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**DEADLINE**

30\(^{\text{th}}\) November 2019  
Deadline for abstract submission

31\(^{\text{st}}\) March 2020  
Deadline for reduced registration fees
INVITATIONS

Dear Colleagues and Friends,
On behalf of the Local Organising Committee, it is my pleasure to invite you to attend the 19th International Congress on Animal Reproduction that will be held at the Palazzo della Cultura e dei Congressi in Bologna (Italy) from June 28th to July 2nd 2020. The International Congress on Animal Reproduction (ICAR) is a non-profit international organization that conducts conferences on animal reproduction. Founded in 1948, ICAR has no members but is governed by a Standing Committee made of scientists representatives of over 40 countries and has held a major conference every four years in many countries throughout the world. The focus of the Congress is animal reproduction, including animal physiology, animal pathology and reproductive technologies.

The conference is organized in individual plenary sessions followed by concurrent symposia and workshops as well as poster sessions. A trade exhibition will remain open throughout the conference.

At ICAR 2020 we are expecting between 800 and 1200 delegates who will attend a 4-day Scientific Programme organized in 5 Plenary Sessions, 12 Symposia 19 Workshops and 3 Poster sessions.

Join us at the ICAR 2020!

Prof. Carlo Tamanini
Chair of the Organising Committee
COMMITTEES

LOCAL ORGANIZING COMMITTEE

Carlo Tamanini (Chair)

Diego Bucci (Secretary)    Maria Laura Bacci

Giovanna Galeati                Cesare Galli

Gaetano Mari                                          Marcella Spinaci

Department of Veterinary Medical Sciences of the University of Bologna
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SCIENTIFIC PROGRAMME COMMITTEE

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Department of Veterinary Medical Sciences, University of Parma

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Department of Biosciences, Biotechnologies and Biopharmaceutics, University of Bari

Cesare Galli
Avantea (Cremona)

Fulvio Gandolfi
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Pasqualino Loi
Department of Veterinary Medicine, University of Teramo

Mauro Mattioli
Department of Veterinary Medicine, University of Teramo

Salvatore Naitana
Department of Veterinary Medicine, University of Sassari
Stefano Romagnoli
Department of Animal Medicine, Production and Health, University of Padova

Carlo Tamanini
Department of Veterinary Medical Sciences, University of Bologna

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Dubai (United Arab Emirates)

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Girona (Spain)

Eckhard Wolf
Munich (Germany)
# Programme at a Glance

## Sunday 28th June 2020

- From 16.00: Registrations
- 19.00: Welcome Cocktail

## Monday 29th June 2020

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<td>Opening Ceremony &amp; Simmet Prize</td>
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<td>PLenary 1 Sustainable breeding in a changing climate</td>
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<td>SYMPOSIUM 4 New aspects of corpus luteum regulation toward successful pregnancy</td>
<td>SYMPOSIUM 3 Cloning and genome editing</td>
<td>SYMPOSIUM 2 Devising new gonadotropins for the future...which strategies, which uses?</td>
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<td>16.30</td>
<td>SYMPOSIUM 1 Opu: hormones, time and follicular size</td>
<td>SYMPOSIUM 3 Pregnancy and perinatal care</td>
<td>SYMPOSIUM 4 Pluripotent embryonic stem cells: past, present and future</td>
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#### ROOM COBALTO
- **11.00** Poster Session 1
- **13.30** SYMPOSIUM 1
  - The unconformist: concepto-maternal communication in the dog
- **16.30** WORKSHOP 5
  - Improving livestock production: beyond genetic gain

#### ROOM AZZURRA
- **11.00** Lunch
- **16.00** Coffee Break

#### ROOM VERDE
- **16.30** WORKSHOP 2
  - Reproduction of cultured fish
- **16.30** WORKSHOP 6
  - Reproduction in camelids

#### General
- **Coffee Break** at 10.30, 13.30, and 16.30
- **Jazz & Food Event** at 20.00
## Programme at a Glance

### Tuesday 30th June 2020

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<td>Extracellular vesicles in female reproductive function</td>
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<td>SYMPOSIUM 5</td>
<td>SYMPOSIUM 8</td>
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<td>16.00</td>
<td>Effects of heat stress on reproduction: from conception to lactation</td>
<td>Reproduction in non-domestic and endangered species</td>
<td>Cryopreservation: freezing, vitrification, freezing drying</td>
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<td>WORKSHOP 8</td>
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<td>18.00</td>
<td>Improved mammalian embryo production by novel biomimic-designed 3d and microfluidic cell culture approaches</td>
<td>Gonadotropin secretion in cattle and sheep: new discoveries</td>
<td>The gait of assisted reproduction in the equids</td>
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<td>Coffee Break</td>
<td>WORKSHOP 19 Stem cells and their products: applications in reproductive</td>
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<td>SYMPOSIUM 6 Immune regulation of</td>
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<td>WORKSHOP 9 Reproductive toxicology in</td>
<td>WORKSHOP 12 Is a new star born?</td>
<td>WORKSHOP 7 Advances in sperm cryopreservation technology for conservation</td>
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<td>NGF role on ovulation induction and sperm traits</td>
<td>of avian genetic resources</td>
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# PROGRAMME AT A GLANCE

