

Dean's Colloquium

**Dr. Rajeev Chandra, Associate Professor
Department of Biological Sciences**



When: Wednesday, November 8, 2023

Where: Turner 129

Time: 3:00 – 3:20 pm, Q&A: 5 min

Title: Folliculogenesis in Polycystic Ovaries in the Domestic Cat

Abstract: Polycystic ovary syndrome (PCOS) is the most common cause of anovulatory infertility, but the mechanism of anovulation remains uncertain. The typical gross morphology of anovulatory polycystic ovaries is the presence of multiple antral follicles 2–10 mm in diameter, which signifies the arrest of follicle development prior to the preovulatory phase. Anovulation in PCOS is characterized by arrested growth of antral follicles. Although arrested antral follicle growth reflects the abnormal endocrine environment, there is increasing evidence of abnormalities of follicle development from the very earliest, gonadotropin-independent stages. The underlying molecular basis of this fundamental ovarian abnormality remains to be determined. Folliculogenesis is the cycle of maturation of a follicle within the ovary of the adult human female. A follicle is a membranous sac of cells that contains an immature egg cell, called an oocyte. This research's primary investigation includes a study identifying various stages of follicle development with reference to antral follicle development and their respective sizes during the estrous cycle of the domestic cat, *Felis catus*. This understanding will help enhance the ability to assess risk and develop preventative strategies of ovarian dysfunction such as Polycystic Ovarian Syndrome, as highlighted. Ovaries from adult female domestic cats were obtained from routine spaying procedures conducted at a local veterinary clinic. The primary methods utilized in the study include histology of ovarian tissue. Gross follicular morphology, including their respective sizes, was evaluated for various developmental stages of the ovarian follicles.

BIO: Dr Rajeev Chandra joined Hampton University in August 2023 as Faculty member in the Department of Biological Sciences with major aim of coordinating and strengthening the discipline of Human Anatomy and Physiology, required by Biology and Nursing majors aspiring careers in Medicine, Nursing, and other allied fields. Dr Chandra's current research focuses on Control of Ovarian Function and Ovarian Cancer. Dr Chandra is a trained Reproductive Biologist obtaining his Doctorate degree in Physiology from Indian Veterinary Research Institute followed by completing Postdoctoral programs at University of Aberdeen, Scotland, National Institute of Animal Industry, Tsukuba, Japan and Eastern Virginia Medical School, Norfolk, VA. Prior to joining Hampton University Dr Chandra has been Assistant Professor in the Department of Biology at Norfolk State University coordinating with Human Anatomy and Physiology, Microbiology, General Biology courses. Dr Chandra has been one of the authors to recently publish a Human Anatomy & Physiology Lab Manual via the VIVA Course Redesign Grant offered in 2022 at Norfolk State University. His research articles primarily focus on Reproductive Physiology and Fertility Control.