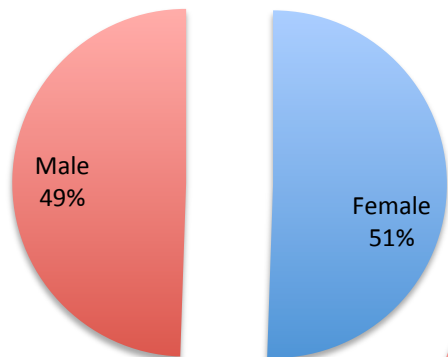


# Toward Inclusive Excellence in Nuclear Science

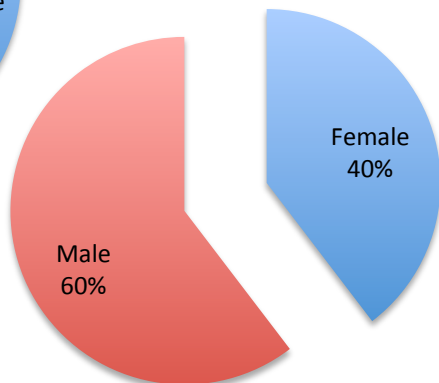
S. Yennello

Texas A&M University

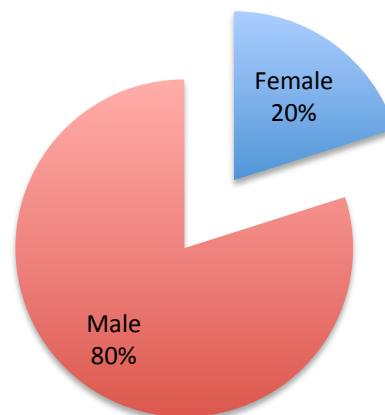
## US population, Age 18-24



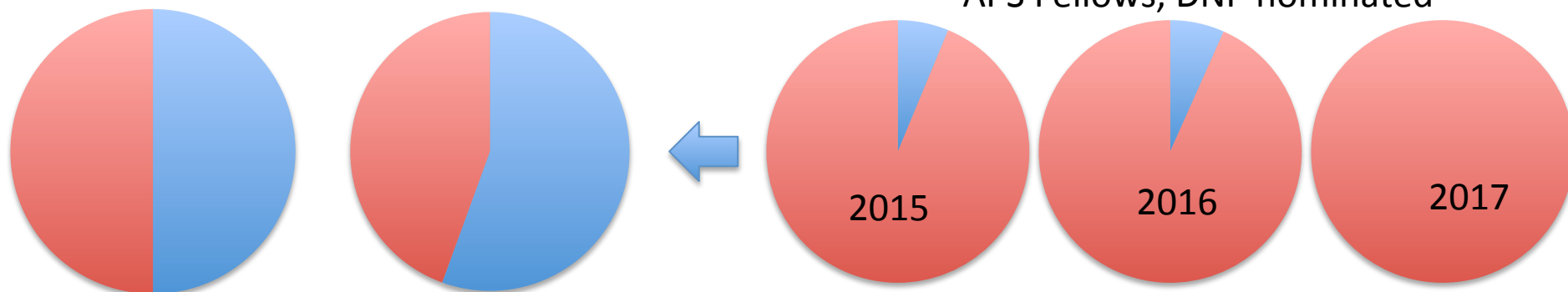
## Intentions of freshmen to major in physical sciences



