

Women in physics: Bound by the ropes of motherhood expectations and the gendered labor market

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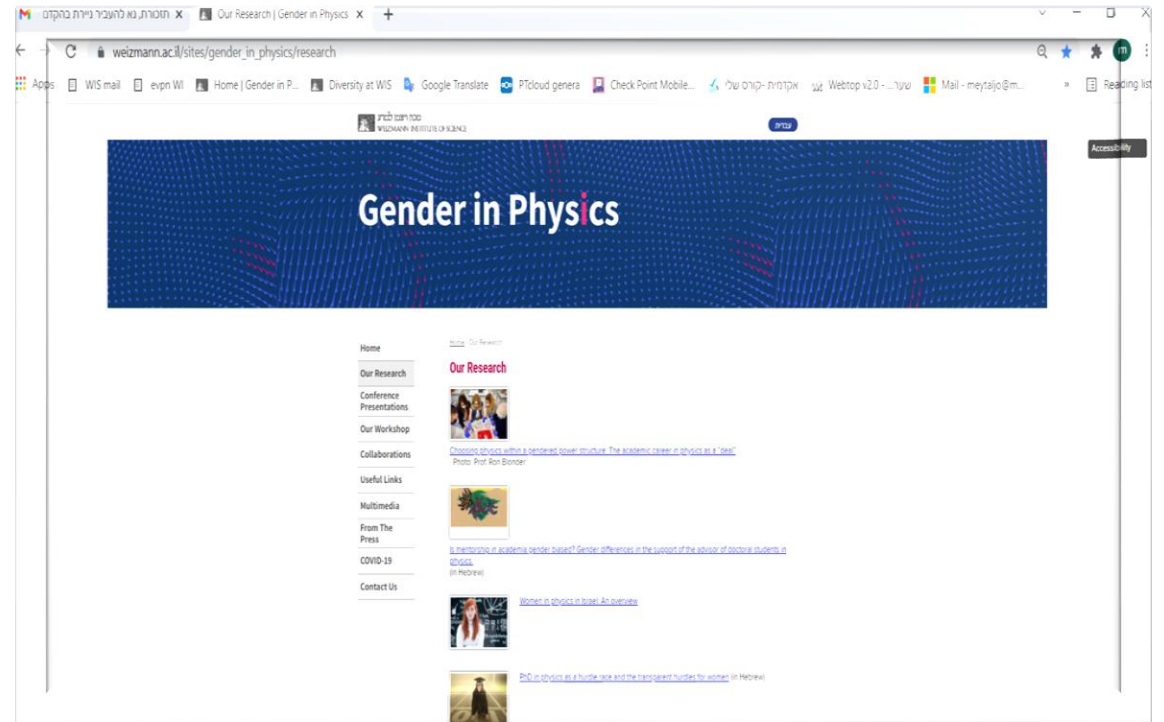
HEAD OF DIVERSITY & INCLUSION OFFICE

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GENERA project management team

OUR RESEARCH



Prof. Yossi Nir, Particle physics and Astrophysics, WIS
Dr. Meytal Eran Jona, Head of Diversity and Inclusion Office

RESEARCH QUESTIONS

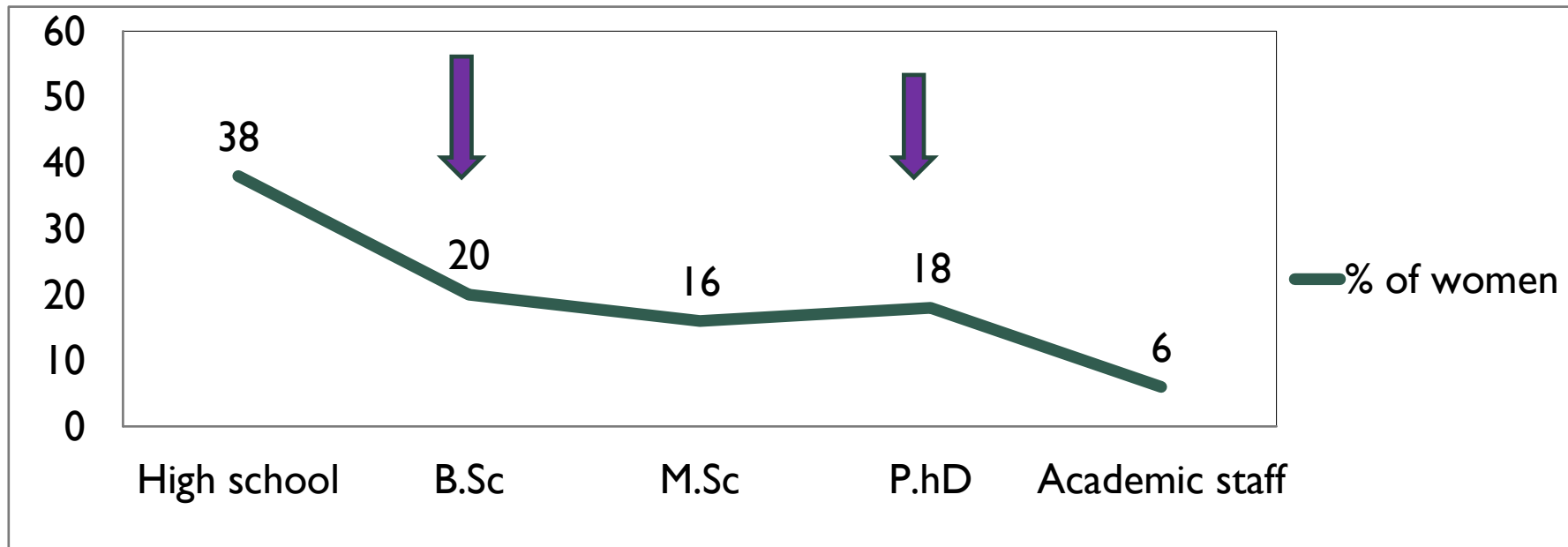
1. What are the pros and cons of an academic career in the eyes of graduate students (PhD and postdoc)?
2. What is the most significant decision junction for choosing an academic career?
3. What are the women key considerations for going on a postdoc & in what way are they influenced by gender?



