Sex, Gender Identity, Sexuality, and Disability

GENE 220

Justin Gomez-Stafford, TA
Pronouns: he/they

Alvina Adimoelja, TA
Pronouns: she/her

Ronit Mazzoni, Guest Speaker
Pronouns: she/her

Learning Goals

1. Distinguish the relationship between biological sex, gender identity, and sexuality through discussion of the role genetics plays in these concepts.

2. Examine the medicalization (called a disorder) of identities and how it impacts society, medicine, and research.

3. Critique genetics studies and practices from a disability-rights perspective.

Ground Norms

- Be respectful of conflicting opinions
- Commit to learning and growing
- **Compassionate listening**
- No talking over anyone
- **Make space, take space**
- **What is said in the room, stays in the room (confidentiality)**
- Use “I”statements for sensitive topics
- Don’t equate people with stereotypes
- Don’t rush to judge others

Overview

5 min: Warmup word clouds for biological sex, gender identity, and sexuality

10 min: Didactic lesson for biological sex, gender identity, and sexuality

25 min: Activity 1: discussion on genetics + biological sex, gender identity, and sexuality

10 min: Primer for medicalization of identity

20 min: Activity 2: sex, genetics, and athletics activity

30 min: Primer on disability + guest speaker, Ronit Mazzoni MS, LCGC, to chat about disability in genetics practice

Warmup Word Clouds (5 mins)

What comes to mind when you think of biological sex?

What comes to mind when you think of gender identity?

What comes to mind when you think of sexuality?

Didactic Lesson (10 mins)

Definitions of biological sex, gender identity, and sexuality

Discussions around sex, gender and sexuality are highly politicized

Style

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battleg

By **Monica Hesse**
April 1, 2016

2023 LEGISLATIVE SESSION

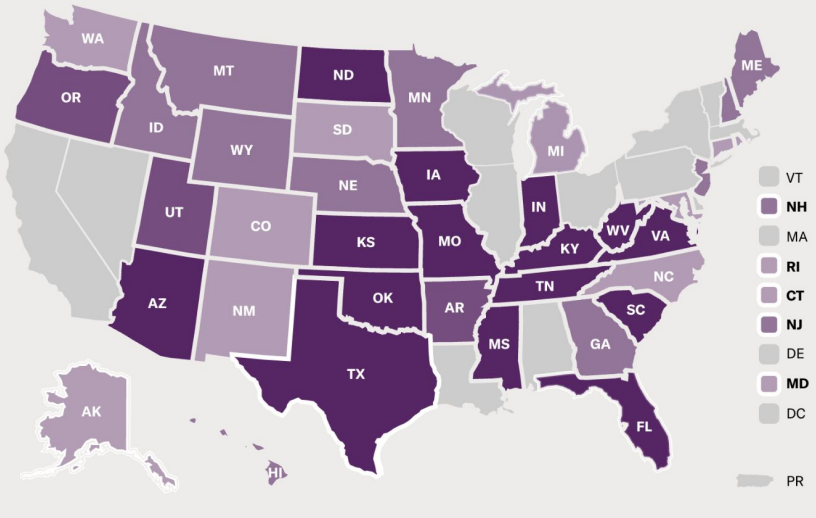
The ACLU is tracking 385 anti-LGBTQ bills in the U.S.

Choose a state on the map to show the different bills targeting LGBTQ rights and take action. While not all of these bills will become law, they all cause harm for LGBTQ people.

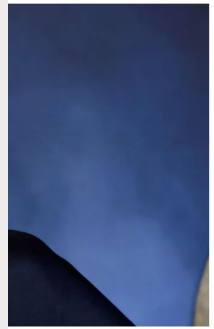
View past legislative sessions.

