



DEPARTMENT OF OBSTETRICS AND GYNECOLOGY **RESEARCH RETREAT** — 2022 —

Wednesday, May 18, 2022
8:00 am – 4:15 pm
The Inn at Hudson Gardens
Littleton, Colorado



Research Retreat Planning Committee

Heather Aldrich, PhD

Maddie Book

Olivia Castillo

Bradley Corr, MD

Marsha K. Guess, MD, MS

Karen Hampanda, PhD, MPH

Thomas Jansson, MD, PhD

Emily Su, MD, MSCI

Levi Watson, PhD

A welcome from Thomas Jansson, the Program Chair,

Emerging from COVID lockdown and restrictions and university administrative challenges, we now gather in person at the South Platte River to enjoy SCIENCE for a full day without interruption! WELCOME!

I would like to thank the members of the Research Retreat Organizing Committee for developing a compelling program that features distinguished keynote speakers and displays the diversity and high quality of the research in our department. A very special thanks to Maddie Book, Olivia Castillo and Nicole Fuentes who have worked tirelessly to make this research retreat happen. I also would like to extend a warm welcome to the keynote speakers who graciously agreed to travel to the 'frontier' and present some of their most exciting science in person at Hudson Gardens! Finally, thanks to all the members of our amazing department that were able to join us today! I hope you will enjoy the retreat, learn something new and engage in networking to find new friends and scientific collaborators!



Thomas Jansson, MD, PhD

Florence Crozier Cobb Endowed Professor
Chief, Division of Reproductive Sciences
Vice Chair of Research, Department of Obstetrics and Gynecology
University of Colorado, School of Medicine

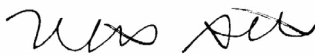


A message from Dr. Nanette Santoro, Department Chair,

Welcome to the Department of Obstetrics & Gynecology's Research Retreat! Your very presence here demonstrates your commitment to the tremendous effort and growth of research in our Department that reflects our common goal of creating and sustaining a top-tier national research program that has strength in all areas of our specialty. As Chair, my role has been to facilitate engagement in the collective vision, resource the needed recruitments, and contribute personally as much as I can. But each and every one of you present today has played a key role in the success of our research mission. In case you haven't seen how much fun we have doing research at the University of Colorado, check out our video evidence.

I would be remiss if I did not acknowledge our tremendous leadership: Vice Chair for Research Thomas Jansson, Associate Vice Chairs Raj Kumar and Jeanelle Sheeder, and our awesome administrators: Majik Abidzhanova, Olivia Castillo and staff: Maddie Book, Pamela Alvarez, Greta Devol, Jillian Ellerman, Zejian Liu and Naila Naushad.

So, sit back, relax, and enjoy the fruits of your collective labor!



Nanette F. Santoro, MD

Professor and E. Stewart Taylor Chair
Department of Obstetrics and Gynecology
University of Colorado, School of Medicine



WRHR Alumna Presentation



Virginia D. Winn, MD, PhD

Associate Professor Obstetrics and Gynecology
Division Reproductive, Stem Cell and Perinatal Biology, Director
Division Maternal Fetal Medicine and Obstetrics
H&H Evergreen Faculty Scholar
Stanford University School of Medicine

Training & Education

University of Rochester School of Medicine and Dentistry
University of California, San Francisco School of Medicine
NIH Reproductive Scientist Development Program (RSDP)

Virginia D. Winn, MD, PhD, is an Associate Professor of Obstetrics and Gynecology (Reproductive and Stem Cell Biology) at Stanford University, the Director of Reproductive, Stem Cell and Perinatal Biology at Stanford School of Medicine's Ob/Gyn department, and the Program Director for the Women's Reproductive Health Research (K12) at Stanford Program. Dr. Winn received both her PhD training and medical education from the University of Rochester School of Medicine and Dentistry (in 1994 and 1996 respectively.) She completed her residency and fellowship at UCSF. She received research training through the NIH-funded Reproductive Scientist Development Program (RSDP). Dr. Winn was on faculty at University of Colorado and from 2006 to 2014 leading a basic and translational NIH-funded research program. She then moved to Stanford in 2014. She is Board Certified in Obstetrics and Gynecology and Maternal and Fetal Medicine from the American Board of Obstetrics and Gynecology.