Sabrina Pasterski, 22, Harvard: “the Next Einstein”

WOMEN PHYSICS TRACK

- Physics as an academic field is characterized by gender imbalance, that persists in most western democracies.
- Israel: 1/6 choose physics

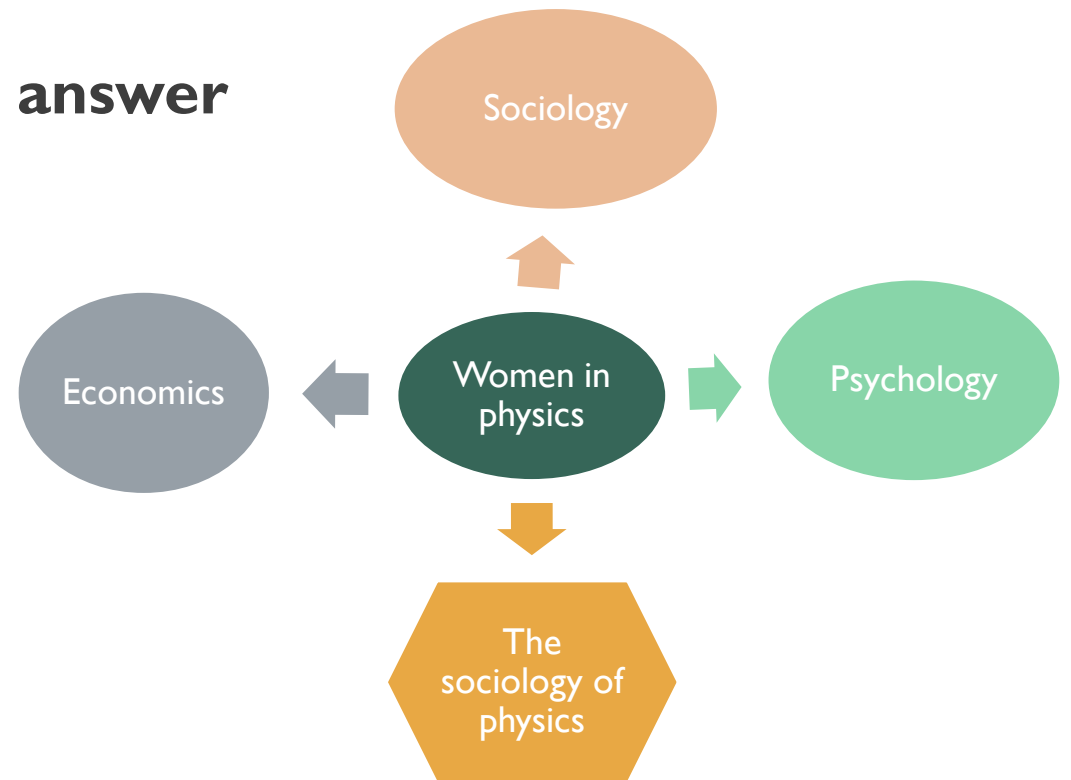


THE THEORETICAL FRAMEWORK

We need an inter disciplinary approach to answer complex research questions.

Studying the intersection between:

- The individual level
- The organizational level
- The labor market level



METHODOLOGY

Mixed methods

PhD and Post Doc interviews:

- Population: n=**25** female PhD students, age 26-36, married (21), mothers (12).
- Post Docs: n=**13** female postdocs, age 30-46, almost all in relationship, only 2 without children.
- Face to face in depth interviews, recorded (1-2.5 hours).
- Analysis :Atlas.it software, grounded theory.

