Department of Obstetrics and Gynecology
University of Colorado Anschutz Medical Campus

RESEARCH RETREAT 2017

Bench-to-bedside in Obstetrics, Gynecology and Reproduction

DENVER BOTANIC GARDENS
WEDNESDAY OCTOBER 4, 2017 | 8AM–5PM
FOLLOWED BY HAPPY HOUR AND DINNER
Session 1
MODERATORS: T. Rajendra Kumar, PhD and Lindsay Wheeler, MD

8:10–9:00 am
**KEYNOTE SPEAKER**

*2017 Florence Crozier Cobb Keynote Lecture*

*Biology of Estrogen Receptor Beta*
Jan-Åke Gustafsson, MD, PhD
Director, Center for Nuclear Receptors and Cell Signaling
Robert A. Welch Professor
University of Houston

9:00–9:15 am
**JUNIOR INVESTIGATOR ORAL PRESENTATION 1**

*Omega-3 Fatty Acid Supplementation Improves Luteal Function in Obese but Not Normal Weight Women*

Jessica Bauer, MD

9:15–9:30 am
**JUNIOR INVESTIGATOR ORAL PRESENTATION 2**

*LH / Testosterone-Regulated Transporters in the Mouse Testis*

Zhenghui Liu, PhD

9:30–10:00 am
Refreshments
Session 2
MODERATORS: Kathleen Connell, MD and Damian Guerra, PhD

10:00–10:40 am

ESTABLISHED INVESTIGATOR ELEVATOR PRESENTATIONS

Be Fruitful and Multiply Like Fish: Can Omega-3 Fatty Acids Help Me Conceive?
Alex Polotsky, MD

Measuring Maternal and Fetal Marijuana Exposure
Torri Metz, MD

A Cluster Randomized Trial of a Home-Based Intervention to Increase Uptake of Postpartum Contraceptives and its Effect on Short-Interval Pregnancy Rates in a Postpartum Population of Rural Guatemalan Women
Margo Harrison, MD

Access to Reproductive Healthcare Services at Catholic-Affiliated Clinics
Maryam Guiahi, MD

Electronic Cigarette Use During Pregnancy—Safer Than Traditional Tobacco Cigarettes?
Beth Bailey, PhD

The Case for Postprandial Triglycerides Fueling Excess Baby Fat—Is it Time to Target Maternal Lipids?
Linda Barbour, MD

Identification of Therapeutic Targets in Ovarian Cancer
Kian Behbakht, MD
10:40–10:55 am JUNIOR INVESTIGATOR ORAL PRESENTATION 3
Epigenetic Mechanisms of PARP Inhibitor Resistance in Epithelial Ovarian Cancer
Zachary L. Watson, PhD

10:55–11:10 am JUNIOR INVESTIGATOR ORAL PRESENTATION 4
Anti-Tumor Effect of Adiponectin Receptor Agonist in Serous Ovarian Cancer
Amin Ramzan, MD

11:10 am–12:00 pm POSTER SESSION
Poster session with Discussants for posters presented by junior investigators, PRA’s and administrators

12:00–12:30 pm Lunch

JUNIOR INVESTIGATOR
Lunch date with invited speakers

12:30–1:00 pm PHOTOGRAPHY

1:00–1:45 pm Free time: Stroll in the Botanic Gardens

Session 3
MODERATORS: Emily Su, MD and Owen Vaughan, PhD

1:45–2:35 pm KEYNOTE SPEAKER
Stillbirth Assessment, Management and Prevention
Uma Reddy, MD, MPH
NICHD Pregnancy and Perinatology Branch
2:35–2:50 pm  |  JUNIOR INVESTIGATOR ORAL PRESENTATION 5
| Adverse Perinatal Outcomes Associated with Marijuana Use in Young Mothers  
| Christina E. Rodriguez, MD

2:50–3:05 pm  |  JUNIOR INVESTIGATOR ORAL PRESENTATION 6
| Adiponectin Receptor Activation Mediates Myometrial Tocolysis: A Repro-Metabolic Signal for Uterine Quiescence in Preterm Pregnancy  
| Vibhuti Vyas