As a physician scientist, Dr. Winn's ultimate goal is to see this knowledge translate to improved clinical care resulting in healthier mothers and babies. Her lab uses a combination of molecular, cellular, tissue and translational studies in their research. Additionally, Dr. Winn has mentored 40+ undergraduates, medical students, graduate students, post docs, residents and MFM Fellows on research projects. Many of which who have received presentation awards and have gone on to faculty positions.

Dr. Winn is a member of the Dunlevie Maternal-Fetal Medicine Center for Discovery, Innovation and Clinical Impact, the Maternal and Child Health Research Institute (MCHRI), the Stanford Cardiovascular Institute, BioX. She is a recipient the MCHRI Arline & Pete Harman Faculty Scholar award, and is currently a H&H Evergreen Scholar.

Behind the talk,

The Placenta and Preeclampsia

The placenta is a remarkable organ that develops over 9 months of pregnancy. The placenta orchestrates changes in maternal physiology to support the growth and development of the fetus. While placenta is a defining feature of mammals it is not highly conserved, and the human placenta is the most invasive. The normal development of the human placenta is essential for a healthy pregnancy and when there are abnormalities it can account for a number of pregnancy complications such as preeclampsia, accreta spectrum disorder and fetal growth restriction. The Winn lab focuses on understanding the placental role in preeclampsia pathogenesis. Understanding the placental factors, the impact maternal immune system and account for the endothelial dysfunction central to preeclampsia will provide insight into unique biologic aspects and reveal potential therapeutic targets for preeclampsia.

Keynote Speaker



Patti E. Gravitt, PhD, MS

Deputy Director
Center for Global Health
US National Cancer Institute

Training & Education Johns Hopkins University Bloomberg School of Public Health
University of North Carolina at Charlotte

Patti Gravitt, PhD, is internationally recognized for her work in human papillomavirus (HPV) associated cancers. Her research has spanned the interdisciplinary spectrum, including the development and validation of HPV molecular diagnostics, evaluating the role of viral latency in the natural history of HPV infection, understanding cervical cancer risk across the lifespan, and implementation of cervical cancer control interventions in a global context. In July 2021, Dr. Gravitt joined the NCI Center for Global Health as Deputy Director and leads implementation of the strategic scientific programmatic activities of the Center, currently focused specifically on global implementation science and cancer disparities.

Behind the talk,

Systems Thinking for Reducing Health Disparities

"We can't impose our will on a system. We can listen to what the system tells us and discover how its properties and our values can work together to bring forth something much better than could ever be produced by our will alone" – Donella H. Meadows, Thinking in Systems: A Primer.

Health disparity is a prototypical 'wicked problem'. Disparities are hard to define, offer no single solution, and are sufficiently complex that no one can claim a full understanding of the scope of the problem. They occur largely because of deeply rooted mental models and system structures, both of which remain hidden beneath the surface. Through both her work as a molecular epidemiologist and implementation scientist, Dr. Gravitt believes that improving health disparities requires a fundamentally different scientific approach. Reducing health disparities will require a transdisciplinary research approach that embraces complexity, rather than trying to control it. Systems thinking and complexity science, key methodologies used in organizational management and ecology, builds on the foundational knowledge gained from decades of reductionist biomedical research to view and model the dynamic and adaptive nature of biological and social systems, identify structural root causes of system dysfunction and associated high leverage change opportunities. Dr. Gravitt will illustrate how these principles can guide the scientific process in both molecular epidemiology and implementation research.