**WEDNESDAY 1ST JULY 2020**

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<td>Novel insights on uterine immunology</td>
<td>New approaches in buffalo reproductive management</td>
<td>New imaging systems for assessing gamete and embryo quality</td>
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<td>WORKSHOP 15</td>
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<td>Advances in the use of doppler</td>
<td>Tissue invasion mechanisms of trophoblast in veterinary species</td>
<td>Nutritional strategies to improve fertility in small and large ruminants</td>
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<td>ultrasonography in cattle reproduction</td>
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**SYMPOSIUM 10**
Reproduction in companion animals

**WORKSHOP 18**
Genetically tailored pigs as disease models and organ donors for xenotransplantation

**WORKSHOP 14**
Bovine reproduction

**WORKSHOP 16**
Embryonic diapause

Coffee Break
Poster Session 3
Lunch

Social Evening

WEDNESDAY 1ST JULY 2020
## PROGRAMME AT A GLANCE

### THURSDAY 2\textsuperscript{ND} JULY 2020

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| 8.00-10.00 | **PLENARY 4**
Semen quality. semen omics: relation with male fertility |             |            |
| 10.00-10.30| Coffee Break                                   |             |            |
| 10.30-12.30| **PLENARY 5**
Adding a new dimension to reproduction |             |            |
| 12.30-13.00| Closing Ceremony                               |             |            |
SCIENTIFIC PROGRAMME

MONDAY 29TH JUNE 2020

8.00 - 9.00
OPENING CEREMONY & SIMMET PRIZE  
AUDITORIUM

9.00 - 10.30
PLENARY SESSION 1  
AUDITORIUM

SUSTAINABLE BREEDING IN A CHANGING CLIMATE

Chair: Ann van Soom (Belgium)

• Breeding animals to feed people: the many roles of animal reproduction in ensuring global food security.  
  Robin White (Germany)
• Managed wildlife breeding- an undervalued conservation tool?  
  Imke Lueders (Germany)
• The dog 2.0: lessons learned from the past.  
  Bart Broeckx (Belgium)

10.30 - 11.00
Coffee break

11.00 - 12.00
POSTER SESSION 1

12.00 - 13.30
Lunch

13.30 - 16.00
SYMPOSIUM 1  
ROOM AZZURRA

THE UNCONFORMIST:  
CONCEPTO-MATERNAL COMMUNICATION IN THE DOG

Chair: Mariusz Kowalewski (Switzerland)

• Impact of the oviductal environment on IVF success and early embryo development in the dog.  
  Alexander J. Travis (USA)
• Embryo-maternal communication in the canine uterus at pre-implantation.  
  Sabine Schafer-Somi (Austria)
• Canine concepto-maternal communication during maintenance and termination of pregnancy, including the role of species-specific decidualization.  
  Mariusz P. Kowalewski (Switzerland)

13.30 - 16.00
SYMPOSIUM 2  
ROOM CIANO

DEVISING NEW GONADOTROPINS FOR THE FUTURE...  
WHICH STRATEGIES, WHICH USES?

Chair: Marc-Antoine Driancourt (France)

• What is the ideal FSH profile to maximize ovarian response in donor cows?  
  Gabriel Bo (Argentina)
• Gonadotropin priming before OPU: what are the benefits in cows and calves?  
  Richard Fry (Australia)
• Long acting/single shot recombinant FSH.  
  Neil Sanderson (New Zealand)
13.30 - 16.00  SYMPOSIUM 3  ROOM ITALIA

CLONING AND GENOME EDITING

- Somatic Cell Nuclear Transfer (SCNT): state of the art and applications. José Cibelli (USA)
- Current progress of genome editing in livestock. Kiho Lee (USA)
- How to improve mouse cloning. Atsuo Ogura (Japan)
- CRISPR in livestock: from editing to printing. Alejo Menchaca (Uruguay)

Chair: Lino Loi (Italy)

13.30 - 16.00  SYMPOSIUM 4  AUDITORIUM

NEW ASPECTS OF CORPUS LUTEUM REGULATION TOWARD SUCCESSFUL PREGNANCY

- Roadmap to pregnancy in the first 7 days post-insemination in the cow: Immune cross-talk in the corpus luteum, oviduct and uterus. Akio Miyamoto (Japan)
- Roadmap to pregnancy during the period of maternal recognition in the cow: Changes within the corpus luteum associated with luteal rescue. Joy Pate (USA)
- Impact of the corpus luteum on survival of the developing embryo and early pregnancy in mares. Carlos RF Pinto (USA)
- Factors affecting the fate of canine corpus luteum: Potential contributors for pregnancy and non-pregnancy. Paula Papa (Brazil)

Chair: Akio Miyamoto (Japan)

16.00 - 16.30  Coffee break

16.30 - 18.00  WORKSHOP 1  AUDITORIUM

OPU: HORMONES, TIME AND FOLLICULAR SIZE

- Using FSH and time to optimize oocyte quality prior to OPU. Patrick Blondin (Canada)
- Follicular wave synchronization prior to ovum pick-up. Marcelo Marcondes Seneda (Brazil)
- Follicle priming or pre-maturation to increase oocyte quality. Kenichiro Sakaguchi (Japan)

Chair: Marc-André Sirard (Canada)
16.30 - 18.00  WORKSHOP 2  ROOM AZZURRA

REPRODUCTION OF CULTURED FISH

- Broodstock management of cultured grey mullet (Mugil cephalus): application of a therapeutic approach to resolve reproductive dysfunctions. Hanna Rosenfeld (Israel)