3:05–3:40 pm  |  ESTABLISHED INVESTIGATOR ELEVATOR PRESENTATIONS
| Transdifferentiation of Granulosa Cells to Sertoli Cells  
| T. Rajendra Kumar, PhD  
| Temporal Control of Primordial Follicle Growth Activation  
| Joshua Johnson, PhD  
| PARP Inhibitor Maintenance Therapy for Recurrent & Metastatic Endometrial Cancer  
| Bradley Corr, MD  
| Understanding the Multifactorial Contributions to the Development of Pelvic Organ Prolapse  
| Kathleen Connell, MD  
| Can Evolution Tell Us How To Prevent Hypoxia-Associated Fetal Growth Restriction?  
| Lorna Moore, PhD  
| The Powerful Potential of the Placenta  
| Emily Su, MD
Session 4

MODERATORS: Andrew Bradford, PhD and Jessica Bauer, MD

4:00–4:15 pm  JUNIOR INVESTIGATOR ORAL PRESENTATION 7
Gut Microbes in Infants of Obese Mothers Promote Hepatic Inflammation and Pro-Inflammatory Liver Macrophage Polarization in Germ Free Mice
Taylor Soderborg

4:15–4:30 pm  JUNIOR INVESTIGATOR ORAL PRESENTATION 8
Loss of Perilipin-2 Alters Adipose Tissue and Leads to Profound Beiging in Mice
Andrew Libby

4:30–4:45 pm  JUNIOR INVESTIGATOR ORAL PRESENTATION 9
Placental Nutrient Transporter Protein Expression Across the First Half of Pregnancy and the Impact of Obesity
Laura James-Allan, PhD
4:45–5:00 pm  JUNIOR INVESTIGATOR ORAL PRESENTATION 10
*Human Embryonic Stem Cell-Derived Trophoblasts Regulate Fetoplacental Endothelial Cell Function*
Yingchun Li, MD, PhD

5:10–6:00 pm  HAPPY HOUR

SCIENTIFIC AND CAREER DEVELOPMENT SPEED DATING
*Nine tables, each with a specific theme and hosted by expert; junior investigators rotate*

6:15 pm  Dinner

KEYNOTE SPEAKER
*A Journey to Ithaca*
Christos Coutifaris, MD, PhD
*Department of Obstetrics and Gynecology*
*University of Pennsylvania*

Prizes to best poster presentations
Scientific and Career Development Speed Dating for Junior Investigators*

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<td>Jan-Åke Gustafsson, MD, PhD</td>
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<td>Theresa L. Powell, PhD</td>
<td>Scientific Networking 101</td>
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<td>Uma M. Reddy, MD, MPH</td>
<td>How to Get a NIH Grant: the Untold Secrets</td>
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<td>Chanel Mansfield, CCRP</td>
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<td>Beth Bailey, PhD</td>
<td>Designing a Clinical Research Project: A-Z</td>
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<td>Nanette Santoro, MD</td>
<td>Emergency Clinic: Get Your Research Career on Track in 10 Minutes</td>
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*Junior Investigators = 1. In-training investigators (residents, graduate students, clinical fellows, post doctoral fellows) and 2 Instructors. Others are welcome to participate if room is available.

FORMAT:
- Introduction (2 min)
- Nine discussants are positioned at round tables with 5-6 empty chairs
- 5 x 10 minute sessions with one minute in between, participants must change table during that minute.
POSTERS

Handouts with abstracts will provided to all registered attendees at the day of the Retreat.

POSTER DISCUSSANTS:

Andrew Bradford, PhD  T. Rajendra Kumar, PhD
Christos Coutifaris, MD, PhD  James McManaman, PhD
Jan-Åke Gustafsson, MD, PhD  Lorna Moore, PhD
Terry Harper, MD  Theresa L. Powell, PhD
Joseph K Hurt MD, PhD  Uma M. Reddy, MD, MPH
Thomas Jansson, MD, PhD  Malgorzata Skaznik-Wikiel, MD
Joshua Johnson, PhD  Emily Su, MD

1  Morphometric Analysis Reveals Reduced Atresia in Ovaries of Pulsatile FSH-Expressing Mice

Elizabeth Petesch
T. Rajendra Kumar
Division of Reproductive Sciences and Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology

2  Cell Biology of Lactation: Docking and Stimulated Secretion of Milk Fat Globules

Jenifer Monks
Elise S Bales  Andrew E Libby  David J. Orlicky  James L. McManaman
Division of Reproductive Sciences, Department of Obstetrics and Gynecology

