

# OSSD 2023 Annual Meeting

## Event Schedule

Sun, May 07, 2023

11:00 AM

### Registration

🕒 11:00 AM - 5:00 PM, May 7

📍 Grand Foyer 3

[Registrati...](#)

12:00 PM

### PWHR and SWHR Pre-Conference Event: From Cells to Society: Research and Advocacy to Advance Mature Women's Health

🕒 12:00 PM - 3:00 PM, May 7

📍 Imperial 1/2/3

[Pre-Meetin...](#)

Research has documented sex differences across a myriad of biological processes and diseases, however, the full impact of sex, gender, and hormones in areas such as cognition, heart disease, and mental health, is still not well understood. The COVID-19 pandemic highlighted the urgency of applying a sex and gender-based life stages framework to promoting health for all individuals. This symposium will offer a cell to society perspective on sex and gender differences in aging that influence heart, brain, and mental health among older women. Panelists will present basic and translational research approaches, public health initiatives, and policy interventions that have been utilized to advance these key issues in mature women's health. Attendees (whether they are researchers, trainees, health care providers, patient advocates, or policy stakeholders) will have the opportunity to engage in Q&A with the panel and roundtable conversations to discuss how they can contribute their expertise to address persistent gaps and barriers to advancing the health of women.

Sponsored by the Partnership for Women's Health Research Canada (PWHR) and the Society for Women's Health Research (SWHR), USA, this pre-conference symposium is designed to bring attention to the ongoing need for investment in women's health research, with a special focus on mature women's health. As our societies continue to age and women's life spans extend, there comes an increased burden of morbidity and the need to better understand sex and gender influences on health and disease. Advancing the health of women, and thus the health of society, requires interdisciplinary partnership-building and advocacy throughout the research and health care ecosystem.

[Learn More>>>](#)

## 🗣️ Speakers



### Liisa Galea

Treliving Family Chair for Women's Mental Health; Senior Scientist  
Campbell Family Mental Health Research Institute



### Cindy Barha

Assistant Professor, Kinesiology  
University of Calgary



### Rachel Savage

Scientist  
Women's College Research Institute



### Irene Aninye

Chief Science Officer  
Society for Women's Health Research



### Lindsey Horan

3:00 PM

### Council Meeting

🕒 3:00 PM - 5:00 PM, May 7

📍 Neilson 1

[Council Meet...](#)

5:00 PM

### Break

🕒 5:00 PM - 6:00 PM, May 7

6:00 PM

### Opening Reception

🕒 6:00 PM - 7:00 PM, May 7

📍 Imperial 5/7/9

[Networking E...](#)

7:00 PM

### Trainee Only Networking Event

🕒 7:00 PM - 8:00 PM, May 7

📍 Thomsons

[Trainee Eve...](#)

**Mon, May 08, 2023**

7:30 AM

### Breakfast

🕒 7:30 AM - 8:30 AM, May 8

8:30 AM

### Arthur P. Arnold Distinguished Lecture: Sex differences in neuroimmune interactions in development: implications for life-long health

🕒 8:30 AM - 9:45 AM, May 8

📍 Imperial 4/6/8

[Keynote](#)

Many neuropsychiatric disorders exhibit marked sex differences in prevalence and age of onset. Males are more likely to have disorders that arise in early childhood, including autism and learning disabilities. Females more often have disorders that arise during puberty, including anxiety and depression. This epidemiology suggests that there are sex-based neurobiological differences, which are likely to arise during development, that either directly promote specific neuropsychiatric disorders or increase the susceptibility to environmental factors that lead to such disorders. This talk will discuss the role of sex differences in neuroimmune factors, including microglia, in normal and abnormal brain development, including as a consequence of infection, stress, or changes in maternal diet, and the implications for long-term health outcomes.

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 **Speaker**



**Staci Bilbo**

Professor  
Duke University

9:45 AM

**Break**

 9:45 AM - 10:00 AM, May 8

10:00 AM

**SABV101**

 10:00 AM - 11:45 AM, May 8

 Imperial 4/6/8

**Sessions**

This session features lectures by distinguished scientists about Sex as a Biological Factor in diverse fields of interest.

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 **Speaker**



**Arthur Arnold**

Distinguished Professor  
University of California, Los Angeles

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**3 Subsessions**

● **Sex differences in the immune response**

 10:05 AM - 10:40 AM, May 8

● **Sex and gender differences in large organ transplantation**

 10:40 AM - 11:15 AM, May 8

● **Studying sex differences in the human brain: missteps, methods, mechanisms and meanings**

 11:15 AM - 11:45 AM, May 8

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**Puberty: A Key Activational Period for Psychopathology**

 10:00 AM - 11:45 AM, May 8

 Stephen A/B

**Sessions**

Puberty is a key developmental period characterized by rapidly rising rates of eating disorders, depression and anxiety, and clinical impairment in females. The researchers in this translational symposium utilized longitudinal study designs, twin studies, and animal models to explore biological and environmental factors that contribute to risk for these common forms of psychopathology during puberty, a critical activational period for psychopathology. A longitudinal study revealed that as girls progressed through puberty, ADHD-related impairment increased, particularly in girls who were younger at study entry, and depressive symptoms increased in girls, but not boys as they progressed through puberty. ADHD hyperactivity symptoms in girls significantly decreased. Next, a twin study suggested that genes interact with the environment to influence the expression of genetic risk for disordered eating during puberty. Specifically, girls living in disadvantaged contexts showed significant genetic influence on disordered eating, even before puberty. In contrast, girls living in advantaged contexts did not show significant genetic influences on disordered eating until mid/late puberty. Lastly, animal models indicated that the gut-brain axis plays an important role in the development of psychopathology during puberty and that the manipulation of the gut-brain axis with probiotics can lead to a resilience to stress-induced psychopathology in males and females. Using cutting-edge translational paradigms and a “bench to bedside” approach to examination of pubertal impacts on women’s health, these studies shed light on the different ways biological and environmental factors associated with puberty can affect risk for psychopathology, including ADHD, depression, anxiety, and eating disorders.

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#### Speaker



#### Tory Eisenlohr-Moul

Associate Professor  
University of Illinois Chicago

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#### 4 Subsessions

● **Longitudinal Pubertal Associations with ADHD, Impairment, and Co-Occurring Depressive Symptoms**

🕒 10:05 AM - 10:30 AM, May 8

● **The Gut Microbiome: A Mediator of Stress-Induced Depression- and Anxiety-like Behaviors in Males and Females**

🕒 10:30 AM - 10:55 AM, May 8

● **Genes and Puberty in Context: Disadvantage Moderates Genetic Influences on Disordered Eating During Puberty in Girls**

🕒 10:55 AM - 11:20 AM, May 8

● **Discontinuities in brain and behavioural development in adolescence in male and female rats: Relevance for understanding adolescent vulnerability.**

🕒 11:20 AM - 11:45 AM, May 8

11:45 AM

#### Trainee Lunch

🕒 11:45 AM - 1:15 PM, May 8

📍 Imperial 4/6/8

Trainee Eve...

#### Lunch on Own

🕒 11:45 AM - 2:00 PM, May 8

2:00 PM

#### Funder Forum

🕒 2:00 PM - 3:00 PM, May 8

📍 Imperial 4/6/8

Sessions

Participants: Angela Kaida, Chyren Hunter, Liisa Galea, Kathleen Morrison (moderator)

This panel will feature OSSD leadership and representatives of the CIHR Institute of Gender and Health and NIH Office of Research on Women’s Health. Panelists will present on new initiatives relevant to SABV/SGBA and the past, present, and future of SABV/SGBA policy implementation. A question and answer session will follow the presentations.

#### 1 Subsessions

### ● Funder Forum Q&A

🕒 2:00 PM - 2:00 PM, May 8

3:00 PM

## Melting Clocks: Circadian Rhythms and Sex Differences in Health and Disease

🕒 3:00 PM - 4:45 PM, May 8

📍 Imperial 4/6/8

### Sessions

In “The Persistence of Memory,” Salvador Dalí takes hard, mechanical objects and renders them to limp to illustrate how time controls and distorts our sense of reality. In this series of influential works, Dalí was drawing on a central tenant of biology: Life on this planet is adapted to the 24-hour solar day. Indeed, these daily cycles of light and dark are internalized in the form of circadian rhythms that allows for synchronization of biological and behavioral processes to extrinsic cues from the environment. Disruption to the internal timekeepers that control the optimal timing of all homeostatic processes is associated with sex-specific susceptibility to disease, response to treatment, and disease outcome. We have assembled a group of outstanding researchers who will present the latest evidence on sex differences in circadian rhythms and how these processes influence health and disease. Co-Chair Dr. Leah Pyter (The Ohio State University) will showcase her research on circadian rhythm disruption in cancer patients, and how a common chemotherapy drug disrupts molecular, physiological, and behavioral circadian rhythms driven by the central clock in the Suprachiasmatic Nucleus. Dr. Laura Fonken (University of Texas at Austin) will discuss how disruption of the circadian clock in microglia - the CNS resident macrophages – recapitulate aspects of age-associated changes in sex-specific behavior. Dr. Lauren DePoy (University of Pittsburgh) will reveal how prenatal circadian rhythm disruption predisposes male and female offspring towards distinct behavioral phenotypes later in life: substance use-like in males and anhedonic-like in females. Lastly, Co-Chair Dr. Eldin Jašarević (Magee-Womens Research Institute) will discuss the role of sex differences in circadian rhythms in the crosstalk between microbiota and their hosts and the role of diet as an essential factor in maintaining these sex differences. Together, this symposium would be of interest of OSSD meeting attendees as the assembled speakers represent the next frontier for sex differences research and provides a roadmap for the inclusion of circadian rhythms research into the study of gender and sex differences.