- Physiological and endocrine mechanisms behind postsmolt maturation in Atlantic salmon. Birgitta Norberg (Norway)

- The reproduction of European eel in captivity: a scientific challenge with multiple facets. Juan F. Asturiano (Spain)

- The male contribution to reproductive success: paternal transmission of environmental effects to the spawn. María Paz Herráez (Spain)

- Sperm motility signaling in fishes. Hadi Alavi (Iran)

Chair: Aldo Corriero (Italy)

16.30 - 18.00  WORKSHOP 3  ROOM ITALIA

PREGNANCY AND PERINATAL CARE

- Biomarkers for placental disease and fetal well-being. Igor Federico Canisso (USA)

- Is stress affecting parturition and neonatal adaptation in the horse? Christina Nagel (Austria)

- Maternal microbial transmission to offspring. Elena Biagi (Italy)

Chair: Carolina Castagnetti (Italy)

16.30 - 18.00  WORKSHOP 4  ROOM CIANO

PLURIPOTENT EMBRYONIC STEM CELLS: PAST, PRESENT AND FUTURE

- Historical perspective on ESC and iPSC in companion and domestic animals. Jorge Piedrahita (USA)

- Capturing pluripotency in bovine embryonic stem cells: perspectives for in vitro breeding. Pablo Ross (USA)

- Establishment of porcine expanded potential stem cells. Monika Nowak-Imialek (Germany)

Chair: Pablo Ross (USA)

16.30 - 18.00  WORKSHOP 5  ROOM COBALTO

IMPROVING LIVESTOCK PRODUCTION: BEYOND GENETIC GAIN

- IVF and genomic screening in pigs and cattle to improve food production. Darren Griffin (UK)

- Freezing eggs to make bacon. Katie Fowler (UK)

- Parental effects on production relevant traits in pigs. Simon Harvey (UK)

Chair: Katie Fowler (UK)
16.30 - 18.00

WORKSHOP 6

REPRODUCTION IN CAMELIDS

Chair: Lulu Skidmore (UAE)

• Unveiling the luteotrophic role of beta-NGF present in the seminal plasma of llamas. Marcelo Ratto (Chile)
• Protocols for superovulation and new insights to predict and achieve better superovulatory responses in camels. Amir Niasari-Naslaji (Iran)
• Recent advances in AI technology in dromedary camels. Samir Al-Bulushi (Oman)

20.00

EVENING: JAZZ & FOOD EVENT
### PLENARY SESSION 2

**AUDITORIUM**

**EXTRACELLULAR VESICLES IN FEMALE REPRODUCTIVE FUNCTION**

- Extracellular vesicle mediated molecular signaling in ovarian follicle: implication for oocyte developmental competence. *Dawit Tesfaye (Germany)*
- Extracellular vesicles: multi-signal messengers in the gametes/embryo-oviduct crosstalk. *Carmen Almināna (Switzerland)*
- Extracellular vesicles: novel regulators of conceptus-uterine interactions? *Thomas Spencer (USA)*

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<tr>
<td>8.30 - 10.30</td>
<td>PLENARY SESSION 2</td>
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<td>10.30 - 11.00</td>
<td>Coffee break</td>
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<tr>
<td>11.00 - 12.00</td>
<td>POSTER SESSION 2</td>
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<td>10.30 - 12.00</td>
<td>WORKSHOP 19 Room Azzurra</td>
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<td><strong>STEM CELLS AND THEIR PRODUCTS: APPLICATIONS IN REPRODUCTIVE DISEASES OF DOMESTIC ANIMALS</strong></td>
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**Chair:** Pascal Mermillod (France)

**Chair:** Fausto Cremonesi (Italy)

**Chair:** Xavier Donadeu (Scotland)

- Endometrial Mesenchymal Stem/Stromal Cells – regenerative properties. *Cristina Esteves (Scotland)*
- Mesenchymal cell secretome applications in large animal reproductive regenerative medicine. *Anna Lange-Consiglio (Italy)*
- Mesenchymal Stem Cells in livestock cattle: potential applications in reproduction for germilines derivation. *Oscar Alejandro Peralta Troncoso (Chile)*
- Intra-uterine administration of veterinary device Ozolea-Metr in bovine to enhance the endometrium trophism and reduce the repeat breeders rate: in vivo and in vitro results. *Andrea Bignotti (Italy)*

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<td>12.00 - 13.30</td>
<td>Lunch</td>
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13.30 - 16.00

SYMPOSIUM 5  ROOM ITALIA

REPRODUCTION IN NON-DOMESTIC AND ENDANGERED SPECIES

• Reproductive biology and biotechnologies in wild felids. Ampika Thongphakdee (Thailand)
• Assisted reproduction in wild bovids. Gabriela Mastromonaco (Canada)
• Understanding and sustaining reproduction at the Panama Amphibian Rescue and Conservation Project. Gina Della Togna (Panama)
• Marsupials the alternative therians – From gametes to birth. John Rodgers (Australia)

Chair: Pierre Comizzoli (USA)

13.30 - 16.00

SYMPOSIUM 6  ROOM AZZURRA

IMMUNE REGULATION OF OVIDUCT/UTERINE FUNCTION

• Challenges in studying preimplantation embryo-maternal interaction in cattle. Dimitrios Rizos (Spain)
• Neutrophils and monocytes in the equine endometrium: friends or foes? Dariusz Skarzynski (Poland)
• Preventing postpartum uterine disease in dairy cattle depends on avoiding, tolerating and resisting pathogenic bacteria. Iain Martin Sheldon (UK)

