

ANIMAL MOLECULAR AND CELLULAR BIOLOGY GRADUATE PROGRAM

TWENTY THIRD ANNUAL RESEARCH SYMPOSIUM



Panama City Beach
Florida

May 15-16, 2025



**ANIMAL MOLECULAR
AND CELLULAR BIOLOGY**

WELCOME

On behalf of all the AMCB faculty, welcome to the 23rd Annual Research Symposium of the AMCB.

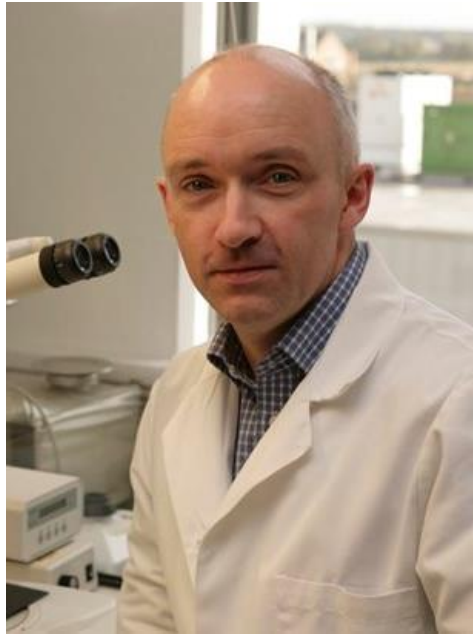
This year's symposium is held at the Embassy Suites Panama City Beach Resort, in Panama City Beach Florida. Located on the Emerald Coast of the Florida panhandle, the cities slogan is "The World's Most Beautiful Beaches" due to the beautiful white sand beaches. If swimming in the ocean, be sure to adhere to the local lifeguard instructions as the beach conditions can be very dangerous in the area.

We are grateful for those who support the AMCB during the year including IFAS, 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' to the Offices of the Dean's and their financial support, particularly Dr Elaine Turner, Dr Rob Gilbert and Dr John Davis 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 2025 DISTINGUISHED LECTURER



Kevin D. Sinclair, PhD DSc



University of
Nottingham
UK | CHINA | MALAYSIA

Division of Animal Sciences, University of Nottingham

Dr Kevin Sinclair is Professor and Head of the Division of Animal Sciences at the University of Nottingham. Dr Sinclair received his bachelor's degree in agriculture and PhD in reproductive physiology at the University of Aberdeen in Scotland. In 2003, Dr Sinclair joined the University Nottingham and received a Doctor of Science (D.Sc.) in Developmental Biology and Embryology.

Dr Sinclair's research focuses on metabolic programming during early development, where epigenetic outcomes are determined in embryonic cells, and long-term developmental consequences are assessed in offspring. Working with sheep, his group was the first

to discover that developmental anomalies following embryo culture were due to errors in genomic imprinting. Dr Sinclair's team were also the first to demonstrate that reductions in specific micronutrients in rodents and sheep lead to epigenetic modifications to DNA methylation and adult offspring with increased body fat and blood pressure, altered immune function and insulin resistance. More applied aspects of Dr Sinclair's research have focused on improving in vitro systems for culturing cattle and sheep embryos and developing methods for preimplantation genetic diagnosis in these species.

It is a pleasure to host Dr Sinclair as the AMCB 2025 Distinguished Lecturer.

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
Tracy Scheffler, Department of Animal Sciences
Tyler A. Square, Department of Microbiology & Cell Science
Haipeng Yu, 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

Fernanda R. Bernarde (Advisor: Jiang)

Teerawin Bouma (Advisor: Faciola)

Camila Jose Cuéllar* (Advisor: Hansen)

Ahmad Fraz* (Advisor: Nelson)

Nicholas Kertz (Advisor: Bromfield)

Yufen Li* (Advisor: Yue)

Gabriela Macay* (Advisor: Bromfield)

Tatiane Silva Maia (Advisor: Hansen)

Srinivas Pandey* (Advisor: Jeong)

Veronica Rubio Santillanes (Advisor: Daigneault)

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)

♦ CALS Deans award recipient

* matching assistantship recipient

GRADUATES OF THE AMCB, 2024-2025

Maura McGraw (Advisor: Daigneault)

Lead Embryologist, Feanix Bio

Phillip Martins Peixoto (Advisor: Bisinotto)

Director of Dairy / Herd Veterinarian, Kinnard Farms

Leah Sheen-Yi Chu (Advisor: Yue)

PhD student, University of Florida

Madison Newman (Advisor: Bisinotto)

