



ORGANIZATION FOR THE  
STUDY OF SEX DIFFERENCES

Founded by the Society for Women's Health Research

## 2022 Meeting of the Organization for the Study of Sex Differences Preliminary Program

**Monday May 2<sup>nd</sup>**

8:00a-5:00p **Registration Open**

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11:00a-1:00p **Lunch on your own OR**

11:00a-12:15p **Education event: “Translating sex and gender research findings into the curriculum and health care”**  
*(Open to all faculty, postdocs, graduate students/clinical trainees who teach or will teach in the future. RSVP requested, lunch provided.)*

Moderator: **Dr. Kristen Zuloaga**, Albany Medical Center

The Panelists:

**Dr. Sarah Temkin**, OWHR, NIH

**Dr. TBD**

**Dr. Sophia Ahmed**, University of Calgary

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1:00p-2:30p

### **SESSIONS 1 and 2**

#### **Session 1: SABV 101 WORKSHOP**

Moderator: **Dr. Art Arnold**, UCLA

**Dr. Franck Mauvais-Jarvis**, Tulane University School of Medicine  
Sex differences in diabetes and metabolism

**Dr. Dena Dubal**, UCSF  
Sex differences in aging

**Dr. Jill Becker**, University of Michigan  
Sex differences in addiction

#### **Session 2: Incorporating hormonal contraceptives in studies of women's brain health and SABV**

Chairs: **Drs. Liisa Galea**, University of British Columbia and **Jesse Lacasse**, Concordia University, Center for Studies in Behavioural Neurobiology

**Dr. Jesse Lacasse**, Concordia University, Center for Studies in Behavioural Neurobiology  
Hormonal contraceptive and cognition: Navigating animal-models and translation to humans

**Dr. Natalie Tronson**, University of Michigan  
Modelling the impact of hormonal contraceptives on stress and depression

**Dr. Nafissa Ismail**, University of Ottawa  
The brain on the Pill: the enduring impact of pubertal exposure to oral contraceptives

**Dr. Elizabeth Hampson**, University of Western Ontario  
Fundamentals of oral contraceptives: Basic physiology and common misconceptions

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2:30p-2:45p **Coffee Break**

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3:00p-4:45p

### SESSION 3

#### Session 3: Hormone system interactions in the female body across the lifespan

Chairs: **Drs. Alexandra Ycaza Herrera**, University of Southern California and **Stephanie Koebele**, Arizona State University

**Dr. Caitlin Taylor**, University of California Santa Barbara  
Differences in striatal dopamine synthesis between hormonal contraceptive users and non-users

**Dr. Claudia Barth**, University of Oslo  
Associations between hormone therapy regimes and brain age in middle to older-aged women from the UK Biobank

**Dr. Jaclyn Schwarz**, University of Delaware  
Interaction between pregnancy and added stress on the endocrine, immune, and neural systems that regulate reward and anhedonia behaviors

**Dr. Stephanie Koebele**, Arizona State University  
Sex-specific relationships between 17 $\beta$ -estradiol and depression in an aging adult population of forager horticulturalists

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4:45p-5:15p **Welcome Remarks:** Dr. Rhonda Voskuhl

5:15p-6:15p **KEYNOTE ADDRESS**

**Dr. Barbara Stranger, Ph.D.**



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6:30p-8:30p **OPENING RECEPTION**

**Tuesday May 3rd**

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8:00a-5:00p **Registration Open**

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7:30a-8:30a **Breakfast**

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8:30a-10:15a

## **SESSIONS 4 and 5**

### **Session 4: The Y of the sex differences**

Chair: **Dr. Anna Naumova**, McGill University

**Dr. Karl Shpargel**, University of North Carolina

Histone demethylase independent redundancy of the X and Y chromosome homologs UTX and UTY during development

**Dr. Chris Lau**, University of California San Francisco

The Battle of the Sexes: The contrasting roles of TSPY and TSPX in human oncogenesis

**Dr. Anna Naumova**, McGill University

The Y and methylation of transposons

**Dr. Julie Cocquet**, Institut Cochin

Competition between X and Y chromosome-encoded proteins for partner interaction and chromatin occupancy drives multicopy gene expression and evolution in muroid rodents

### **Session 5: Ovarian hormones in sex-specific brain plasticity and disease: molecular, cellular, and neuroimaging insights**

