

ANIMAL MOLECULAR AND CELLULAR BIOLOGY GRADUATE PROGRAM

TWENTY SECOND ANNUAL RESEARCH SYMPOSIUM



St. Petersburg / Clearwater
Florida

May 10-11, 2024



ANIMAL MOLECULAR
AND CELLULAR BIOLOGY

WELCOME

On behalf of all the AMCB faculty welcome to the 22nd Annual Research Symposium of the AMCB.

This year's symposium is held at the St Petersburg Marriott Clearwater in Florida. Located between Clearwater and Tampa, and just a short drive from historic Ybor City and The Dali Museum (featured on the cover of this years program).

Tampa Town was incorporated in 1849 by the people living around Fort Brooke that served as the military headquarters during the Second Seminole War. In 1885 Vicente Ybor established his cigar factory in Tampa that quickly grew into one of the largest immigrant communities in the United States, producing millions of cigars every year. Today Ybor City is designated as a National Historic Landmark District that includes the Colombia Restaurant. Colombia Restaurant is the oldest continuously operated restaurant in Florida, as well as the oldest Spanish restaurant in the United States and is well worth a visit to enjoy the food, flamenco and sangria.

We are grateful for those who support the AMCB during the year including the College of Agricultural and Life Sciences, and the University of Florida Office of Research. Thank you to Renee Parks-James who continues to work hard for the AMCB program. In addition, the symposium would not be possible without the efforts of Jasmine Corbit, Tracy Cawley and Debra Nagy – thank you for all your hard work. A hearty 'thank you' is also given to the Dean's Office and the financial support of Dr Elaine Turner for making the AMCB symposium possible.

The AMCB is all about intellectual, professional, and personal connections – we encourage all to engage fellow faculty and students during the breaks, to build new insights and foster collaboration.

John Bromfield, Director
Geoff Dahl, Co-Director

AMCB 2024 DISTINGUISHED LECTURER



Pablo J. Ross, DVM PhD
STgenetics, Navasota, TX



Dr. Pablo J. Ross is the Chief Scientific Officer at STgenetics and Adjunct Professor at the University of California-Davis. Dr. Ross received his D.V.M. from La Plata National University and M.S. in Animal Science from Mar del Plata National University, both in Argentina. He then earned a Ph.D. in Animal Science from Michigan State University. In 2010, Dr. Ross joined the University of California-Davis as Professor of Reproductive Biology. In 2020 Dr. Ross moved to Navasota TX to work for STgenetics. One of the main scientific interests during Dr. Ross's career is related to understanding the mechanisms of epigenetic remodeling and transcriptional reprogramming that occur during preimplantation embryo development. His work also relates to developing

genomic resources to better understand the genotype-to-phenotype relationship, developing livestock embryo gene editing approaches, and embryo and pluripotent stem cell technologies for use in agriculture and biomedicine. Dr. Ross has published over 100 peer-reviewed scientific papers and delivered more than 90 invited presentations. Dr. Ross is a Fellow of the American Association for the Advancement of Science, a Fulbright Scholar, and a UC Davis Chancellor's Fellow. Dr. Ross obtained prestigious awards for his research efforts including the Early Career Achievement Award from the International Society of Embryo Technologies and the Young Investigator Award from the International Society for Transgenic Technology.

AMCB FACULTY

Fernanda Batistel, Department of Animal Sciences
Mario Binelli, Department of Animal Sciences
Rafael S. Bisinotto, Department of Large Animal Clinical Sciences
John J. Bromfield, Department of Animal Sciences
Samantha A. Brooks, Department of Animal Sciences
Mary B. Brown, Department of Infectious Diseases & Immunology
Geoffrey E. Dahl, Department of Animal Sciences
Brad W. Daigneault, Department of Animal Sciences
Aria Eshaghi, Department of Infectious Diseases & Immunology
Antonio Faciola, Department of Animal Sciences
Angela Gonella-Diaza, Department of Animal Sciences
Klibs Galvão, Department of Large Animal Clinical Sciences
Peter J. Hansen, Department of Animal Sciences
Kwang Cheol (KC) Jeong, Department of Animal Sciences
Zongliang (Carl) Jiang, Department of Animal Sciences
Raluca Mateescu, Department of Animal Sciences
Corwin Nelson, Department of Animal Sciences
Fernanda M. Rezende, Department of Animal Sciences
José E. P. Santos, Department of Animal Sciences
Haipeng Yu, Department of Animal Sciences
Tracy Scheffler, Department of Animal Sciences
Feng Yue, Department of Animal Sciences

Emeritus Faculty

Lokenga Badinga, Department of Animal Sciences
William C. Buhi, Departments of Animal Sciences
Kenneth C. Drury, Department of Obstetrics & Gynecology
Michael J. Fields, Department of Animal Sciences
Maureen Keller-Wood, Department of Pharmacodynamics
Daniel C. Sharp, Department of Animal Sciences
William W. Thatcher, Department of Animal Sciences
Charles E. Wood, Department of Physiology & Functional Genomics