PhD students survey- nationwide

- Population: all physics students in Israel N=404; n= **267 (66%)** n=60 Women, n=207 Men.
- Self administered survey, 105 questions (Dec. 2018 - Feb. 2019).
- Sample errors: total population: $\pm 3.6\%$. W: $\pm 3.2\%$. M: $\pm 4.3\%$.

THE POSTDOC JUNCTION – THE GENDERED “DEAL”

Women decisions are shaped within a **gendered structure** in a reality that **reduces** their **freedom of choice** and raises the perceived **economic price** of pursuing a post doctoral training abroad.

The organizational level

Unequal
competition
in a
gendered
workplace

Post as a
disruption of
the gender
order

The socio-cultural level

The individual level

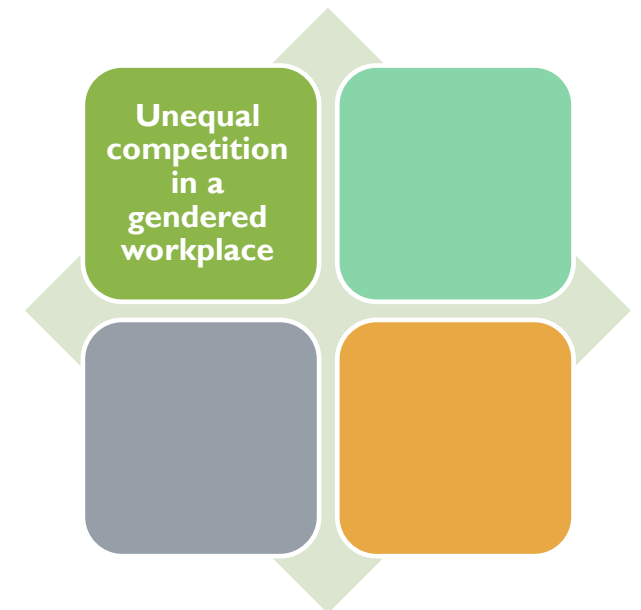
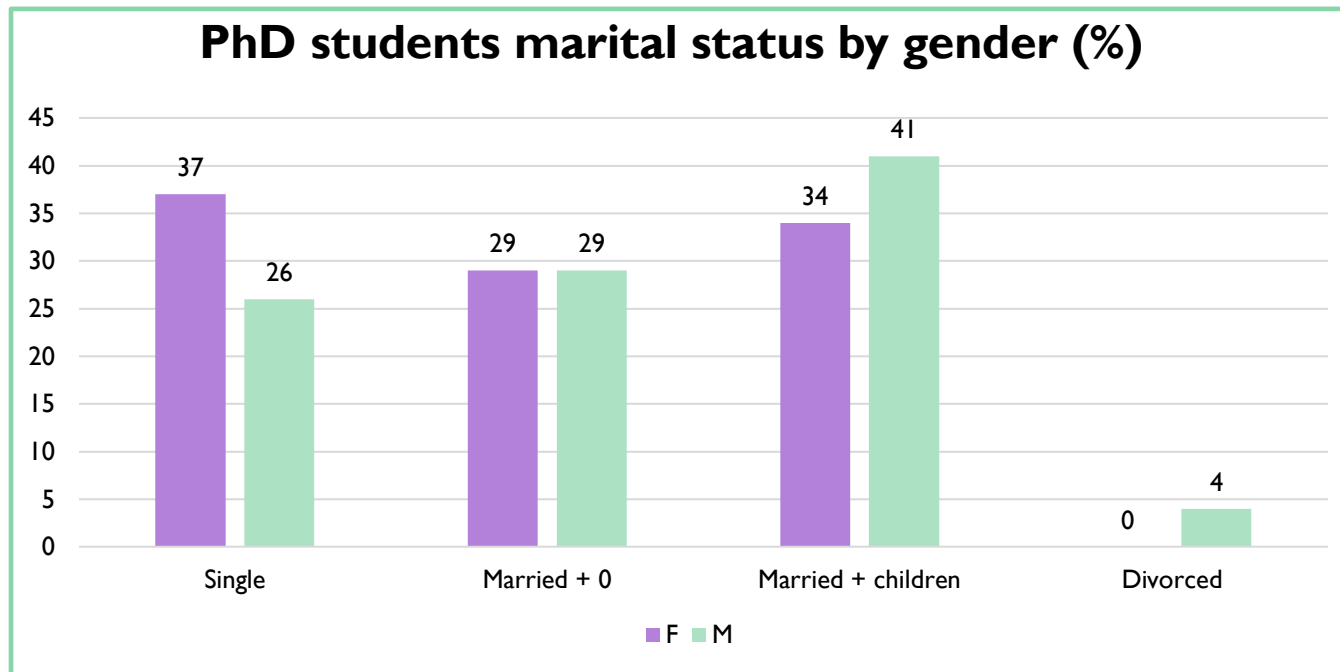
Prioritizing
the
husband's
career