Keynote Speaker



Angeles Alvarez Secord, MD, MHSc

Professor of Obstetrics and Gynecology
Director of Gynecologic Oncology Clinical Trials
Associate Director, Clinical Research, Gynecologic Oncology Program
Duke Cancer Institute
Duke University Medical Center

Training & Education University of Washington Medical School
Duke University

Angeles Alvarez Secord, MD, MHSc, is a Professor in the Division of Gynecologic Oncology at Duke University. She completed her residency in Obstetrics and Gynecology and fellowship in Gynecologic Oncology at Duke. Dr. Secord has received awards from Duke, Mid-Atlantic Gynecologic Oncology Society, Society of Gynecologic Oncologists, Gynecologic Oncology Group, and Foundation for Women's Cancer for her research in angiogenesis. She is the Director of Gynecologic Oncology Clinical Trials, the Associate Director of Clinical Research, Gynecology Oncology, and a NRG site Principal Investigator. She has served as NRG Group Developmental Therapeutics Committee core member, Ovarian Cancer Committee core member, NRG New Investigator Committee Vice-Chair, GOG Foundation Education and Mentoring co-Chair, and AAOGF Scholar Chair. Her research interests include novel therapeutics and biomarkers in ovarian and endometrial cancer, novel clinical trial designs, and the role of obesity in gynecologic malignancies. Dr. Secord is a fellow of the American College of Obstetricians and Gynecologists and active member of the Society of Gynecologic Oncology, American Society of Clinical Oncology, American Gynecological & Obstetrical Society, and International Gynecologic Cancer Society. She has authored more than 190 peer-reviewed articles along and has been the recipient of numerous clinical trial and basic/translational research grants.

Behind the talk,

Endometrial Cancer: Raising the Alarm and Promising New Therapies

Endometrial Cancer: Raising the Alarm and Promising New Therapies will explore the rising incidence and mortality rates of endometrial cancer. Globally there are over 400,000 uterine cancers and 97,370 deaths annually, and in contrast to most cancers, endometrial cancer mortality rates are increasing 2% per year. Of utmost concern is the alarming disparity in survival with Black patients being at 2-fold increased risk of death compared to White patients. We will explore risk factors, the current treatment landscape, novel therapies, and the underlying molecular biology of this disease. Tremendous progress in elucidating the molecular biology of endometrial cancer has been driven by The Cancer Genome Atlas (TCGA) Research Project. The findings have led to the recognition of four recognized endometrial cancer molecular subtypes, (1) DNA Polymerase- ϵ (POLE) mutated or ultramutated, (2) microsatellite instability (MSI) or hypermutated, (3) copy-number low, and (4) copy-number high. These four subgroups are characterized by distinct molecular alterations and are prognostic for survival outcomes. With the TCGA findings there has been considerable adoption of next-generation sequencing (NGS) and tumor testing to direct therapy in patients with advanced/recurrent endometrial cancer. However, the impact of this approach to date is unclear. In order to assess the use of NGS testing, identify potentially actionable genetic alterations, and assess the impact of matched targeted therapy in endometrial cancer we formed a national multidisciplinary consortium. We will share our preliminary results and outline how the consortium is facilitating the development of real world data on patterns of genomic testing and use of molecularly targeted therapies in patients with endometrial cancer.

Keynote Speaker



Methodius G. Tuuli, MD, MPH, MBA

Chace-Joukowsky Professor and Chair
Chief of Obstetrics and Gynecology, Women & Infants Hospital
Executive Chief of Obstetrics and Gynecology, Care New England Health System
Department of Obstetrics and Gynecology
Warren Alpert Medical School of Brown University

Training & Education

University of Ghana Medical School
University of California at Berkeley
Emory University
Washington University
Kelley School of Business at Indiana University

