



**10<sup>th</sup>** International Ruminant  
Reproduction Symposium  
**CONFERENCE BOOK**





## FROM THE IRRS LOCAL ORGANIZING COMMITTEE

# Dear colleagues,

It is with great joy that we welcome you to the 10th International Ruminant Reproduction Symposium (IRRS) at the Wish Resort Golf & Convention in Foz do Iguaçu – Brazil. The IRRS is recognized as one of the most prestigious international conferences on reproduction, which we believe is clearly reflected in this year's Scientific Program.

We are extremely honored to organize the IRRS in South America for the first time. As you know, South America has garnered significant international attention during the last 15 years because of the increase in the number of high-impact studies on reproductive biology and the wide application of assisted reproductive technologies in ruminants, particularly IVF and fixed-time AI in cattle. Several productive collaborations between local, North American, European, and Australian groups have been fundamental in promoting this intense scientific and technological progress in South America. The IRRS 2018 scientific program illustrates and celebrates the importance of these partnerships. While providing up to date scientific information and an enjoyable social program, we hope to benefit the participants in the IRRS 2018 by offering a fruitful environment for new collaborations and the reinforcement of those already underway.

Our special thanks to the IRRS editors and session chairs for putting together a fantastic group of speakers. Many thanks also to all speakers for their time and generosity in sharing their precious time and knowledge with us. Finally, we immensely thank our public and private sponsors for providing funds without which this meeting would not be possible.

We sincerely hope that you enjoy the IRRS 2018.

**VERY BEST WISHES,**

José Buratini, Roberto Sartori, Gabriel Bo and Guilherme Nogueira



## SUNDAY, SEPTEMBER 16, 2018

**Afternoon** Delegates arrive in the afternoon

**5:00 to  
7:00 p.m.** Welcome reception

## MONDAY, SEPTEMBER 17, 2018

**8:15 a.m.** Opening of the conference

**8:30 a.m.**

### Scientific session 1: Folliculogenesis and follicular population

**Chair:** Robert Webb, *University of Nottingham*

**Speaker 1:** Danielle Monniaux, INRA, *University of Tours*; Factors influencing establishment of the ovarian reserve and their effects on fertility

**Speaker 2:** José Ricardo Figueiredo, *University of the State of Ceará*; Control of growth and development of the preantral follicle: Insights from *in vitro* culture

**9:50 a.m.** Coffee break

**10:20 a.m.**

### Scientific session 1: (continued)

**Speaker 3:** Álvaro Garcia Guerra, *Ohio State University*; Mechanisms regulating follicle selection in ruminants: Lessons learned from multiple ovulation models

**Speaker 4:** Christopher Price, CRRA, *University of Montreal*; The life and death of the dominant follicle

**Selected abstract 1:** A. Sharma\*, V. S. Baddela, and J. Vanselow, *Leibniz-Institut für Nutztierbiologie (FBN), Dummerstorf, Mecklenburg-Vorpommern, Germany*; Elevated free fatty acid concentrations alter gene expression, cell proliferation, and steroid hormone production in cultured bovine granulosa cells



11:55 a.m.

Lunch

1:30 p.m.

## Scientific session 2: Sperm function and technology

**Chair:** John Kastelic

**Speaker 5:** Arlindo Moura, *Federal University of Ceará*; Seminal plasma proteins and metabolites: Effects on sperm function and potential for biotechnology

**Speaker 6:** Heinrich (Heiner) Bollwein, *Vetsuisse-Faculty University Zurich*; Impact of oxidative stress on sperm function and embryonic development

**Speaker 7:** Jacob Thundathil, *University of Calgary*; The sodium pump and regulation of sperm function in bulls

**Selected abstract 2:** Trish Berger\* and Kim Miller, *University of California, Davis*; Prepuberal Sertoli cell proliferation differs between the bull and boar

3:45 p.m.

Coffee break

4:15 p.m.

