



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 Lecture	1
Work in Progress Meetings	1
People News	2
Kirk Conrad	2
Selected Recent Papers	3
Recent Grants	3
Seminar Schedule	4
New Faculty	5
Notes on the Seminar	5

Hernandez Gifford to Present Barron Lecture

Dr. **Jennifer Hernandez Gifford** will visit UF to present the Fall Barron Lecture on October 17. Dr. Gifford is an Associate Professor in the Department of Animal and Range Sciences at New Mexico State University. The title of her presentation is "Keeping estrogen in its place: the unexpected role of WNT in ovarian function".



Jennifer Hernandez Gifford

After completing a M.S. at New Mexico State University, and a Ph.D. at Washington State University in Animal Science, Dr. Gifford conducted post-doctoral research at Washington State University in the School of Molecular Biosciences. In 2009, she joined the faculty at Oklahoma State University and was involved in teaching undergraduate and graduate courses in physiology, endocrinology and biotechnology. In 2016, she was recruited by her alma mater and returned to NMSU.

Gifford's research focus is on mechanisms by which ovarian signaling molecules and pituitary hormones interact to regulate follicular growth and endocrine function and impact health and disease.

The Alvin C. Warnick Lecture Series was created by the Department of Animal Sciences to recognize the achievements of Dr. Alvin C. Warnick. One of the founders of the Reproductive and Perinatal Biology Group, Dr. Warnick made important contributions to the improvement of the livestock industry through innovative research, outreach to the industry through extension, research and teaching.

Past Barron Lecturers

2011	Mike Smith, Univ. Missouri
2012	Robert Chapman, USDA-ARS
2013	Poul Hyttel, Univ. Copenhagen
2014	Tom Geary, USDA-ARS
2015	Peter Sutovsky, Univ. Missouri
2016	Milo Wiltbank, Univ. Wisconsin
2017	Pablo Ross, Univ. Cal.-Davis

Work In Progress Meetings

The Reproductive and Perinatal Research Work in Progress Conference will again convene this semester. Organized by Kirk Conrad, the purpose is to present new ideas and new data, in order to solicit feedback from one's peers, educate trainees, and find common ground for new grants.

We will meet at the New Deal Café from 4 to 6 PM on selected Fridays. Beverages and hors d'oeuvres are provided! It is preferred that the presentations should be really informal with NEW IDEAS and data to back them up, if you have any (not necessary). PowerPoint and screen are available, but you are encouraged to use them sparingly. There is also a white board with markers. We want spontaneity and interruptions; presenters can expect wild and off the wall questions and comments from PIs and trainees. Dates for Fall semester are 9/28, 10/12 and 12/7.

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

Usman Arshad (Animal Sciences) began work towards the PhD in Animal Molecular and Cellular Biology (AMCB) this semester. Arshad is in the laboratory of Jose Santos and joins fellow Pakistani scientist **Ali Husnain** in Dr. Santos's lab. Husnain is also working towards the PhD in the AMCB program.

John Bromfield (Animal Sciences) was recognized by *Biology of Reproduction* as a top reviewer for 2017.

Peter Hansen (Animal Sciences) is the recipient of the Term Professorship awarded by the UF Research Foundation.

Laila Ibrahim (Animal Sciences) received her MS in the AMCB in May. She has returned to Libya to take a faculty position at the University of Benghazi.

Alice Rhoton-Vlasak (Ob/Gyn) has been promoted to professor and

was the recipient of a College of Medicine Exemplary Teaching Award in 2018.



Ibrahim after her successful defense, shown with John Bromfield and John Driver



Paige Swenson

Paige Swenson presented a prize paper at the American College of Obstetrics and Gynecology meeting in May and matched to an REI Fellowship at UCSD. She was mentored by Dr.

Rhoton-Vlasak and Harry Nick (Biochem. & Mol Biol.).