Bills per state

0 1-3 4-6 7-9 10+



J.K. Rowling responds to trans tweets



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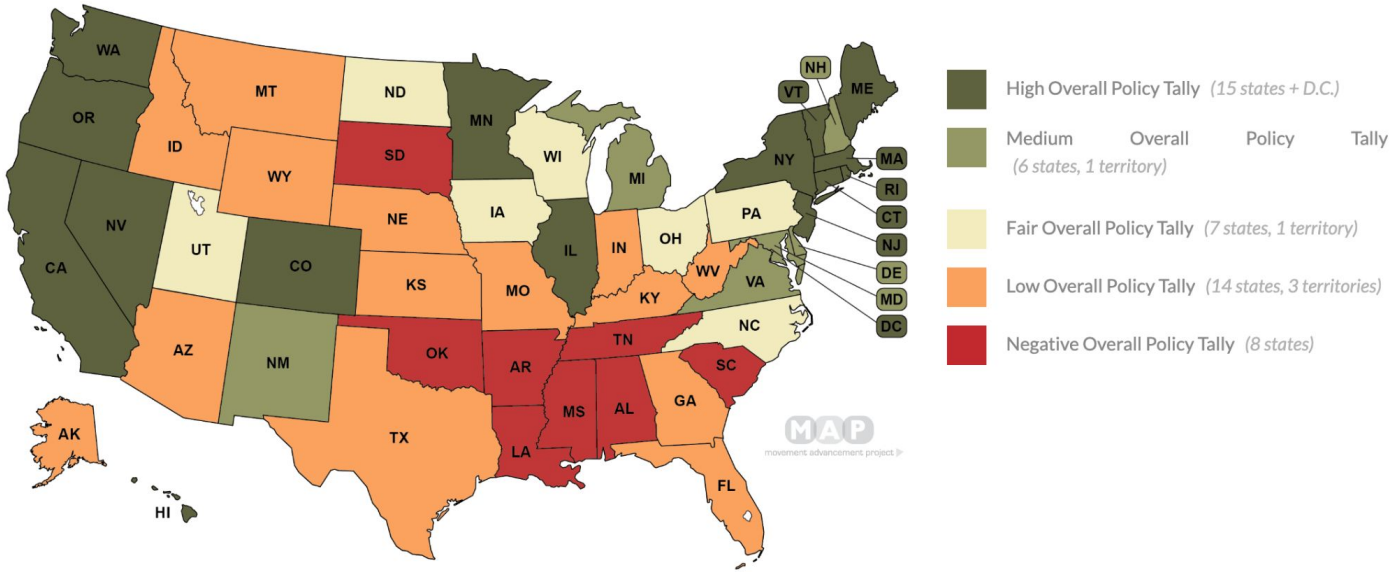
Discussions around sex and gender are highly politicized

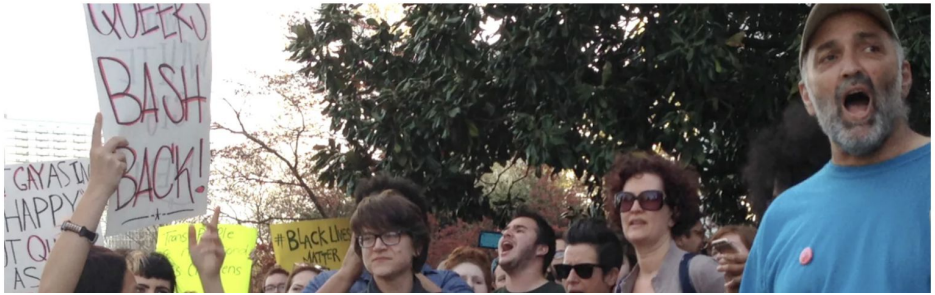


https://transgenderlawcenter.org/equalitymap

Style

How the bathroom became a political battleground for civil rights

By **Monica Hesse**
April 1, 2016



JK Rowling responds to trans tweets criticism

11 June 2020

JK Rowling has said she spoke out about transgender issues in part due to her personal experience of domestic abuse and sexual assault.

The Harry Potter author addressed criticism of her response to an article that described "people who menstruate".

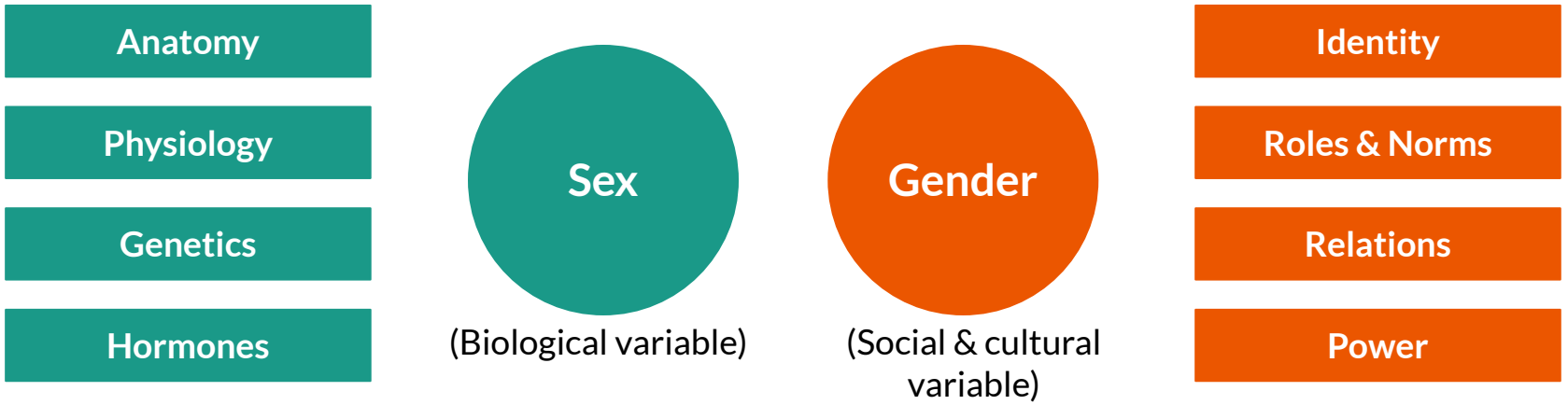
In a **lengthy blog**, she wrote her interest in trans issues stemmed from being a survivor of abuse and having concerns around single-sex spaces.

Definitions

- **Sex:** Sex is a multidimensional biological construct based on anatomy, physiology, genetics, and hormones. (These components are sometimes referred to together as “sex traits.”)