## Scientific session 3: Oocyte maturation, ovulation, and fertilization

**Chair:** Jeremy Thompson, *University of Adelaide*

**Speaker 8:** Robert Gilchrist, *University of New South Wales*; Factors influencing oocyte developmental competence in ruminants

**Speaker 9:** Alberto Luciano, *University of Milan*; The variable success of *in vitro* maturation: Can we do better?

**Speaker 10:** Hilde Aardema, *Utrecht University*; Cumulus cells protect the oocyte against saturated free fatty acids

**Selected abstract 3:** S. E. Dickinson\*, T. W. Geary, J. M. Monnig, J. A. Green, K. G. Pohler, G. A. Bridges, S. Behura, M. F. Smith, *University of Missouri, Columbia, USDA-ARS, Fort Keogh Livestock and Range Research Lab, Miles City, University of Tennessee, Knoxville, University of Minnesota, St. Paul*; Differential transcript profiles in cumulus-oocyte complexes originating from pre-ovulatory follicles of varied physiological maturity in beef cows



6:30 p.m. First Poster Session (Abstracts with odd numbers)

8:15 p.m. Dinner

## TUESDAY, SEPTEMBER 18, 2018

8:00 a.m.

### Scientific session 4: Embryo development and interactions with the reproductive tract

**Chair:** Pat Lonergan, *University College Dublin*

**Speaker 11:** Dimitrios Rizos, *National Institute of Agricultural and Food Investigation and Technology (INIA), Madrid*; Embryo-maternal interactions in the oviduct

**Speaker 12:** Eduardo Ribeiro, *University of Guelph*; Embryo-maternal interactions in the uterus

**Speaker 13:** Jennifer Schoen, *Leibniz Institut für Nutztierbiologie (FBN) Dummerstorf*; Modeling embryo-maternal interactions *in vitro*

**Selected abstract 4 :** C. B. de Lima, E. C. Santos, J. Ispada, P. K. Fontes, M. F. G. Nogueira, C. M. D. Santos, and M. P. Milazzotto\*, *Federal University of ABC, Santo Andre, University of São Paulo, São Paulo, São Paulo State University, Botucatu*; Comprehensive evaluation of metabolic behavior in preimplantation embryo

10:15 a.m. Coffee break

10:45 a.m.

### Scientific session 5: Corpus luteum function and maternal recognition of pregnancy

**Chair:** Akio Miyamoto, *Obihiro University of Agriculture and Veterinary Medicine*

**Speaker 14:** Joy Pate, *The Pennsylvania State University*; Integration of proteomic, transcriptomic and metabolomic data for luteal rescue in early pregnancy: Role of microRNA as regulators of the corpus luteum

**Speaker 15:** Milo Wiltbank, *University of Wisconsin*; Potential mechanisms involved in maintenance of the corpus luteum during the second month of pregnancy

**Selected abstract 5:** K. K. Piotrowska-Tomala, A. W. Jonczyk, B. M. Jalali, D. J. Skarzynski\*, *Institute of Animal Reproduction and Food Research of PAS, Olsztyn, Poland*; Estrous cycle stage-specific actions of exogenous prostaglandin F<sub>2α</sub> on angiogenic and cell-death pathways in bovine corpus luteum may depend on its local or systemic administration





12:20 p.m.

Lunch

2:00 p.m.

**Scientific session 6: Placenta, fetal development, and parturition****Chair:** Larry Reynolds, *North Dakota State University***Speaker 16:** Gerhard Schuler, *Justus-Liebig-University of Giessen*; Placental contribution to the endocrinology of gestation and parturition**Speaker 17:** Gregory Johnson, *Texas A&M University*; Molecular events during ovine implantation and impact for gestation**Selected abstract 6:** S. T. Reese\*, G. A. Franco, T. S. Maia, R. V. Olivero Filho, F. G. Dantas, F. N. Schrick, M. F. Smith, K. G. Pohler, *Texas A&M University, College Station, University of Tennessee, Knoxville, University of Missouri, Columbia*; Prostaglandin profile in pregnant cows during initiation of active placentation

3:35 p.m.

Coffee break

4:10 p.m.