Less
profitable
economic
deal

The labor market level

A GENDERED WORKPLACE

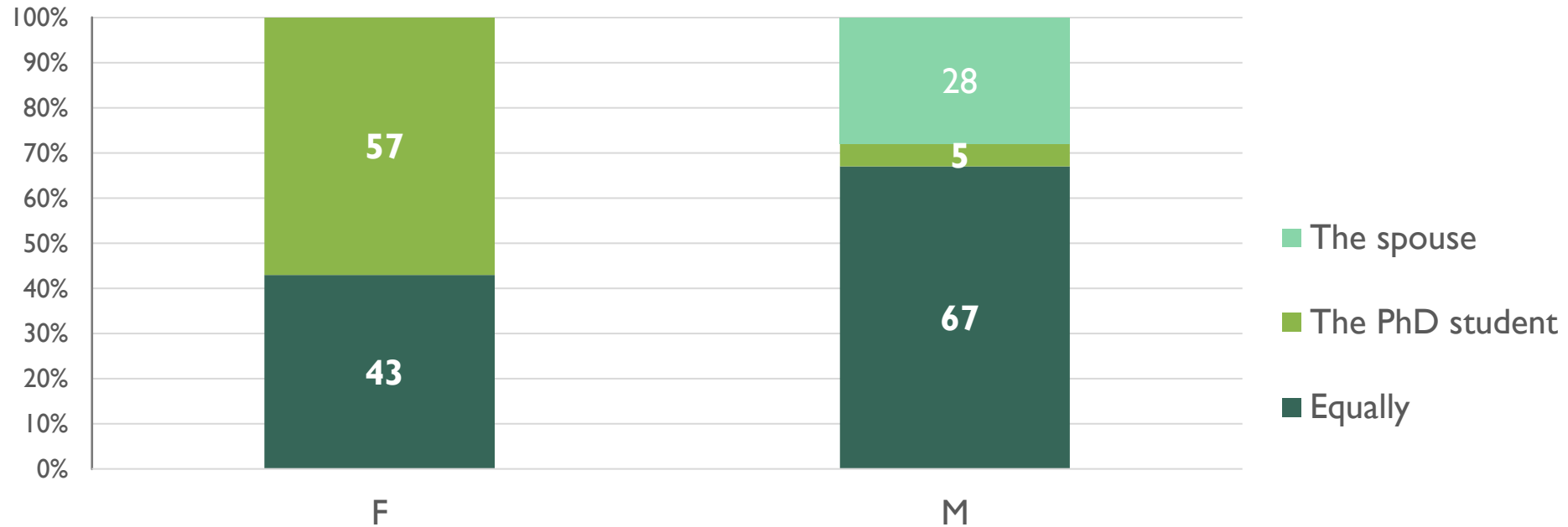
➤ Israel as a familial society. Most students are married, 40% have children



A GENDERED WORKPLACE

WHO IS RESPONSIBLE FOR CHILDCARE?

Who is responsible for most child care work?
(%, by gender, n=115)

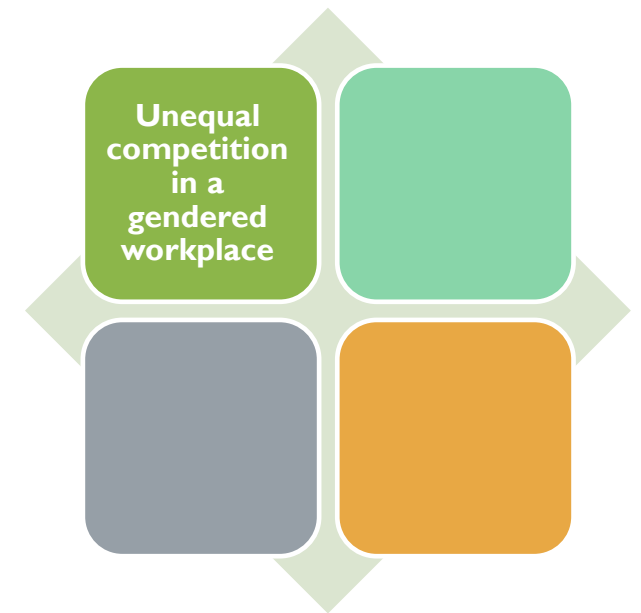


57% of female, but only 5% of male students are the primary child care giver

A GENDERED WORKPLACE

"I feel the gender difference mainly from **having far fewer hours to work than my friends from the lab** and it becomes a **tough gap** .. **You are competing against** them, and the comparison is always between you and a **man** who does not have **this "problem."** (childcare)