Definition taken from https://orwh.od.nih.gov/sex-gender

Dimensions of sex and gender



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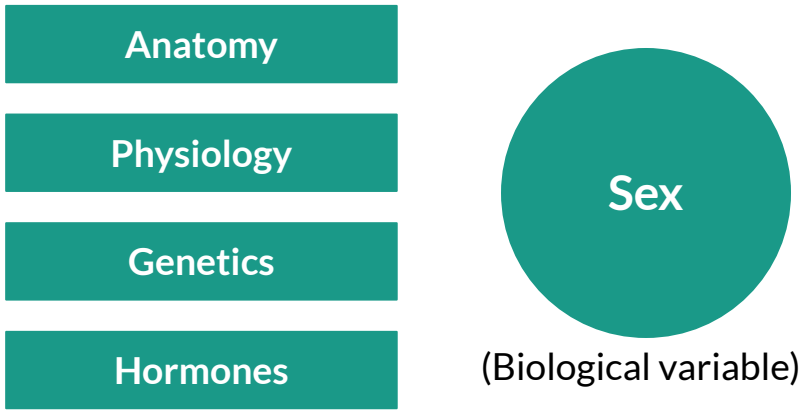
Dimensions of sex



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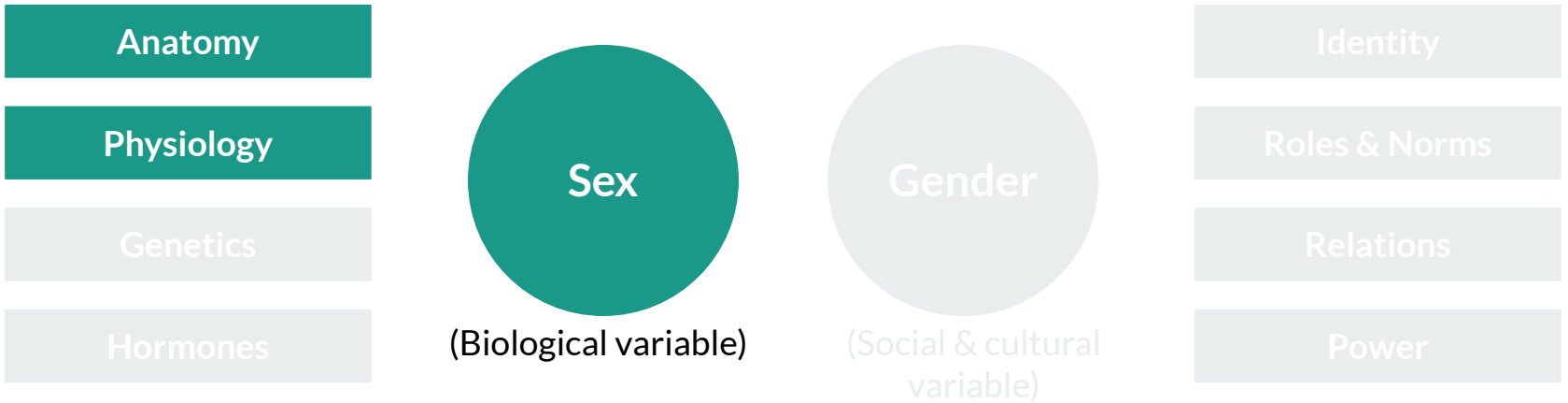


E.g. genitalia, body shape, voice pitch, body hair

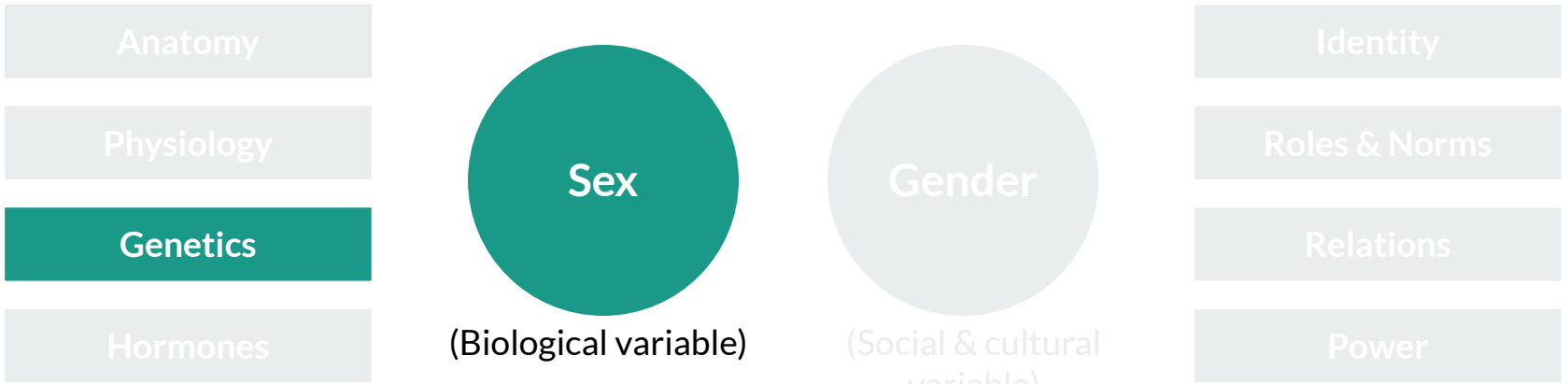
Example: Persistent Müllerian duct syndrome

Shocking MRI Reveals 37-Year-Old Man Could Potentially Carry A Child

He thought he was being tested for bladder cancer when doctors found that he has a womb.