## Enrolled graduate students, Physics



## APS Fellows, DNP nominated









## *DNP Chairs (1966-2011)*

**L.I. SCHIFF (1966)**

**H.H. BARSCHALL**

**M. GOLDHABER**

**H. FESHBACH**

**G.C. PHILLIPS**

**T. LAURITSEN**

**F. AJZENBERG-SELOVE**

**B.L. COHEN**

**J.P. SCHIFFER**

**S.S. HANNA**

**J. WENESER**

**P. AXEL**

**E.M. HENLEY**

**B.G. HARVEY**

**G.T. GARVEY**

**S.M. AUSTIN**

**G.F. BERTSCH**

**E. HAYWARD**

**L. ROSEN (1985)**

**R.G. STOKSTAD (1986)**

**E.G. ADELBERGER**

**S.E. KOONIN**

**R.A. EISENSTEIN**

**J.B. BALL**

**G.M. CRAWLEY**

**W.C. HAXTON**

**N. BENCZER-KOLLER**

**C.B. DOVER**

**J.D. WALECKA (1995)**

**L.L. RIEDINGER (1996)**

**B.C. CLARK**

**S.J. FREEDMAN**

**W.F. HENNING**

**R.G.H. ROBERTSON**

**J.M. MOSS**

**C. GLASHAUSSER**

**A.B. BALANTEKIN**

**D.F. GEESAMAN**

**B.M. SHERRILL**

**S.J. SEESTROM**

**R.G. MILNER**

**R.F. CASTEN**

**L.S. CARDMAN**

**W.A. ZAJC**

**R.E. TRIBBLE (2011)**

# Lise Meitner

1878 - 1968

Lise Meitner was born in Vienna and studied Physics, Mathematics and Philosophy at the University of Vienna. In 1906, she was the second woman at the university to receive a doctorate in Physics. She moved to Berlin in 1907 where she met Otto Hahn, with whom she collaborated for the

2



following 30 years. She was the first woman to become a full professor in Germany. Lise Meitner was Jewish; her life in Nazi Germany became increasingly at risk. She fled to Sweden in 1938 where she was able to continue her research. One of her best and most significant scientific achievements was the

theoretical explanation of nuclear fission, a work that she published with her nephew Otto Frisch in 1939. Otto Hahn was awarded the Nobel Prize in Chemistry in 1944 for the experimental component of this work. She also studied radioactivity and together with Otto Hahn discovered a number of radioactive isotopes, such as Protactinium 231. Lise Meitner was nominated for the Nobel Prize 48 times (29 in Physics and 19 in Chemistry), but none was ever awarded to her.

Photo Credit:  
AIP Emilio Segrè Visual Archives



Acknowledgements: The ChETEC Action (CA16117) is supported by COST (www.cost.eu). COST (European Cooperation in Science and Technology) is a funding agency for research and innovation networks. Our Actions help connect research initiatives across Europe and enable scientists to grow their ideas by sharing them with their peers. This boosts their research, career and innovation. We acknowledge the Department of Communication and External Relations, Universidade Nova de Lisboa - FCT for the ChETEC logo.

See [www.ChETEC.eu](http://www.ChETEC.eu) website for more information.

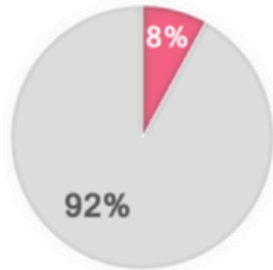
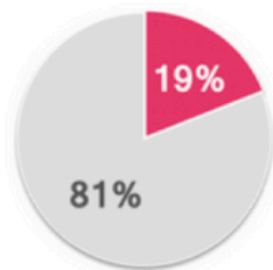


