

Reproduction and Perinatology Update

A publication of the D.H. Barron Reproductive and Perinatal Biology Research Program and the Center for Perinatal Outcomes Research

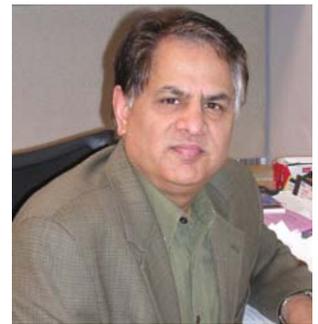


INSIDE THIS ISSUE:

Barron Lecturer	1
People News	2
Select Publications	2
Seminar Schedule	3
Recent Grants	3

Surendra Sharma to present Spring 2018 Barron Lecture

Professor Surendra Sharma of Brown University will present the Barron Lecture on March 14. His laboratory has recently made interesting discoveries about the etiology of preeclampsia in women. The title of his lecture is “Novel concepts of tauopathy and protein toxicity in preeclampsia: mechanistic similarities with Alzheimer’s Disease and CTE”.



Surendra Sharma

Dr. Sharma is Professor of Pediatrics at Women and Infants Hospital of Rhode Island and Deputy Director of Center of Biomedical Research Excellence for Perinatal Biology. He is an internationally known investigator in the field of immune programming of pregnancy and associated disorders. Gestational outcomes are programmed at the time of implantation and during early pregnancy, apparently in defiance of the normal immunological laws of tissue transplantation. The overarching hypothesis of the laboratory is that key pregnancy complications originate from abnormal immune and hormonal responses during pregnancy. In particular, it is believed that the anti-inflammatory intrauterine milieu controlled by cytokines and pregnancy hormones is crucial to fetal development and pregnancy success.

Professor Sharma is the recipient of the AJRI Award of the American Society for Reproductive Immunology (the highest award given by that society) and was recently awarded the Honorary Doctor of Medicine Degree from Linkoping University Faculty of Health Sciences, Linkoping, Sweden. He serves as a permanent member on review boards for the NIH and the American Diabetes Association (ADA) as well as on editorial boards of several journals. Sharma has trained a number of PhD, post-doctoral and clinical fellows and has served on numerous review panels of NIH and ADA. He served as President of the American Society for Reproductive Immunology (2010-2012) and has organized several international and national conferences focusing on reproductive immunology.

Faculty, Student, Postdoc and Alumni News

Contribute IDC to Support Our Program

Our reproductive biology effort is supported by the Center for Perinatal Outcomes Research. This is a source of funds that are generated by indirect costs from us - up to 7.5% of IDC that otherwise goes to the Deans Office can be designated to the Center. These funds are used to invite speakers to campus, organize retreats and are used as a source of seed grants. Please consider designating some of your IDC to the Center

Identify Our Program on Your Next Paper

Please consider including the D.H. Barron Reproductive and Perinatal Biology Research Program as one of your affiliations

Paula Molinari has joined the laboratory of John Bromfield as a doctoral student in the Animal Molecular and Cellular Biology Graduate Program.

The following students successfully defended their doctoral dissertations in the Animal Molecular and Cellular Biology Program in 2017: **Ana Mesa** (supervisor is Chris Mortensen; currently postdoc with Paul Cooke at UF), **Sofia Ortega** (Hansen, currently postdoc at Univ. Missouri), **Veronica Negrón-Pérez** (Hansen; postdoc at Virginia Tech), **Luiz Siqueira** (Hansen, currently research scientist at

Embrapa), and **Paula Tribulo** (Hansen; currently postdoc with Hansen). **Gulnur Jumatayeva** completed a M.S degree with Dr. Hansen and is now a scientist at the Kazakh Scientific Research Institute of Cattle Breeding and Forage Production.

Dr Paige Swenson has been awarded the Donald F. Richardson Memorial prize paper award by the American College of Obstetrics and Gynecology for her submission "FOXO3 Expression in the Human Ovary", which will be presented at the 2018 ACOG Annual meeting. Her faculty Mentors are Alice Rhoton-Vlasik and Harry

Nick.

Adriana Zolini, a doctoral student in the AMCB in the Hansen lab, was the runner up at the 2018 Student Research Competition at the Annual Conference of the International Embryo Transfer Society held in Bangkok, Thailand in January, 2018.



Zolini with her award

SELECT RECENT PUBLICATIONS

Bromfield JJ, Iacovides SM. Evaluating lipopolysaccharide-induced oxidative stress in bovine granulosa cells. *J Assist Reprod Genet* 2017; 34: 1619-1626.