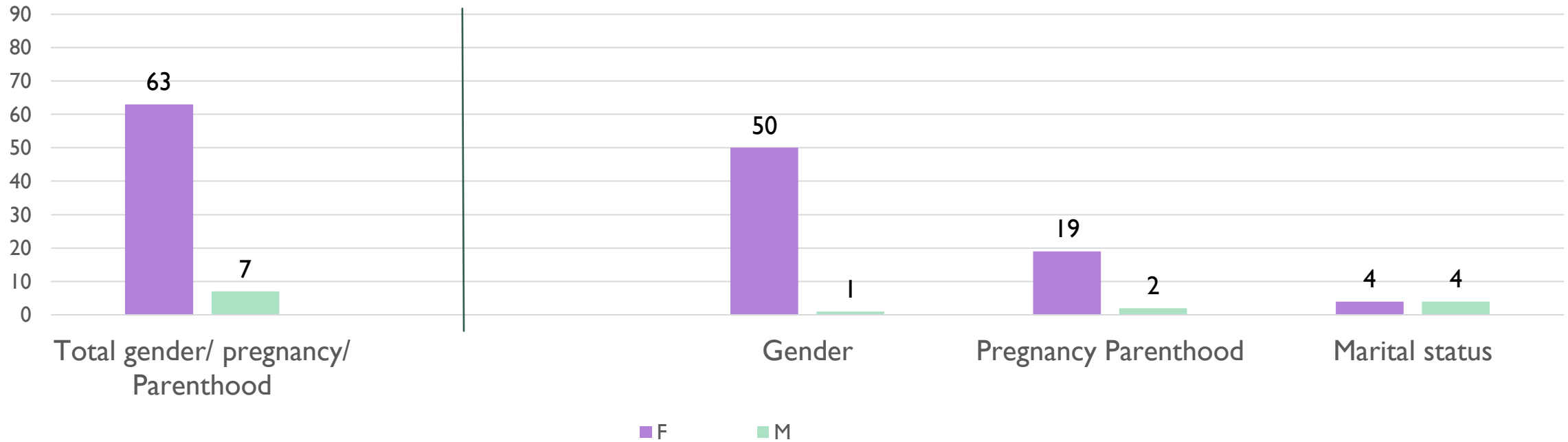
(T. married+ I + pregnant).



A GENDERED WORKPLACE

GENDER DISCRIMINATION

Have you ever felt discriminated against: gender, pregnancy and parenthood, marital status
(%, response positively, by gender)

