# Train the Integration of the sex and gender dimension in life sciences research Trainer





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#### **Day 1** - Wednesday, June 28, 2023 | 13h - 18h

- 13:00-14:00 Welcome lunch
- 14:00-14:30 Icebreaker and Introduction to the Question Board
- 14:30-15:45 Sex and Gender Concepts
- 15:45-16:15 Coffee break
- 16:15-17:30 Storyboarding
- 17:30-18:00 Individual Reflection and Preparation to Day 2
- 20:00 Course dinner (El Jardí de l'Abadessa c/ de l'Abadessa Olzet, 26)

#### **Day 2** - Thursday, June 29, 2023 | 9:00h - 14:00h

- 9:00-10:00 Individual Reflection
- 10:00-12:30 Training Plan Proposal Ideation with Coffee break (11:00-11:30 coffee break)
- 12:30-13:00 Back to the Question Board
- 13:00-14:00 Closing lunch





**Editors:** Davide Cirillo (BSC), Mónica Cano Abadía (BBMRI-ERIC)

**Content creators:** Mónica Cano Abadía, Melanie Goisauf, Kaya Akyüz (BBMRI-ERIC), Sarah Morgan (EATRIS), María Flores, Othmane Hayoun Mya, Iria Pose, Fatemeh Baghdadi, Gonzalo Parra, Claire Furtick (BSC)

#### Handbook

#### **Case studies**

- Definitions of 'sex' and 'gender'
- Beyond binary classifications
- Sex and gender in the postgenomic era
- Sex and gender dimension in single cell multiomics
- Integrating a gender-and sex-sensitive dimension into pharmaceuticals
- Integrating the sex and gender dimension into social impact of technology
- ...

#### Implementation guidelines

- Communication
- Leading interactive / discussion sessions
- Assessing / evaluating learning

# Day 1

Icebreaker & Introduction to the Question Board

# Definitions of sex and gender

## Sex and Gender Concepts

#### is an intersex condition that can follow multiple pathways throughout The Gender Spectrum development. Affected individuals have a chromosomal makeup of 46XY, like a typical biological male, but a genetic mutation causes a A transgender woman is a person who was A nonbinary person is someone who A transgender man is a person who was assigned female at birth based on his Sexuality refers to an deficiency of the hormone dihydrotestosterone. assigned male at birth based on her anatomy identifies as neither completely female individual's sexual orientation Patients' external anatomy can vary, so an nor completely male. Such an but who identifies as a woman. anatomy but who identifies as a man. individual might be assigned to either sex at birth, individual may identify with both but at puberty a surge of testosterone promotes A cisgender woman is a person who was A cisgender man is a person who was genders or neither gender, or they may **FACTORS THAT** assigned female at birth based on her assigned male at birth based on his Sexuality is also a spectrum male characteristics. As a result, patients be gender fluid, meaning their gender **DETERMINE SEX** who are raised as girls often end anatomy and who also identifies as a woman. fluctuates between female and male. anatomy and who also identifies as a man. up identifying as male. 45X 45X/46XY Chromosomes 46XY CONCEPTION mosaicism Genes Absence of SRY gene CYP21A2 AR gene SRD5A2 gene AMH or AMHR2 SRY gene SRY gene may be present gene mutation gene mutation mutation mutation gene mutation Klinefelter XX testicular disorder Congenital adrenal Mixed gonadal Androgen insensitivity 5-alpha reductase Intersex conditions > Turner syndrome biological female of sex development hyperplasia dysgenesis syndrome (AIS) syndrome deficiency Low dihydro-Hormones Elevated levels of Resistance to male hormones male hormones Female internal Female internal Female external Female external Enlarged clitoris, One testis, one dys-Ambiguous Male internal Predominantly Male internal Male internal Internal and Small testes; Slight variations BIRTH and external structures, male fused labia. genic (anomalously and external structures, atypical genitals male or ambiguous external sex and external male external and external from typical male and external genital structures internal structures internal structures; developed) gonad; (partial AIS) external structures: organs structures: short vagina: structures: uterus. structures structures such as anomalous genital structures undescended testes normal ovaries. female, male or male internal impaired ovarian fallopian tubes position of (complete AIS) ambiguous genitals structures development uterus, cervix urethral opening Genitals can be Dysgenic gonad Dysgenic gonad modified to look and testis can be can be removed more typically removed and and genitals genitals modified modified to look female to look female male Possible irregular Male hormones Secondary sex Slight variations Absent or limited Low testosterone: Male hormones Low estrogen Atypical amounts Low testosterone: Slight variations characteristics (primarily from typical female menstrual periods. pubertal of testosterone; small testes; infertility (low or normal from typical male (primarily testosterone); decreased fertility. levels): (such as breasts such as elevated development infertility, reduced characteristics breasts may such as low or facial hair) female secondary levels of male increased body develop facial hair, weak male sperm count male secondary characteristics muscles; breasts characteristics characteristics hormones may develop Hormonal birth Infertility; Hormone hormone therapy control can treatment can regulate effects can promote female promote male characteristics characteristics of male hormones