William Thatcher

William Thatcher (Animal Sciences) will be recognized at the International Ruminant Reproduction Symposium in Foz de Iguacu, Brazil on September 19 with the Pioneer Award for lifetime achievements in ruminant reproduction. The award is given every 4 years.

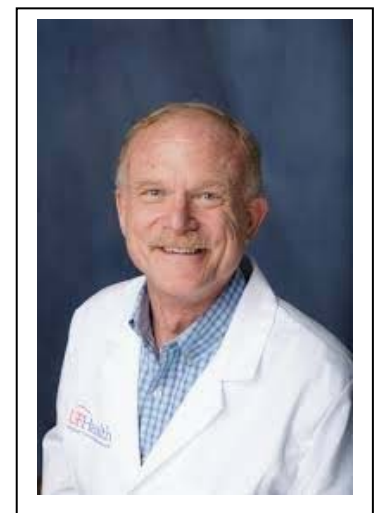
Yao Xiao (Animal Sciences) has joined the Hansen laboratory. His PhD was obtained from Huazhong Agric. Univ. He comes to Florida from Univ. of Arizona where he worked with RJ Collier and Ben Renquist.

Congratulations and Thanks to Kirk Conrad

Kirk Conrad, Cade Professor of Physiology in the Dept. of Physiology & Functional Genomics, recently completed 10 years as the leader of the Reproductive and Perinatal Biology Seminar. This seminar series, which has been active since 1969, is the signature event of the D.H. Barron Reproductive and Perinatal Biology Research Program. Kirk has been an able, enthusiastic, and dedicated leader of the seminar and has ensured that it has been an important facet of the intellectual life of the UF reproductive biology community.

In 2018, Conrad organized the 8th International Conference on Relaxin and Related Peptides in Cabo San Lucas, Mexico. He continues to organize the monthly WIP meetings held on Fridays at New Deal Café.

Thanks for everything Kirk.



Selected Recent Papers

Bromfield JJ, Watt MM, Iacovides SM. Characterisation of peripheral blood mononuclear cell populations in periparturient dairy cows that develop metritis. *Vet Immunol Immunopathol.* 2018; 200:69-75.

Bromfield JJ. Review: The potential of seminal fluid mediated paternal-maternal communication to optimise pregnancy success. *Animal* 2018; 12:s104-s109.

Conrad KP, Rabaglino MB, Post Uiterweer ED. Emerging role for dysregulated decidualization in the genesis of preeclampsia. *Placenta* 2017; 60:119-129.

Gonella-Diaza AM, Mesquita FS, Lopes E, da Silva KR, Cogliati B, Strefezzi RDF, Binelli M. Sex steroids drive the remodeling of oviductal extracellular matrix in cattle. *Biol Reprod.* 2018; 99:590-599.

Kilar CR, Diao Y, Sautina L, Sekharan S, Keinan S, Carpino B, Conrad KP, Mohandas R, Segal MS. Activation of the β -common receptor by erythropoietin impairs acetylcholine-mediated vasodilation in mouse mesenteric arterioles. *Physiol Rep.* 2018; 6:e13751.

Moraes JGN, Behura SK, Geary TW, Hansen PJ, Neibergs HL, Spencer TE. Uterine influences on conceptus development in fertility-classified animals. *Proc Natl Acad Sci USA.* 2018; 115:E1749-E1758.

Negrón-Pérez VM, Hansen PJ. Role of yes-associated protein 1, angiomin, and mitogen-activated kinase kinase 1/2 in development of the bovine blastocyst. *Biol Reprod.* 2018; 98:70-183.

Roussos-Ross D, Rhoton-Vlasak AS, Baker KM, Arkerson BJ, Graham G. Case-based care for pre-existing or new-onset mood disorders in patients undergoing infertility therapy. *J Assist Reprod Genet.* 2018; 35:1371-1376.

Tríbulo P, Jumatayeva G, Lehloenya K, Moss JI, Negrón-Pérez VM, Hansen PJ. Effects of sex on response of the bovine preimplantation embryo to insulin-like growth factor 1, activin A, and WNT7A. *BMC Dev Biol.* 2018; 18:16.