Dr. Tuuli is the Chace-Joukowsky Professor and Chair of the Department of Obstetrics and Gynecology at the Warren Alpert Medical School of Brown University, and Chief of Obstetrics and Gynecology at Women & Infants Hospital. A board certified Maternal-Fetal Medicine physician, his research is focused on the prediction and prevention of adverse obstetric outcomes. He employs large cohort studies, randomized clinical trials and meta-analysis to generate high quality evidence for managing obstetric problems including preventing of surgical site infection after cesarean delivery, management of labor, and optimizing medical complications in pregnancy. His work is supported by the NIH and Gates Foundation and is published in high impact journals including the NEJM, JAMA and JAMA Pediatrics. Originally from Ghana, Dr. Tuuli earned his Medical Degree from the University of Ghana Medical School in 2001. He attended the University of California at Berkeley, earning a Master of Public Health degree in 2003 with concentration in maternal and child health. He completed residency training in Obstetrics & Gynecology at Emory University in 2008, and fellowship training in Maternal-Fetal Medicine at Washington University in 2011. Dr. Tuuli completed the Business of Medicine Physician MBA program at the Kelley School of Business at Indiana University in 2020.

Behind the talk,

Iron Deficiency Anemia in Pregnancy: Can We Do Better?

Iron deficiency anemia is a common, under-treated problem in pregnancy. The prevalence of iron-deficiency anemia in the U.S. is estimated at 16.2% overall in pregnancy and up to 30% at delivery, and it is associated with significant adverse maternal and neonatal outcomes. Moreover, iron-deficient mothers are at risk of delivering iron-deficient neonates who, despite iron repletion, remain at risk for delayed growth and development. While treatment with iron supplementation is recommended during pregnancy, important questions remain about the optimal route. Oral iron therapy, the current standard, is often suboptimal with up to 70% of patients experiencing significant gastrointestinal side effects that prevent adherence to treatment, resulting in persistent anemia. In addition, the timing and frequency of oral iron can influence absorption. Intravenous iron is an attractive alternative because it mitigates the adherence and absorption challenges of oral iron. However, it costs more, and there are historical concerns about adverse reactions. Available data show that the predominant oral based approach leads to 30% of patients with persistent IDA at delivery and an associated 3 to 6-fold increased risk of peripartum blood transfusion. This preferential recommendation of oral iron is based on paucity of data on the benefits and safety of intravenous iron, compared with oral iron, in pregnancy. A randomized trial in the U.S. will clarify the role of intravenous iron in optimizing the treatment of iron deficiency anemia on maternal and fetal outcomes. In addition, medium and long term follow up of the offspring from this trial offers a unique opportunity to clarify the effect of adequate prenatal iron therapy on offspring brain myelination and neurodevelopmental outcomes.

2022 Research Retreat Itinerary

7:30 – 8:00 am

Light Breakfast Part 1 & Networking

8:00 – 8:05 am

Welcome and Introduction

Research Retreat Committee Chair

Thomas Jansson, MD, PhD

Florence Crozier Cobb Endowed Professor

Chief, Division of Reproductive Sciences

Vice Chair of Research, Department of Obstetrics and Gynecology

University of Colorado, School of Medicine

8:05 – 8:35 am

The Placenta and Preeclampsia

Moderator: Thomas Jansson, MD, PhD

WRHR Alumni Scholar Presentation

Virginia D. Winn, MD, PhD

Associate Professor Obstetrics and Gynecology

Division Reproductive, Stem Cell and Perinatal Biology, Director

Division Maternal Fetal Medicine and Obstetrics

H&H Evergreen Faculty Scholar

Stanford University School of Medicine

8:35 – 9:25 am

Systems Thinking for Reducing Health Disparities

Moderator: Karen Hampanda, PhD, MPH

Keynote Speaker

Patti E. Gravitt, PhD, MS

Deputy Director

Center for Global Health

US National Cancer Institute

9:25 – 9:55 am

Light Breakfast Part 2 & Networking

Mid-Morning Moderators: Bradley Corr, MD & Marsha K. Guess, MD, MS

9:55 – 10:10 am

Research Scholarship among Academic Specialists in OB-GYN: Priorities, Challenges, and Progress