Jeon SJ, Lima FS, Vieira-Neto A, Machado VS, Lima SF, Bicalho RC, Santos JEP, Galvão KN. Shift of uterine microbiota associated with antibiotic treatment and cure of metritis in dairy cows. *Vet. Microbiol* 2018; 214:132-139.

Jeon SJ, Cunha F, Vieira-Neto A, Bicalho RC, Lima S, Bicalho ML, Galvão KN. Blood as a route of transmission of uterine pathogens from the gut to the uterus in cows. *Microbiome* 2017;5:109.

Negrón-Pérez VM, Zhang Y, Hansen PJ. Single-cell gene expression of the bovine blastocyst. *Reproduction* 2017; 154: 627-644.

Rhoton-Vlasak A, Roussos-Ross K, Cua G, Odera E, Irani T, Vasilopoulos T. Obesity and reproduction: a study to determine how effectively medical education enhances awareness of the reproductive risks related to obesity. *JBRA Asst Reprod* 2017: 21:330-335.

Tribulo P, Caetano da Silva Leão B, Lehloenya KC, Mingoti GZ, Hansen PJ. Consequences of endogenous and exogenous WNT signaling for development in the preimplantation bovine embryo. *Biol Reprod* 2017; 96: 1129-1141.

Schedule Spring Seminar Series

Reproductive & Perinatal Biology Seminar, Wednesday 4:00-5:00 PM D.H. Barron Conference Room Medical Sciences Building M-304

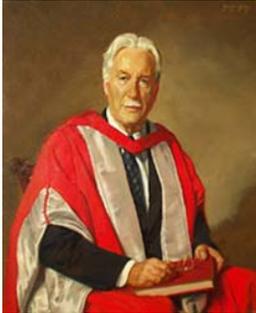
- January 17: *Developmental programming during preimplantation development – evidence from the cow*
Pete Hansen, PhD
Department of Animal Sciences, University of Florida
- January 24: **NO MEETING**
- January 31: *The expression and signaling of gut peptides in the human placenta*
Shèdy Taher, BSc
Department of Physiology and Functional Genomics, University of Florida
& Medicine, Maastricht University
- February 7: *Subversion of utero-placental angiogenesis and vasculogenesis by the periodontal pathogen *Porphyromonas gingivalis**
Leticia Reyes, DVM, PhD
Department of Pathobiological Sciences, University of Wisconsin-Madison
- February 14: *What are invasive species and how did they get here?*
Pam Fuller
Nonindigenous Aquatic Species Program, U.S. Geological Survey
- February 21: *Maternal imprint setting mechanisms*
Jim Resnick, PhD
Department of Molecular Genetics and Microbiology, University of Florida
- February 28: *(Title TBD)*
Anderson Veronese, DVM
Department of Large Animal Clinical Sciences, University of Florida
- March 7: **NO MEETING: Spring Break**
- March 14: *Novel Concepts of Tauopathy and Protein Toxicity in Preeclampsia: Mechanistic Similarities with Alzheimer's Disease and CTE*
Surendra Sharma, MD, PhD (Barron Lecture)
Women and Infants Hospital of Rhode Island
- March 21: *Novel Mechanisms for Microbial Trafficking in the Late-Gestation Fetus: Challenging the Sterile Womb Paradigm*
Michelle Rodriguez
Department of Microbiology & Cell Science, University of Florida
- March 28: *The Role of Mucins in Epithelial Defense and Trophoblast Adherence*
Ilene Gipson, PhD
Department of Ophthalmology
Harvard Medical School
- April 4: *(Title TBD)*
José Santos, DVM, PhD
Department of Animal Sciences, University of Florida
- April 11: *Involvement of PARM1 in regulation of embryonic development*
Adriana Zolini
Department of Animal Sciences, University of Florida
- April 18: *(Title TBD)*
Mario Binelli
Department of Animal Sciences, University of Florida

Recent Grants

NIH. Sexual dimorphism in developmental programming caused by CSF2. R01 HD088352. PJ Hansen, G.E. Dahl, K. Lee, and C. Robert. \$1,760,549. 2017-2002.

USDA-NIFA AFRI. The role of dickkopf-1 to enhance embryonic competence for establishment of pregnancy in cattle. 2017-67015-26452, P.J. Hansen, J. Block, and G.E. Dahl, \$480,000, 2017-2020.