BY MARISA RUSSELL PUBLISHED: FEB 9, 2015

Dimensions of sex



Example: Barr body

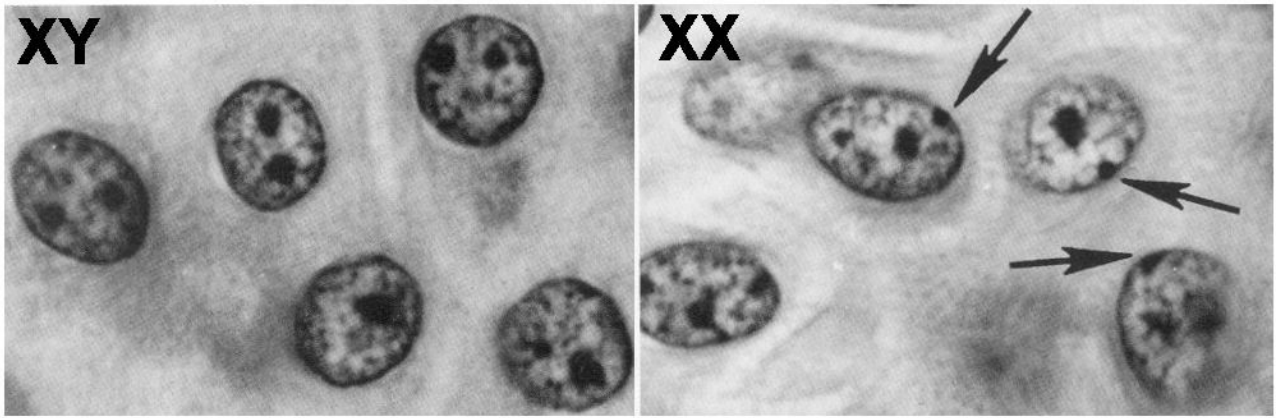
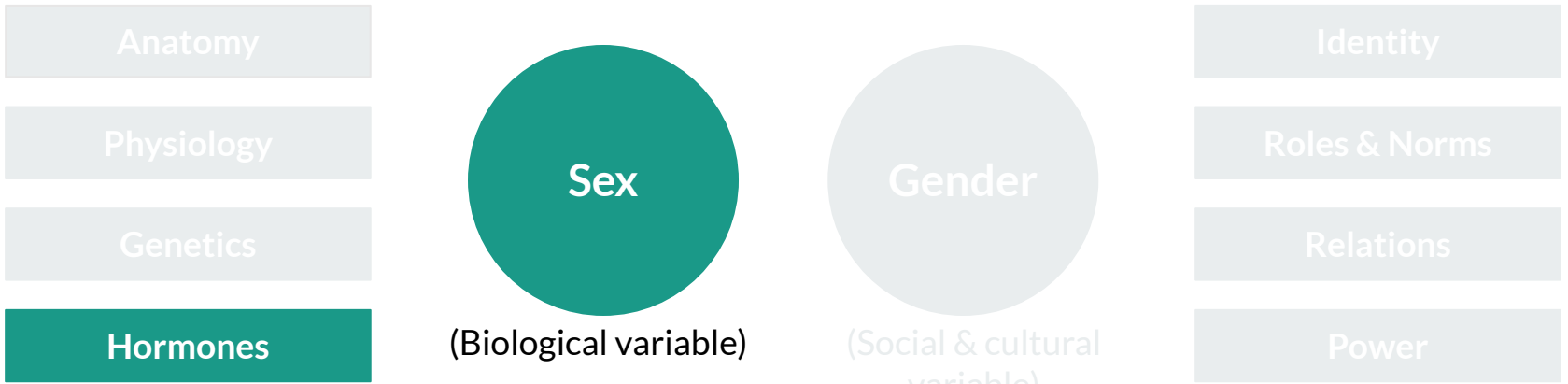


Image source: https://www.mun.ca/biology/scarr/Barr_Bodies.html

Example: SRY gene

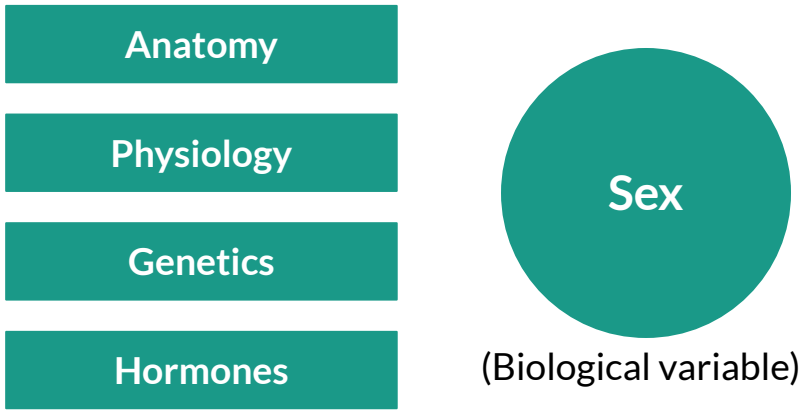
- SRY (Sex-determining region Y gene)
- Found only on the Y chromosome
- Involved in development of male anatomy and physiology

Dimensions of sex



E.g. testosterone, estrogen

Biological sex as a spectrum



Intersex is a general term used to refer to individuals born with, or who develop naturally in puberty, biological sex characteristics that are not typically male or female.