### 🗣️ Speaker



#### Leah Pyter

Associate Professor  
Ohio State University

#### 4 Subsessions

### ● Paclitaxel chemotherapy disrupts behavioral and molecular circadian clocks in mice

🕒 3:05 PM - 3:30 PM, May 8

### ● Microglia circadian clocks contribute to sex-specific changes in behavior with age

🕒 3:30 PM - 3:55 PM, May 8

### ● Prenatal circadian rhythm disruption induces sex-specific substance use and mood-related phenotypes in mice

🕒 3:55 PM - 4:20 PM, May 8

### ● Speaker Q&A

🕒 4:20 PM - 4:45 PM, May 8

## What's Sex Got to Do with It? 40 years of HIV/AIDS Pandemic Progress and Gaps in Our Sex and Gender-informed Understanding of HIV Prevention, Immunopathogenesis, Treatment, and Complications

🕒 3:00 PM - 4:45 PM, May 8

📍 Stephen A/B

### Sessions

While the advent of potent antiretroviral therapy and multiple effective biomedical prevention tools has led to significant progress in mitigating the HIV/AIDS pandemic over the last 40 years, women still make up a majority of the estimated 38.4 million people living with HIV worldwide. Male/Female biological differences can account for some of the observed disparities in HIV transmission, treatment, and health outcomes, but biology doesn't tell the entire story. This symposium will give an overview of how sex as a biological variable (SABV) and sex & gender (sexgen) science have – and have not yet – impacted each aspect of the HIV care continuum from prevention to acquisition, treatment, and complications across the lifespan.

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#### Speakers



##### Cecile Lahiri

Associate Professor of Medicine  
Emory University



##### Dr. Igbo Ofotokun

Professor of Medicine  
Emory University School of Medicine

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#### 4 Subsessions

● **Lost in translation: Sex differences and gender inequalities in HIV prevention strategies**

🕒 3:05 PM - 3:30 PM, May 8

● **Sexgen Science Meet HIV: The Interplay of Sex and Gender on HIV Acquisition, Immunopathogenesis, and the Latent Reservoir**

🕒 3:30 PM - 3:55 PM, May 8

● **Interrogating the promise of biomedical HIV technologies: Gender-based health disparities and the rollout of long-acting injectable antiretroviral therapy (ART)**

🕒 3:55 PM - 4:20 PM, May 8

● **Differences in Cognitive Decline Between Men and Women Living with HIV: What are the Drivers**

🕒 4:20 PM - 4:45 PM, May 8

4:45 PM

#### Networking Break

🕒 4:45 PM - 5:00 PM, May 8

5:00 PM

#### Poster Session 1

🕒 5:00 PM - 7:00 PM, May 8

📍 Imperial 5/7/9

Posters

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#### 89 Subsessions

● **1. Brain Specific Estrogen Reverses Cognitive Effects of Menopause**

🕒 5:00 PM - 7:00 PM, May 8

● **2. Neuroimmune Sex Differences of Chronic Pain in Multiple Sclerosis**

🕒 5:00 PM - 7:00 PM, May 8

● **4. Sex differences in joint and back pain experienced by informal caregivers of older adults.**

🕒 5:00 PM - 7:00 PM, May 8

● **6. Characterizing neural activity during cognitive bias in male and female offspring from a model of postpartum depression**

🕒 5:00 PM - 7:00 PM, May 8

● **Evaluating X-chromosome inactivation in the human placenta: does promoter DNA methylation correlate with gene silencing?**

🕒 5:00 PM - 7:00 PM, May 8

● **9. The association between serum testosterone levels and cardiovascular health with gender-affirming testosterone therapy use: a protocol.**

🕒 5:00 PM - 7:00 PM, May 8

- **10. Albuminuria and vascular risk in females with chronic kidney disease**  
⌚ 5:00 PM - 7:00 PM, May 8
- **11. Right Ventricle Remodeling is Sex Dependent in Pulmonary Arterial Hypertension**  
⌚ 5:00 PM - 7:00 PM, May 8
- **12. Mapping microglia in the female mouse brain: Effects of gonadal hormones and sex chromosomes.**  
⌚ 5:00 PM - 7:00 PM, May 8
- **13. Sex-specific effects of adjunctive raloxifene treatment in schizophrenia**  
⌚ 5:00 PM - 7:00 PM, May 8
- **14. APOEε4 genotype and parity influence the neuroinflammatory profile in the hippocampus and frontal cortex of middle-aged rats**  
⌚ 5:00 PM - 7:00 PM, May 8
- **16. Investigating mechanisms regulating postnatal sex-biased gene expression in the mouse pituitary gland**  
⌚ 5:00 PM - 7:00 PM, May 8
- **17. Positive and negative affect in fluctuating cortical thickness and estrogens across the natural female menstrual cycle: A longitudinal single-subject study**  
⌚ 5:00 PM - 7:00 PM, May 8
- **18. DEVELOPMENT AND VALIDATION OF ALGORITHMS TO IDENTIFY TRANSGENDER WOMEN AND MEN IN ADMINISTRATIVE HEALTHCARE DATA: A PROTOCOL**  
⌚ 5:00 PM - 7:00 PM, May 8
- **19. Serum Estradiol Levels and Cardiovascular Risk Associated with Gender-Affirming Hormone use in Transgender Women: A Systematic Review and Meta-Analysis**  
⌚ 5:00 PM - 7:00 PM, May 8
- **20. Revisiting and correcting the sex bias in access to liver transplantation**  
⌚ 5:00 PM - 7:00 PM, May 8
- **21. Prioritizing Analysis of Sex as a Biological Variable: A Novel qPCR-Based Strategy for Identifying Sex of Avian Embryos**  
⌚ 5:00 PM - 7:00 PM, May 8
- **22. Effects of pregnancy and gestational stress on microglia and perisynaptic remodeling in prefrontal cortex**  
⌚ 5:00 PM - 7:00 PM, May 8
- **23. Influence of Sex in Modulation of Airway Inflammation**  
⌚ 5:00 PM - 7:00 PM, May 8
- **24. EV (Exploit Variability): conferring protective female immunity in myocarditis**  
⌚ 5:00 PM - 7:00 PM, May 8
- **26. Aging reveals deleterious cardiorespiratory and metabolic consequences of neonatal stress in female rats**  
⌚ 5:00 PM - 7:00 PM, May 8
- **27. The role of androgen and estrogen receptors in the facilitation of social recognition by sex steroids in the male mouse brain**  
⌚ 5:00 PM - 7:00 PM, May 8
- **28. Investigating sex and gender-related differences in immunotherapy treatment effects: the INSITE study**  
⌚ 5:00 PM - 7:00 PM, May 8
- **29. Sex-specific differences in the gut microbiome and metabolome at 3 months of age**  
⌚ 5:00 PM - 7:00 PM, May 8
- **30. Sex-dependent impairments of parvalbumin expressing neurons in the retrosplenial cortex in Alzheimer's disease**  
⌚ 5:00 PM - 7:00 PM, May 8
- **31. Importance of sex-stratification in early stage melanoma survival analyses**  
⌚ 5:00 PM - 7:00 PM, May 8
- **The effect of hormone administration on future cardiovascular risk in females treated with in-vitro fertilization: an exploratory physiology study protocol**  
⌚ 5:00 PM - 7:00 PM, May 8
- **Public coverage of period products and contraception in Canada**  
⌚ 5:00 PM - 7:00 PM, May 8
- **34. Cross-species neuroimaging study of sex differences in the human and mouse brain**  
⌚ 5:00 PM - 7:00 PM, May 8
- **35. Estradiol receptor alpha determines sex-specific cardiorespiratory**

**responses to intermittent hypoxia**

⌚ 5:00 PM - 7:00 PM, May 8

● **36. A preliminary study: does type and duration of exercise during pregnancy affect Edinburgh Postnatal Depression Scale scores?**

⌚ 5:00 PM - 7:00 PM, May 8

● **37. Sex Differences in Radiation-Induced Heart Disease**

⌚ 5:00 PM - 7:00 PM, May 8

● **38. The EEG-indexed Impacts of Caffeine on Auditory Novelty Processing Across Phases of the Menstrual Cycle**