Chair: **Dr. Marija Kundakovic**, Fordham University

**Dr. Stephanie Correa**, University of California, Los Angeles

Estrogenic modulation of neural circuits that control energy expenditure

**Dr. Marija Kundakovic**, Fordham University

3D genome dynamics in the mouse brain across the estrous cycle

**Dr. Julia Sacher**, Max Planck Institute for Human Cognitive and Brain Sciences

Mapping menstrual rhythm of hippocampal microstructure by high-field MR imaging

**Dr. Deepak Srivastava**, King's College London, London

From brain to cell and back again: determining the molecular mechanisms of psychosis and developing a cellular platform for novel estrogen-based drug discovery

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10:15a-10:30a **Coffee Break**

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10:30a-12:15p

## **SESSIONS 6 and 7**

### **Session 6: Mechanisms of sex differences in respiratory disease**

Chairs: **Drs. Patricia Silveyra**, Indiana University and **Alicia Rizzo**, University of Colorado Hospital

**Dr. Andrea Frump**, Indiana University  
Estrogen regulation in pulmonary arterial hypertension

**Dr. Krithika Lingappan**, Children's Hospital of Philadelphia  
Sex as a biological variable in the preterm lung: first step towards precision medicine

**Dr. Venkatachalem Sathish**, North Dakota State University  
Sex differences in airway smooth muscle cell transcriptome signatures in asthma

**Dr. Alicia Rizzo**, University of Colorado Hospital  
Sex differences in alveolar epithelial glycocalyx degradation in ARDS

### **Session 7: NIH ORWH Science Policy Scholar Travel Award Symposium**

Chair: **Dr. Samia Noursi**, NIH

**Dr. Samia Noursi**, Associate Director for Science Policy, Planning, and Analysis at ORWH, NIH  
Advancing Science for the Health of Women – How are we doing this at ORWH?

The NIH ORWH Science Policy Scholar Travel Awards support the development of two junior investigators who are focused on women's health or sex and gender differences and are also interested in research policy.

**Two recipients of Policy Scholar Travel Award will speak on women's health or sex and gender differences and policy**

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12:15p-1:30p **Lunch on your own OR**

12:15p-1:30p **Equity, Diversity and Inclusion workshop**

**Goal:** Introduce to membership to what EDI is (and isn't) and share some tips on reducing bias and creating a more inclusive environment.

*(Open to all members. RSVP requested, lunch provided)*

Chairs: **Drs. Deborah Bangasser**, Temple University and **Farrah Madison**, Hope College

*Speaker - TBD*

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1:45p-3:30p

## SESSIONS 8 AND 9

### Session 8: How variable and malleable is escape from X chromosome inactivation

Chairs: **Drs. Christine Disteche**, University of Washington, and **Carolyn Brown**, University of British Columbia

**Dr. Xinxian Deng**, University of Washington  
3D features of the genome impact escape from X inactivation in different cell types

**Dr. Carolyn Brown**, University of British Columbia  
Genomic determinants of escape from X-chromosome inactivation

**Dr. Stefan Pinter**, University of Connecticut  
Monosomy X in isogenic human iPSC-derived trophoblast model impacts expression modules preserved in human placenta

**Dr. Bingfei Yu**, Stanford University  
B cell specific XIST complex enforces X-inactivation and restrains atypical B cells

### Session 9: Cognitive effects of neurodegeneration

Chairs: **Drs. Rhonda Voskuhl**, University of California, Los Angeles and **Margaret Fahnestock**, McMaster University

**Dr. Rhonda Voskuhl**, University of California, Los Angeles  
A new approach to address the unmet need for a treatment targeting cognitive deficits at menopause

**Dr. Margaret Fahnestock**, McMaster University  
Effect of gonadal hormones on pathology, autoimmunity and behavior in a mouse model of Alzheimer's Disease

**Sara Zarate**, Texas A&M  
Characterizing the combined neuroprotective effects of estrogen and cytosine in a 6-OHDA mouse model of Parkinson's Disease

**Dr. Charly Abi Ghanem**, Albany Medical College  
Sex-specific effects of high fat diet on neuropathology in a mouse model of VCID

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3:30p 3:45p **Coffee Break**

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3:45p-5:00p

## SESSIONS 10 AND 11

### Session 10: Sex differences in cardiovascular health

Chairs: **Drs. Stephanie Faubion**, Mayo Clinic Florida and **Chrisandra Shufelt**, Cedars Sinai

