

## Faculty's IVF lab advancing towards artificial rhino conservation technologies with

### San Diego Zoo Global

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Mr Mario Smuts, First Veterinary Technologist, evaluating an equine hatching blastocyst

An important week-long international visit in February to the Faculty's In Vitro Fertility Laboratory (IVF) has paved the way for more extensive collaboration with **San Diego Zoo Global** as part of the International Rhino Reproduction Collaborative (IRRC). An IRRC-MOU, primarily drafted by the University of Pretoria and San Diego Global was officially signed in early 2019.

The focus of the visit by the San Diego Zoo team and other members of the IRRC was rhino semen collection and cryopreservation, oocyte pick-up, and streamlining of IVF media preparation and Intracellular Sperm Injection techniques.

According to Mr Mario Smuts from the Faculty's Department of Production Animal Studies, who represented the Faculty during this visit, the aim of the IRRC is to investigate methods in optimising rhino gamete retrieval and survival and to improve the outcomes from maturation and intracellular sperm injection (ICSI) techniques towards artificial reproduction. This will indeed provide further impetus to rhino conservation efforts.

"The critical first step will be to investigate methods for optimising gamete retrieval and survival during their transfer to the laboratory to improve the outcomes from maturation, embryo culture or vitrification for oocyte cryopreservation and ultimately embryos from IVF or ICSI," Mr Smuts said.

As a result of inputs from various members of the IRRC, the Faculty's IVF Laboratory celebrated its 1<sup>st</sup> ever equine hatching blastocyst early in March 2020. This was also made possible by the

installation of a state-of-the-art ICSI system (Leica microscope with Takanome Narishige manipulators) by the Faculty. The Faculty's Section of Reproduction will soon be able to extrapolate and offer this specialised in vitro service to potential clients in the equine and wildlife fraternity.

\*\* Under this agreement, IVF research is only done by three labs, including the Faculty's IVF lab, Embryo Plus in Brits and at the San Diego Zoo. Other institutions that are also part of this IRRC collaborative include SANParks, the Institute of Rhino Cryogenetics, Geolife, and the Buffalo Dream Ranch in Klerksdorp.

\*\* San Diego Zoo Global's mission is to save species worldwide by uniting their expertise in animal and plant care and conservation science with their dedication to inspiring passion for nature.



First Equine hatched Blastocyst following ICSI at the Faculty of Veterinary Science



Some members of the IRRRC during the San Diego Zoo Global visit

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