CURRENT AMCB STUDENTS

PhD Students

Camila Jose Cuéllar* (Advisor: Hansen)

Ahmad Fraz* (Advisor: Nelson)

Yufen Li* (Advisor: Yue)

Gabriela Macay* (Advisor: Bromfield)

Tatiane Silva Maia (Advisor: Hansen)

Maura McGraw (Advisor: Daigneault)

Phillip Martins Peixoto (Advisor: Bisinotto)

Masroor Sagheer (Advisor: Hansen)

Firmansyah Tri Saputra (Advisor: Nelson)

Zaeem Sarwar (Advisor: Santos)

Muhammad Sohail Siddique (Advisor: Daigneault)

Chao Song* (Advisor: Jiang)

Daniel Stanton (Advisor: Hansen)

Arslan Tariq (Advisor: Bromfield)

Abdul Waheed* (Advisor: Binelli)

Yumei Zhou* (Advisor: Yue)

Linkai Zhu (Advisor: Jiang)

MS Students

Leah Sheen-Yi Chu (Advisor: Yue)

Madison Newman (Advisor: Bisinotto)

♦ CALS Deans award recipient

* matching assistantship recipient

GRADUATES OF THE AMCB, 2023-2024

Efstathios Sarmikasoglou (Advisor: Faciola)
Postdoctoral Scientist, Dept. of Animal Sciences, Michigan State University

Camila Jose Cuéllar, MS (Advisor: Hansen)
Graduate student, Dept. of Animal Sciences, University of Florida

Richard Lobo, PhD (Advisor: Faciola)
Associate Specialist in Ruminant Microbiome, Nestlé, Vaud, Switzerland

Yuhan Wen, PhD (Advisor: Nelson/Driver)
Postdoctoral Scientist, Div. of Animal Sciences, University of Missouri

Yuting Zhai, PhD (Advisor: Jeong)
Postdoctoral Scientist, Dept. of Animal Sciences, University of Florida

Lané Haimon, PhD (Advisor: Hansen)
In Vitro Fertilization and Andrology Laboratories, UF Health Reproductive Medicine

Federico Cunha, PhD (Advisors: Brown & Galvão)
Postdoctoral Scientist, Dept. of Large Animal Clinical Sciences, University of Florida

Quinn Hoorn, MS (Advisor: Hansen)
Continuing graduate studies

HISTORY OF THE AMCB RESEARCH SYMPOSIUM

YEAR	LOCATION	DISTINGUISHED LECTURER
2003	Whitney Laboratory St. Augustine, Florida	Randy Prather University of Missouri
2004	Chinsegut Hill Brooksville, Florida	John Dobrinsky USDA-ARS Beltsville
2005	Chinsegut Hill Brooksville, Florida	Doug Stocco Texas Tech University
2006	Lake Wauburg Gainesville, Florida	Ina Dobrinski University of Pennsylvania
2007	Whitney Laboratory St. Augustine, Florida	Doug Bannerman USDA-ARS, Beltsville
2008	Cedar Cove Beach & Yacht Club Cedar Key, Florida	Eckhard Wolf LMU Munich, Germany
2009	Plantation Golf Resort and Spa Crystal River, Florida	Dean Betts University of Western Ontario
2010	Whitney Laboratory St. Augustine, Florida	Marc-Andre Sirard Laval University
2011	Steinhatchee Landing Resort Steinhatchee, Florida	Kimberly Vonnahme North Dakota State University
2012	Holiday Isle Oceanfront Resort St. Augustine, Florida	Rocio Rivera University of Missouri
2013	Harbor Front Hampton Inn Fernandina Beach, Florida	Martin Sheldon Swansea University
2014	Lakeside Inn Mount Dora, Florida	Cynthia Baldwin University of Massachusetts
2015	Jekyll Island Club Hotel Jekyll Island, Georgia	Pat Lonergan & Trudee Fair University College Dublin
2016	Chinsegut Hill Retreat Brooksville, Florida	Shawn Donkin Purdue University
2017	Safety Harbor Resort and Spa Safety Harbor, Florida	Kieran Meade Teagasc
2018	Plantation on Crystal River Crystal River Florida	Christopher Geyer East Carolina University
2019	International Palms Resort & Conf. Center Cocoa Beach, Florida	Brian O'Neill University of Iowa
2021	Austin Cary Forest Gainesville, Florida	Liang Zhou University of Florida
2022	Hampton Inn & Suites, Fernandina Beach Amelia Island, Florida	Fuller Bazer Texas A&M
2023	Sheraton Lake Buena Vista Resort Orlando, Florida	Pascale Chavatte-Palmer INRAE