**Scientific session 7: Neuroendocrinology and puberty****Chair:** Gary Williams, *Texas A&M University***Speaker 18:** Caroline Decourt, *INRA, Nouzilly*; New insights on the neuroendocrine control of puberty and seasonal breeding in female sheep**Speaker 19:** Rodolfo Cardoso, *Texas A&M University*; Neuroendocrine signaling pathways and the nutritional control of puberty in heifers**Selected abstract 7:** C. E. P. Leonardi\*, F. C. F. Dias, R. Carrasco, E. M. Zwiefelhofer, G. P. Adams, J. Singh, *University of Saskatchewan, Saskatoon, Saskatchewan*; Mechanism of LH release after peripheral administration of kisspeptin in cattle

5:45 p.m.

Second Poster Session (Abstracts with even numbers)

8:00 p.m.

Dinner



## WEDNESDAY, SEPTEMBER 19, 2018

8:40 a.m.

### Scientific session 8: Placenta, fetal development, and parturition

**Chair:** José Eduardo P. Santos, *University of Florida*

**Speaker 20:** Marc Drillich, *University of Veterinary Medicine Vienna*; Pathogenesis of uterine diseases in cattle and implications for fertility

**Speaker 21:** Sean Limesand, *University of Arizona*; Impact of thermal stress on placental function and fetal physiology

10:00 a.m.

Coffee break

10:30 a.m.

### Scientific session 8: (continued)

**Speaker 22:** Ana Meikle, *University of Uruguay*; Influences of nutrition and metabolism on reproduction of the female ruminant

**Speaker 23:** Kimberly Vonnahme, *North Dakota State University*; Programming of female reproduction by prenatal dietary interventions

**Selected abstract 8:** R. A. Ferrazza\*, H. D. M. Garcia, J. C. O. Cuervo, V. H. V. Aristizábal, F. F. Souza, E. M. S. Schmidt, R. Burchmore, R. Sartori, P. D. Eckersall, J. C. P. Ferreira, *São Paulo State University, Botucatu, University of Glasgow, Glasgow, University of São Paulo, Piracicaba*; Heat stress induces proteomics changes in the follicular fluid of dairy cows

12:05 p.m.

Lunch

1:30 p.m.

### Adventure and networking at the Iguazu Falls National Park (information and instructions for booking in the Social Program)

8:00 p.m.

Closing dinner and party

THURSDAY, **SEPTEMBER 20, 2018**

8:30 a.m.

**Scientific session 9: Genetics and ruminant reproduction****Chair:** William W. Thatcher, *University of Florida***Speaker 24:** Sofia Ortega, *University of Missouri*; Identification of genes associated with reproductive function in dairy cattle**Speaker 25:** Stephen Butler, *Teagasc, Moorepark*; Genetic control of reproduction in dairy cows under grazing conditions**Selected abstract 9:** G. A. Franco\*, T. S. Maia, R. F. G. Peres, C. F. G. Martins, S. T. Reese, J. L. M. Vasconcelos, K. G. Pohler, *University of Tennessee, Knoxville, Universidade Federal de Uberlândia, Agropecuaria Fazenda Brasil, Barra do Garças, UNESP, Botucatu, Texas A&M University, College Station*; Quantification of PAG genes in semen of high and low fertility sires using droplet digital PCR

10:05 a.m.

Coffee break

10:35 a.m.

**Scientific session 10: Assisted reproductive technologies in South American cattle****Chair:** Roberto Sartori, *University of São Paulo***Speaker 26:** José Luiz Moraes Vasconcelos, *São Paulo State University*; Evolution of fixed-time AI in dairy cattle in Brazil**Speaker 27:** Gabriel Bó, *Institute of Animal Reproduction of Cordoba (IRAC)*; State of the art of artificial insemination in beef cattle in South America**Speaker 28:** João Henrique Moreira Viana, *Embrapa Genetic Resources and Biotechnology*; Embryo-related technologies in South America**Selected abstract 10:** A. M. L. Madureira\*, T. A. Burnett, T. G. Guida, J. L. M. Vasconcelos, R. L. A. Cerri, *University of British Columbia, Vancouver, São Paulo State University, Botucatu*; Estrous expression improves the success of timed artificial insemination and embryo transfer

12:50 p.m.

