

The Assisted Reproductive Technology (ART) laboratory (<https://vetart.vetmed.ucdavis.edu>) functions as a dedicated service laboratory, working in conjunction with the Theriogenology Service at VMTH. The lab specializes in providing cutting-edge in vitro fertilization (IVF) services for horses and cattle. The current team comprises two board-certified Theriogenology faculty members, one skilled embryologist, two clinicians, two technicians, two residents, and three PhD students, all working collaboratively to advance the field and ensure top-quality service.

For those embarking on the Don Low Fellowship, the following specific expectations and unique opportunities await:

1- Hands-on Experience with In Vitro Services: Don Low Fellows will be directly involved in the intricate processes of the laboratory including oocyte manipulation and in vitro embryo production primarily in cattle, and oocyte manipulation and In Vitro Maturation (IVM) in horses.

2- Semen Preparation: Fellows will gain firsthand experience in semen preparation for IVF and ICSI, encompassing both bovine and equine procedures. This step is crucial to the success of the IVF process, ensuring the use of the highest quality of gametes.

3- Embryo Vitrification and Thawing: Fellows will be trained in the art and science of embryo vitrification that preserves embryos without forming ice crystals. This process, applicable to both bovine and equine embryos, ensures that embryos maintain their viability during freezing and storage. Additionally, they will learn the delicate process of embryo thawing, which is pivotal for successful transfer and pregnancy establishment.

4- Micromanipulation Techniques for ICSI: Intracytoplasmic sperm injection (ICSI) is a delicate procedure where a single sperm cell is injected directly into the cytoplasm of an egg. Don Low Fellows will have the opportunity to become familiar with this advanced micromanipulation technique as well as the necessary equipment and supplies needed.