**Dr. Chrisandra Shufelt**, Cedars Sinai  
Hormones and cardiovascular risk in transgender health

**Dr. Ekta Kapoor**, Mayo Clinic Rochester  
Sex differences in dyslipidemia and statin therapy

**Dr. Puja Mehta**, Emory  
Sex differences in obesity and diabetes

**Dr. Samar El Khoudary**, University of Pittsburgh  
Sex differences in the trajectories of cardiovascular risk in midlife

## **Session 11: Mechanisms of motivation: convergent and divergent sex differences of motivated behavior**

Chairs: **Drs. Georgia Hodes**, Virginia Polytechnic Institute and State University and **Deborah Bangasser**, Temple University

**Dr. Alexia Williams**, Temple University  
Early life stress alters motivation for natural rewards in a sex-dependent manner

**Dr. Georgia Hodes**, Virginia Polytechnic Institute and State University  
Not feeling up to it? How sex differences in the immune response to stress impact reward motivation

**Dr. Jeremy Day**, University of Alabama Birmingham  
Leveraging single-cell profiling to identify sex-specific and drug-responsive genetic programs in brain reward

**Dr. Jill Turner**, University of Kentucky, Lexington  
Neuroinflammatory drivers of nicotine use disorder: opportunities for precision medicine

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5:00p-7:00p **POSTER SESSION I**

7:00p-9:00p **Trainee Social Event – organized on Whova**

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**Wednesday May 4<sup>th</sup>**

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8:00a-5:00p **Registration Open**

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7:30a-8:30a **Breakfast**

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8:00a-8:30a **OSSD Business Meeting** (*open to all members*)

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8:30a-10:15a **SESSIONS 12 and 13**

## **Session 12: Specialized Centers of Research Excellence on Sex Differences (SCOREs)**

Three speakers will present from SCORE programs -

“Each SCORE program serves as a national resource for translational research, at multiple levels of analysis, to identify the role of biological sex differences on the health of women. These NIH-supported Centers of Excellence are vital hubs for research on sex and gender that also provide pilot funding, training, and education. SCORE investigators provide leadership in the development and promotion of standards and policies for the consideration of sex as a biological variable (SABV) and sex differences in biomedical research.”

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

### **Session 13: Emerging concepts in data analysis of sex differences**

Chairs: **Drs. Arjun Krishnan**, Michigan State University and **Joseph E. Ippolito**, Washington University

**Dr. Joseph E. Ippolito**, Washington University

Glucose-mediated serine biosynthesis in lung cancer predicts sex-specific response to chemotherapy

**Dr. Arjun Krishnan**, Michigan State University

A data-driven approach to unravel sex- and age-specific gene signatures and genome-scale gene interaction networks

**Laura Pritschet**, University of California, Santa Barbara

Applying dense-sampling to reveal endocrine modulation of the central nervous system

**Dr. Onder Albayram**, Medical University of South Carolina

Sex-associated difference in mitochondrial stress response following traumatic brain injury

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10:15a-10:30a **Coffee Break**

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10:30a-12:15p

### **SESSIONS 14 and 15**

#### **Session 14: Endocrine aging and novel hormone therapies: impacts on physiology and the brain**

Chair: **Drs. Kristen Zuloaga**, Albany Medical College and **Paulo Pires**, University of Arizona

**Dr. Karyn Frick**, University of Wisconsin-Milwaukee

Targeting estrogen receptor beta as a treatment for alleviating memory loss and hot flashes

**Dr. Kristen Zuloaga**, Albany Medical College

Influence of endocrine aging on metabolism and memory: protective effects of brain-specific estrogen therapy

**Dr. Rachel Buckley**, Harvard University

Menopause as a modulator of sex differences in levels of tau deposition in healthy adults

**Dr. Paulo Pires**, University of Arizona

Influence of menopause on cerebrovascular function

## Session 15: Sex differences in myocarditis

Chairs: **Drs. Katelyn Bruno**, Mayo Clinic and **Bettina Heidecker**, Charité Universitätsmedizin Berlin

**Dr. Bettina Heidecker**, Charité Universitätsmedizin Berlin  
Sex differences in myocarditis from large European cohort

**Dr. DeLisa Fairweather**, Mayo Clinic Florida  
Sex differences in COVID infection and vaccine related myocarditis

**Dr. Iwona Buskiewicz-Koenig**, SUNY Upstate Medical University  
Sex differences in the role of estrogen in viral myocarditis mouse model

**Dr. Madeleine Cunningham**, University of Oklahoma Health Sciences Center  
Sex difference in IL-17 response that promotes progression from clinical myocarditis to DCM

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12:15p-1:30p **Lunch on your own OR**

12:15p-1:30p **Trainee-Mentor LUNCH**  
(Open to all trainees, RSVP required, lunch provided)

12:15p-1:00p **BSD Editorial Board Meeting** (RSVP requested, lunch provided)

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1:45p-3:30p **Elizabeth Young New Investigator Award Symposium**

Chairs: **Drs. Katelyn Bruno** and **Karen Reue**

Elizabeth Young New Investigator Award is awarded to trainee members (graduate students, post-docs, or residents) that have a substantial story to tell regarding the effects of sex and/or gender on health and disease.