Adapted from https://orwh.od.nih.gov/sex-gender
Definition from https://www.nih.gov/nih-style-guide/sex-gender-sexuality

Example: Androgen Insensitivity Syndrome

- XY chromosomes
- Insensitive to testosterone
- Presents as biologically female
- Example: María José Martínez-Patiño

Example: Androgen Insensitivity Syndrome

As I was about to enter the January, 1986, national championships, I was told to feign an injury and to withdraw from racing quietly, graciously, and permanently. I refused. When I crossed the line first in the 60 m hurdles, my story was leaked to the press. I was expelled from our athletes' residence, my sports scholarship was revoked, and my running times were erased from my country's athletics records. I felt ashamed and embarrassed. I lost friends, my fiancé, hope, and energy. But I knew that I was a woman, and that my genetic difference gave me no unfair physical advantage. I could hardly pretend to be a man; I have breasts and a vagina. I never cheated. I fought my disqualification.

Source: "Personal Account: A woman tried and tested", Prof María José Martínez-Patiño, MD

Definitions

- **Gender:** Gender can be broadly defined as a multidimensional construct that encompasses gender identity and expression, as well as social and cultural expectations about status, characteristics, and behavior as they are associated with certain sex traits.

Definition taken from https://orwh.od.nih.gov/sex-gender

Dimensions of gender

Gender can be broadly defined as a multidimensional construct that encompasses gender identity and expression, as well as social and cultural expectations about status, characteristics, and behavior as they are associated with certain sex traits.

Gender

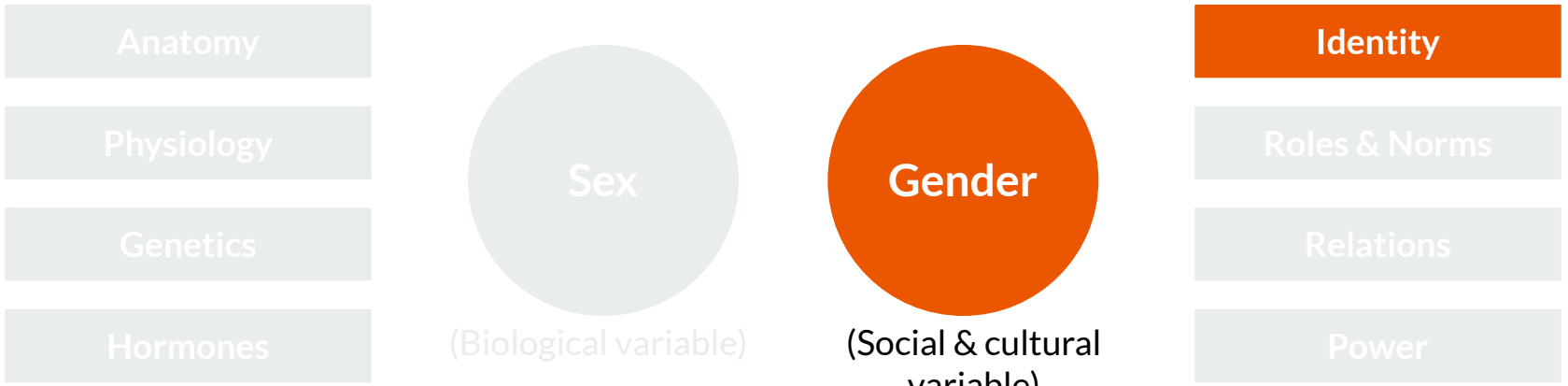
(Social & cultural variable)