Chair: Graça Ferreira-Dias (Portugal)

13.30 - 16.00

SYMPOSIUM 7  AUDITORIUM

EFFECTS OF HEAT STRESS ON REPRODUCTION: FROM CONCEPTION TO LACTATION

• Effects of periconceptional heat stress on primiparous and multiparous daughters of Holstein dairy cows. Shelly Rhoads (USA)
• Late gestation heat stress: effects on dam and daughter. Geoffrey Dahl (USA)
• Impact of heat stress on lactational performance of dairy cows. Sha Tao (USA)
• Effects of heat stress on mammary function: mediators and mechanisms. Tom McFadden (USA)

Chair: Geoffrey Dahl (USA)
13.30 - 16.00 SYMPOSIUM 8 ROOM CIANO

CRYOPRESERVATION: FREEZING, VITRIFICATION, FREEZING DRYING

• Vitrification in ART: past, present, and future. Gabor Vajta (Australia)
• Dry Biobanking as a Conservation Tool in the Anthropocene. Joseph Saragusty (Italy)
• Cryopreservation in endangered species - a way to win time for new conservation solutions. Thomas Hildebrandt (Germany)
• VitDrying (vitrification and drying) of reproductive cells and stem cells. Amir Arav (Israel)

Chair: Amir Arav (Israel)

16.00 - 16.30 Coffee break

16.30 - 18.00 WORKSHOP 7 ROOM VERDE

ADVANCES IN SPERM CRYOPRESERVATION TECHNOLOGY FOR CONSERVATION OF AVIAN GENETIC RESOURCES

• Cryoprotective vs toxic action of non-permeant cryoprotectants: effect on sperm and embryos. Silvia Cerolini (Italy)
• Role of endogenous and external factors on poultry sperm cryoresistance. Julian Santiago-Moreno (Spain)
• Membrane lipid regulation of cryopreserved sperm function in poultry. Atsushi Asano (Japan)
• Current advantages and limits in the implementation of a sperm cryobank for avian genetic resources. Elisabeth Blesbois (France)

Chair: Silvia Cerolini (Italy)
16.30 - 18.00  WORKSHOP 8  AUDITORIUM

IMPROVED MAMMALIAN EMBRYO PRODUCTION BY NOVEL BIOMIMIC-DESIGNED 3D AND MICROFLUIDIC CELL CULTURE APPROACHES

• Engineering the female reproductive tract using microfluidic devices provide new insights into ovulation and ovarian cancer. Joanna Burdette (USA)
• Modeling the early embryonic environment at the air-liquid interface. Jennifer Schön (Germany)
• Step-by-step improvements in oviduct-on-a-chip cell culture approaches for better in vitro embryo production in cattle. Heiko Henning (The Netherlands)
• CRISPR-Cas9 editing of organs-on-a-chip to create reproductive models: a serous tubal intraepithelial carcinoma-on-a-chip. Marcia Ferraz (USA)

16.30 - 18.00  WORKSHOP 9  ROOM COBALTO

REPRODUCTIVE TOXICOLOGY IN MARINE MAMMALS

• Reproduction in Baltic seals - history of environmental pollution effects and present status. Sara Persson (Sweden)
• The killer whale apocalypse. Paul D. Jepson (UK)

16.30 - 18.00  WORKSHOP 10  ROOM CIANO

THE GAIT OF ASSISTED REPRODUCTION IN THE EQUIDS

• An extensive characterization of horse oocytes suggests the use of different cultural strategies in order to improve in vitro embryo production. Federica Franciosi (Italy)
• Embryo and recipient mare cycle characteristics affect the likelihood of pregnancy and foaling after transfer of ICSI embryos. Tom A.E. Stout (The Netherlands)
• Fatty acid composition of the equine sperm plasma membrane and its implication on sperm function. Christina Aurich (Austria)
• Assisted reproduction in donkeys: a new challenge. Diana Fanelli (Italy)
16.30 - 18.00 WORKSHOP 11 ROOM ITALIA

GONADOTROPIN SECRETION IN CATTLE AND SHEEP: NEW DISCOVERIES

• Intra-pituitary mechanisms underlie annual time measurement to regulate seasonal reproduction. Domingo Tortonese (UK)

• Discoveries of new receptors on bovine gonadotrophs: possible new mechanisms to control reproductive functions. Hiroya Kadokawa (Japan)

• Use of an antiestrogen delivered centrally to override the estradiol negative feedback on LH secretion during anestrus in ewes. Terry Nett (USA)

16.30 - 18.00 WORKSHOP 12 ROOM AZZURRA

IS A NEW STAR BORN? NGF ROLE ON OVULATION INDUCTION AND SPERM TRAITS

• Induced ovulation in South American camelids: new insights on the role of b-NGF. Mauricio Silva (Chile)

• Effect of nerve growth factor on the main traits of rabbit sperm. Cesare Castellini (Italy)

• Role of nerve growth factor in rabbit female reproduction. Rosa M Garcia-Garcia (Spain)

• Insights into NGF role in bovine reproduction. Fabio Lima (USA)
8.30 - 10.30  **PLENARY SESSION 3  **