Funded by the Horizon 2020 Framework Programme of the European Union

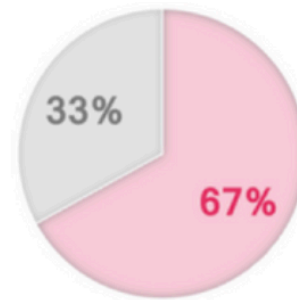


40-70%

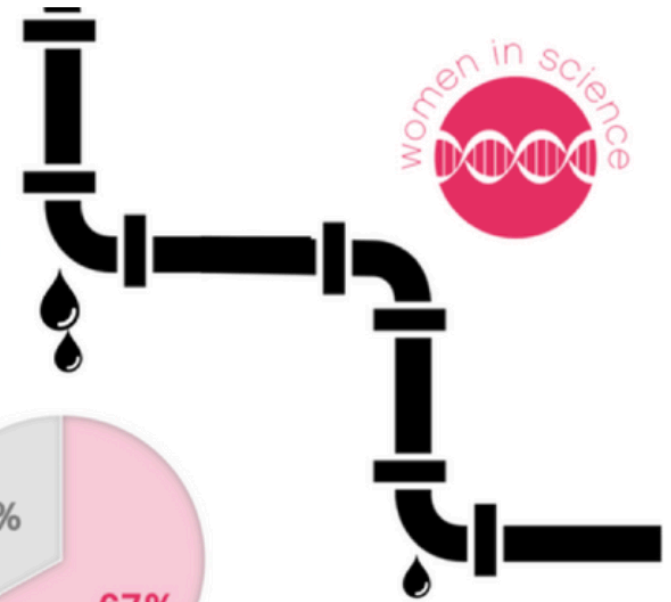
...women have experienced sexual harassment during their careers or as students



...women only occupy 19% of all full professorships, and only 8% of academic institutions are led by women...