3  Activation of AMPK Reduces Contractile Response in Isolated Murine Uterine Artery

Sydney L. Coates
Ramon A. Lorca  Colleen G. Julian  Lorna G. Moore
Division of Reproductive Sciences, Department of Obstetrics and Gynecology and Department of Medicine
4  Enhanced Angiogenic Potential of the Human Placental Microvascular Niche
Yingchun Li
Shuhan Ji | Emily J. Su
Division of Reproductive Sciences, Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology

5  Decreased Expression of Atresia Marker Genes in Ovaries of Pulsatile FSH-Expressing Mice
Qin Zhou
T. Rajendra Kumar
Division of Reproductive Sciences and Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology

6  High Grade Serous Carcinoma Growth in Suspension Associated with Transcriptional Repression
Lindsay J. Wheeler
Zachary L. Watson | Tomomi M. Yamamoto | Benjamin G Bitler
Division of Reproductive Sciences and Division of Gynecologic Oncology, Department of Obstetrics and Gynecology

7  Effects of High Fat Diet on the Mouse Hypothalamic-Pituitary-Ovarian (HPO) Axis: A Systematic Review
Sara Babcock Gilbert
T. Rajendra Kumar
Division of Reproductive Sciences and Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology

8  The role of VEGFR-1 and VEGFR-2 in Mediating Human Fetoplacental Endothelial Cell Angiogenesis
Shuhan Ji
Yingchun Li | Hong Xin | Emily J. Su
Division of Reproductive Sciences, Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology
9 Identification of the FSH-Regulated Metabolomic Profiles in Serum
Anushka Jayaraman
T. Rajendra Kumar
Division of Reproductive Sciences and Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology

10 High-Altitude Increases AMPK Activity in Myometrial Arteries from Pregnant Women
Ramón A. Lorca
Sydney Coates | Coleen G. Julian | Lorna G. Moore
Division of Reproductive Sciences, Department of Obstetrics and Gynecology and Department of Medicine

11 Histological Analysis of Bone in FSHB Null Mice Expressing Distinct FSH Glycoforms
Allyson Roof
David Orlicky | T. Rajendra Kumar
Division of Reproductive Sciences, Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology and Department of Pathology

12 nNos Phosphorylatability Presages Nanc Inhibition: Investigation with a Novel Phosphorylation-Deficient nNos Mutant Mouse
Damian Guerra
Rachael Bok | K. Joseph Hurt
Division of Reproductive Sciences, Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology
13 Computational Analysis of CpG Island Methylation in Follicle-Stimulating Hormone Beta Subunit Gene
   Nandana Das
   T. Rajendra Kumar
   Division of Reproductive Sciences and Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology

14 Glucocorticoid Regulation of System A Amino Acid Transport in Primary Human Trophoblast Cells
   Owen R. Vaughan
   Theresa L. Powell | Thomas Jansson
   Division of Reproductive Sciences, Department of Obstetrics and Gynecology and Section of Neonatology, Department of Pediatrics

15 SMITTEN: Study Milk in Type Two Diabetes to Enhance Infant Nutrition
   Rachel Rodel
   Bridget Young | Linda Barbour
   Division of Maternal Fetal Medicine, Department of Obstetrics and Gynecology, Section of Nutrition, Department of Pediatrics and Division of Endocrinology, Diabetes, and Metabolism, Department of Medicine

16 Gene-Environment Interactions Underlying Neurodevelopmental Disorders: Examining the Impact of Perinatal Hypoxia on Akt1, Brain Development and Function
   Kristy R. Howell
   Amanda J. Law
   Division of Reproductive Sciences, Department of Obstetrics and Gynecology and Department of Psychiatry
17  **Team Leadership Training for Medical Residents: Results of a Pilot Study**

**Kelsey Jones**
Eva Aagaard  |  Meredith Alston  |  Kirsten Broadfoot  |  David Colarossi  
Alison Heru  |  Elaine Landry  |  Rita Lee  |  Jane Limmer  
Bart McCoy  |  John J. Reilly  |  Nanette Santoro  

*Divisions of Reproductive Endocrinology and Infertility and General Obstetrics and Gynecology, Department of Obstetrics and Gynecology, Department of Medicine, Resnik Partners, Community and Behavioral Health School of Public Health and Department of Psychiatry*

18  **mTOR Complex 1 Decreases in the Early Gestation and is Not Impacted by Maternal Body Mass Index**

**Elena Silva**
Kate Erickson  |  Theresa L. Powell  |  Thomas Jansson  

*Division of Reproductive Sciences, Department of Obstetrics and Gynecology and Section of Neonatology, Department of Pediatrics*

