

To apply or for more information, visit our website:

SMconservation.gmu.edu

Application Deadline:

May 14, 2018

Additional Details:

Information about course pricing, and our facilities can be found on our website.

**Smithsonian-Mason
School of Conservation**

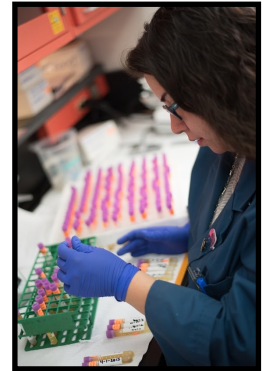
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Non-Invasive Techniques and Applications in Wildlife Endocrinology

July 23—August 3, 2018

Wildlife endocrinology is an increasingly important conservation tool that can help managers better understand the factors impacting health and reproduction in captive and wild populations. Especially important has been the development of noninvasive techniques, which can assess hormone metabolites excreted in urine and feces. Evaluating hormones allows determination of:

- 1) the reproductive cycle, including puberty, timing of sexual receptivity, and onset of reproductive aging;
- 2) the effects of different husbandry practices and environmental enrichment on animal well-being;
- 3) animal pregnancy and the possible date of birth;
- 4) optimal hormone treatments for artificial insemination or *in vitro* fertilization; and
- 5) the impact of human activities or environmental changes on reproduction and health of free-ranging species.



The National Zoo's Endocrinology Laboratory was founded in 1986 and today conducts hormone analyses for zoo- and field-based research projects around the globe. It is the world's largest diagnostic service and research laboratory for wildlife endocrinology and the lab's director, Dr. Janine Brown, has extensive experience in the development of non-invasive endocrine techniques.

The purpose of this course, developed and taught by the experts at The National Zoo, is to provide theoretical information and practical experience in using endocrine monitoring techniques for assessing reproductive status and welfare in wildlife species, both in captive and wild scenarios. Lectures cover aspects of basic biology, theory of immunoassay methods, reproductive endocrinology and stress physiology, and case studies from *in-situ* and *ex situ* studies of wildlife species. Extensive lab work will include hands-on experience in sample (urine and feces) processing and analysis using enzyme immunoassay technology. Computer sessions will include basic and advanced data analysis techniques. Substantial time will be provided for work on independent group projects where participants will complete a full lab analysis and data interpretation themselves. Skills learned throughout the course will enable participants to develop and conduct research projects that incorporate non-invasive hormone monitoring. Samples used in lab work will be real samples from the National Zoo's animal collection. A comprehensive endocrine training manual will be provided to course participants. *This is an introductory course, and all experience levels beyond an undergraduate degree are welcome to apply.*



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