Lunch





2:20 p.m.

## Scientific session 11: Assisted reproductive technologies in other ruminants

**Chair:** Gabriel Bó, *Institute of Animal Reproduction of Cordoba (IRAC)*

**Speaker 29:** Pietro Baruselli, *University of São Paulo*; Reproductive biotechnologies in water buffaloes

**Speaker 30:** Alejo Menchaca, *Instituto de Reproducción Animal Uruguay, Fundación IRAUy*; Reproductive biotechnologies in small ruminants

3:40 p.m.

Coffee break

4:15 p.m.

## Scientific session 11: (continued)

**Speaker 31:** Gregg P. Adams, *University of Saskatchewan*; Inducing ovulation in South American camelids

**Selected abstract 11:** P. C. dos Santos Neto\*, F. Cuadro, M. Souza-Neves, M. Crispo, A. Menchaca, *Instituto de Reproducción Animal Uruguay, Fundación IRAUy, Montevideo, Unidad de Animales Transgenicos y Experimentación, Institut Pasteur de Montevideo*; Birth of fresh or vitrified CRISPR/Cas9 microinjected sheep embryos transferred on Day 3 or Day 6

5:10 p.m.

## The Eric Lamming Memorial Lecture

**Chair:** José Buratini, *São Paulo State University*

**Speaker 32:** Reuben Mapletoft, *University of Saskatchewan*; Evolution of the knowledge in ovarian physiology and its contribution on the widespread application of reproductive biotechnologies in South American cattle

5:50 p.m.

Closing Remarks



# ABSTRACTS LIST

Abstracts with odd numbers will be presented during the first poster session on Monday at 6:30pm, and abstracts with even numbers will be presented during the second poster session on Tuesday at 5:45pm

## Reproductive Endocrinology

- 1 Effects of follicular ablation on follicular growth and codominance in beef cattle
- 2 Supplementation of 17 $\beta$ -estradiol and progesterone in the co-culture medium of bovine oviductal epithelial cells and ovine spermatozoa reduces sperm kinematics and capacitation
- 3 Effect of zinc supplementation on the area of corpus luteum and progesterone serum concentration
- 4 Delayed time of luteolysis using ovulatory doses of GnRH on days 8 and 15 after insemination in dairy cows
- 5 The anti-equine Chorionic Gonadotrophin (eCG) antibody response after an eCG treatment during the non-breeding season does not affect the semen quality during the following breeding season in bucks
- 6 Timing of regression of contralateral accessory corpora lutea in pregnant lactating dairy cows
- 7 Fractal analysis is a useful tool to evaluate bovine luteal development
- 8 Hormonal treatment post insemination for induction of accessory corpora lutea and production of progesterone in sheep
- 9 Dietary restriction in sheep: uterine functionality in ewes with different body reserves during early gestation
- 10 Testosterone concentration profiles in bucks treated with a GnRH-agonist implant or immunized against GnRH
- 11 Follicle and hormone profiles during selection of the dominant follicle under different physiologic conditions in Holstein heifers
- 12 The Perioovulatory Endocrine Milieu Affects the Metabolomic Profile of the Oviductal Fluid in Beef Cows
- 13 Local effect of the corpus luteum (CL) on reproductive tract functionality in the ewe