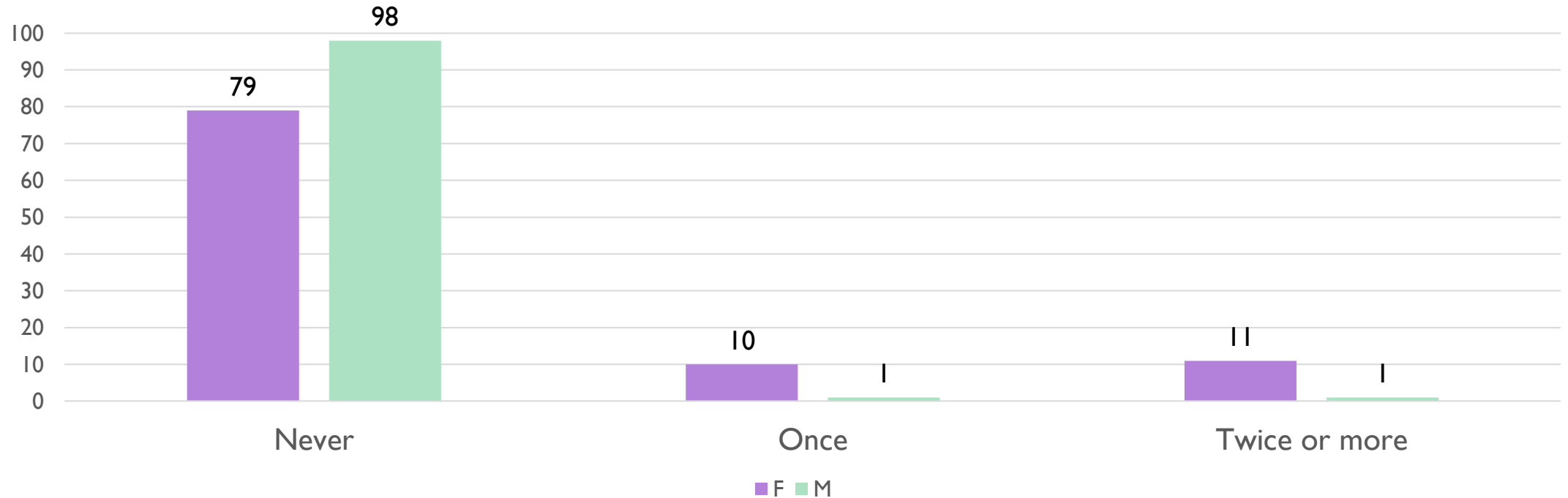


The most common basis for discrimination was GENDER

A GENDERED WORKPLACE

SEXUAL HARASSMENT

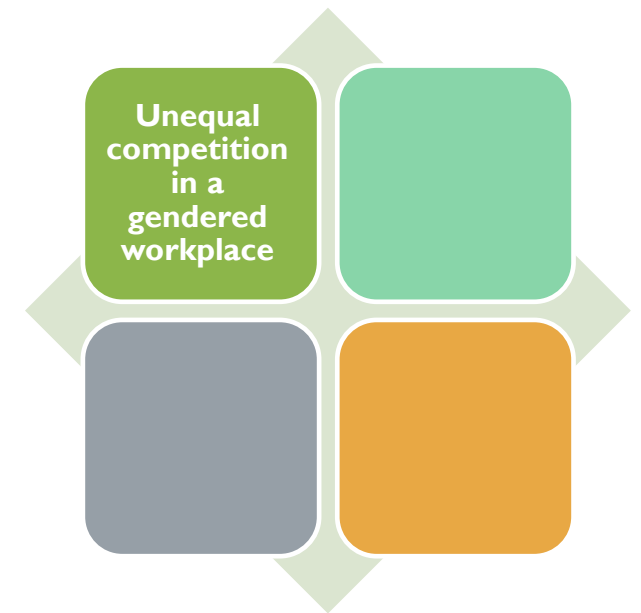
Did you experience sexual harassment during your academic studies? (% response positively, by gender)



21% of female and 2% of male students have been sexually harassed during their studies

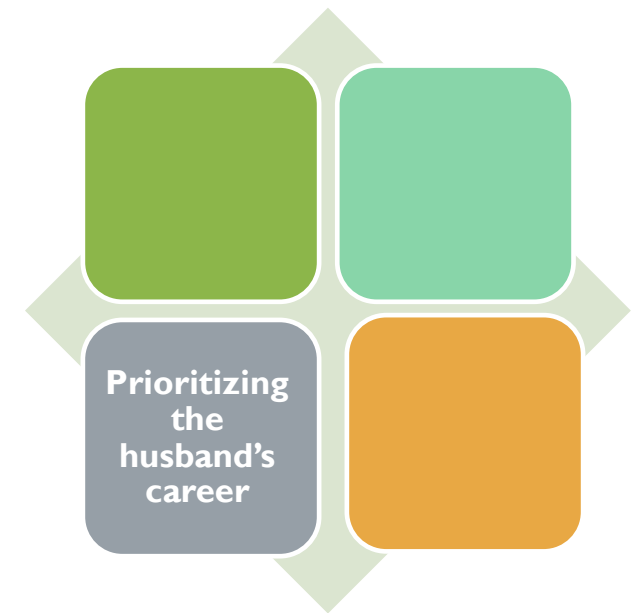
UNEQUAL COMPETITION IN A GENDERED WORKPLACE

- The “family work” places double burden on female students.
- Women face extra hurdles
- **In the competition against their male colleagues, being a mother is a disadvantage.** Motherhood moves women away from the “ideal worker” model and labels them as less career committed.



PRIORITIZING THE HUSBAND'S CAREER

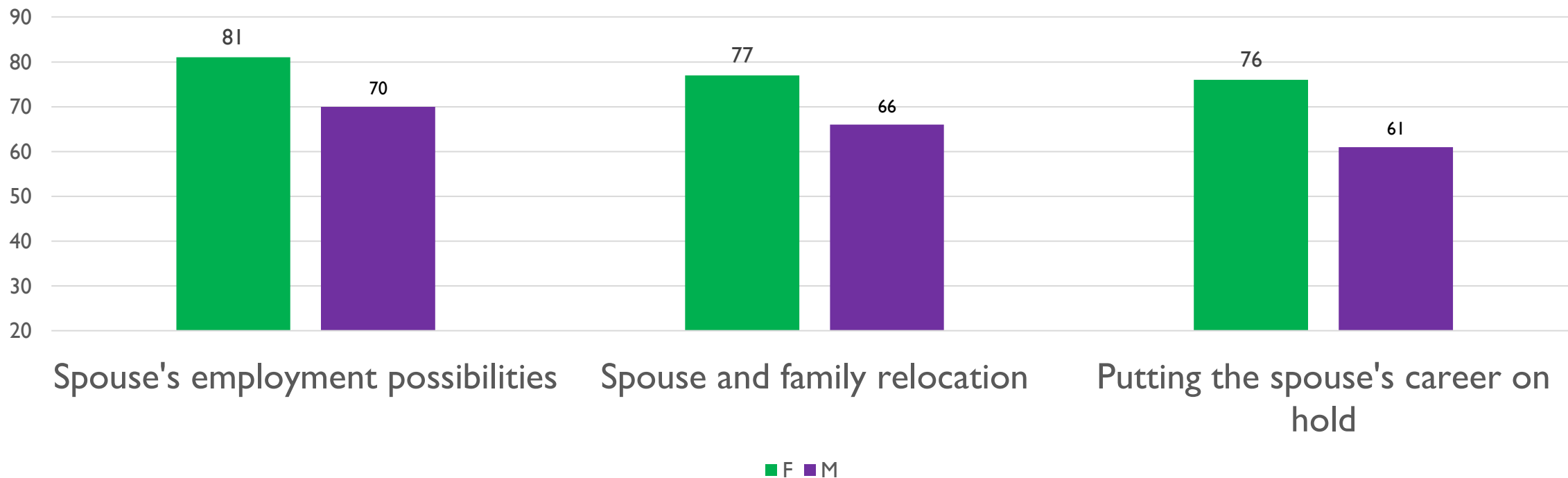
- Internalizing the rules of the gendered labor market creates a reality in which **women give priority and preference** to their husband's career.
- The career sacrifices of the spouse **play a prominent role** in women-postdocs considerations.