*Dr. Elizabeth Young*

**Four speakers will be chosen from submitted abstracts**

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2:00p-3:00p **BSD Business Meeting**

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3:30p-3:45p **Coffee Break**



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3:45p-5:00p

## CAPSTONE LECTURE

Dr. Simon Baron-Cohen, FBA, FMedSci, Kt Professor



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5:45p-6:45p **Poster Session 2**

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7:00p-9:00p

## AWARDS RECEPTION

Honoring all award recipients, and announcing the  
Florence P. Haseltine Best Poster Award competition winners

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### Thursday May 5<sup>th</sup>

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8:00a-11:00p **Registration Open**

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7:30a-8:30a **Breakfast**

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8:30a-10:15a

## SESSIONS 16 and 17

### Session 16: Sex differences in stroke pathophysiology and pharmacology

Chairs: **Drs. Fudong Liu**, University of Texas Health Science Center and **Ami Ravel**, University of Miami

**Dr. Set Frank Blixt**, University of Texas Science Center

Sex specific effects of maternal microbiome on cerebrovascular risk factors in offspring

**Dr. Ami Ravel**, University of Miami

Sex differences in post-stroke whole body vibration therapy on the cognitive outcomes

**Dr. Pelin Cengiz**, University of Wisconsin

Sex differences in anxiety-like behavior following neonatal brain injury

**Dr. Farida Sohrabji**, Texas A&M Health Science Center

Sex differences in the efficacy of microRNA stroke therapies

### Session 17: Sex differences in COVID-19-related outcomes

Chairs: **Drs. Manfred Green**, University of Haifa and **Janet Wei**, Cedars Sinai

**Dr. Manfred Green**, University of Haifa

Sex differences in the case-fatality rates for COVID-19: A comparison of the age-related differences and consistency over seven countries

**Dr. Janet Wei**, Cedars Sinai

Why is post COVID syndrome, including postural orthostatic tachycardia (POTS), more common in women than men?

**Dr. Katelyn Bruno**, Mayo Clinic

Sex differences in mortality in COVID-19 patients administered convalescent plasma as part of the United States Convalescent Plasma Expanded Access Program

**Dr. Dorit Nitzan**, World Health Organization

Sex differences in COVID-19 vaccine hesitancy

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10:15a-10:30a **Coffee Break**

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10:30a-12:15p

## **SESSIONS 18 and 19**

### **Session 18: Leading young investigator submissions**

Chairs: Drs. **Dr. Jeeyeon Cha**, Vanderbilt University Medical Center and **Alex DeCasien**, NIMH

**Dr. Jeeyeon Cha**, Vanderbilt University Medical Center

A role for the MAFA S64F mutation in sex-dependent diabetes

**Dr. Sergi Clotet Freixas**, University Health Network Toronto

Cell sex and sex hormones modulate kidney glucose and glutamine metabolism in health and diabetes

**Dr. Alex DeCasien**, NIMH

Linking X-Y gametologue co-expression patterns to sex differences in disease

**Dr. Joni Nikkanen**, University of California, San Francisco

Evolutionary trade-offs of hepatic host defense programs underlie sex-biased diseases

### **Session 19: Sex-biased brain states and network activity**

Chair: **Dr. Rita Valentino**, NIDA

**Dr. Reagen Wetherhill**, University of Pennsylvania

Sex differences in resting state neural networks and functional connectivity in response to addictive drugs

**Dr. Vincent Calhoun**, Georgia State University

Sex differences in intrinsic brain dynamism and their neurocognitive correlates

**Dr. Emeran Mayer**, University of California Los Angeles

Sex differences in stress and pain-related brain networks

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*End of OSSD 2022 Meeting. See you next year at OSSD 2023!*

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12:30p-3:00p

## **OSSD COUNCIL MEETING**