Tríbulo P, Siqueira LGB, Oliveira LJ, Scheffler T, Hansen PJ. Identification of potential embryokines in the bovine reproductive tract. *J Dairy Sci.* 2018; 101:690-704.

Recent Extramural Grants and Contracts

Elanco Animal Health. Actions of granulocyte colony stimulating factor on the maturing oocyte and developing embryo in cattle. PJ Hansen, \$55,663.

Florida Cattle Enhancement Fund. Continuing the expansion of the Brahman herd at the University of Florida. M. Binelli, GE Dahl, and PJ Hansen, \$50,000.

IMV Technologies. Strategies to extend sperm cell lifespan and improve fertility outcomes in dairy heifers, R. Bisinotto, \$48,700.

NIH. Estrogen receptor-mediated reprogramming of prostate in BPH. P Cooke, \$2,451,055

Select Sires. Improving pregnancy in dairy cows by supplementing seminal proteins at the time of artificial insemination. \$18,800.

Schedule Fall Seminar Series

Reproductive & Perinatal Biology Seminar

Wednesday 4:00-5:00 PM

D.H. Barron Conference Room Medical Sciences Building M-304

sponsored by the D. H. Barron Reproductive & Perinatal Biology Research Program
and the Center for Perinatal Outcomes Research

- | | |
|---|---|
| <p>Sept 5: Recent advances in the understanding of the bovine uterine microbiota in health and disease
Klibs Galvão, DVM, MPVM, PhD, Dipl. ACT
Department of Large Animal Clinical Sciences, University of Florida</p> | <p>Oct. 24: Mechanisms regulating dominant follicle selection: Lessons learned from Trio, a bovine allele that increases number of ovulatory follicles due to altered oocyte-granulosa cell communication.
Milo Wiltbank, PhD
Department of Dairy Science and Endocrinology-Reproductive Physiology Program, University of Wisconsin-Madison</p> |
| <p>Sept. 12: Genes and Genetic Variants Associated with Fertility and Embryonic Survival in Dairy Cattle
Adriana Zolini
AMCB Program, University of Florida</p> | <p>Oct. 31: Maternal Physiology and Obstetrical Outcome After In Vitro Fertilization: New Perspectives and More Questions
Kirk Conrad, MD
Departments of Physiology and Functional Genomics, and of Obstetrics and Gynecology, University of Florida</p> |
| <p>Sept. 19: Estrogen Action in the Fetus: It's not as simple as you think
Charlie Wood, PhD
Department of Physiology and Functional Genomics, University of Florida</p> | <p>Nov. 7: Repro Festival, featuring platform presentations from "The D. H. Barron Reproductive & Perinatal Biology Research Program" trainees:
Mackenzie Dickinson, Department of Animal Sciences, University of Florida
Johanny Perez Baez, Department of Large Animal Clinical Sciences, University of Florida
Eliab Estrada, Department of Animal Sciences, University of Florida</p> |
| <p>Sept. 26: Effects of uterine disease on the ovary of dairy cows
Rachel Piersanti
Department of Animal Sciences, University of Florida</p> | <p>Nov. 14: Can infection of the female reproductive tract compromise oocyte quality? Stories from the high producing dairy cow.
John Bromfield, PhD
Department of Animal Sciences, University of Florida</p> |
| <p>Oct. 3: Mechanics of nuclear shaping
Tanmay Lele, PhD
Department of Chemical Engineering, University of Florida</p> | <p>Nov. 28: Perspectives on success in grant writing
Peter Hansen, PhD
Department of Animal Sciences, University of Florida</p> |
| <p>Oct. 10: Advances in metabolomic science for clinical research and diagnostics
Timothy Garrett, PhD
Department of Pathology, Immunology, and Laboratory Medicine, University of Florida</p> | |
| <p>October 17: Keeping estrogen in its place: the unexpected role of WNT in ovarian function
Jennifer Gifford, PhD (Warnick Lecture)
Department of Animal and Range Sciences, New Mexico State University</p> | |

New Faculty – Mario Binelli and Juan Samper



Mario Binelli joined the faculty of the Department of Animal Sciences in 2018 as an assistant professor. Prior to coming to Florida, Dr. Binelli was on the faculty at the University of Sao Paulo where he rose to the rank of professor. His formal education was at Michigan State University and University of Florida and he received postdoctoral experience at the University of Montreal.

