Medicine. Science center in biology and health. Universidade Federal de Viçosa, Brazil.
- 2015 – 2016. Teaching assistant (lectures/labs) in the Center of Technical Productions (CPT) in Viçosa (Brazil). Courses:
 - Artificial insemination.
 - Fixed time artificial insemination programs.
 - Flushing and embryo transfers.
 - Rectal palpation.
 - Ultrasonography and oocyte pick-up (OPU).
 - Breeding Soundness Evaluation and sperm freezing process.
- 2013. Lecture on animal husbandry and food security. X international Faminas meeting in the forest zone (zona da mata), Minas Gerais - Brazil.

- 2012 II – 2016 I. VET 381: Pathophysiology of Reproduction (labs). Graduate Program in Veterinary Medicine. Department of Veterinary Medicine. Science center in biology and health. Professor: Dr. José Domingos Guimarães.

COURSES

- 2019. Science communication workshop. 52nd annual meeting of the Society for the Study of Reproduction (SSR). San Jose, California, US.
- 2016. VII Theoretical-practical course in flow cytometry. Nucleus of microscopy and microanalysis (NMM) with the science center in Biology and Health (CCB). Universidade Federal de Viçosa, MG-Brazil.
- 2014. Aspects related to animal and reproductive biotechnologies. Embrapa dairy cattle, Juiz de Fora, MG-Brazil.
- 2014. Morphologic evaluation of dairy cows. MENGE Holstein cows with SEMEX. Pouso Alegre, MG-Brazil.
- 2013. Excel course. Lago company. Universidade Federal de Viçosa, MG-Brazil.
- 2011. Course in reproductive biotechniques in the bovine female as an option to finish the Bachelor of Science in Veterinary Medicine and Animal Science. Department of Veterinary Medicine and Animal Science. Universidad de Córdoba-Colombia.
- 2011. Course on bovine female infertility. Reprovet, Montería, Córdoba-Colombia.
- 2007. Selection and evaluation of Zebu cattle. National association of Zebu cattle judgment (ANJGC) with the Colombian association of Zebu cattle (ASOCEBU). Bogota-Colombia.

VOLUNTEER WORK

- Organization and abstract reviewer for the International meeting of Animal Reproduction (IMAR). UFV, Brazil. 2020 (Postpone until 2021).
- Organization (founder): Reproduction journal club. UW-Madison, US. 2019 – current.
- English to Spanish translation of lecture: The 5 keys of effective reproductive management programs. Speaker: Dr. Paul Fricke. Dairy Science Department. UW-Madison. 2018.
- Organization and abstract reviewer for conference: Embryo day. UFMG, Brazil. 2015-2017.
- Organization: Reproduction study group. UFV, Brazil. 2014 – 2016.
- President and Founder: Young committee of zebu cattle in Córdoba-Colombia, 2007–2011.

AREAS OF INTEREST AND PROJECT PARTICIPATION

Andrology

- Testicular growth association with qualitative and quantitative studies of spermatogenesis in Nellore and cross bred Nellore x Aberdeen Angus.
- 2012 – 2016. Breeding Soundness Examination (BES) of Nellore bulls from 2 to 5 years old (4,000 bulls/year). Farms: São Francisco and Lageado. Company name: Agro-pecuária CFM.

- 2014 – 2016. Breeding Soundness Examination (BES) of Nellore and Montana bulls (100 bulls/year). Farm: Derribadinha. Company name: Unicafé Agrícola S/A.
- 2015 – 2016. Semen collection and freezing in Montana bulls. Company name: Agropecuaria Montana MF.

Control of the estrous cycle

- Control of follicular wave dynamics after first artificial insemination in order to optimize fertility and resynchronization programs for lactating dairy cows.
- Comparison of ovarian function during estrous synchronization for breeding every 21 days in *Bos indicus* heifers.
- Development of a resynchronization program for embryo transfer every 28 days.
- Influence of different types of fixed-time artificial insemination protocols (FTAI) on oocyte and granulosa cell gene expressions in Nellore cows and heifers.

Ovarian dynamics: corpus luteum

- Biopsy of the corpus luteum (CL) to evaluate the effect of an oxytocin challenge on circulating prostaglandin F2 α metabolite and CL gene expression in cows during the second month of pregnancy.
- Biopsy of the CL and use of the uterine cytobrush technique to study molecular changes in CL and endometrium during treatments with dinoprost tromethamine with or without inhibition of endogenous prostaglandin production using flunixin meglumine.
- Resistance of the CL to physiologic pulses of dinoprost tromethamine in pregnant Holstein heifers on day 20 after artificial insemination.

Ovarian dynamics: follicle development and selection

- Granulosa cell proliferation before and after selection in heifers' carriers and non-carriers of the high fecundity Trio-allele genotype
- Complexities during dominant follicle selection (diameter deviation) in the first vs the second (induced or spontaneous) follicular waves.
- Manipulative studies of circulating progesterone concentrations that is found to induce earlier selection based on the changes of the subordinate follicle profiles at deviation.
- Gonadotropin pulse profiles at the onset of diameter deviation during increased or minimum progesterone concentration and its effects on follicle dynamics.
- Molecular studies (mRNA concentrations in granulosa cells) on acquisition of the dominant follicle phenotype during increased vs minimal circulating progesterone concentrations with or without exogenous hCG treatment.
- Role of LH activity in the rate of follicle growth rate before diameter deviation and in the second largest follicle profile in Holstein dairy heifers.

- Evaluated the role of LH action in the frequency of double ovulations in high-producing dairy cattle in the absence or presence of circulating progesterone concentrations.
- Insights into the role of LH action from studies using GnRH-antagonist (Acyline) and human chorionic gonadotropin (hCG) in Holstein dairy heifers.
- Examined role of LH action in selection of a single or multiple dominant follicle using carriers and non-carriers of the novel high fecundity allele, Trio, using GnRH-antagonist (Acyline) and hCG treatments.
- Intrafollicular injection of IGF-1 into the largest and second largest follicle before diameter deviation.

Pregnancy and pregnancy losses

- Increasing circulating concentrations of progesterone to reduce pregnancy losses in recipients of fresh in vitro produced (IVP) or cloned embryos.
- Interferon Stimulated Genes (ISGs) in the reproductive tracts and plasma profiles of Pregnancy Associated Glycoproteins (PAGs) from days 18 to 25 of pregnant cows.
- Follicular aspiration to manipulate side of ovulation and increase the success rate of bilateral twin parturitions in carriers of the high fecundity Trio-allele genotype.

Reproductive biotechniques

- 2014 – 2016. Pregnancy checks during and after the breeding season in Nellore and Montana animals (4,000 female herd). Farm: Derribadinha. Company name: Unicafé Agrícola S/A.
- 2013 – 2015. Pregnancy checks in dairy Holsteins (60 female herd). Unit of Teaching, Research and Extension in dairy cattle. Universidade Federal de Viçosa. UEPEL-UFV.
- 2015. Flushing and embryo transfer in Nellore cows (45 donors). Farm: Derribadinha. Company name: Unicafé Agrícola S/A.
- 2016. Pregnancy checks during and after the breeding season in Montana animals (200 female herd). Company name: Agropecuaria Montana MF.

Uterine biology

- Correlation of the endometrial thickness with the circulating concentrations of progesterone and estradiol in heifers and cows during different FTAI protocols.
- Evaluated the dynamics of endometrial gene expression before and during luteolysis in heifers with two or three follicular wave interovulatory-intervals.