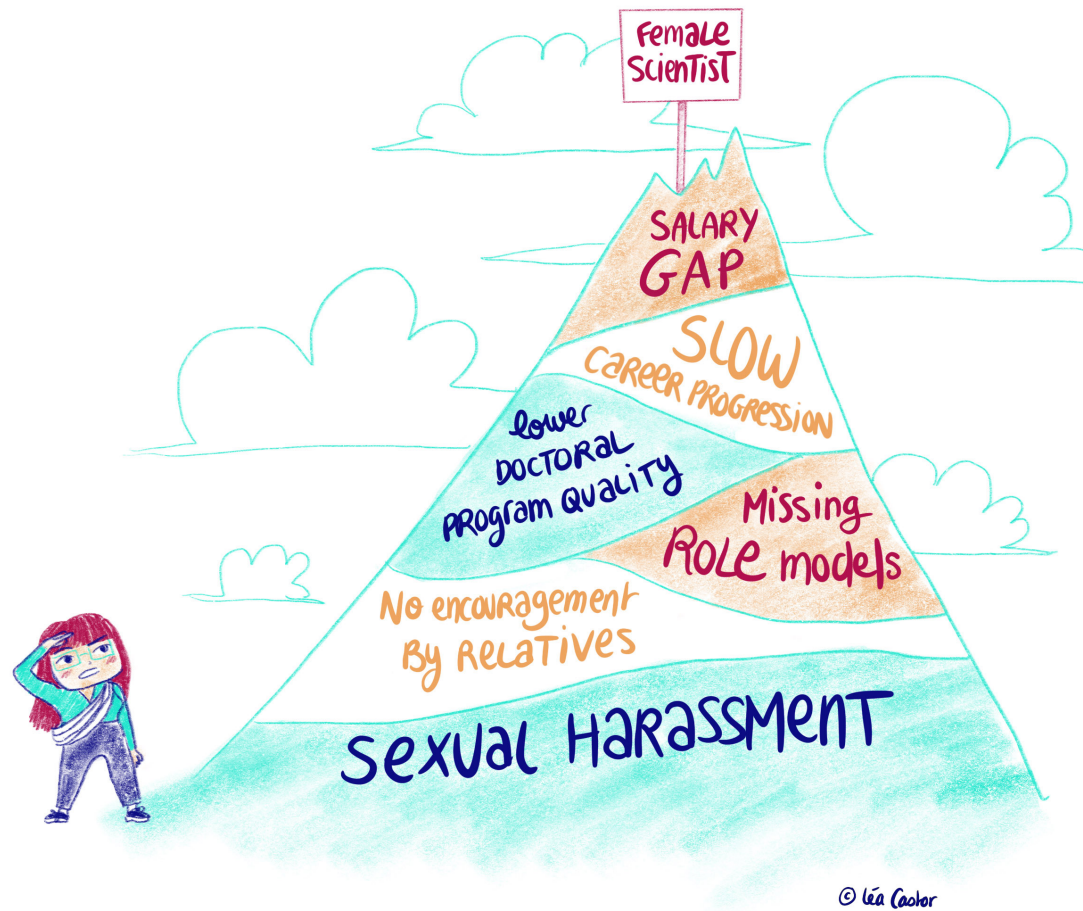


67% of Europeans believe that women do not possess the necessary capabilities to succeed in scientific positions





# Thin Air



- Mental Models
- Gender Harassment

*BEFORE*



*To me, a scientist is bald and has hair coming out of the sides of his head. . . .*

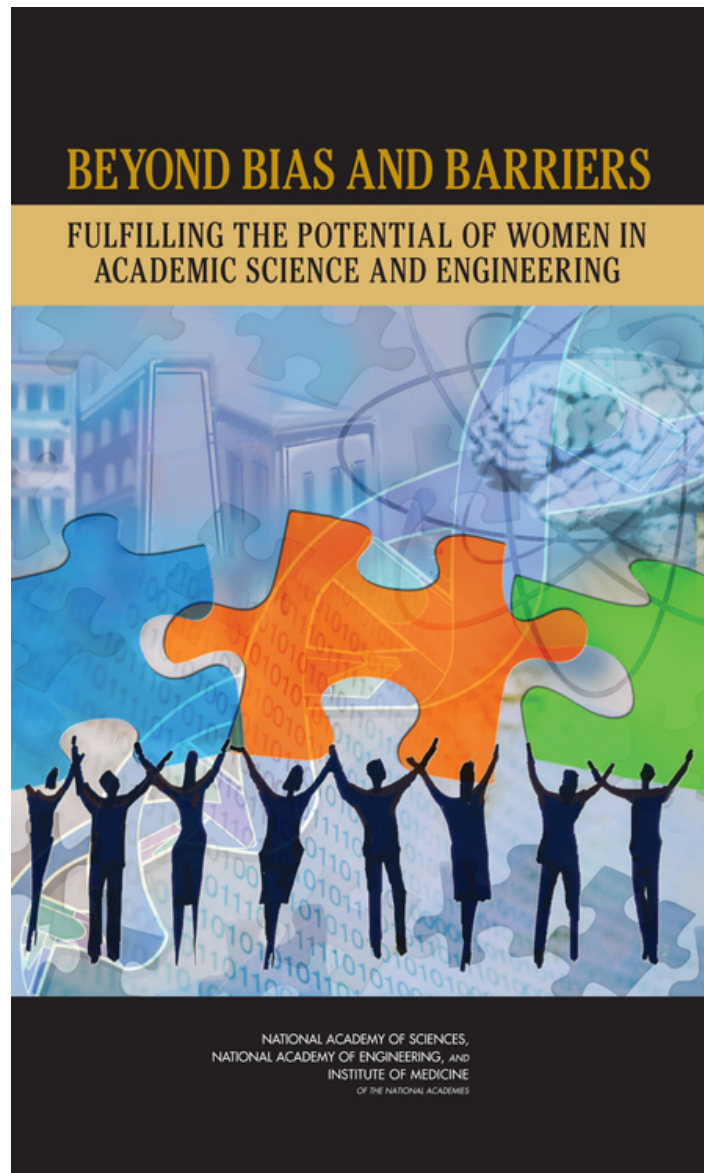
*Scientists live in their own world and the rest of society puts them there.*

*"You can not judge a book by the cover!" Scientists come in all shapes and forms. Women, men, chemists, biologists, and physicists are all in the field of science.*