⌚ 5:00 PM - 7:00 PM, May 8

● **40. Orchiectomy increases hepatic oxidative stress and expression of flavin-containing monooxygenase 3 induced by intermittent hypoxia in mice.**

⌚ 5:00 PM - 7:00 PM, May 8

● **43. Chronic Intermittent Hypoxia Increases Oxidative Stress and Impairs Spatial Memory in Male and Female Rats**

⌚ 5:00 PM - 7:00 PM, May 8

● **44. Females are Protected from Neurovascular Coupling Impairment Induced by Interleukin-17A**

⌚ 5:00 PM - 7:00 PM, May 8

● **45. Reproductive Health and Cognition in Later Life**

⌚ 5:00 PM - 7:00 PM, May 8

● **Sex Differences and Microglial Response in a Novel Mouse Model of Hypoxic Ischemic Encephalopathy**

⌚ 5:00 PM - 7:00 PM, May 8

● **47. Age-related resting-state functional connectivity differs by vascular burden and menopause status**

⌚ 5:00 PM - 7:00 PM, May 8

● **49. Sexual function and activity among young females with kidney failure**

⌚ 5:00 PM - 7:00 PM, May 8

● **50. Exploring Gender-Related Variables Between Males and Females with Atrial Fibrillation**

⌚ 5:00 PM - 7:00 PM, May 8

● **51. A comparison of prediction equations for estimating glomerular filtration rate in transgender individuals on gender affirming hormone therapy**

⌚ 5:00 PM - 7:00 PM, May 8

● **52. DREADD-ing Stress: Using chemogenetics to bypass variability and examine sex-specific vulnerabilities to chronic CRF activation**

⌚ 5:00 PM - 7:00 PM, May 8

● **53. Regulation of stress and anhedonia in a mouse model of hormonal contraceptives**

⌚ 5:00 PM - 7:00 PM, May 8

● **54. Prenatal Dexamethasone Programs Autonomic Dysregulation in Female Rats**

⌚ 5:00 PM - 7:00 PM, May 8

● **55. Sex differences in the developing human visual cortex**

⌚ 5:00 PM - 7:00 PM, May 8

● **56. Not a hard pill to swallow: The beneficial influence of oral contraceptives on cognition**

⌚ 5:00 PM - 7:00 PM, May 8

● **57. Multiome analyses to understand sex differences in GBM outcome**

⌚ 5:00 PM - 7:00 PM, May 8

● **58. Examining age at natural menopause in relation to cortical thickness at age 70**

⌚ 5:00 PM - 7:00 PM, May 8

● **59. Estrogen-Deficiency Contributes to Menopause-Related Increases in Large Artery Stiffness**

⌚ 5:00 PM - 7:00 PM, May 8

● **60. Synergistic effects of age at menopause and vascular risk on cognition**

⌚ 5:00 PM - 7:00 PM, May 8

● **61. Female rats are more responsive than males to exercise-induced stress resilience**

⌚ 5:00 PM - 7:00 PM, May 8

● **62. Cannabis use for chronic pain: Do stereotypically masculine or feminine personality traits have a role?**

⌚ 5:00 PM - 7:00 PM, May 8

● **63. Learning exceptions to category rules varies by sex and menstrual cycle**

stage

⊙ 5:00 PM - 7:00 PM, May 8

● **64. Impact of age at menopause, APOE status, and hormone replacement therapy on Alzheimer's disease related brain features**

⊙ 5:00 PM - 7:00 PM, May 8

● **65. Evidence that sex hormones and lifestyle factors contribute to sex differences in the diagnosis and severity of unipolar depression and anxiety**

⊙ 5:00 PM - 7:00 PM, May 8

● **66. Cervical cancer screening barriers and facilitators for sexual and gender minorities: a community engaged feasibility approach**

⊙ 5:00 PM - 7:00 PM, May 8

● **67. Sex- and estrous-differences in the impact of stress on cue-driven behavior and dopamine release**

⊙ 5:00 PM - 7:00 PM, May 8

● **68. Sex chromosomes and sex hormones play opposing roles in regulating the severity of Th17 cell-mediated disease in a model of chronic CNS autoimmunity**

⊙ 5:00 PM - 7:00 PM, May 8

● **69. Serum Estradiol and Cardiovascular Events in Postmenopausal Individuals: A Systematic Review and Narrative Synthesis**

⊙ 5:00 PM - 7:00 PM, May 8

● **70. Sex- and Gender-Specific Reporting in Literature Informing Clinical Guidelines for Hypertension Management**

⊙ 5:00 PM - 7:00 PM, May 8

● **72. Anti-Müllerian Hormone & Cardiovascular Risk in Males with Chronic Kidney Disease: A Protocol**

⊙ 5:00 PM - 7:00 PM, May 8

● **73. Estrogen Receptor Alpha Mediates Female Cardiometabolic Health Through Mitochondrial Function**

⊙ 5:00 PM - 7:00 PM, May 8

● **74. A BNST-to-lateral septum vasopressin circuit that modulates sex-specific social approach, communication, and anxiety-like behavior in mice**

⊙ 5:00 PM - 7:00 PM, May 8

● **75. ROLE OF HYPOTHALAMIC PACAP AND ITS COGNATE PAC1 RECEPTOR IN SEX- & DIET-SPECIFIC REGULATION OF ENERGY BALANCE VIA HOMEOSTATIC CIRCUITS**

⊙ 5:00 PM - 7:00 PM, May 8

● **76. Characterization of steroidogenic enzymes in the embryonic brain and placenta in mice**

⊙ 5:00 PM - 7:00 PM, May 8

● **77. The hormonal regulation of dorsal hippocampal D2-type dopamine receptor regulated social learning in mice**

⊙ 5:00 PM - 7:00 PM, May 8

● **78. Chronic recording of hippocampus reveals sex differences in spatial navigation circuitry**

⊙ 5:00 PM - 7:00 PM, May 8

● **79. Insulin/insulin-like growth factor signaling pathway promotes female specific increased body fat in Drosophila**

⊙ 5:00 PM - 7:00 PM, May 8

● **80. Phenotypic sex and sex-chromosome complement impact DNA methylation including brain-specific sex-biased CAC methylation**

⊙ 5:00 PM - 7:00 PM, May 8

● **81. Adolescent Hormonal Contraceptive Administration Impacts the Prefrontal Cortex, HPA Axis, and Behavior of Female Rats.**

⊙ 5:00 PM - 7:00 PM, May 8

● **83. Sex Differences In Response To Global Cerebral Hypo-Perfusion In A Mouse Model Of Cerebral Amyloid Angiopathy**

⊙ 5:00 PM - 7:00 PM, May 8

● **84. Maternal corticosterone differentially affects depressive-like endophenotypes in female and male offspring**

⊙ 5:00 PM - 7:00 PM, May 8

● **85. Effects of In Vitro Fertilization (IVF) on Female Kidney Function: A Protocol**

⊙ 5:00 PM - 7:00 PM, May 8

● **86. Assessing disparities in sexual orientation and gender identity data availability.**

⊙ 5:00 PM - 7:00 PM, May 8

- **87. Investigating transcriptomic sex differences in Parkinson's disease.**  
⌚ 5:00 PM - 7:00 PM, May 8
- **88. A Cross-Lagged Panel Model of Sex Differences in the Reciprocal Relationship between Cannabis Use and Depressive Symptoms during Adolescence**  
⌚ 5:00 PM - 7:00 PM, May 8
- **89. Evidence for sex-specific gut microbiota mediation of social behavior deficits in a mouse model of neurodevelopmental disorders**  
⌚ 5:00 PM - 7:00 PM, May 8
- **90. An appetite for aggressive behavior? Female rats derive reward from aggressive interactions.**  
⌚ 5:00 PM - 7:00 PM, May 8
- **91. Differences in genetic etiology of sex hormones by sex and stage of life**  
⌚ 5:00 PM - 7:00 PM, May 8
- **92. Parenthood, genotype, and age of menopause affect cognition in aging humans.**  
⌚ 5:00 PM - 7:00 PM, May 8
- **94. Reproductive health perceptions and priorities of females living with chronic kidney disease: a survey protocol**  
⌚ 5:00 PM - 7:00 PM, May 8
- **95. Differential vasoactive effects of oxLDL/LOX-1 in female and male mouse thoracic aorta**  
⌚ 5:00 PM - 7:00 PM, May 8
- **96. Age of Menopause and its Association with CSF-based Alzheimer's Disease Biomarkers**  
⌚ 5:00 PM - 7:00 PM, May 8
- **97. SEX DIFFERENCES IN TAU DEPOSITION IN ALZHEIMER'S DISEASE**  
⌚ 5:00 PM - 7:00 PM, May 8
- **98. Gender and choice of kidney replacement therapy: A protocol**  
⌚ 5:00 PM - 7:00 PM, May 8
- **99. Sex, gender and quality of life in hemodialysis**  
⌚ 5:00 PM - 7:00 PM, May 8
- **100. Hemodialysis dose as a modifiable sex-specific cardiovascular risk factor: A systematic review**  
⌚ 5:00 PM - 7:00 PM, May 8
- **101. Sex differences in retrosplenial cortex parvalbumin interneurons: Implications for Alzheimer's Disease and cognitive decline.**  
⌚ 5:00 PM - 7:00 PM, May 8