- 14 Functional transitions in the corpus luteum are associated with changes in NR5A2 abundance, which regulates luteal progesterone production
- 
- 15 The involvement of resistin in the regulation of gonadotropin secretion in sheep
- 
- 16 Expression of inhibin  $\alpha$  subunit in bovine theca cells: does inhibin  $\alpha$  contribute to the regulation of ovarian androgen production?
- 
- 17 Development of a physiological model of proestrus in cows using exogenous hormones
- 
- 18 Intensity of estrous expression detected by automated monitor and its relationship with concentration of pregnancy-associated glycoprotein
- 
- 19 Administration of endothelin-1 induces complete luteolysis in cyclic ewes
- 
- 20 The response of ovarian follicle, at the early static phase, to eCG-GnRH in Holstein heifers
- 
- 21 Effect of IGF2 on bovine luteinising follicular angiogenesis and progesterone production *in-vitro*
- 
- 22 Luteal regression is compromised in high producing lactating Holstein cows independent of embryonic mortality
- 
- 23 Proinflammatory cytokine gene expression in endometrium and fertility in timed AI postpartum beef cows
- 
- 24 Health status and resumption of ovarian ciclicity in dairy cows
- 
- 25 Protein supplementation control on luteal progesterone and expresion of its receptor in ovarian tissues of Boer goats
- 
- 26 Resistin regulates prolactin concentrations from the ovine adenohipophysis depending on season
- 
- 27 Association of antral follicle count and peripheral anti-Müllerian hormone concentrations with fertility in beef cows
- 
- 28 Use of FSH in FTAI protocol in lactating dairy cows



- 29 Creep feeding has no effect on antral follicle count at weaning
- 
- 30 Mechanism of LH release after peripheral administration of kisspeptin in cattle
- 
- 31 Estrous cycle stage-specific actions of exogenous prostaglandin F<sub>2a</sub> on angiogenic and celldeath pathways in bovine Corpus Luteum may depend on its local or systemic administration
- 
- 32 Elevated free fatty acid concentrations alter gene expression, cell proliferation and steroid hormone production in cultured bovine granulosa cells
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- 33 Prostaglandin profile in pregnant cows during initiation of active placentation

## Gametes Biology, Embryology and Fetal Development

- 34 Components of *Biserrula pelecinus* that affect *in vitro* maturation of ovine oocytes, and subsequent fertilisation and embryo development
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- 35 Effect of supplementation with Cysteine, Glycine and Glutamate during *in vitro* fertilization of bovine oocytes
- 
- 36 Heat shock compromises bovine oocyte endoplasmic reticulum reorganization during *in vitro* maturation
- 
- 37 Influence of sodium pump on ram sperm parameters
- 
- 38 Ghrelin antagonist: possible solution for *in vitro* oocyte maturation from cows in negative energy balance
- 
- 39 Oxidative stress in newborn calves with intrauterine growth retardation is associated with a deficiency of selenium and copper
- 
- 40 Lipid profile during bovine initial development unraveled by sensitive MRM approach
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- 41 Addition of pregnancy-associated plasma protein-A (PAPP-A) during *in vitro* maturation did not impact on lipid content of *in vitro*-matured bovine oocytes
- 
- 42 An investigation into the factors affecting milk pregnancy associated glycoproteins in seasonal-calving pasture-based dairy cows



- 43 Distinct expression profile of microRNAs in maternal serum indicates early pregnancy status of cows
- 
- 44 The kinetics of the first cleavages impacts on the regulation and levels of histone acetylation of bovine blastocysts
- 
- 45 Gene expression related to meiosis resumption after associated use of NPPC and rhFSH during *in vitro* maturation of bovine cumulus-oocyte complexes
- 
- 46 Dynamic changes in miRNAs during early embryonic development in bovine: From oocytes to *in vitro* produced blastocysts
- 
- 47 Interferon-tau is induced in bovine Day-4 embryos by oviduct epithelium, which generates an anti-inflammatory response in immune cells
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- 48 Seasonal influence on spermatic parameters and testosterone levels of Santa Inês rams
- 
- 49 Hormonal metabolic aspects of embryonic mortality of cows and the effectiveness of its prevention
- 
- 50 Protective effects of cysteamine on bovine oocytes matured *in vitro* with eicosapentaenoic acid (EPA): impact on early embryo development
- 
- 51 Influence of preovulatory estradiol on uterine luminal fluid proteomics around maternal recognition of pregnancy in beef cattle
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- 52 Differential expression of LH receptor, LHR mRNA binding protein (LRBP) and bta-miR-222 in the developing bovine ovary
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- 53 Transcripts abundance modulation by AREG and FSH treatments during the *in vitro* maturation of bovine cumulus-oocyte complexes
- 
- 54 Lack of association of neospora caninum infection with late embryo losses in grazing dairy cows
- 
- 55 Serum concentration of sex steroids in down-calving cows as predictors of the respiratory diseases progression among their posterity
- 
- 56 HSPA5 and *in vitro* embryo production: effect of addition of the protein during *in vitro* embryo culture in cattle
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- 57 Effect of laterality of ovulation and the presence of embryo on uterine horn irrigation in llamas