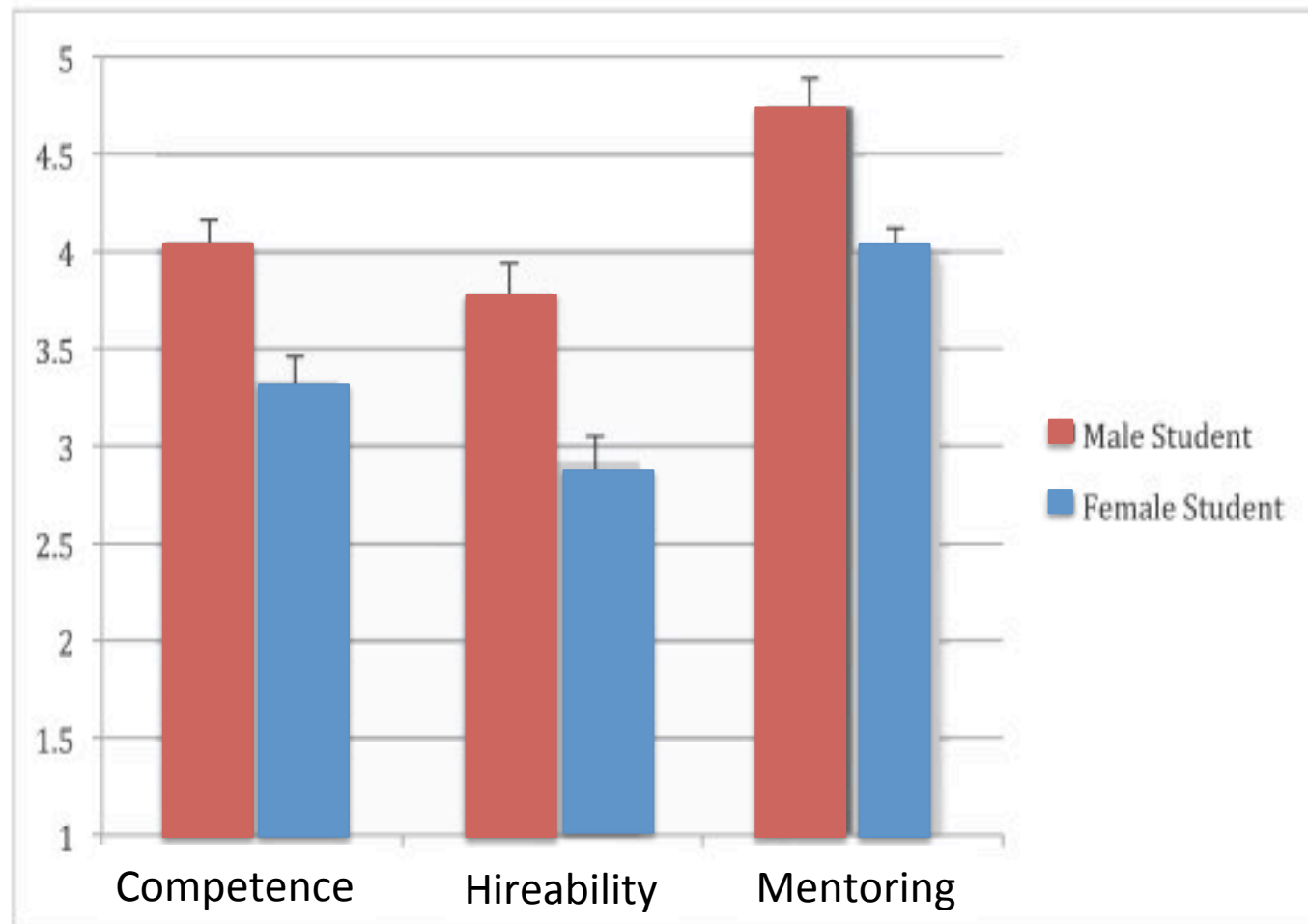
**AFTER**





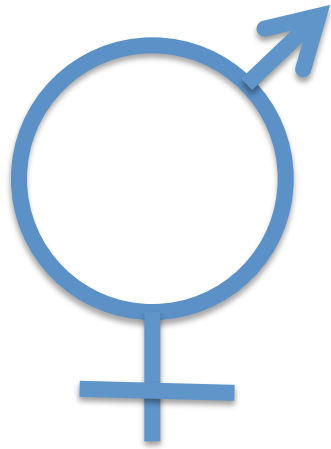


National Academy of Sciences, National Academy of Engineering, and Institute of Medicine. 2007. *Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/11741>.