7:00 PM

**Networking Activities**

⌚ 7:00 PM - 9:00 PM, May 8

**Tue, May 09, 2023**

7:30 AM

**Breakfast**

⌚ 7:30 AM - 8:30 AM, May 9

8:30 AM

**OSSD 2023 Education Series: Sex Differences Without Sexism**

⌚ 8:30 AM - 9:45 AM, May 9

📍 Imperial 4/6/8

**Dr. Jordan Marrocco, Dr. Jill Becker & Jordan Witzel**

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🗨️ Speakers



**Jordan Marrocco**

Assistant Professor of Biology and Neuroscience  
Touro University New York



**Jill Becker**

Professor of Psychology, Research Professor Molecular and Behavioral Neuroscience Institute  
University of Michigan



**Jordan Witzel**

Senior Specialist, Strategic Marketing and Communications, Office of the Vice-President of Research  
University of Calgary

9:45 AM

**Break**

🕒 9:45 AM - 10:00 AM, May 9

10:00 AM

**ORWH Specialized Centers of Research Excellence (SCORE) on Sex Differences:  
Examining the impact of stress on women's health**

🕒 10:00 AM - 11:45 AM, May 9

📍 Imperial 4/6/8

**Sessions**

The National Institutes of Health (NIH) Office of Research on Women's Health (ORWH) supported SCORE Programs, co-sponsored by NIH Aging, Alcohol Abuse and Alcoholism, Drug Abuse, Diabetes and Digestive and Kidney Diseases, and Mental Health institutes, are vital hubs for research on sex and gender. The impact of stress on women's health is a primary focus across several of our centers. Dr. Chyren Hunter will provide introductory comments regarding the significance of stress for women's health and introduce four SCORE investigators who will present cross-species findings examining the impact of stress on the etiology, course, and treatment of addiction, menopause, depression, and cardiovascular disease. Dr. Rajeev Agarwal will provide summary comments and moderate a general discussion. Dr. Carmela Reichel of the Medical University of South Carolina SCORE will present preclinical findings highlighting how physiological responses to stress and drugs of abuse acquire conditioned associations with environmental cues that can become precipitants or "triggers" to drug seeking. Understanding such triggers are critical for the development of relapse prevention in both sexes. Dr. Sherry McKee of the Yale School of Medicine SCORE will present translational findings focused on targeting stress reactivity for the pharmacological treatment of alcohol use disorders in women and men. Stress drives the initiation and maintenance of alcohol use disorders in women, and effective treatments need to target factors which underlie drinking in women. Dr. Taben Hale of the MGH-Harvard-CSU SCORE will present sex differences in preclinical findings examining the impact of late gestation glucocorticoids on autonomic regulation in adulthood. Autonomic dysregulation is associated with cardiovascular disease and is also characteristic of major depressive disorder, and thus is an important area of investigation for development of future therapies to treat these conditions that are often co-incident in women. Dr. Pamela Mahon of the Brigham & Women's Hospital SCORE will present on vasomotor symptoms and sleep disruption which are linked with altered stress responsivity in non-depressed midlife women. Understanding biological mechanisms underlying VMS occurrence and persistence will have a significant impact because VMS affect so many women and have a negative impact on quality of life.

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🗨️ Speakers



**Chyren Hunter**

Associate Director  
National Institutes of Health, ORWH



**Rajeev Agarwal**

Program Director  
NIH

#### 4 Subsessions

● **Complex interactions between stress, sex, and addiction**

🕒 10:05 AM - 10:30 AM, May 9

● **Targeting stress-reactivity for the treatment of alcohol use disorder.**

🕒 10:30 AM - 10:55 AM, May 9

● **Sex-Biased Influence of Late Gestation In Utero Glucocorticoid Exposure on Autonomic Regulation in Adulthood**

🕒 10:55 AM - 11:20 AM, May 9

● **Vasomotor symptoms and sleep disruption are linked with altered stress responsivity in non-depressed midlife women**

🕒 11:20 AM - 11:45 AM, May 9

### Deep phenotyping of sex differences in disease using glioma as an exemplar.

🕒 10:00 AM - 11:45 AM, May 9

📍 Stephen A/B

**Sessions**

This symposium will familiarize OSSD members with new clinical analyses, model systems, and laboratory data in the study of sex differences in cancer. The genetic, epigenetic, and gonadal hormone actions of sexual differentiation interact with developmental, aging, and pathogenic mechanisms, to produce the clear and substantial sex differences we observe in disease across our lifespans. In cancer, sexual differentiation interacts with cancer protection mechanisms and responses to oncogenic events at all levels of cellular and systems biology. The generous funding for cancer research has produced enormous advances and rich sets of genomic, proteomic, metabolomic, clinical, and laboratory data that have been used to: 1) improve cancer diagnosis i.e., sequence-based classifications, 2) promote drug development, i.e., target identification, patient selection through measures of genetic ancestry, demographics, and the genetics of drug efficacy and toxicity, 3) clinical science, i.e., patient stratification for clinical trials, molecular evaluations of treatment response, efficacy and toxicity, 4) as well as all aspects of laboratory science. Further, cancer represents a unique opportunity to leverage vast data resources to probe the depths of sex differences in disease. Thus, familiarity with the advances being made in cancer sex differences research should be relevant to a large sector of OSSD. There are four confirmed speakers representing a broad spectrum. None of the speakers have spoken at OSSD before and they come from different stages of career development from graduate student to senior faculty and represent public universities, hospital systems, as well as the NIH. The speakers represent multiple ethnicities and three are women. As detailed below, all the talks will use glioma, including the most common glioma, glioblastoma (GBM), as the model disease and together, they will cover the use of big datasets, single-cell multiome analysis, and immunology and immunotherapy. While glioma-centered, the talks will be relatable to many other avenues of sex differences research, including other cancers and complex diseases.

#### 🗣️ Speaker



**Joshua Rubin**

Professor of Pediatrics and Neuroscience  
Washington University School of Medicine

#### 4 Subsessions

● **Using "Big Data" to examine sex differences in disease: Glioma as an exemplar**

🕒 10:05 AM - 10:30 AM, May 9

● **Myeloid-derived suppressor cell heterogeneity drives glioblastoma in a sex-biased manner**

🕒 10:30 AM - 10:55 AM, May 9

● **Multiome analyses to understand sex differences in GBM outcome**

🕒 10:55 AM - 11:20 AM, May 9

● **Sex differences in T cells underlie immunotherapy response in glioblastoma**

🕒 11:20 AM - 11:45 AM, May 9

11:45 AM

### EDI Lunch

🕒 11:45 AM - 1:15 PM, May 9

📍 Imperial 4/6/8

Shannon Ruzycki is a general internist and Assistant Professor in the Departments of Medicine and Community Health Sciences at the University of Calgary. She has Masters degree in Public Health from Johns Hopkins University with dual concentration in Epidemiology and in Quality, Patient Safety, and Outcomes Research. Her research interests include perioperative quality improvement and equity, diversity, inclusion, and anti-racism in the medical workforce.

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🗣 Speaker



**Shannon Ruzycki**  
University of Calgary

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**Lunch on Own**

🕒 11:45 AM - 1:15 PM, May 9

1:15 PM

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**Elizabeth Young New Investigator Symposium**

🕒 1:15 PM - 2:45 PM, May 9

📍 Imperial 4/6/8

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4 Subsessions

● **Prioritizing Analysis of Sex as a Biological Variable: A Novel qPCR-Based Strategy for Identifying Sex of Avian Embryos**

🕒 1:20 PM - 1:40 PM, May 9

● **Chronic recording of hippocampus reveals sex differences in spatial navigation circuitry**

🕒 1:40 PM - 2:00 PM, May 9

● **Gestational Bisphenol A Exposure Has Permanent Effects on Mice Vasopressin Sex Differentiation**

🕒 2:00 PM - 2:20 PM, May 9

● **The X chromosome determines B1 cell number and natural antibody titer in mice**

🕒 2:20 PM - 2:40 PM, May 9

2:45 PM

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**Break**

🕒 2:45 PM - 3:00 PM, May 9

3:00 PM

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**From bench to bedside: Accounting for sex in neural mechanisms of drug seeking**

🕒 3:00 PM - 4:45 PM, May 9

📍 Imperial 4/6/8

**Sessions**

A significant contributor to the failure of therapies to translate for treatment of substance use disorders may be insufficient consideration of sex as a biological variable at each phase of the research process. Substantial evidence demonstrates important sex and gender variability in the behavioral, biological, and clinical correlates of substance use disorders. Here, we dissect this variability using innovative technical and conceptual multidisciplinary perspectives. Jennifer Tuscher will discuss recent work leveraging multiomic single-nucleus sequencing to examine sex- and cell-type specific chromatin and transcriptional alterations in response to cocaine experience and withdrawal in a rat model system. Elizabeth Doncheck will discuss in vivo calcium imaging data on the sex differences in, and hormonal state-dependence of, neural circuit activity dynamics during heroin seeking in mice. Aimee McRae-Clark will discuss clinical data highlighting variability in neural activity as a function of biological sex, gender, and drug class. We aim to close with recommendations for future research, including the importance of highlighting differential outcomes on the basis of biological sex and gender, and promising targets that have yet to be fully explored.