PRIORITIZING THE HUSBAND'S CAREER

FAMILY & ECONOMIC CONSIDERATIONS FOR POSTDOC ABROAD

If you are considering going abroad for a postdoc, how central is this consideration in your decision? (% central consideration, by gender)



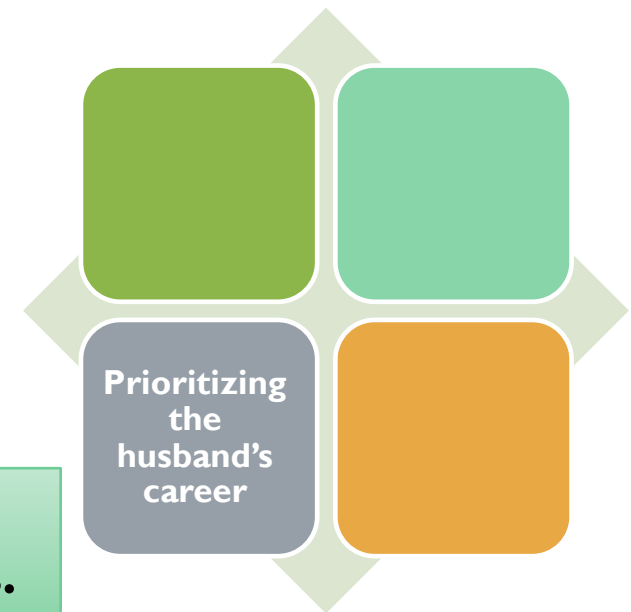
Women give greater weight to the considerations of their spouse's career

PRIORITIZING THE HUSBAND'S CAREER

“After giving birth there is a **shuffle of emotions and insights about life**. As much as I was a career woman, **I want to be a mom** too.. So, if you are not a career women anymore, and your career is not considered anymore as the leading,.. it's **easier to cross to the other side and say: I will follow the husband; the husband is the leader.**”

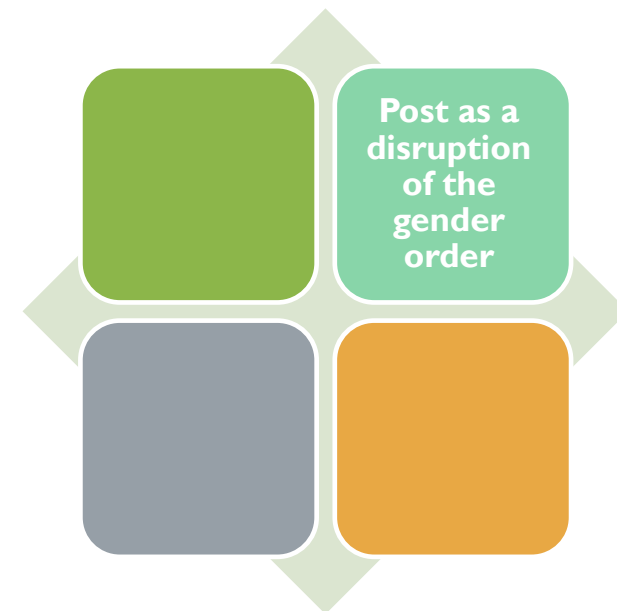
(M, Married + 2)

- **Prioritizing the husband's career is constraining women options and pushes women out of the race towards an academic career in physics.**



POSTDOC AS A DISRUPTION OF THE GENDER ORDER

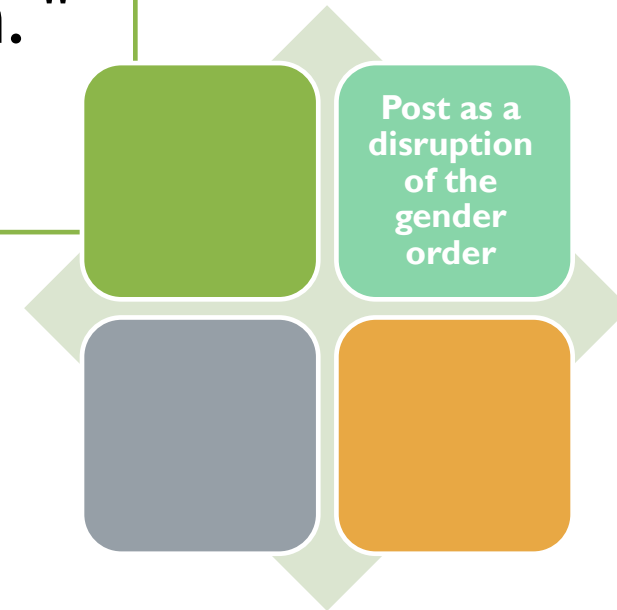
- **The academic career path is highly demanding and competitive.**
- Although coming from a **high socio-economic background**, the social and family environment perceives postdoc abroad as a **non-normative path for women**.
- **The women doubt themselves:** Am I worthy? Do I have the skills to succeed?