The overall goal of Dr. Binelli's program is to maximize the proportion of beef cows pregnant at the end of the breeding season with particular focus on *Bos indicus*-based cattle operations. This goal is being pursued by conducting basic and applied research to understand and manipulate female reproductive tract functions to support embryo-conceptus development and pregnancy success.



Juan Samper has been appointed as Associate Dean for Students and Instruction for the University of Florida College of Veterinary Medicine. His appointment is effective Oct. 20.

A board-certified theriogenologist, Samper is a professor and the associate dean of clinical affairs and professional opportunities at Ross University School of Veterinary Medicine in St. Kitts, a post he has held since 2014. In addition to his administrative duties, Samper has continued to give equine theriogenology lectures, working closely with students to ensure their success.

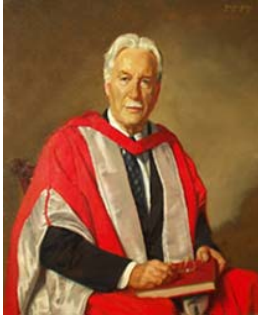
Samper received his D.V.M. degree with honors from the National University in Colombia, followed by M.S. and Ph.D. degrees, both from the University of Minnesota.

In his new role, Samper will oversee instructional and other activities associated with the college's professional D.V.M. program, along with college admissions.

Notes on Seminar

Mario Binelli, Animal Sciences

First things first, we all need to thank Dr. Kirk Conrad for the 10-year stewardship of the RPBO Seminar Series. With my leadership, the main philosophy of the seminar series remains to seek interdisciplinary balance among themes and to generate an environment that stimulates discussion and opens possibilities of collaboration. Regarding programming, I will seek diversity and balance within the interests of the group. Seminar topics will include basic, applied and clinical sciences, including human, companion, domestic, wildlife species and in vitro models. I will also seek balance among speakers to include researchers that are internal and external to the group. There will be a special focus on trainee speakers. Starting this fall we will have, each semester, a seminar session dedicated to short presentations. These "Repro Festival" special seminars will feature three 15-min presentations by trainees. This fall's Festival will be on November 7, at the same place and time as the regular seminar. I will also occasionally invite speakers on themes of general interest, not directly related to reproduction. Themes include advanced analytical techniques (see Dr. Timothy Garrett on Oct 10) and basic biology (see Oct 3 with Dr. Tanmay Lele). Last but not least, please make a point of showing up for the Wednesday Seminar, and bringing your lab, colleagues and visitors! Sustainability of the Program resides on our weekly participation!



DH Barron Reproductive & Perinatal Biology Research Program

University of Florida

Repro & Perinatal Update is issued each August and January

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 led to his 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.



Conrad Takes His Organizational Skills on the Road!

Kirk Conrad (Physiology & Functional Genomics) was one of the organizers of the 8th International Conference on Relaxin and Related Peptides held in Cabo San Lucas, Mexico from May 6-11, 2018. See if you can identify him in this group picture.

We all know Dr. Conrad as the organizer and host of our Wednesday afternoon seminar. He was preceded in that role by Mike Fields of Animal Sciences, who also was a very active attendee at the International Conference on Relaxin. Mike's brother, Phil Fields, was one of the organizers of the Fourth International Symposium, held in 2004 in Grand Teton National Park, Jackson Hole, Wyoming.

Is a relaxin conference in the future of our new seminar leader, Mario Binelli?