## 📌 Speakers



### Jennifer Tuscher

Postdoctoral Fellow  
University of Alabama, Birmingham



### Elizabeth Doncheck

Postdoctoral Fellow, Dr. Jim Otis' Lab  
Medical University of South Carolina

## 4 Subsessions

### ● Leveraging single-nucleus multiomics to examine sex- and cell-type specific molecular alterations in response to cocaine use and withdrawal

🕒 3:05 PM - 3:30 PM, May 9

### ● Sex-specific modulation of dopamine release mechanisms through nicotinic acetylcholine receptors.

🕒 3:30 PM - 3:55 PM, May 9

### ● In vivo calcium imaging reveals sex- and hormone- specific responses to heroin seeking in a mouse model system

🕒 3:55 PM - 4:20 PM, May 9

### ● Development of sex-specific treatments for substance use disorders: A clinical perspective

🕒 4:20 PM - 4:45 PM, May 9

## Sex-specific pathways to influence Alzheimer's disease risk

🕒 3:00 PM - 4:45 PM, May 9

📍 Stephen A/B

### Sessions

Findings of sex and gender differences in pathological risk for Alzheimer's disease (AD) and clinical progression to the dementia, from both human and animal models, demonstrate important divergences in the clinicopathological trajectory. The extent to which these differences arise from biological aspects of sex is still unfolding. The goal of this session is to dive into the role of endocrinological aging in men and women, from the perspective of menopause, hormone therapy use, declining sex steroid hormones, to influence Alzheimer's disease (AD) pathology, medial temporal lobe function and memory circuitry. The session will include an exciting array of topics covering a broad span of disciplines: endocrine modulation of medial temporal lobe subregions over the life course (Emily Jacobs, Associate Professor, University of California, Santa Barbara), sex steroid hormones and their influence on neuroimaging markers of AD proteinopathy in men and women (Rachel Buckley, Assistant Professor, Harvard University), sex-specific effects of microglial activation on AD proteinopathy (new OSSD speaker Kaitlin Casaletto, Assistant Professor, University of California, San Francisco), and the role of menopause onset and hormone therapy use on increasing risk for tauopathy in women (new OSSD speaker Gillian Coughlan, Postdoctoral Fellow, Harvard University). Our speakers will appeal to a diverse audience in OSSD, as our speakers represent: 1) a range of career stages from Postdoc to Associate Professor, 2) multiple disciplines (neuroscience to clinical neurology), 3) several fields of research (pathology, neuroimaging and biostatistics), 4) featuring both new and returning OSSD speakers, and 5) data from a large epidemiological and observational human cohorts (Framingham Heart Study, Wisconsin Registry of Alzheimer Prevention, Rush Religious Orders Study/Memory Aging Project). We believe this symposium will be of great interest to the OSSD community as it will inform on the latest developments and high-impact findings from up-and-coming and well-established leaders in the field. and will provide some of the latest perspectives on sex-specific drivers of AD risk.

## 📌 Speaker



### Rachel Buckley

Instructor  
Massachusetts General Hospital/Harvard Medical School

#### 4 Subsessions

● **Impact of endocrine aging on regional and global brain architecture and cognition**

🕒 3:05 PM - 3:30 PM, May 9

● **Sex hormone binding globulin and total testosterone levels are associated with in vivo tau burden differentially between the sexes: findings from the Framingham Study**

🕒 3:30 PM - 3:55 PM, May 9

● **Sex-specific effects of microglial activation on Alzheimer's disease proteinopathy in older adults**

🕒 3:55 PM - 4:20 PM, May 9

● **Self-reported history of hormone therapy is associated with rates of amyloid accumulation (PiB-PET), with implications for cognitive decline: findings from the Harvard Aging Brain Study**

🕒 4:20 PM - 4:45 PM, May 9

4:45 PM

#### Networking Break

🕒 4:45 PM - 5:00 PM, May 9

5:00 PM

#### Poster Session 2

🕒 5:00 PM - 7:00 PM, May 9

📍 Imperial 5/7/9

Posters

#### 78 Subsessions

● **102. Association between gender index and frailty-related sub-types of Alzheimer's and Vascular dementia.**

🕒 5:00 PM - 7:00 PM, May 9

● **103. Sex differences in the adolescent development of multisite pain**

🕒 5:00 PM - 7:00 PM, May 9

● **104. Transitional menopause induced by accelerated rodent ovarian failure as a menopausal model for the study of Alzheimer's disease.**

🕒 5:00 PM - 7:00 PM, May 9

● **105. Genetic contribution to opioid use disorder treatment outcomes**

🕒 5:00 PM - 7:00 PM, May 9

● **107. Novel strategies for recruitment and retention of reproductively aged participants in clinical trials**

🕒 5:00 PM - 7:00 PM, May 9

● **108. Estrogen Receptor Alpha Regulates Ucp1-Independent Thermogenesis in Brown Adipose Tissue Through Serca2b-Mediated Calcium Cycling**

🕒 5:00 PM - 7:00 PM, May 9

● **109. Estrous cycle modulation of fear extinction and relapse: Role of a substantia nigra-to-dorsolateral striatum pathway**

🕒 5:00 PM - 7:00 PM, May 9

● **110. Sex- and gender-related terms in a COVID-19 clinical trials registry**

🕒 5:00 PM - 7:00 PM, May 9

● **111. Sex differences in pain scores assigned to critically ill patients by family members**

🕒 5:00 PM - 7:00 PM, May 9

● **112. How well do sex differences translate from mice to humans? Large data sets reveal suggestive but mixed results.**

🕒 5:00 PM - 7:00 PM, May 9

● **113. Machine learning models to predict the risk of probable depression in early pregnancy in low-income people of color using electronic medical records**

🕒 5:00 PM - 7:00 PM, May 9

● **114. Sex- and estrous-differential gene expression in dorsal hippocampus is accentuated by loss of AMPA receptor trafficking gene Cnih3.**

🕒 5:00 PM - 7:00 PM, May 9

- **115. Sex Differences in Serum Protein Levels of IL-2, IL-6, IL-10 and IL-12 in Systemic Lupus Erythematosus Patients**  
⌚ 5:00 PM - 7:00 PM, May 9
- **117. Sex differences in transcriptional profiles of cochlear genes in mice**  
⌚ 5:00 PM - 7:00 PM, May 9
- **118. Effect of sex and menstrual cycle phase on spatial pattern separation**  
⌚ 5:00 PM - 7:00 PM, May 9
- **119. CNS cell types exhibit sex-specific responses preceding and during demyelination facilitated by sex chromosomes and gonads**  
⌚ 5:00 PM - 7:00 PM, May 9
- **120. BDNF Val66Met polymorphism moderates aerobic exercise efficacy to improve cognition in a sex-dependent manner: Preliminary evidence from a randomized controlled trial**  
⌚ 5:00 PM - 7:00 PM, May 9
- **122. Gender-based differences in co-morbidities and treatment of patients with acute myocardial infarction**  
⌚ 5:00 PM - 7:00 PM, May 9
- **123. Developing a Method for the Identification of functional Sex X Genotype interactions with Autism Spectrum Condition (ASC) variants using Massively Parallel Reporter Assays (MPRAs)**  
⌚ 5:00 PM - 7:00 PM, May 9
- **124. The importance of addressing the unique needs of transgender and gender diverse survivors of intimate partner violence: Findings from a learning needs assessment survey of Ontario service providers**  
⌚ 5:00 PM - 7:00 PM, May 9
- **125. Canadian social service providers' identification of domestically sex trafficked persons: A key entry point to disrupting a gendered health and social issue**  
⌚ 5:00 PM - 7:00 PM, May 9
- **126. Building a research agenda on addressing sexual assault and intimate partner violence against trans and gender diverse people: Differences in priorities by gender**  
⌚ 5:00 PM - 7:00 PM, May 9
- **127. Multiplexed analysis of interneuron heterogeneity in the basolateral amygdala of male and cycling female rats.**  
⌚ 5:00 PM - 7:00 PM, May 9
- **128. Combinatorial shaping of immune responses by sex chromosomes and gonads in a mouse model of Alzheimer's disease**  
⌚ 5:00 PM - 7:00 PM, May 9
- **129. Effect of Age on Risk for Recurrence in Men and Women with Unprovoked Venous Thromboembolism: A Systematic Review and Meta-Analysis**  
⌚ 5:00 PM - 7:00 PM, May 9
- **131. Increases in sex steroid hormones across gestation tied to variation in functional connectivity in a densely-sampled woman**  
⌚ 5:00 PM - 7:00 PM, May 9
- **132. Gonadal hormone-dependent differences in interval timing after COMT inhibition in mice.**  
⌚ 5:00 PM - 7:00 PM, May 9
- **133. Sex-related differences in the plasma proteome in response to diesel exhaust**  
⌚ 5:00 PM - 7:00 PM, May 9
- **134. Sex and Age Differences in Apoptosis in the Developing Mouse Hippocampus**  
⌚ 5:00 PM - 7:00 PM, May 9
- **135. The effect of sex and social housing conditions on stimulated DA during baseline.**  
⌚ 5:00 PM - 7:00 PM, May 9
- **136. Cardiometabolic Disorders of Pregnancy and Dementia Risk: A Twin Study**  
⌚ 5:00 PM - 7:00 PM, May 9
- **137. Sex differences in the effects of GLP-1-estradiol to mitigate detrimental effects of a high-fat high-sugar diet**  
⌚ 5:00 PM - 7:00 PM, May 9
- **138. Modelling Hormonal Contraceptives in Female Rats: what has been done and what can be done?**