- **Identity**
- **Roles & Norms**
- **Relations**
- **Power**

Adapted from https://orwh.od.nih.gov/sex-gender

Dimensions of gender

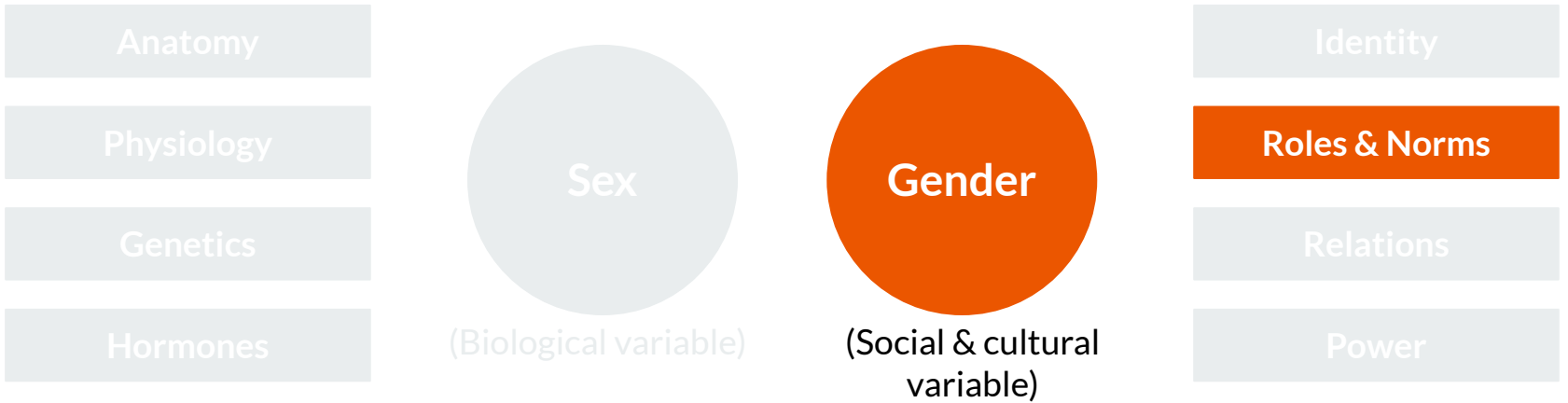
Woman, man, trans man, gender-diverse, nonbinary, etc.



Adapted from https://orwh.od.nih.gov/sex-gender

Dimensions of gender

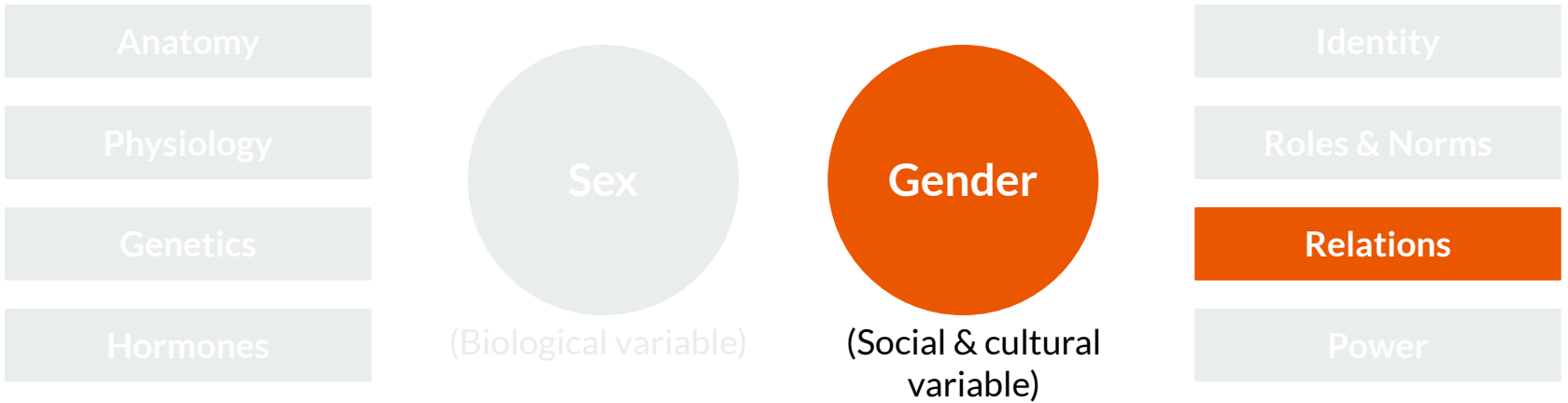
Clothing, activities, behaviors, etc.



Adapted from https://orwh.od.nih.gov/sex-gender

Dimensions of gender

Incorporation, participation, acknowledgement, engagement, etc.



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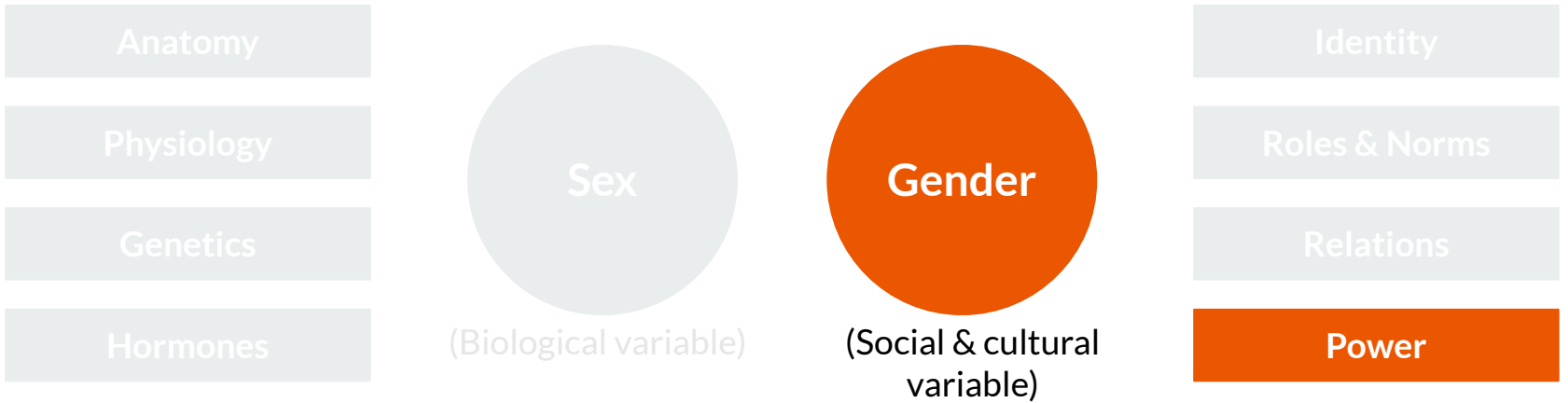
Dimensions of gender