Embryologist, CNY Fertility

Linkai Zhu (Advisor: Jiang)

Postdoctoral Research Associate, Cornell University

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
2024	St Petersburg Marriott Clearwater, Florida	Pablo Ross STgenetics

SCHEDULE OF EVENTS

Thursday May 15, 2025

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

Session 1 Chairs: Yufen Li & Masroor Sagheer

12:45 PM Abdul Waheed, Dept of Animal Sciences (*Binelli*)
“Molecular Crosstalk in Bovine Uterus: Dual Omics Insights Across the Second Week of the Estrous Cycle”

1:00 PM Tatiane Maia, Dept of Animal Sciences (*Hansen*)
“Potential use of the Bovine Oocyte to Optimize Assisted Reproduction in the Roan Antelope”

1:15 PM Sriniwas Pandey, Dept of Animal Sciences (*Jeong*)
“Evaluating Animal-Origin Soil Amendments: Impact on Soil Microbiome and Food Safety”

1:30 PM Nicholas Kertz, Dept of Animal Sciences (*Bromfield*)
“Does Heat Stress Modulate the Virulence of *T. pyogenes* Associated with Uterine Infection of Dairy Cows?”

1:45 PM Muhammad Sohail Siddique, Dept of Animal Sciences (*Daigneault*)
“Behind The Smoke – Unrolling Novel Effects of THC on Sperm Function Through Embryo Development”

2:00 PM *Break*

Session 2 Chairs: Tatiane Maia & Ahmad Fraz

- 2:30 PM Masroor Sagheer, Dept of Animal Sciences
(*Hansen*)
“Impact Of Supplementing Rumen-Protected Choline During the Periconceptional Period on Pregnancy Outcomes and Postnatal Phenotype in Sheep”
- 2:45 PM Zaeem Sarwar, Dept of Animal Sciences (*Santos*)
“Effects of Source of Trace Minerals on Blood Metabolites and Mineral Status in Transition Dairy Cows”
- 3:00 PM Yufen Li, Dept of Animal Sciences (*Yue*)
“Investigating The Role of B Cell Translocation Gene 1 (BTG1) in the Maintenance of Muscle Stem Cells and Skeletal Muscle Regeneration”
- 3:15 PM Chao Song, Dept of Animal Sciences (*Jiang*)
“Generation of Bovine Naive ESCs by Targeting STAT3 Signaling Pathway”
- 3:30 PM Camila Jose Cuellar, Dept of Animal Sciences
(*Hansen*)
“Impact of Heat Shock of the Bovine Embryo on Establishment of Pregnancy and Postnatal Phenotype - Preliminary Results”
- 3:45 PM *Break*

Session 3 2025 AMCB Distinguished Lecture

- 4:00 PM Kevin Sinclair, University of Nottingham.
“Early Regulation of Mammalian Development: Genetic Regulation of Epigenetic Responses to Environmental Stimuli”
- 5:00 PM *Happy hour and group photo*
- 6:00 PM *Dinner at Margaritaville*

Friday May 16, 2025

Session 4 Chairs: Chao Song & Zaeem Sarwar

- 9:00 AM Fernanda Bernarde, Dept of Animal Sciences
(*Jiang*)
“The Roles of Histone Variants During Bovine Embryogenesis”
- 9:15 AM Yumei Zhou, Dept of Animal Sciences (*Yue*)
“Loss of Double PHD Fingers 2 (DPF2) Drives Nonalcoholic Steatohepatitis in Mice”
- 9:30 AM Gabriela Macay, Dept of Animal Sciences
(*Bromfield*)
“Seminal Plasma Exposure at Insemination Enhances Offspring Milk Production”
- 9:45 AM Veronica Rubio, Dept of Animal Sciences
(*Daigneault*)
“Nanoscaling for Targeted Delivery in Bovine Embryos”
- 10:00 AM *Break*

Session 5 Chairs: Gabriela Macay & Abdul Waheed

- 10:30 AM Arslan Tariq, Dept of Animal Sciences (*Bromfield*)
“Prepartum Heat Stress Induces Long-Term Immune and Transcriptional Changes in Postpartum Dairy Cows”
- 10:45 AM Ahmad Fraz, Dept of Animal Sciences (*Nelson*)
“Associations of Postpartum Plasma Calcium with Cow Performance at the Intersection of Disease”
- 11:00 AM Abby Sproull, Dept of Animal Sciences (*Hansen*)
“Impact of Choline on the Lipid Profile of the Preimplantation Bovine Embryo”
- 11:15 AM John Bromfield, AMCB Director
Closing remarks – adjourn

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