⌚ 5:00 PM - 7:00 PM, May 9

● **139. Parity: Confounding factor in aging research using retired breeders?**

⌚ 5:00 PM - 7:00 PM, May 9

● **140. Gestational Bisphenol A Exposure Has Permanent Effects on Mice Vasopressin Sex Differentiation**

⌚ 5:00 PM - 7:00 PM, May 9

● **141. Efficacy of Bremelanotide (Vyleesi) and melanocortin 4 receptors in the nucleus accumbens to enhance sexual motivation in female Syrian hamsters**

⌚ 5:00 PM - 7:00 PM, May 9

● **144. Estradiol enhances cocaine-induced behavioral sensitization in male, but not female Japanese quail**

⌚ 5:00 PM - 7:00 PM, May 9

● **146. Sex differences in the neural circuits that predict alcohol dependence development**

⌚ 5:00 PM - 7:00 PM, May 9

● **147. The effect of sertraline and voluntary exercise during pregnancy on postnatal anxiety-like behaviours and cortical gene expression**

⌚ 5:00 PM - 7:00 PM, May 9

● **149. Sex Differences in the Impact of Midlife Mitochondria Metabolism on Memory Circuitry Function**

⌚ 5:00 PM - 7:00 PM, May 9

● **152. Sex Differences in Complement Components C3 and CR1 during Cardiovascular Disease**

⌚ 5:00 PM - 7:00 PM, May 9

● **153. Solving for Unaddressed Needs in Recurrent Vaginal Infection.**

⌚ 5:00 PM - 7:00 PM, May 9

● **154. Sex differences in structural brain development in young children**

⌚ 5:00 PM - 7:00 PM, May 9

● **155. Amphetamine withdrawal differentially alters timing behavior across estrus cycle in mice.**

⌚ 5:00 PM - 7:00 PM, May 9

● **156. Female gonadal hormones regulate serum autoantibody levels in the 3xTg-AD mouse model of Alzheimer's disease**

⌚ 5:00 PM - 7:00 PM, May 9

● **158. Sex biased function of the common variant rs7696877 and the corresponding gene MYOZ2 in cardiovascular diseases**

⌚ 5:00 PM - 7:00 PM, May 9

● **159. DIFFERENCES IN RE-INJURY RATES IN ANTERIOR CRUCIATE LIGAMENT (ACL) TEARS BETWEEN EXOGENOUS HORMONE USERS AND NON-HORMONE USERS: A RETROSPECTIVE ANALYSIS**

⌚ 5:00 PM - 7:00 PM, May 9

● **160. Long-term effects of premenopausal bilateral oophorectomy on physical and cognitive aging**

⌚ 5:00 PM - 7:00 PM, May 9

● **161. Lessons from eavesdropping on rats: Sex differences in rat ultrasonic vocalizations during fear conditioning and extinction**

⌚ 5:00 PM - 7:00 PM, May 9

● **163. Pregnancy complications and subsequent autoimmune disease: A systematic review and meta-analysis**

⌚ 5:00 PM - 7:00 PM, May 9

● **164. Gender-specific variables of climate-change related health impacts: A Global South perspective**

⌚ 5:00 PM - 7:00 PM, May 9

● **165. Sex moderates the impact of APOE genotype on sleep-dependent memory in older adults**

⌚ 5:00 PM - 7:00 PM, May 9

● **167. Sex differentiation of the hypothalamic vasopressin system occurs during embryonic neurodevelopment**

⌚ 5:00 PM - 7:00 PM, May 9

● **168. Rapid mediation of social recognition by interplay between estrogens in the supraoptic nucleus and medial amygdala oxytocin receptors**

⌚ 5:00 PM - 7:00 PM, May 9

● **170. Sex phenotypes and sex chromosomes contribute to transcriptional regulation of transposable elements in an organ-specific manner.**

⌚ 5:00 PM - 7:00 PM, May 9

● **171. The X chromosome determines B1 cell number and natural antibody titer**

**in mice**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **173. SEX-SPECIFIC REGULATION OF Î<sup>1</sup>-SECRETASE: A NOVEL ESTROGEN RESPONSE ELEMENT (ERE)-DEPENDENT MECHANISM IN ALZHEIMER'S DISEASE**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **174. White matter correlates of episodic memory at midlife in females: Assessing the impact of menopause**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **176. Living With Type 1 and Type 2 Diabetes: A Participatory Study Through an Intersectional Sex and Gender Lens**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **177. Pregnancy Intention and Disability Type among African American Women: Evidence from the 2011-2019 National Survey of Family Growth**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **179. Sex differences in cancer incidence among solid organ transplant recipients**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **180. Cell Sex and Sex Hormones Modulate Kidney Glucose and Glutamine Metabolism in Health and Diabetes.**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **181. Methods and Measures for Developing Knowledge of Sex and Gender Effects in Research on Older Adults**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **182. Gender Representation in Neuroscience Textbooks**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **183. Embracing the intersectionality of sex and gender in research**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **184. Estrogen receptor alpha, beta and G protein-coupled estrogen receptor rapidly facilitate social recognition short-term memory in the medial Prefrontal Cortex of female mice**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **185. Prenatal n-acetylcysteine prevents maternal immune activation induced changes in alcohol self-administration in a sex specific manner**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **186. Optimizing methods for snRNAseq from post-mortem hypothalamic tissue to investigate sex differences in autism**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **187. National Sex and Gender Education Initiative: a student-led model of advocacy**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **189. Multiregional Signatures of Sex-Differential Gene Expression in the Adult Human Brain**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **190. Reducing Disparities in Sex Equity in Vehicle Safety**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **191. Medical device success, failure and complications: What does sex have to do with it?**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **192. Associations between prenatal depression and the maternal cytokine profile: Possible link to child development**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **194. The Association between Perinatal Incontinence and Postpartum Depression: A Systematic Review**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **195. An international survey of reproductive health care providers' perceptions of female reproductive health in chronic kidney disease: a protocol**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **196. Sex differences in the effects of chronic stress on negative cognitive bias and inflammation in rats**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **198. Role of Sex and Sex Hormones in Pulmonary Artery Adventitial Fibroblast Mechanosignaling**

Ⓞ 5:00 PM - 7:00 PM, May 9

● **199. Temporal and Sex-Dependent Effect of Short-term Simulated Microgravity on Human Meniscus Tissue Model**

🕒 5:00 PM - 7:00 PM, May 9

**Wed, May 10, 2023**

7:30 AM

**Breakfast**

🕒 7:30 AM - 8:30 AM, May 10

8:30 AM

**Capstone Lecture: Sex Differences in Cardiac and Vascular Measures and Metrics: From Genes to Outcomes**

🕒 8:30 AM - 9:45 AM, May 10

📍 Imperial 4/6/8

**Keynote**

Over the last several years, key discoveries have been made regarding sex differences in the genetic determinants of blood pressure, in observed trajectories of blood pressure change over the lifecourse, and in discernible associations of elevated blood pressure with cardiovascular as well as non-cardiovascular outcomes. While investigative efforts in this field are ongoing, the discoveries made to date have already begun to motivate a reconsideration by clinicians and professional societies regarding what constitutes a normal range of blood pressure in females compared to males.