**AUDITORIUM**

**EPI/GENETICS GENOMICS IN REPRODUCTION**

- The impact of prenatal environment on postnatal life and performance. *Antonio Gonzalez-Bulnes (Spain)*
- Untangling early embryogenesis using single cell –omics. *Ramiro Alberio (UK)*
- Fetal development and cardiovascular health: causes and consequences. *Janna Morrison (Australia)*
- Interferon Tau: influences on growth and development of the conceptus. *Fuller Bazer (USA)*

10.30 - 11.00  **Coffee Break**

11.00 - 12.00  **POSTER SESSION 3**

12.00 - 13.30  **Lunch**

13.30 - 16.00  **SYMPOSIUM 9  **

**ROOM ITALIA**

**NEW APPROACHES IN BUFFALO REPRODUCTIVE MANAGEMENT**

- Embryo production in buffalo cows. *Pietro Baruselli (Brasil)*
- Exogenous and endogenous factors in seasonality of reproduction in buffaloes: a review. *Michael D’Occhio (Australia)*
- Reproductive management in buffalo by artificial insemination. *Gianluca Neglia (Italy)*
- Synchronization and re-synchronization strategies to improve fertility in Dairy Buffaloes. *Nasim Ahmad (Pakistan)*

13.30 - 16.00  **SYMPOSIUM 10  **

**ROOM AZZURRA**

**REPRODUCTION IN COMPANION ANIMALS**

- Cold Case: Small Animal gametes cryobanking. *Gaia Cecilia Luvoni (Italy)*
- Small animal reproduction: scientific facts versus dogmas or unverified beliefs. *Alain Fontbonne (France)*
- The bitch around parturition. *Sebastian Artt (Germany)*
- Normal and abnormal sperm transport in female dogs. *Gary England (UK)*
- Imaging of the male reproductive tract: not so easy as it looks like. *George Mantziaras (Greece)*
13.30 - 16.00

**SYMPOSIUM 11**

**ROOM CIANO**

**NEW IMAGING SYSTEMS FOR ASSESSING GAMETE AND EMBRYO QUALITY**

- Raman spectroscopy based approach to study the female gamete. *Luísa Bogliolo (Italy)*
- Oocyte and embryo evaluation by AI and multi-spectral auto-fluorescence imaging. *Jeremy Thompson (Australia)*
- Assessments of sperm quality integrating morphology, swimming patterns, bioenergetics and cell signaling. *Eduardo Roldan (Spain)*
- The label-free microscopy a non-invasive new tool to assess gametes and embryo quality. *Marcello Rubessa (USA)*

**Chair:** Sergio Ledda (Italy)

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13.30 - 16.00

**SYMPOSIUM 12**

**AUDITORIUM**

**NOVEL INSIGHTS ON UTERINE IMMUNOLOGY DURING PREGNANCY AND DISEASE**

- Modulation of the maternal immune system by the developing conceptus. *Troy Ott (USA)*
- Immunological memory of the maternal-fetal interface: implications for reproductive management of mares. *Doug Antczak (USA)*
- Immunological memory in the postpartum uterus: potential use of vaccines to control metritis. *Vinicius Machado (Brasil)*
- Modulation of immune function in the bovine uterus peripartum. *Stephen LeBlanc (Canada)*

**Chair:** Eduardo de Souza Ribeiro (Canada)

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16.00 - 16.30

**Coffee Break**

16.30 - 18.00

**WORKSHOP 13**

**ROOM ITALIA**

**TISSUE INVASION MECHANISMS OF TROPHOBLAST IN VETERINARY SPECIES**

- Molecular mechanisms of equine trophoblast development and invasion. *Amanda de Mestre (UK)*
- Genetic regulation of equine chorionic girdle development: linking invasion with immunomodulation. *Doug Antczak (USA)*
- Convergent evolution of pregnancy-specific glycoproteins in animal species with highly invasive trophoblasts. *Robert Kammerer (Germany)*

**Chair:** Amanda De Mestre (UK)
16.30 - 18.00  WORKSHOP 14  ROOM AZZURRA

BOVINE REPRODUCTION

Chair: Ana Meikle (Uruguay)

• Recent advances in dairy research that affect reproductive management in confinement and grazing systems. Matthew Lucy (USA)
• Uterine disease in confined and grazing dairy productive systems with emphasis on risk factors and management. Scott McDougall (New Zealand) and Wolfgang Heuwieser (Germany)

Chair: Giovanni Gnemmi (Italy)

16.30 - 18.00  WORKSHOP 15  AUDITORIUM

ADVANCES IN THE USE OF DOPPLER ULTRASONOGRAPHY IN CATTLE REPRODUCTION

Chair: João Henrique Moreira Viana (Brasil)

• Application of color Doppler ultrasonography to improve efficiency of hormonal treatment: estimation of follicle and luteal activity and prediction of estrous cycle. Motozumi Matsui (Japan)
• Uterine and luteal blood flow after artificial insemination and embryo transfer in cattle. Heinrich Bollwein (Switzerland)
• Potentials and flaws of the early diagnosis of nonpregnancy based on corpus luteum blood flow. João Henrique Moreira Viana (Brazil)
• Applications of color Doppler ultrasonography in commercial fixed-time programs in cattle. Guilherme Pugliesi (Brazil)