USDA-NIFA-CRIS. Genotypic and phenotypic characterization of *E. coli* strains isolated from the feces, uterus, vagina, and vulva of dairy cows with metritis. K. Galvão, FLA-VME-005338, \$24,590, 2017-2018.



DH Barron Reproductive & Perinatal Biology Research Program

University of Florida

Repro & Perinatal
Update is issued each
Fall and Spring

Send items of interest to
P.J. Hansen at
Hansen@animal.ufl.edu

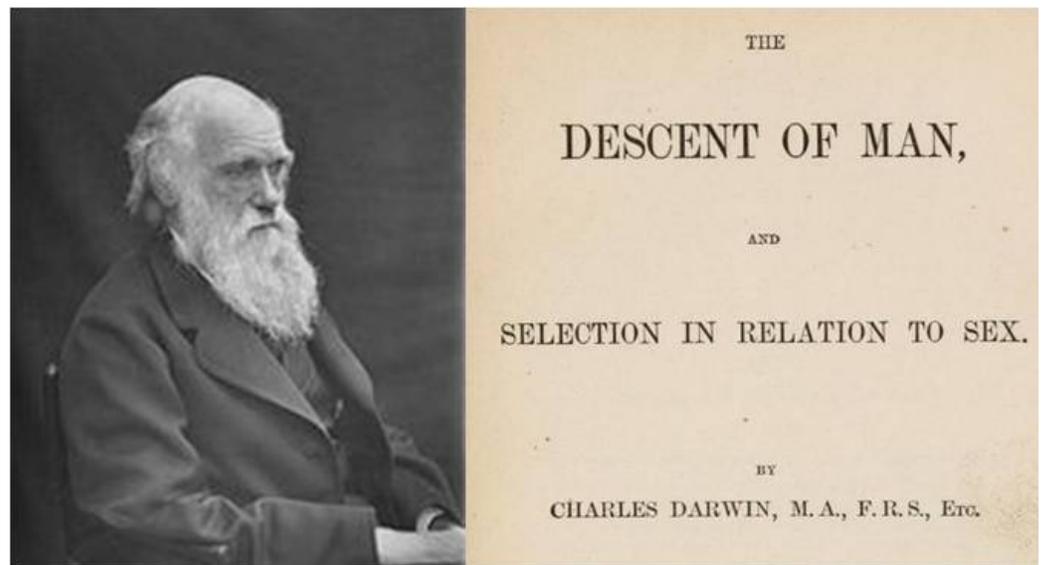
We're on the Web!
www.perinatal.ufl.edu

About the D.H. Barron Reproductive and Perinatal Biology Research Program

History: The Repro program was founded in 1969 by Donald Henry Barron, Fuller Bazer and others. Seminars have been held continuously since that time. Donald Henry Barron (1905-1993) came to UF as the J. Wayne Reitz Professor of Reproductive Biology after a career at Cambridge and Yale. His research in fetal physiology resulted in him being referred to as the Father of Scientific Obstetrics and the Father of Fetal-Placental Physiology. Known to his colleagues and students as "Dr. B.", his portrait is on the masthead. In 1969, Fuller Bazer, currently the O.D. Butler Chair in Animal Science at Texas A&M University, was an assistant professor in the Dept. of Animal Sciences. Since then, he has become one of the pioneers in understanding the nature of communication between the embryo and mother. Among the many recognitions he has received was the Wolf Prize in Agriculture in 2003.

Mission: To foster collaborative, multidisciplinary, and integrative approaches to basic and translational research that (i) improves the health of pregnant women and their babies, (ii) enhances the reproductive success of agriculturally important animals and wildlife, and (iii) prepares the next generation of scientists in these research disciplines.

Scope: Basic, translational and clinical research aimed at understanding (i) the biology of reproduction in humans and animals from fertilization to delivery and early postnatal development, and (ii) genetic, epigenetic or environmental influences that cause abnormal pregnancy outcomes, including those influences that predispose the mother and offspring to adult diseases.



Darwin and Sex

February 12 marks the 209th anniversary of the birth of the great English naturalist, Charles Darwin. While most well-known for his book laying out the theory of natural selection in *On the Origin of Species* (1859), Darwin was also concerned with mating behavior of humans and other animals and its role in evolution. In his later book *The Descent of Man, and Selection in Relation to Sex* (1871), he argued that sexual selection, where members of one biological sex choose mates of the other sex, was a form of biological adaptation distinct from natural selection. This idea continues to be examined, most recently in Richard Prum's *The Evolution of Beauty* (2017).