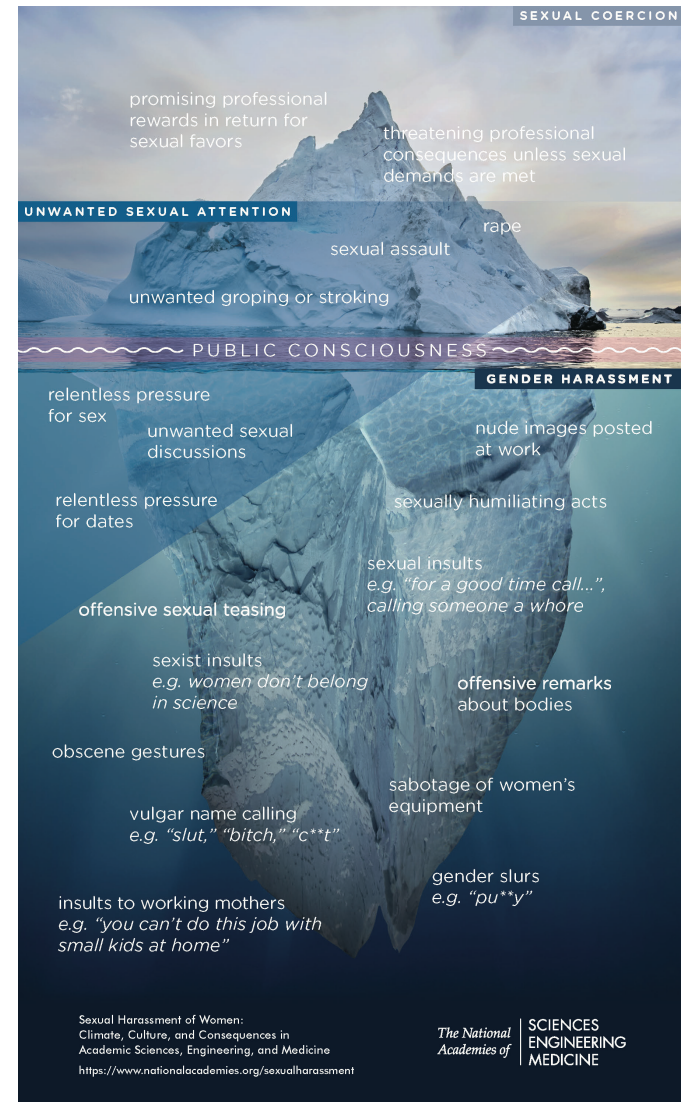
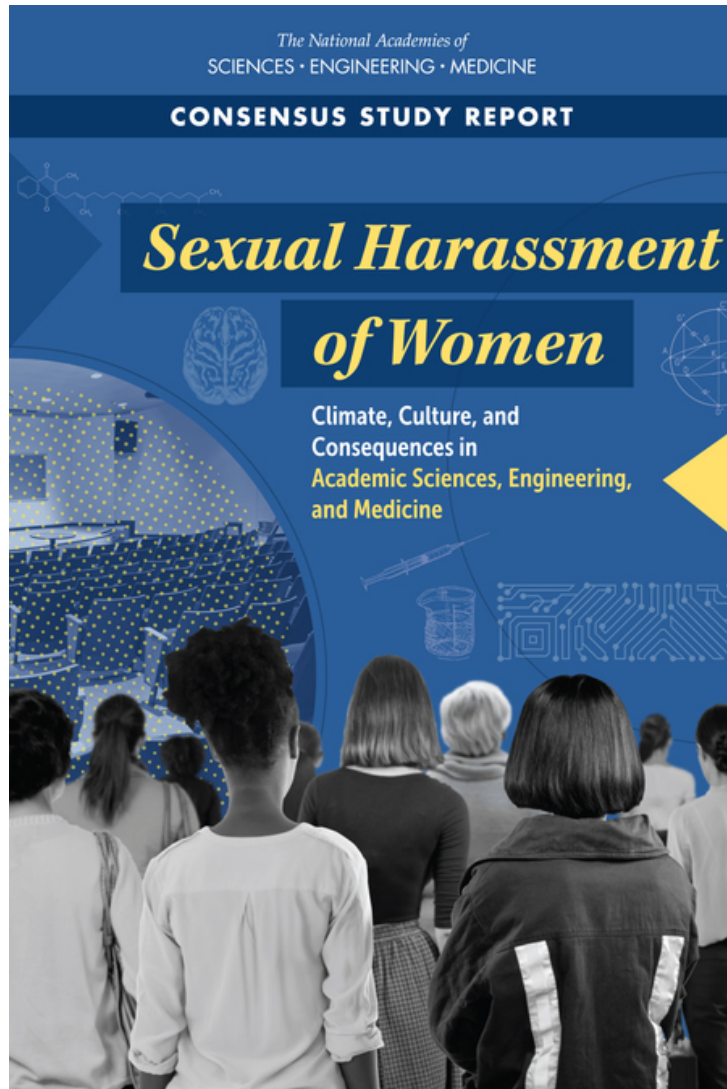
Moss-Racusin et al. *Proc. Nat. Acad. Sci*, 2012