19  **The Effect of Carbamazepine on Serum Estradiol and Progesterone Concentrations in Etonogestrel Contraceptive Implant Users**

**Aaron Lazorwitz**
Anne Davis  |  Maryke Swartz  |  Maryam Guiahi  

*Division of Family Planning, Department of Obstetrics and Gynecology and Columbia University Medical Center*

20  **Characterization of Insulin Sensitivity in Cultured Primary Human Trophoblast Cells from Gestational Diabetic and Healthy Mothers**

**Marisol Castillo-Catrejon**
Thomas Jansson  |  Theresa L. Powell  

*Division of Reproductive Sciences, Department of Obstetrics and Gynecology and Section of Neonatology, Department of Pediatrics*
21 Late Pregnancy is Characterized by Poor Sleep Quality in Obese Women which may Affect Glucose Metabolism

Sarah Farabi
Linda Barbour | Teri Hernandez
Division of Endocrinology, Metabolism and Diabetes, Department of Medicine

22 Impaired Trophoblast Nutrient Transport and Pancreatic β Cell Defects in Intra Uterine Growth Restriction (IUGR) is Alleviated by Activation of Trophoblast mTOR Signaling

Fredrick J. Rosario
Theresa L. Powell | Thomas Jansson
Division of Reproductive Sciences, Department of Obstetrics and Gynecology and Section of Neonatology, Department of Pediatrics

23 Regulation of Amino Acid Transporter Trafficking by mTORC2 in Primary Human Trophoblast Cells is Mediated by the Rho Family of GTP Proteins Cdc42 and Rac1

Fredrick J. Rosario
Theresa L. Powell | Thomas Jansson
Division of Reproductive Sciences, Department of Obstetrics and Gynecology and Section of Neonatology, Department of Pediatrics

24 High-Fat Diet Exposure is Associated with Significant Changes in Ovarian Transcriptome Irrespective of the Induction of Obesity

Natalie M. Hohos
Kirstin J. Cho | Delaney C. Swindle | Malgorzata E. Skaznik-Wikiel
Division of Reproductive Sciences and Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology
**POSTERS**

25  *Cortisol Responses to Stress are Blunted Among Infants Delivered by Cesarean Section*

Camille Driver  
Leticia D. Martinez | Curt A. Sandman | Laura A. Glynn  
Elysia P. Davis  

*Department of Obstetrics and Gynecology and Department of Psychology and Department of Psychiatry and Human Behavior, University of California Irvine, Orange, California*

26  *The Obstetrics Research Team*

Jocelyn Phipers  

*Division of Maternal Fetal Medicine, Department of Obstetrics and Gynecology*

27  *OB/GYN Administrative Research Core Team*

Chanel Mansfield  
Theresa Woelk | Alexandra Mackie | Peter Hahn  

*Department of Obstetrics and Gynecology*

28  *Reprometabolic Syndrome Mediates Subfertility in Obesity*

Anahit Malkhasyan  
Sarah Black | Irene Schauer | Amanda Allshouse | Andrew Bradford  
Katherine Kuhn | Nanette Santoro  

*Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynecology and Division of Endocrinology, Department of Medicine and Department of Biostatistics and Informatics, Colorado School of Public Health*
29 **Burning Fat for Peaks in Colorado, Not Just for 14ers: Targeted Lipidomic Analysis Using GC-MS**

Stefan Haugen  
Division of Reproductive Sciences, Department of Obstetrics and Gynecology and Section of Neonatology, Department of Pediatrics

30 **Evaluation of One or Both Umbilical Arteries in Fetal Growth Restriction**

Diane Gumina  
Teresa Harper | Brittany Driscoll | Allison Gillan | John Hobbins  
Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology

31 **Assessment of the Global Sphericity Index and Cardiac Area as Indirect Indicators of Cardiac Dysfunction in Fetal Growth Restriction**

Brittany Driscoll  
Michael Zaretzky | Greggory DeVore | Diane Gumina | John Hobbins  
Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology and David Geffen School of Medicine, University of California, Los Angeles

32 **Statistical Performance of Image Cytometry for Lipids, DNA, CD45, and Cytokeratin a Model System for Circulating Tumor Cell Identification**

Gregory L. Futia  
Isabel R. Schlaepfer | Lubna Qamar | Kian Behbakht | Emily A. Gibson  
Department of Bioengineering and Department of Medicine and Department of Obstetrics and Gynecology