16.30 - 18.00  WORKSHOP 16  ROOM VERDE

EMBRYONIC DIAPAUSE

Chair: Susanne Ulbrich (Switzerland)

• Putting pregnancy on hold down under. Jane Fenelon (Australia)
• Molecular cues controlling embryonic developmental pace. Vera van der Weijden (Switzerland)
• Embryonic derived signals for communicating with the uterus: Clues from studying embryonic diapause in mice. Shuangbo Kong (China)
16.30 - 18.00  WORKSHOP 17  ROOM CIANO

NUTRITIONAL STRATEGIES TO IMPROVE FERTILITY IN SMALL AND LARGE RUMINANTS

- Role of fatty acids on fertility in dairy cows. José E. P. Santos (USA)
- Managing for fertility in dairy cows, the oocyte deserves center stage. Jo Leroy (Belgium)
- Perspectives on nutrition-reproduction relationships - research priorities and management needs. Graeme Martin (Australia)

Chair: Pietro Celi (USA)

16.30 - 18.00  WORKSHOP 18  ROOM COBALTO

GENETICALLY TAILORED PIGS AS DISEASE MODELS AND ORGAN DONORS FOR XENOTRANSPLANTATION

- Modelling Duchenne muscular dystrophie in pigs - recent progress. Hiroshi Nagashima (Japan)
- A pig model for Hutchinson-Gilford progeria syndrome. Vicente Andrés (Spain)
- Xenografting of gene edited immunodeficient pigs with human hematopoietic stem cells. Jorge Piedrahita (USA)
- Recent breakthroughs in pig-to primate xenotransplantation. Eckhard Wolf (Germany)

Chair: Eckhard Wolf (Germany)

20.00  EVENING: SOCIAL DINNER
8.00 - 10.00  PLENARY SESSION 4  AUDITORIUM

SEMEN QUALITY. SEMEN ÓMICS: RELATION WITH MALE FERTILITY

• Contribution of sperm and seminal proteins on sperm function, cryotolerance and fertilizing ability in the pig. Jordi Roca (Spain)
• Intact cell MALDI-TOF Mass Spectrometry, a promising proteomic profiling method for animal reproduction Xavier Druart (France)
• Role of ram sperm and seminal proteins in the female reproductive tract and their potential impact upon fertilizing ability. Recent advances in transcriptomics. Jessica Rickard (Australia)

10.00 - 10.30  Coffee Break

10.30 - 12.30  PLENARY SESSION 5  AUDITORIUM

ADDING A NEW DIMENSION TO REPRODUCTION

• A 3D approach to reproduction. Tiziana A.L. Brevini (Italy)
• Oviduct on a chip. Pedro Costa (Portugal)
• Engineering the 3D printed bioprosthetic ovary. Monica M. Laronda (USA)

12.30 - 13.00  CLOSING CEREMONY  AUDITORIUM
SIMMET PRIZE - Dr. Gabriel Bó

Through the auspices of the International Congress of Animal Reproduction (ICAR), Minitube International, a science-driven biotechnology company, is sponsoring the **4th Simmet Prize in Assisted Reproduction**.

The award, which recognizes the scientific advances in assisted reproduction pioneered by **Dr. Ludwig Simmet**, founder of Minitube, recognizes an active research scientist for outstanding basic and applied research published during the previous six years in the area of assisted reproductive technologies for animal production systems.

The Simmet Prize, which comes with a 50,000 euro honorarium, is the largest of its type in the world and is presented every four years at the ICAR meeting.

The Simmet Prize will be presented at the 19th International Congress of Animal Reproduction, 28th June - 2nd July 2020 in Bologna, Italy. Note that awardees are expected to provide a manuscript to be published in conjunction with the proceedings of the ICAR meeting.

**Award Criteria which have been followed**

A. **Originality**
   1) A pioneer in the development of novel and significant areas of knowledge to assist in propagation of animal species.
   2) Independently developed new knowledge in an innovative and applicable manner that has served as a technological platform to enhance efficiency of animal reproduction.
   3) Contributed reproductive technology(s) to the assisted reproduction industry/community which is close to application or being used in animal reproduction.

B. **Experimental Approach**
   1) Developed novel questions and hypotheses as a basis for research.
   2) Developed pioneering and superior experimental methodologies.
   3) Formulated experimental designs and approaches that permitted development of significant conclusions and concepts.
   4) Communicated research results to the scientific community and end users with clarity through timely presentation at scientific meetings, publication in high quality journals, and unique strategies of communication for technology transfer in the area of reproductive technology for assisted reproduction.

C. **Leadership**
   1) Provided underlying and major contributions to team research endeavors.
   2) Recognized as an innovator and scholar by scientific peers as evidenced by contributions to scientific societies, invitations to participate in scholarly activities, such as symposia, and service to society.
   3) Shared research experience willingly and unselfishly with the international scientific community through provision of expert advice, sharing new innovative techniques/technology/reagents, and developing the thinking and expertise of others in assisted reproduction of animals.
ICAR Announces Dr. Gabriel Bó as Recipient of 2020 Simmet Prize for Assisted Reproduction

Sydney, Australia, 3rd October 2019: The International Congress on Animal Reproduction (ICAR) announces that Dr. Gabriel Bó of the Instituto de Reproducción Animal Córdoba (IRAC) in Córdoba, Argentina is the recipient of the 2020 Simmet Prize for Assisted Reproduction.