- 58 Treatment of bovine embryos with dickkopf-related protein 1 from the morula to blastocyst stages of development alters trophoblast elongation at day 15 of pregnancy
- 
- 59 Proteome profile of extracellular vesicles isolated from culture media of pre-elongation stage bovine embryos
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- 60 Prepuberal Sertoli cell proliferation differs between the bull and boar
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- 61 Comprehensive evaluation of metabolic behavior in preimplantation embryo
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- 62 Differential transcript profiles in cumulus-oocyte complexes originating from pre-ovulatory follicles of varied physiological maturity in beef cows

## Environment and Reproduction

- 63 Effect of different feeding strategies on reproductive parameters in dairy cows
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- 64 Effect of maternal nutrition on embryo survival, uterine environment and embryo transfer in sheep
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- 65 Impact of postpartum locomotion score on reproductive performance in grazing dairy cows
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- 66 Seasonal changes in melatonin concentrations in female guanaco (*Lama guanicoe*)
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- 67 Effect of controlled heat stress on follicular dynamics and steroid production of dairy cows
- 
- 68 Effects of temperament on reproductive performance of *Bos taurus* heifers enrolled in a 7 d CO-synch + CIDR protocol
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- 69 Dose-dependent effect of astaxanthin on bovine spermatozoa exposed to heat shock
- 
- 70 Effect of seminal plasma on the interval to ovulation, dominant follicle and corpus luteum size in Alpacas (*Vicugna Pacos*) and Llamas (*Lama glama*)





- 71 Ewe fertility in group mating: Does the number of rams the ewe mates with affect fertility?
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- 72 Ovarian characteristics and somatic development in 2 to 5 months old female Nelore (*Bos taurus indicus*) calves
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- 73 Milk yield, periparturient diseases and body condition score as factors affecting the risk of fetal losses in high-yielding Holstein cows
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- 74 The tail in estrous tropical hair ewes (*Ovis aries*) is used as a proceptive signal and favors copulation
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- 75 Pasture allowance in pregnant ewe: Effect on the development of the reproductive tract of their male offspring
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- 76 The permanent presence of ovariectomized, steroid-treated goats does not prevent the seasonal decrease of LH and testosterone in male goats
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- 77 Effect of somatic cell count and its temporal association with service date on conception rate in grazing dairy cows
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- 78 Aerobic metabolism is maintained in rams under testicular hyperthermia due to increased testicular blood flow
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- 79 Associations between ovarian cyclicity, uterine health, body condition score, metabolic status and parity during the postpartum period in seasonal calving grazing dairy cows
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- 80 Expression of COX, PPARGC1-A and NRF-1 genes in granulosa cells of goats after short term dietary supplementation with high lipid levels
- 
- 81 Evaluation of the leucocitary response with the use of Pegbovigrastim in Holstein cows in the peripartum
- 
- 82 Maternal nutrient restriction followed by realimentation in beef cows alters maternal and fetal circulating amino acid profiles
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- 83 Introduction of androgenized steers during the late luteal phase triggers an advancement of luteolysis
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- 84 Timing and duration of nutrient restriction and its impacts on placental development and umbilical blood flow in sheep
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- 85 Effect of post-insemination intrauterine treatment with cephapirin on the subsequent reproductive performance of dairy cows with mild endometritis



- 86 Determinants of cytological endometritis in multiparous Holstein cows
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- 87 Resistin acts as a link between reproduction and energy metabolism in sheep
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- 88 Estrous expression improves the success of timed artificial insemination and embryo transfer
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- 89 Heat stress induces proteomics changes in the follicular fluid of dairy cows