👤 **Speaker**



**Susan Cheng**

Professor  
Cedars-Sinai

9:45 AM

**Break**

🕒 9:45 AM - 10:00 AM, May 10

10:00 AM

**Hot Topics from Biology of Sex Differences**

🕒 10:00 AM - 12:00 PM, May 10

📍 Imperial 4/6/8

**Sessions**

Introduction to the session

👤 **Speaker**



**Jill Becker**

Professor of Psychology, Research Professor Molecular and Behavioral Neuroscience Institute  
University of Michigan

6 Subsessions

● **Sex differences in sucrose reinforcement in Long-Evans rats**

🕒 10:00 AM - 10:20 AM, May 10

● **Gestational hypoxia in late pregnancy differentially programs subcortical brain maturation in male and female rat offspring**

🕒 10:20 AM - 10:40 AM, May 10

● **Why the estrous cycle matters for neuroscience**

🕒 10:40 AM - 11:00 AM, May 10

● **The roles of sex and gender in women's eye health disparities in the United States**

🕒 11:00 AM - 11:20 AM, May 10

● **Sex differences in the human brain: A roadmap for more careful analysis and interpretation of a biological reality**

🕒 11:20 AM - 11:40 AM, May 10

● **Sex differences in the immune response to acute COVID-19 respiratory tract infection**

🕒 11:40 AM - 12:00 PM, May 10

11:45 AM

**Lunch on Own**

🕒 11:45 AM - 1:15 PM, May 10

1:15 PM

**NIH ORWH Science Policy Travel Award program**

🕒 1:15 PM - 3:00 PM, May 10

📍 Imperial 4/6/8

Sessions

<https://orwh.od.nih.gov/>

🗣️ **Speaker**



**Chyren Hunter**

Associate Director  
National Institutes of Health, ORWH

3 Subsessions

● **ORWH Signature Programs**

🕒 1:20 PM - 1:45 PM, May 10

● **The Lived Experience and Treatment Needs of Women with OUD and PTSD Symptoms**

🕒 2:10 PM - 2:35 PM, May 10

● **Q&A**

🕒 2:35 PM - 3:00 PM, May 10

**Sex/gender differences in the acute effects and pharmacokinetics of cannabinoids: translational evidence from human and animal studies**

🕒 1:15 PM - 3:00 PM, May 10

📍 Stephen A/B

Sessions

Both sex and gender are potentially important moderators of relationships between psychoactive drug use and positive/negative drug effects. As cannabis use continues to increase on a global scale, in part due to ongoing changes in its legal status, understanding influences on both the beneficial and detrimental effects of cannabis is growing in importance. The proposed symposium will bring together experts in the field of cannabinoid pharmacology to examine the influence of sex and gender on diverse effects of cannabinoids and cannabinoid pharmacokinetics, spanning methods in animal models, human laboratory experiments, and observational studies in humans. Dr. Matt Hill will present data examining sex differences in the effects of cannabis vapor inhalation on stress and fear responding in rodent models. Relevant senior author publications: •Vecchiarelli et al, 2022. Sex and stressor modality influence acute stress-induced dynamic changes in corticolimbic endocannabinoid levels in adult Sprague Dawley rats [DOI: 10.1016/j.yjnstr.2022.100470] •Baglot et al, 2021. Pharmacokinetics and central accumulation of delta-9-tetrahydrocannabinol (THC) and its bioactive metabolites are influenced by route of administration and sex in rats [DOI: 10.1038/s41598-021-03242-7] Dr. Ryan McLaughlin will present data examining sex differences in the reinforcing properties of cannabis and contributions of gonadal hormones in a preclinical model of cannabis vapor self-administration. Relevant senior author publications: •Ginder et al, 2022. The stoned age: Sex differences in the effects of adolescent cannabinoid exposure on prefrontal cortex structure and function in animal models [DOI: 10.1016/bs.irm.2021.07.005] •Glodosky et al, 2020. Cannabis vapor self-administration elicits sex- and dose-specific alterations in stress reactivity in rats [DOI: 10.1016/j.yjnstr.2020.100260] Dr. Justin Matheson will present data exploring relationships between sex, blood THC concentrations, and verbal recall performance in adults. Relevant publications: •Matheson et al, 2022. Sex differences in the neuropsychiatric effects and pharmacokinetics of cannabidiol: a scoping review [DOI: 10.3390/biom12101462] •Matheson et al, 2020. Sex differences in the acute effects of smoked cannabis: evidence from a human laboratory study of young adults [DOI: 10.1007/s00213-019-05369-y] Dr. Carrie Cuttler will present data examining gender differences in the acute effects of inhaled high-potency cannabis (flower and concentrates) on cognition (e.g., memory, executive functioning, attention) in humans. Relevant publications: •Cuttler et al. 2016. Sex Differences in Cannabis Use and Effects: A Cross-Sectional Survey of Cannabis Users [DOI: 10.1089/can.2016.0010] •Cuttler et al., 2022. Acute Effects of High Potency Cannabis Flower and Cannabis Concentrates on Everyday Life Cognition [DOI: 10.1038/s41598-021-93198-5]

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#### Speaker



**Justin Matheson**

Postdoctoral Research Fellow  
Centre for Addiction and Mental Health

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#### 4 Subsessions

● **Sex differences in the effects of cannabis vapor inhalation on stress and fear responding in rodent models**

🕒 1:20 PM - 1:45 PM, May 10

● **Sex and hormonal contributions to the reinforcing properties of vaporized cannabis in rats**

🕒 1:45 PM - 2:10 PM, May 10

● **Gender Differences in Acute Effects of High-Potency Cannabis on Cognition in Humans**

🕒 2:10 PM - 2:35 PM, May 10

● **Sex, blood THC concentrations, and cognition: findings from a dose-ranging human laboratory experiment of exposure to smoked cannabis**

🕒 2:35 PM - 3:00 PM, May 10

3:00 PM

#### Break

🕒 3:00 PM - 3:15 PM, May 10

3:15 PM

#### New roles for genes that escape X inactivation

🕒 3:15 PM - 5:00 PM, May 10

📍 Imperial 4/6/8

Sessions

About 20% of X-linked genes escape X chromosome inactivation in humans, resulting in biallelic expression and sex biases in gene expression. Their roles in sex differences are emerging with each new study of one of these escape genes. In this session we will focus on novel roles of genes that escape X inactivation. J. Berletch will present new work on the role of the demethylase KDM6A in the regulation of the Xist gene, which support a role for the escape gene Kdm6a in a quintessential female-specific process, i.e. X chromosome silencing. J. Jillis will present new findings on the distribution of genes that are subject to or escape X inactivation during human embryonic development, which represents an exciting first analysis of XCI and escape in embryonic lineages. K. Fange Liu will present her new work on DDX3X and DDX3Y a set of RNA helicases that display molecular differences that would cause sex differences in RNA metabolism. D. Kang will present evidence that higher USP11 expression in females due to escape from X inactivation could explain increased pathological tau aggregation in women with Alzheimer's disease.

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#### Speaker



**Christine Disteche**

Professor  
University of Washington

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#### 4 Subsessions

● **KDM6A and the onset of X inactivation**

⌚ 3:20 PM - 3:45 PM, May 10

● **Variability of cross-tissue X-chromosome inactivation characterizes timing of human embryonic lineage specification events**

⌚ 3:45 PM - 4:10 PM, May 10

● **Sexually dimorphic RNA helicases DDX3X and DDX3Y differentially regulate RNA metabolism**

⌚ 4:10 PM - 4:35 PM, May 10

● **Role of USP11 in tauopathy vulnerability in women**

⌚ 4:35 PM - 5:00 PM, May 10

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### **Stress, Sex, Social and (reproductive) Senescence: The 4 S's of lifespan neuroplasticity**

⌚ 3:15 PM - 5:00 PM, May 10

📍 Stephen A/B

**Sessions**

There has been a long-standing debate about what drives behavior – genes or environment. Yet it is almost always the case that it is little bit of both. Here, we will use examples across the lifespan to illustrate that differences exist in neuroplasticity and behavioral outcomes based on genes (sex) and environment (stress, estrogens, stroke). This symposium will explore how the environment (stress, disease, estrogens) mediates neuroplasticity and behavior differently (or not) in males and females across the lifespan. Travis Hodges will speak about sex differences in cognitive bias across the lifespan and the sex-specific effects of stress on cognitive bias and neuroplasticity. Karyn Frick will discuss sex differences in cellular mechanisms that underlie the rapid facilitation of estrogen-induced memory consolidation. Elena Choleris will describe estrogen effects on structural neuroplasticity and brain circuits that mediate social cognition. Finally, Farida Sohrabji will show how reproductive senescence and associated decline in ovarian hormones affect functional recovery after stroke. This symposium proposal is centered on the idea that understanding the effect of both genes and environment will be critical for developing a framework for precision medicine. WHY: There is much attention on sex and gender differences to drive medical outcomes in Europe and North America. Yet, findings indicate that although many studies in neuroscience, even in endocrinology, are using males and females in both animal and human studies, very few (5%) are analyzing with sex/gender in mind. Of those that do analyze by sex/gender, 72% find differences. NIH and Horizon Europe are recognizing that their mandates have not appreciably moved the dial on this research. Our symposium aims to show that sex matters in terms of cognitive outcomes and interacts with the environment in the context of the lifespan and environment.