The prize, which is the most prestigious award in animal reproduction and one of the largest of its kind, was given for the pioneering efforts of Dr. Bó to develop practical protocols for fixed-time artificial insemination, superovulation and embryo transfer in cattle.

Dr. Bó is currently President and Director of Research and Post-graduate training at IRAC and Professor of Obstetrics and Biotechnology of Reproduction at the Veterinary School of the Instituto de Ciencias Basicas y Aplicadas, Universidad Nacional de Villa Maria in Cordoba, Argentina. IRAC is one of the few organizations of its kind with missions in research, teaching, and clinical service including embryo transfer, artificial insemination, and gamete and embryo cryopreservation. Over 1300 veterinarians in South and Central America have received education on animal reproduction since IRAC opened in 1995.

Bó and his colleagues have developed what are now the de facto standard protocols for superovulation in cattle. Research conducted by him and his collaborators on estrus synchronization and fixed-time artificial insemination has been one of the key drivers for implementation of these technologies by producers throughout South America and globally. Together, these practices are revolutionizing genetic selection and reproductive management of cattle.

The Simmet Prize is sponsored by Minitube International and administered by ICAR. The prize, established as a memorial to the accomplishments of Dr. Ludwig Simmet, a pioneer in development of artificial insemination in farm animals and founder of Minitube, recognizes an active research scientist for basic and applied research published during the previous six years in the area of assisted reproduction of animals. The prize is presented each 4 years and includes an award of 50,000 euros.
ABSTRACT TOPICS

• Bovine reproduction
• Buffalo reproduction
• Camelid reproduction
• Canine and feline reproduction
• Control of estrous cycle
• Cryobiology of gametes and embryos
• Embryo development and differentiation
• Embryogenesis in vitro
• Female reproductive physiology
• Horse reproduction
• Imaging methods in reproduction
• Male reproductive physiology
• Metabolism and reproduction
• Neuroendocrine control of reproduction
• Nutrition and reproduction
• Ovary and oocyte
• Oviduct
• Pig reproduction
• Pregnancy, placental function and parturition
• Reproduction in avian species
• Reproduction in exotic animals and wild species
• Reproduction in fish
• Reproduction in sheep and goats
• Reproductive pathologies
• Reproductive system diseases
• Spermatology and sperm quality
• Testis
• Uterus
• Other

Congress delegates are invited to submit abstracts of their scientific work for presentation as a free communication at ICAR 2020. Abstracts of scientific contributions, covering the topics below are welcome.

GENERAL REQUIREMENTS
The text must be clear, concise, and written in proper English. The content must not have been previously published in academic journals or subjected to peer review. Significant technical information must not be withheld. Abstracts must absolutely contain results. Statements such as “results will be discussed” are not acceptable and will lead to rejection.
At least one Congress registration is needed every two accepted abstracts; abstracts not respecting these indications will be not published.
STRUCTURE OF THE ABSTRACT
Abstracts can be structured and may include:

1. BACKGROUND  a brief introduction stating the purpose of the investigation and its relevance to laboratory medicine;
2. METHODS  a description of the methodology used;
3. RESULTS  to be supported by statistical analysis or other evidence to show their validity;
4. CONCLUSIONS

The body of the abstract must not exceed 2300 characters, spaces included.

GENERAL INFORMATION

Submission deadline: 30th November 2019
Confirmation of receipt: Receipt of the abstract will be acknowledged by e-mail immediately after submission.
Notification of acceptance or rejection: authors will be notified of acceptance or rejection before 30th January 2020.
Registration: At least one Congress registration is needed every two accepted abstracts; abstracts not respecting these indications will be not published.

For information regarding poster submission: posters@icar2020.org

IMPORTANT NOTICE
Abstract Authors are asked to indicate the most suitable topic for presentation of their work.

Abstracts should be submitted via the on-line submission system only. Do not send in an abstract more than once!

THE ABSTRACTS SUBMISSION SYSTEM IS CLOSED
FINANCIAL SUPPORT TO YOUNG RESEARCHERS

The Local Organising Committee is pleased to support the participation of Young Researchers.

Will be available 10 refunds (1000 Eur each) for 10 attendants to cover the cost of the travel and accommodation for a maximum of Eur 630. In addition to this amount, the selected researchers will receive free registration in the student category (corresponding to Eur 370).

Candidates must meet the following criteria:
• Young participants (≤35y at the date of the congress);
• Having an abstract accepted (deadline for abstract submission: 30<sup>th</sup> November 2019);
• Attendance to the Congress.

Applications must be submitted through the application form; they have to be accompanied by a pdf of a letter of support certifying the status as a student or as a post-doc. The document must be signed by an academic supervisor.

The selection will be made by members of both ICAR Board and Local Organising Committee. Applicants will be notified of acceptance or rejection before 29<sup>th</sup> February 2020.

Applications have to be sent to info@icar2020.org within 30<sup>th</sup> November 2019.