Sexism, gender-based violence, patriarchy, over emphasis on a gender/sex binary, etc.



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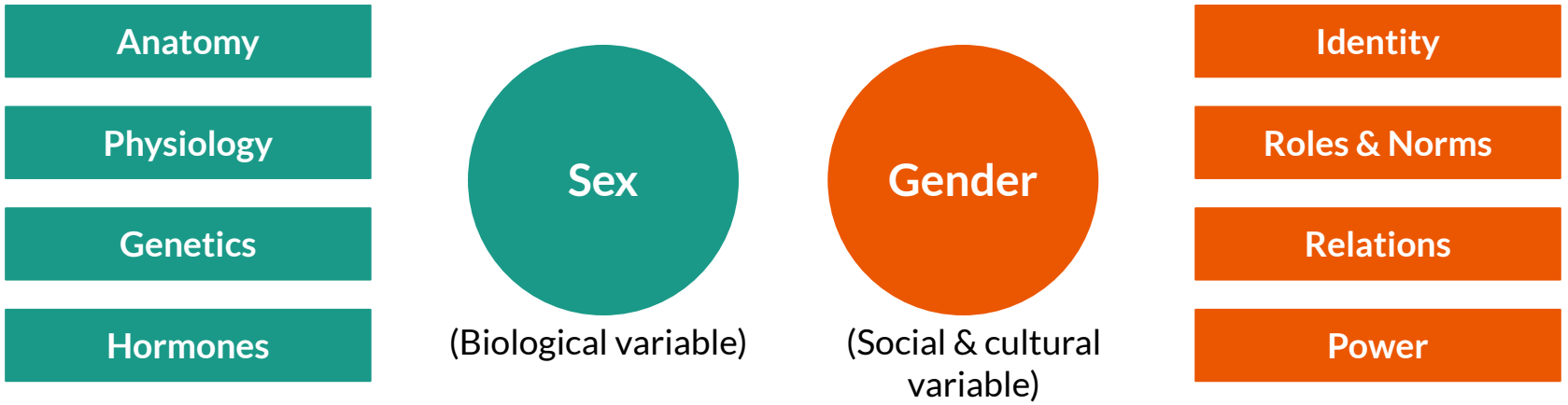
Dimensions of sex and gender



Adapted from https://orwh.od.nih.gov/sex-gender

Definitions

Sexuality: A multidimensional construct encompassing emotional, romantic, and sexual attraction, identity, and behavior.

- "What is considered "normal" in terms of sexual behaviour is based on the mores and values of the society." - Introduction to Sociology
- Sexual attitudes are socialized by:
  - Family, education system, peers, media, culture, religion, etc.

Definition taken from - Measuring Sex, Gender Identity, and Sexual Orientation 2022 and https://opentextbc.ca/introductiontosociology/

Considerations for Sex, Gender, and Sexualtiy

- “Sex, gender, and sexual orientation are core aspects of identity that shape opportunities, experiences with discrimination, and outcomes through the life course; therefore, it is crucial that measures of these concepts accurately capture their complexity.”
  - Measuring Sex, Gender Identity, and Sexual Orientation 2022
- Existence as a:
  - Spectrum
  - Intersectional Trait
  - Evergrowing Aspects of Humanity

Example: biological bases for intersex traits

- Intersex traits occur in up to 1 in 100 people (with estimates varying due to differing definitions of what counts as intersex)

- Two broad categories:
  - Sex chromosome aneuploidy (e.g. Turner syndrome (X), mosaicism)
  - Typical combination of sex chromosomes but possessing other genetic variants that affect how the reproductive system develops (e.g. Androgen Insensitivity Syndrome)

Dimensions of Sex (Biological Variable) & Gender (Social and Cultural Variable)

NIH National Institutes of Health
Office of Research on Women's Health

Activity 1: Discussion (25 mins)

- ~5 mins reading
- ~10 mins small group discussion
- ~10 mins classroom discussion

Discussion Questions (Small Groups, 10 mins)

1. For each of the reading materials, define biological sex/gender identity/ sexuality. How does your lived experience impact the definitions?

2. Discuss:
    a. Biological sex: how does current research understanding describes biological sex (e.g. what are the biological mechanisms that determine sex?)
    b. Gender identity (2 files): how should researchers engage with the definitions of biological sex and gender identity (e.g. when should they consider biological sex vs gender identity in their research)?
    c. Sexuality: how does research into the genetics of sexuality impact the definition of sexuality?