5-alpha reductase deficiency

#### The Gender, Sex, and Sexual Orientation (GSSO) ontology

https://www.ebi.ac.uk/ols4/ontologies/gsso



#### SEX

Sex refers to a set of **biological attributes** in humans and animals. It is primarily associated with physical and physiological features **including chromosomes**, **gene expression**, **hormone levels and function**, **and reproductive/sexual anatomy**. Sex is usually categorised as female or male but **there is variation in the biological attributes** that comprise sex and how those attributes are expressed.

CIHR Institute of Gender & Health. What Is Gender? What Is Sex? 2020. Available online: https://cihr-irsc.gc.ca/e/48642.html

#### **GENDER**

Gender refers to the **socially constructed** roles, behaviours, expressions and identities **of girls, women, boys, men, and gender diverse people**. It influences how people perceive themselves and each other, how they act and interact, and the distribution of power and resources in society. Gender identity is **not confined to a binary (girl/woman, boy/man)** nor is it static; it exists along a **continuum** and can **change over time**. There is **considerable diversity** in how individuals and groups understand, experience and express gender through the roles they take on, the expectations placed on them, relations with others and the **complex ways** that gender is **institutionalised** in society.

CIHR Institute of Gender & Health. What Is Gender? What Is Sex? 2020. Available online: https://cihr-irsc.gc.ca/e/48642.html

## Storyboarding

# A day in the life of a PhD student in Life Sciences



source: unsplash.com

**Presenter:** "To investigate the genetic basis for sexual orientation, we performed a genome-wide association study, discarding individuals with unmatched biological and self-identified sex."

**PhD student:** "Did you exclude transgender, intersex, and other groups within the queer community?"

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Excluding standard practises in science

Inappropriate terminology

Questioning background assumptions

Shifting social responsibility onto others

#### To learn more:



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nature > humanities and social sciences communications > articles > article

Article Open Access Published: 04 August 2020

## Moving back to the future of big data-driven research: reflecting on the social in genomics

Melanie Goisauf ☑, Kaya Akyüz ☑ & Gillian M. Martin

<u>Humanities and Social Sciences Communications</u> **7**, Article number: 55 (2020) <u>Cite this article</u>

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**Expert 2:** "Good. The Commission is obsessing over gender lately."

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source: unsplash.com

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Importance of inclusion in health

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Binary sex categories

Avoid negative impact on human lives

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World View | Published: 23 June 2021

## Improving understanding of cancer in the gender diverse population

Alison M. Berner □

Nature Reviews Cancer 21, 537-538 (2021) Cite this article

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Seek training

Gender discrimination

**Postdoc:** "Look, don't worry about it. I'll ask Adam for help. He has more experience."

Not provide training

#### To learn more:



INCORPORATING THE SEX AND GENDER PERSPECTIVE IN RESEARCH CONTENT: A TOOLKIT

Community Hipàtia



# Individual Reflection &

Preparation to Day 2

# Day 2

## Individual Reflection

# Training Plan Proposal Ideation

# Back to the Question

Board

# Next steps

# Train the Integration of the sex and gender dimension in life sciences research

## Trainer

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