SCHEDULE OF EVENTS

Friday May 10, 2024

12:30 PM John Bromfield, AMCB Director
Welcome and introduction

Session 1 - Chairs: Camila Cuéllar & Yumei Zhou

12:45 PM Phillip Martins Peixoto, Dept of Large Animal Clinical Sciences (*Bisinotto*)
“Genetic Merit for Fertility and Postpartum Resumption of Estrus Behavior and Ovulation in Lactating Dairy Cows”

1:00 PM Tatiane Silva Maia, Dept of Animal Sciences (*Hansen*)
“Morphokinetics as a Tool to Identify Embryos with Superior Ability to Survive Cryopreservation”

1:15 PM Arslan Tariq, Dept of Animal Sciences (*Bromfield*)
“Carryover Effects of Heat Stress on the Innate Immune Response of Endometrial Epithelial Cells in Dairy Cows”

1:30 PM Firmansyah Tri Saputra, Dept of Animal Sciences (*Nelson*)
“Effects of Heat Stress on Mammary Immunity of Dairy Cows”

1:45 PM Leah Chu, Dept of Animal Sciences (*Yue*)
“Regulatory Role of Mitochondrial Protein FAM210A in Liver Homeostasis”

2:00 PM BREAK

Session 2 - Chairs: Chao Song & Phillip Martins Peixoto

- 2:30 PM Linkai Zhu, Dept of Animal Sciences (*Jiang*)
“Exogenous METTL7A Alleviates Oxidative Stress in Bovine Preimplantation Embryos”
- 2:45 PM Madison Newman, Dept of Animal Sciences (*Bisinotto*)
“A Novel Strategy for Early Pregnancy Diagnosis in Dairy Cows Based on Vaginoscope-Guided Measurement of Cervical IFN- τ Concentrations”
- 3:00 PM Yumei Zhou, Dept of Animal Sciences (*Yue*)
“Exploring the Role of DPF2 in Lipid Metabolism”
- 3:15 PM Masroor Sagheer, Dept of Animal Sciences (*Hansen*)
“Feeding Rumen-Protected Choline during the Periconceptional Period Programs Postnatal Phenotype of Beef Calves”
- 3:30 PM Maura McGraw, Dept of Animal Sciences (*Daigneault*)
“NanoBros-Optimization of Nanoparticle Technology for Targeted Overexpression and Gene Editing in Bovine Embryos”
- 3:45 PM BREAK

Session 3 - 2024 AMCB Distinguished Lecture

Chair: Professor Geoff Dahl

- 4:00 PM Pablo J. Ross, STgenetics.
“Livestock Gametes, Embryos and Stem Cells: From the Bench to the Barn”
- 5:00 PM Group photo.
- 6:00 PM Dinner.

Saturday May 11, 2024

7:30 – 8:30 AM Breakfast.

Session 4 - Chairs: Arslan Tariq & Daniel Stanton

- 8:45 AM Muhammad Sohail Siddique, Dept of Animal Sciences (*Daigneault*)
“Elucidating Effects of Environmental Stressors and Recreational Pharmaceuticals on Postejaculatory Sperm”
- 9:00 AM Camila Cuéllar, Dept of Animal Sciences (*Hansen*)
“Interactions Between Addition of Serum and Type of Culture Medium on Gene Expression of Bovine Blastocysts Produced In Vitro”
- 9:15 AM Gabriela Macay, Dept of Animal Sciences (*Bromfield*)
“Exploring the Female Response to Semen”
- 9:30 AM Zaeem Sarwar, Dept of Animal Sciences (*Santos*)
“Effects of Source of Trace Minerals on Health and Survival of Dairy Cows”
- 9:45 AM Yufen Li, Dept of Animal Sciences (*Yue*)
“Investigating the Role of B Cell Translocation Gene 1 (BTG1) in Muscle Stem Cells”
- 10:00 AM BREAK

Session 5 - Chairs: Zaeem Sarwar & Masroor Sagheer

- 10:15 AM Daniel Stanton, Dept of Animal Sciences (*Hansen*)
“The Ontogeny of Circadian Clock Gene Expression in the Mouse Embryo”
- 10:30 AM Ahmad Fraz, Dept of Animal Sciences (*Nelson*)
“Interplay between Energetic Metabolites and Inflammation and Postpartum Cow Performance”
- 10:45 AM Chao Song, Dept of Animal Sciences (*Jiang*)
“Embryonic and Extraembryonic Cell-Cell Interactions Underlying Pre- and Peri-implantation Development”
- 11:00 AM Abdul Waheed, Dept of Animal Sciences (*Binelli*)
“Metabolic Landscape of the Bovine Uterus in the Second Week of the Estrous Cycle”
- 11:15 AM Mariana Nehme Marinho, Dept of Animal Sciences (*Santos*)
“Effects of Supplementation of Microbial Additives on Changes in the Microbiome”
- 11:30 AM John Bromfield, AMCB Director
Closing remarks – adjourn.

NOTES