Discussion Questions (Class Shareout, 10 mins)

- Share the key takeaways from small group discussion (e.g. definitions and how these definitions relate to research)

Key takeaway points (biological sex)

- While the dichotomy of two biological sexes is often presented as an objective truth, the biology is a lot more complicated
- Intersex individuals are not extremely uncommon
- “Social pressure to conform to binary model”

Key takeaway points (gender identity)

- Accounting for biological sex and gender identity in research has the potential to generate more accurate and equitable research
- It is important to keep in mind the differences between the definitions of biological sex and gender identity, and in which contexts these two factors are relevant

Key takeaway points (sexuality)

- A case study on how genetics research can be applied in potentially harmful ways
- Difficulty in regulating direct-to-consumer genetic testing–whose responsibility is it?

Didactic Primer for Medicalization of Identity

Medicalization of Identity

- “Medicalization refers to the process in which conditions and behaviors are labeled and treated as medical issues.” - NYU Medicine
  - Autism, ADHD, Dyslexia
  - Sexuality (Homosexuality) and Trans/Non-Binary People
  - Intersex Corrective Surgeries (for no medical reason)

Medicalization of Identity

- Establish a “fixed” way of being
  - Usually though the use of science and biology
    - Gender = Biological Sex

Medicalization of Identity

- Rhetoric of science to justify social and political choices/identities
  - Deferring from socially acceptable ways of being = errors in personhood that needs a form of correction
    - Social perceptions often influence what is “acceptable”

Activity 2: Discussion (20 mins)

- ~10 mins reading and small group discussion
- ~5 mins classroom share out

Activity Primer

Gender tests for Olympians: A relic that persists

Give this article

By Katie Thomas
July 30, 2008

By the time they arrive in Beijing, most athletes have resigned themselves to the possibility of undergoing a battery of tests for banned substances, like anabolic steroids and certain cough medicines.

But some female athletes may find they are asked to submit to an entirely different examination - one that will test whether they are, in fact, women.

At first, women were asked to parade nude before a panel of doctors to verify their sex. At the 1968 Olympics in Mexico City, officials switched to a chromosomal test.

The tests never unmasked a man posing as a woman, but they did turn up several athletes born with genetic defects that made them appear - according to lab results, at least - to be men. In 1967, a Polish sprinter, Ewa Klobukowska was barred from the sport because she failed the chromosomal test, even though she had passed the nude test a year earlier. In the 1980s, the Spanish hurdler Maria José Martínez Patino was disqualified because the test revealed, to her surprise, that she was born with a Y chromosome. Her eligibility was reinstated in 1988 after a public dispute.

You are the doctor responsible for verifying the sex of competitors in the women's 800m race in an international track and field competition. Using the information given for each athlete, decide whether they pass or fail each type of sex verification test, and conclude whether they should be allowed to participate in the women's race.

Four tests for female biological sex

	Pass (Female)	Fail (Male)
Anatomical Test	Female genitals fully formed	Masculinized genitalia
Barr Body Test	Barr body present	Barr body absent
SRY Gene Test	SRY gene absent	SRY gene present
Hormone Level Test	Testosterone level less than 5 nmol/L	Testosterone level above 5 nmol/L

Athletes' test results

Athlete 1	**Physical characteristics:** female genitals fully formed **Genetic test findings:** Barr body absent, SRY gene absent **Hormone test findings:** Testosterone (T): 1.2 nmol/L
Athlete 2	**Physical characteristics:** genitals neither typically male nor typically female **Genetic test findings:** Barr body absent, SRY gene present **Hormone test findings:** Testosterone (T): 12 nmol/L

Small Group Discussion - 10 Minutes

Small Group Discussion

- Share your decisions with one another. Reach a group decision.
- Which test play a greater role in your decision making, if any? (e.g. did genetics play a role in your decision making?)
- Did you wish you had more information or was the information you had enough?

Class share out - 5 Minutes

Class Discussion

- Describe your thought process. Did you wish you had more information or was the information you had enough?

- What impact do you think your decision could have on the lives of the athletes involved?

Primer on Disability (5 mins)

Key Points From Articles

If Not Now, Then When?

Taking Disability Seriously in Bioethics

- Questions to Consider:
  - What thoughts came to mind when reviewing these articles?
    - Questions you still have?
    - Concerns or comments of what was discussed?
  - How do you see the points discussed in the articles, intersecting with your research and/or clinical practice?

Guest Speaker, Ronit Mazzoni MS, LCGC, to Chat About Disability in Genetics Practice (30 mins)

https://stanford.zoom.us/j/92126010955?pwd=aTU0RzJXOTg1Z2NaZjlCL0s3cVZhZz09&from=addon

Next Session: Screening and Selection

- Understand the role of eugenics in the development of the prenatal genetic testing field
- Summarize the current landscape of prenatal genetic testing, carrier screening, embryo selection and gene editing
- Extrapolate the current and future implications of the currently available technologies with a focus on reproductive choice and disability rights
- Evaluate how ethics can help guide society towards ethical application of these technologies