POSTDOC AS A DISRUPTION OF THE GENDER ORDER

“Even if the husband supports, **the extended family wrists the nose and puts pressure on me** (not to go on a postdoc abroad). If a post-doc could be done in Israel, it would have been much easier for women.”

(T, Married, no children)



WOMEN IN PHYSICS MUST EXCEL!

The justification regime: excellence

Women feel that they must be **excellent students**, with high probability of **success**, to justify the choice of a non-normative career trajectory.

If you are not excellent – **promising thesis, prizes, the mentor supports you** - you will leave the race!

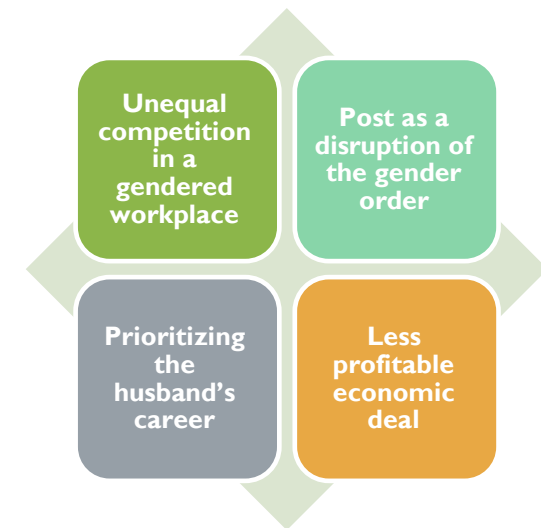
WOMEN IN PHYSICS MUST EXCEL!

“Women are also **affected by their partners**, not that men are not, but when a man thinks of pursuing a postdoc, the women is usually enthusiastic to follow him ... It's an adventure! Women (on the other hand) are more **looking at the partner**, and if he says **no**, then you need a really good reason (to go on a post), for example, **when your thesis is brilliant and the advisor wants you to go... really pushes you to do so**, then people would say: **it's worth it**, then, maybe then.. ”

(C, Married + pregnant, leaving for industry).

SUMMARY

- The women stories reveal the multiple and hidden ways in which gender operates as a **power structure, within the family, in physics as a male-dominated field and within the labor market.** This power structure shapes women's decisions and behavior.
- Women face extra hurdles and put the bar higher!
- **Next step:** Best practice: Our book.



WHAT CAN WE DO?

The GENERA network

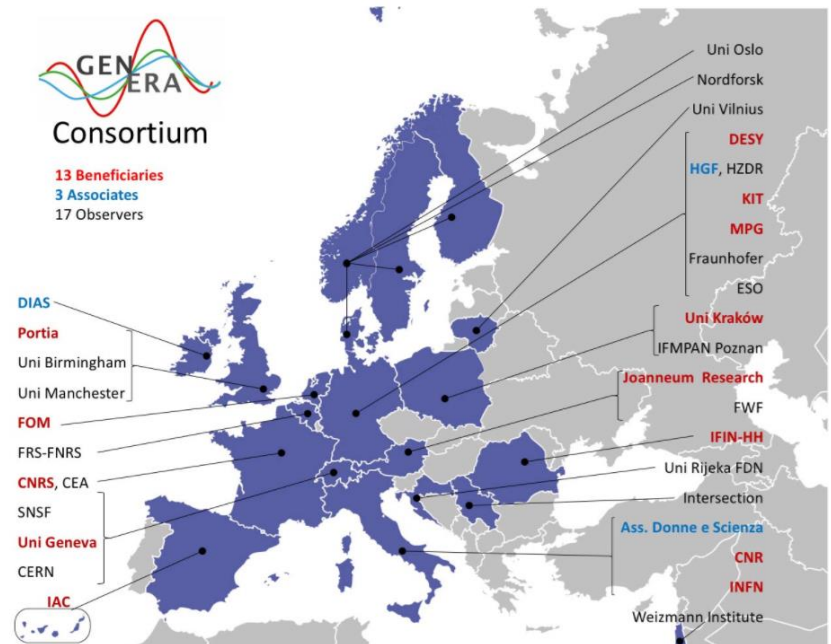
Enhance Gender Equality in Physics

Participants:

40+ organizations from Europe research organizations, universities and funding agencies.

Main activities:

- ✓ Raising awareness
- ✓ Creating networks, sharing best practice and knowledge
- ✓ Supporting each organization to create its own Gender Equality Plan



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