Preconference Symposium

*In Vitro* Embryo Production Technologies Workshop

Sunday, January 20, 2019, LSU AgCenter Research

**Location**

The Louisiana State University AgCenter Research Station located in St. Gabriel Louisiana, approximately 1 hour from New Orleans. Transportation will be available to the Station and back to the Sheraton New Orleans Hotel. Lunch will be provided.

**Format**

Limit of 45–50 participants, 4 available modules, with each participant choosing 2 of the available modules. Two rotations of approximately 3 hours each. Modules are as follows:
- Bovine OPU
- Bovine IVF and vitrification Laboratory
- Equine follicular aspiration
- Equine ICSI

The design is to have each module contain as much hands-on learning as possible with the following learning objectives for each.

**Bovine OPU**

Participants within each section of this module will learn the basics for the following techniques: OPU taught by Dr. André Dayan, Dr. Glenn England and Dr. Charles Looney; Oocyte handling and terminal harvesting taught by Jane H. Pryor.

- Ultrasound tract demonstration session with uterine tracts. Each participant will learn proper ultrasound transvaginal guide placement within the vagina utilizing the latest in ultrasound imagery.
- OPU – Each participant will learn the basics for ovum pick up with aspirate to be searched at the end of the OPU session.
- Oocyte searching – Participants will learn to identify oocytes morphologically, handle through washes, load and unload for transport.
- Terminal ovary slicing - Each participant will be given a terminal ovary removal protocol. In addition, participants will learn procedures for proper ovary handling, temperature and follicular oocyte aspiration utilizing two techniques for oocyte removal (syringe and blade).

**Bovine IVF and Vitrification**

Participants will learn the basics of bovine IVF and vitrification using commercially available reagents.
- Preparation of media and dishes for semen preparation, fertilization, and culture.
- Preparation of semen for fertilization using frozen semen.
- Movement of mature oocytes through the fertilization and culture steps.
- Movement of bovine oocytes, embryos, or both through vitrification solutions and placement and recovery from a vitrification device such as the Cryo Lok.

**Equine Follicular Aspiration**

Participants will learn the basics of ultrasound guided follicular aspiration of equine oocytes suitable for ICSI.
- Management of donor mares taking into account effects of follicle size, time of the year, and reproductive status (non-cycling, cycling, pregnancy).
- Demonstration of equipment (vacuum pumps, needles, and transducers) and media available for equine follicular aspiration.
- Preparation of mares for the aspiration procedures: choices for sedation, spasmolytic agents, and antibiotics.
- Basic procedure of follicular aspiration and recovery of aspirated oocytes.
- Tips for maximizing oocyte recovery.
- Considerations for storage and transport of retrieved oocytes.

**Equine ICSI**

Participants will learn basic steps and considerations for the performance of ICSI utilizing equine oocytes.
- Considerations for equine oocyte maturation.
- Sperm preparation; optimizing use of frozen semen.
- Setting up equipment and choice of microtools.
- ICSI technique (conventional, laser, or piezo drill assisted and troubleshooting common problems).
- Embryo culture systems (daily vs. intermittent checks).