APPLICATIONS ARE CLOSED
REGISTRATION FEES

All delegates must register for the congress. Registration fees are as follows:

UNTIL 31st MARCH 2020

Delegate €470.00
Students* €370.00
Accompanying Person € 50.00

FROM 1st APRIL TO 14th JUNE

Delegate €570.00
Students* €470.00
Accompanying Person € 50.00

ON-SITE REGISTRATION

Delegate €640.00
Students* €540.00
Accompanying Person € 50.00

VAT 22% included

THE REGISTRATION FEE INCLUDES:

- Admission to full scientific program
- Congress Kit
- Welcome Reception
- Buffet Lunches (3 services)
- Coffee breaks (7 services)
- Access to exhibition and posters
- Certificate of Attendance

The registration fee for Accompanying person includes:
- Welcome Reception

Extra Social Program Fee (per person):
- Jazz & Food Event, 29th June 2020 € 70.00
- Congress Dinner, 1st July 2020 € 100.00

VAT 10% included

* Registration in the STUDENT category is only open to people able to provide a valid official certificate. To validate this, documentary proof of this status must be forwarded to the e-mail: registrations@icar2020.org
REMITTANCE
Registration fees shall be paid by credit card or bank transfer through the on-line system available. When paying by bank transfer, a copy of the transfer receipt must be sent at registrations@icar2020.org. Registrations without proof of payment will not be accepted. The organising secretariat will send registration receipt upon receipt of payment, by e-mail. Please be sure your e-mail address is filed in correctly.

PERSONAL INVITATION FOR VISA PURPOSES
To facilitate congress attendance a personal invitation can be sent on request. This invitation does not exempt the recipient from registering and paying the proper congress fee. Please inform the congress secretariat if you need a personal invitation letter.

CANCELLATION AND REFUND
Cancellations must be sent to registrations@icar2020.org. The amount equal to 50% of the fee paid will be refunded for cancellations received by 31st May 2020. After 31st May 2020 no refunds will be issued. All refunds will be paid in euros after the congress.

CANCELLATION OF THE CONGRESS
The congress secretariat reserves the right to cancel the congress, shift venue, or change dates without notice, in case of “force majeure”. Neither VET International or the Congress Organising Committee shall be liable for any damage claims.

LIABILITY AND INSURANCE
Registration fees do not include the insurance of participants against personal accidents, sickness and cancellations by any party, theft, loss or damage to personal possessions. Participants are advised to take out adequate personal insurance to cover travel, accommodation, cancellation and personal effects.
GENERAL INFORMATION

CONGRESS VENUE
Palazzo della Cultura e dei Congressi
P.zza Costituzione, 4/a - 40128 Bologna (Bo) Italia
Phone: +39 051.63.75.111 - Fax. +39 051 63.75.170
info@bolognacongressi.it
www.bolognacongressi.it

HOW TO REACH BOLOGNA
There are many different and easy ways to reach Bologna.

BY PLANE
Guglielmo Marconi Airport
Guglielmo Marconi International Airport, 15 minutes by bus from Historic DownTown, connecting Bologna to the main Italian and European airports.

BY TRAIN
Bologna Central Station
For the strategic geographic location - between downtown and the north - Bologna is the main Italian railway junction, made even more efficient by the high-speed trains, which, together with the new railway station project, has lead to greater development and a significant increase of daily transit of trains and passengers.

BY CAR
Highways
In Bologna there are two main motorways that converge, linking the north and south of the country (A1 and A14), that can be reached directly from all major Italian cities.
CONGRESS LANGUAGE
The congress' official language is English.

NAME BADGE
A name badge will be required for access to the congress area. Participants will receive a name badge when they check in at the registration desk. It must be worn at all times.

CERTIFICATE OF ATTENDANCE
A certificate of attendance will be issued to properly registered attendees. Certificates of attendance will be sent by email after the congress.

INVITATION LETTER
An official letter of invitation will be sent to you upon request. The invitation letter may be used by visitors to raise travel funds or to obtain a visa, but is not a commitment on the part of the organisers to provide any financial support. Please contact the Organising Secretariat, info@icar2020.org, to request a letter of invitation.

MOBILE PHONES
All participants are asked to switch mobile phones off or to silent mode during the scientific sessions.

ELECTRICITY
In Italy the electrical current is 220 volts AC (50 Hz). Electrical sockets comply with European regulations. In most hotels you will find adaptors for different types of plugs.

CURRENCY
What currency is used in Italy?
Since 2001, the currency used in Italy is the euro. One euro is divided up into 100 euro-cents. There are eight different coins (1, 2, 5, 10, 20 and 50 euro-cents) and seven notes (5, 10, 20, 50, 100, 200 and 500 euros).

CREDIT CARDS
As well as in cash, purchases can be paid for using the most common credit cards. This payment system is common in Italian shops, which generally display the symbols of the credit cards they accept on the outside door. If you pay by credit card you will be asked to show an identity document. Travellers cheques (in USD or Euros) can also be cashed in Italian banks.
**TIPS**
Tips are not compulsory and in Italy there are no generally established rules, although it is common practice to leave a sum amounting to around 10% of the bill if you are satisfied with the service you have received.

**TOURIST INFORMATION**
You can use the link below in order to find all tourist information
www.bolognawelcome.com/en/

**HOTEL AND TRAVEL**
On-line booking system is available on the congress website.
Travel information are available on the congress website.
See you in Bologna!

Organising Secretariat

Via Carlo Farini 81 - 20159 Milano – Italy
Phone: +39 02 66802323 - Fax: +39 02 6686699
Email: info@icar2020.org

For information on any specific topic, please refer to the following e-mails:
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Abstracts & Posters (information only): posters@icar2020.org
Companies and Sponsorships: companies@icar2020.org
Registrations: registrations@icar2020.org
Scientific programme & speakers: info@icar2020.org