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#### Speakers



**Liisa Galea**

Treliving Family Chair for Women's Mental Health; Senior Scientist  
Campbell Family Mental Health Research Institute



**Elena Choleris**

Professor  
University of Guelph

#### 4 Subsessions

● **Sex differences in the effects of chronic stress on negative cognitive bias and inflammation in rats**

🕒 3:20 PM - 3:45 PM, May 10

● **Sex differences and memory: Males and females accomplish the same ends through different means**

🕒 3:45 PM - 4:10 PM, May 10

● **Hormone-Regulated Brain Circuits of Social Cognition in Adult Female and Male Mice**

🕒 4:10 PM - 4:35 PM, May 10

● **The Expected and the Unexpected: Neuroprotective Effects of Estrogens for Stroke Diverge Dependent on Reproductive Age**

🕒 4:35 PM - 5:00 PM, May 10

5:00 PM

#### **Business Meeting**

🕒 5:00 PM - 5:30 PM, May 10

📍 Stephen A/B

5:30 PM

#### **Networking Break**

🕒 5:30 PM - 6:00 PM, May 10

6:00 PM

#### **Awards Reception Sponsored by CIHR**

🕒 6:00 PM - 8:00 PM, May 10

📍 Imperial 4/6/8

**Networking E...**

Thank you to our sponsor [CIHR, Canadian Institutes of Health Research](#)! If you have not done so, please stop by the CIHR booth in the foyer.



### **Thu, May 11, 2023**

7:30 AM

#### **Breakfast**

🕒 7:30 AM - 8:30 AM, May 11

8:30 AM

#### **The Physiological Effects of Hypoxia: What's Sex Have to Do With It?**

🕒 8:30 AM - 10:15 AM, May 11

📍 Imperial 4/6/8

**Sessions**

Hypoxia or low oxygen availability can have dramatic effects on physiology, such as the brain and cardiovascular system. Multiple conditions can induce hypoxia, such as preeclampsia, obstructive sleep apnea, and even pollution from motor vehicle emissions. The pathological impacts of hypoxia are broad and include multiple diseases that encompass cardiovascular diseases, neurological diseases, and metabolic diseases. Little is known about the full impact of hypoxia on physiology, much less the role of sex.

📣 Speakers



**Rebecca L. Cunningham**

Professor and Associate Dean of Research  
University of North Texas Health Science Center at Fort Worth



**Jessica Bradshaw**

Postdoctoral Research Associate  
University of North Texas Health Science Center

4 Subsessions

● **Disruptions in oxygen homeostasis dysregulate placental adaptive and secretory responses**

🕒 8:35 AM - 9:00 AM, May 11

● **Sex and age differences in social and cognitive function in offspring exposed to late gestational hypoxia**

🕒 9:00 AM - 9:25 AM, May 11

● **Sex-specific differences in vascular dysfunction following traffic-generated air pollution exposure and associated hypoxic conditions.**

🕒 9:25 AM - 9:50 AM, May 11

● **Sex Differences in Blood Pressure Regulation and Behavioral Responses to Intermittent Hypoxia**

🕒 9:50 AM - 10:15 AM, May 11

**Sex Differences in Metabolism**

🕒 8:30 AM - 10:15 AM, May 11

📍 Stephen A/B

Sessions

📣 Chair



**Charly Abi Ghanem**

Postdoctoral Associate  
Albany Medical College



**Kathleen Morrison**

Assistant Professor  
West Virginia University

4 Subsessions

● **Sex Differences in Adipose Mitochondria and Metabolism**

🕒 8:35 AM - 9:00 AM, May 11

● **Menopause, Metabolic Syndrome, and Alzheimer's Disease**

🕒 9:00 AM - 9:25 AM, May 11

● **Cell Sex and Sex Hormones Modulate Kidney Glucose and Glutamine Metabolism in Health and Diabetes.**

🕒 9:25 AM - 9:50 AM, May 11

● **Sexually dimorphic role of the neuropeptide PACAP and its receptor PAC1 in regulation stress-related behaviors and metabolic functions**

🕒 9:50 AM - 10:15 AM, May 11

10:15 AM

**Break**

🕒 10:15 AM - 10:30 AM, May 11

10:30 AM

**Preeclampsia: A Sex-specific Cardiovascular Risk Factor Across the Lifespan**

🕒 10:30 AM - 12:15 PM, May 11

📍 Imperial 4/6/8

Sessions

Women's cardiovascular (CV) risk varies across lifespan, with premenopausal women considered relatively "protected", and post-menopausal women gradually catching up and eventually exceeding the risk of men. Women face unique challenges during their lifespan, including pregnancy, which when complicated with hypertensive disorders of pregnancy (HDP), can significantly increase future CV risk. Pregnancy acts as a "cardiometabolic stress test", which can reveal pre-existing CV abnormalities, provoke new CV disorders, and predispose women to premature CV dysfunction. The incidence of preeclampsia (PE) is on the rise, with a roughly 25% increase in the past 20 years. PE is a complex entity characterized by hypertension and end-organ dysfunction after the 20th week of gestation, affecting up to 5-8% of pregnant women worldwide. It is estimated that PE is responsible for >500,000 fetal and neonatal deaths and >70,000 maternal deaths globally. Moreover, women with PE have a >3-fold increased risk of chronic hypertension and premature CV disease within 10 years postpartum, with the risk increasing even further according to the severity of PE. Existing tools for PE prediction have variable accuracy; however, novel tools (including arterial stiffness parameters and biomarkers) may enable better and earlier prediction of PE, a priority that has been strongly endorsed by the National Institute for Health and Clinical Excellence. Once PE occurs, understanding and characterizing its associated severe morbidity and mortality is essential to improve short-term adverse clinical outcomes. Longer-term CV complications of PE/HDPs have been recognized, leading to the American Heart Association strongly recommending inquiring about reproductive history when assessing CV risk in women. Overall, PE represents a CV risk-altering event at an early and critical point of a woman's lifespan, and PE has the potential to severely affect CV health during childbearing years and beyond. The proposed symposium will address this unique sex-specific CV risk factor by addressing 4 important topics. First, to better understand the complex pathophysiology of PE/HDPs and CV risk, we will provide an overview of important concepts related to vascular pathophysiological mechanisms of PE/HDPs and future CV health (Dr. Davidge). Second, existing and novel predictive tools for PE in early pregnancy and across gestation will be summarized (Dr. Daskalopoulou). Third, we will present the short-term maternal risks of CV morbidity and mortality associated with PE (Dr. Malhamé). Finally, we will discuss the long-term implications of PE/HDPs on CV health (compared with men), including the need for sex-specific and gender-transformative interventions to improve CV health (Dr. Nerenberg). This symposium brings together 4 experts in diverse fields of sex-based CV disease (basic science, clinical, and population health) and is representative of junior, mid-career, and senior scientists from across Canada.

👤 Speaker



**Stella S. Daskalopoulou**

Associate Professor  
McGill University

4 Subsessions

● TBD

🕒 10:35 AM - 11:00 AM, May 11

● **Multi-Model Approach for the Prediction of Preeclampsia in High-Risk Pregnancies. Existing and Novel Tools for the Prediction of Preeclampsia**

🕒 11:00 AM - 11:25 AM, May 11

● **Cardiovascular Health Following Preeclampsia - a Need for Gender Transformative Interventions**

🕒 11:50 AM - 12:15 PM, May 11

● **Circulating Cell-Free Mitochondrial DNA in Preeclampsia**

🕒 11:50 AM - 12:15 PM, May 11

**Sex-specific impact of stress on immune responses**

🕒 10:30 AM - 12:15 PM, May 11

📍 Stephen A/B

Sessions

As an early career researcher, I am interested in early life disturbance and immunity. Recent events during the COVID pandemic highlighted the differences in infection severity between men and women, with more hospitalization and death in men. This increased morbidity in men is associated with an unbalanced inflammatory response to infection. Although multiple factors drive inflammatory response, there is multiple evidence supporting that stress has long-term and sex-specific consequences on brain development and corticotropic axis. While we know that stress and sex hormones modulate immune responses, their interplay in the maturation and overall function of the immune system remains poorly understood. Of particular interest is the impact of early stress on the corticotropic axis, which is likely to influence immune responses later in life. Although epidemiological or clinical data on the subject is scarce, there is growing literature using animal models.

## 🗣️ Speakers



**Jean-Francois Lauzon-Joset**

Université Laval



**Karine Bouchard**

PhD candidate  
Laval University

## 4 Subsessions

● **From bench to bedside: exploring the intersection of biological sex and immune response in lung disease**

🕒 10:35 AM - 11:00 AM, May 11

● **Early life stress has sex-specific impact on viral infection severity later in life**

🕒 11:00 AM - 11:25 AM, May 11

● **Biological sex and host response in sepsis and critical illness**

🕒 11:25 AM - 11:50 AM, May 11

● **Immune mechanisms of atherosclerotic cardiovascular disease in females with autoimmune disease**

🕒 11:50 AM - 12:15 PM, May 11

12:15 PM

## Post-Meeting Excursions: On your own

🕒 12:15 PM - 10:00 PM, May 11