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- 91 Cryopreservation of prepubertal bovine testicular tissue
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- 92 Effect of heat shock on developmental competence in bovine oocytes during *in vitro* maturation
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- 93 Use of interspecific fertilization as a tool to evaluate fertilizing ability of buffalo (*Bubalus bubalis*) bulls in an *in vitro* fertilization program
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- 94 Comparison between ovine refrigerated spermatozoa from ejaculate and epididymal cauda
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- 95 Impact of GnRH administration at the time of AI on pregnancy and ovulation rates and its interaction with estrous expression
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- 96 Factors affecting the ovum pick-up and *in vitro* embryo production in buffaloes
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- 97 Modifications of a 5-d GnRH-based timed-AI protocol to optimize fertility in Holstein heifers inseminated with sex-selected semen
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- 98 Color Doppler ultrasonography for early pregnancy diagnosis in goats
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- 99 Effect of a single bST administration on follicular dynamics and ovulation during an interovulatory cycle in sheep



- 100** Progesterone priming during follicular growth of Wave 1 improves pregnancy rate after FTAI in sheep
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- 101** Effect of pre-maturation culture using EGFR kinase inhibitor on embryo development, lipid metabolism and gene expression profile
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- 102** Autologous nuclear transfer in cattle does not increase cloning efficiency
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- 103** Flow cytometry analysis of the mitochondrial membrane potential using two incubation times of JC1 probe in fresh bovine semen
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- 104** Follicular emergence in zebu cows actively immunized against GnRH
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- 105** Effects of sire breed and season on *in vitro* embryo production and subsequent pregnancy rates
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- 106** Ultrasonographic cervical evaluation in Lacaune ewes subjected to transcervical embryo collection
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- 107** Efficient transcervical embryo collection in synchronous estrus-induced Lacaune ewes
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- 108** Equine chorionic gonadotropin (eCG) impacts the transcriptional profile of genes involved with competence of cumulus-oocyte complexes and embryo quality in superstimulated Nelore cows
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- 109** Evidence that pregnancy-associated plasma protein A (PAPP-A) plays a role in bovine *in vitro*-embryo production
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- 110** *In vitro* embryo production in Angus breed with semen sorted for male: effect of semen preparation method
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- 111** The effect of prostaglandin F<sub>2α</sub> (PGF<sub>2α</sub>) on cumulus expansion and glucose metabolism of *in vitro* matured bovine cumulus-oocyte complexes
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- 112** Influence of parity category on conception rate of Holstein females submitted to timed artificial insemination in semiarid conditions
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- 113** Effect of GnRH on day 5 or 7 on pregnancy rate in dairy cows after AI with sex-sorted sperm
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- 114** Impact of recombinant bovine somatotropin, progesterone, and estradiol benzoate on the ovarian follicular dynamics of *Bos taurus taurus* cows in protocols for synchronization of estrus and ovulation



- 115 Effect of a one-time, strategic donor FSH-treatment on oocyte and embryo production in a commercial buffalo IVP program
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- 116 Down-regulated genes in *in vitro* produced bovine day 8 blastocysts due to an insulin challenge during oocyte maturation
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- 117 The effect of ceftiofur hydrochloride on pregnancy rates of beef cattle synchronized with intravaginal progesterone implants
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- 118 Effects of using either estradiol benzoate or GnRH at the beginning of a 7-d P4-based FTAI protocol with or without GnRH at the time of AI in Nelore heifers
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- 119 Murrah buffalo antral follicle count in ovaries from a slaughterhouse
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- 120 Plasma and acrossomal integrity of bull spermatozoa cryopreserved with iodixanol
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- 121 Effects of moxibustion during the mid-luteal phase on blood flow to the corpus luteum in cattle
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- 122 Blastulation timing affects the blastocyst development and its secretion of extracellular vesicles
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- 123 Extracellular vesicle-depleted culture media improves quality of *in vitro* produced bovine embryos
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- 124 Interference of dairy production on oocyte recovery and embryo conversion rate of donors from Gyr and crossbred (Holstein x Gyr) dairy cows
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- 125 Contribution of breed and equine chorionic gonadotropin on the collection of oocytes and *in vitro* embryo production in young goats during the breeding season
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- 126 Is the laterality of the corpus luteum and the dominant follicle of Wave 1, and the GnRH administration 5 d after insemination, relevant for pregnancy establishment in heifers?
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- 127 Influence of estrus expression in a fixed-time AI protocol on reproductive performance
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- 128 Efficacy of Doppler ultrasonography to detect non-pregnant Nelore cows and heifers submitted to three timed-AI in 48 days
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- 129 Effect of supplementation of  $\alpha$ -tocopherol in superovulated Dorper ewes