Division of Academic Specialists in Obstetrics and Gynecology Presenter

Karen Hampanda, PhD, MPH

Assistant Professor

Associate Director of Research

Division of Academic Specialists in Obstetrics and Gynecology

Department of Obstetrics and Gynecology

University of Colorado, School of Medicine

10:10 – 10:25 am

A Novel, Alternative Insertion Site: Pilot Data on Subdermal Scapular Insertion of the Etonogestrel Contraceptive Implant

Division of Family Planning Presenter

Cara Clure, MD, MSCS

Assistant Professor
Division of Family Planning
Department of Obstetrics and Gynecology
University of Colorado, School of Medicine

10:25 – 10:40 am

Fetal Growth in the Spotlight: Using Optogenetics to Control Uterine Blood Flow

Division of Reproductive Sciences Presenter

Ramón Lorca, PhD

Instructor
Division of Reproductive Sciences
Department of Obstetrics and Gynecology
University of Colorado, School of Medicine

10:40 – 10:55 am

Defining Chromobox 2-Mediated High Grade Serous Carcinoma Progression

Division of Gynecologic Oncology Presenter

Lindsay Brubaker, MD

Assistant Professor
Division of Gynecologic Oncology
Department of Obstetrics and Gynecology
University of Colorado, School of Medicine

10:55 – 11:45 am

Endometrial Cancer: Raising the Alarm and Promising New Therapies

Keynote Speaker

Angeles Alvarez Secord, MD, MHSc

Professor of Obstetrics and Gynecology
Director of Gynecologic Oncology Clinical Trials
Associate Director, Clinical Research, Gynecologic Oncology Program
Duke Cancer Institute
Duke University Medical Center

11:45 am – 1:00 pm	Lunch, Networking and Group Photo
1:00 – 2:10 pm	Poster Session and Networking <i>The Pavilion</i> Afternoon Moderators: Emily Su, MD, MSCI & Heather Aldrich, PhD
2:10 – 2:25 pm	Determining the Rate of Reproductive Aging in Women Division of Reproductive Endocrinology and Infertility Presentation Joshua Johnson, PhD Assistant Professor Division of Reproductive Sciences and Reproductive Endocrinology and Infertility Department of Obstetrics and Gynecology University of Colorado, School of Medicine
2:25 – 2:40 pm	Understanding the Role of Estradiol on Recurrent Urinary Tract Infection Prevention Division of Urogynecology and Reconstructive Pelvic Surgery Presenter Marsha K. Guess, MD, MS Associate Professor Fellowship Director Division of Urogynecology and Reconstructive Pelvic Surgery Department of Obstetrics and Gynecology University of Colorado, School of Medicine
2:40 – 2:55 pm	Vaccine Confidence in an Urban Pregnant Population: A Mixed-Methods Study Denver Health Presenter Claire Schultz, MD Assistant Professor Denver Health Departments of Obstetrics and Gynecology and Psychiatry University of Colorado, School of Medicine
2:55 – 3:10 pm	Concentrating in a Loud Crowd: Do Practice Policies Limit Distractors and Improve Quality of Obstetrical Ultrasound? Division of Maternal-Fetal Medicine Presenter Heather Straub, MD Assistant Professor Division of Maternal-Fetal Medicine Department of Obstetrics and Gynecology University of Colorado, School of Medicine

3:10 – 4:00 pm

Iron Deficiency Anemia in Pregnancy: Can We Do Better?

Keynote Speaker

Methodius G. Tuuli, MD, MPH, MBA

Chace-Joukowsky Professor and Chair

Chief of Obstetrics and Gynecology, Women & Infants Hospital

Executive Chief of Obstetrics and Gynecology, Care New England Health System

Department of Obstetrics and Gynecology

Warren Alpert Medical School of Brown University

4:00 – 4:15 pm

Announcement of Poster Prizes

4:15 – 5:30 pm

Networking with Refreshments



Department of
Obstetrics and Gynecology

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