



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 2nd

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

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

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

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

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 β -estradiol and depression in an aging adult population of forager horticulturalists

4:45p-5:15p **Welcome Remarks:** Dr. Rhonda Voskuhl, M.D.
OSSD President, University of California, Los Angeles

5:15p-6:15p **KEYNOTE ADDRESS** from the
Arthur Arnold Distinguished Lecturer

Dr. Barbara Stranger, Ph.D.
Northwestern University Feinberg School of Medicine



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

Tuesday May 3rd

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

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

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

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

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

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

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

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

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

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

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

Wednesday May 4th

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

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

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

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

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

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

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)

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

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

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

3:45p-5:00p

CAPSTONE LECTURE

Introduction: Dr. Joel Berletch, Ph.D., University of Washington
Dr. DeLisa Fairweather, Ph.D., Mayo Clinic

Dr. Simon Baron-Cohen, FBA, FMedSci, Kt Professor
University of Cambridge



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

7:00p-9:00p **AWARDS RECEPTION**

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

Thursday May 5th

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

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

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

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

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

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

12:30p-3:00p

OSSD COUNCIL MEETING