- 130** Characterization and control of the oocyte population for ovum pick up in Nellore donors
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- 131** Differences in the endometrial response to age-matched long and short conceptuses during early pregnancy in cattle
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- 132** Effect of time of gamete co-incubation on *in vitro* production of bovine embryos
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- 133** Improvement on the composition of sequential culture media based on the bovine content of oviductal and uterine fluids
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- 134** Transcervical is more efficient than surgical embryo collection in Brazilian hair sheep
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- 135** Factors that affect embryo transfer conception rate in lactating dairy cows
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- 136** Sertoli cell-mediated differentiation of bovine fetal mesenchymal stem cells into germ cell lineage in an *in vitro* co-culture system
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- 137** Nuclear Maturation of bovine oocytes submitted to intrafollicular transfer of immature oocytes (IFIOT)
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- 138** Effects of ovarian synchronization associated with a two-step IVM strategy on *in vitro* embryo production in cattle
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- 139** Superstimulation prior to ovum pick-up to improve *in vitro* embryo production in buffalo donors
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- 140** A pre-maturation with C-type natriuretic peptide plus estradiol prolongs meiotic arrest in juvenile goat oocytes
- 
- 141** Effect of CRISPR/Cas9 microinjection on development and mutation rate of sheep embryos
- 
- 142** Relations between plasma anti-muellerian-hormone (AMH) concentrations, fertility performance and influencing factors in Holstein-Friesian heifer
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- 143** Prostacyclin PGI<sub>2</sub> modulates *in vitro* maturation of bovine cumulus-oocyte complexes
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- 144** Effect of successive ovum pick up on follicular development, and oocyte quality and quantity, in a commercial, buffalo (*Bubalus bubalis*) *in vitro*, embryo production program



- 145 Birth of fresh or vitrified CRISPR/Cas9 microinjected sheep embryos transferred on Day 3 or Day 6

## Genetics and Reproduction

- 146 Oocyte quality and *in vitro* embryo production of aged Nellore cows selected for fertility
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- 147 Differences in transcriptomic data from preovulatory follicles of buffalo (*Bubalus bubalis*) and (*Bos indicus*) cattle: A meta-analysis
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- 148 Histone deacetylase inhibitor during pre-maturation (PIVM) and/or *in vitro* maturation (IVM) of bovine oocytes: effect on transcript levels of histone acetylation related genes
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- 149 Heritability and genetic correlations for scrotal circumference at different ages in Brahman bulls raised under tropical conditions
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- 150 The embryo regulation of the immune system in day 14 endometrium is affected by the level of nutrition
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- 151 Dynamic changes in bovine endometrial stem cells throughout estrus cycle and postparturition
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- 152 A Comparative analysis of calcium channels in holstein and hanwoo (korean cattle) in the duodenum and kidney
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- 153 Similarities in endometrial transcriptomic profile between high producing and anestrous dairy cows
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- 154 Expression of immunological markers by bovine endometrial stem cells after priming with PGE<sub>2</sub>
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- 155 Abductive analysis of metabolic interactions in bovine mammary epithelial cells
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- 156 Effect of maternal ability of Corriedale and Corriedale Pro ewes on lamb growth
- 
- 157 Quantification of PAG genes in semen of high and low fertility sires using droplet digital PCR





## LOCAL ORGANIZING COMMITTEE

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