“Ben Barres gave a great seminar today, but then his work is much better than his sister's.”

# Gender Harassment

# Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine



National Academies of Sciences, Engineering, and Medicine. 2018. *Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/24994>.

# Types of Sexual Harassment

1  
Sexual  
Coercion

2  
Unwanted Sexual  
Attention

Waterline

Come-ons  
Assault  
Quid pro quo

Put-downs

Mocking

Bullying

Sexual  
imagery

Stereotyping

Sexual  
comments

Patronizing

3  
Gender  
Harassment

Sharona Gordon [Below the water line.org](http://Belowthewaterline.org)

Based on Figure 2-2 from NASEM report on Sexual Harassment

## Impressions from the DNP Fall Meeting by Sara Jane

We thank the many APS members who graciously shared their stories with us. Many represent a moment of pain or confusion, and a sense of not belonging to a community they hoped would be an important part of their lives. Rather than present each story in isolation, we have chosen to collect them as though they happened to one young woman as she navigates DNP meetings. Each incident related in this compendium was submitted to us as an actual personal experience. Only a fraction of the stories are included in this first edition (others stories will be part of future editions). All names have been changed to protect confidentiality.

### Dear Diary,

#### Wednesday 8:30 a.m.

*After our registration, my advisor told me he would introduce me to this famous physicist that was standing in the lobby. I got so excited. He just looked at my name badge, nodded in recognition and said he thought I was a man. Clearly this person needs to work on his implicit bias and expand his imagination to include women physicists...*



#### Saturday 12:00 p.m.

*I don't think my advisor is talking to me. I can never get hold of him in the conference. I texted and tried to call him several times, but there is no answer. For two days I have wanted to let him know how my talk went... Thank goodness the meeting is over: I feel exhausted.*





# Recommendations for Institutions

- Create diverse, inclusive, and respectful environments
- Diffuse the hierarchical and dependent relationship between trainees and faculty
- Provide support for targets
- Improve transparency and accountability
- Strive for strong and diverse leadership
- Make the entire academic community responsible for reducing and preventing sexual harassment

National Academies of Sciences, Engineering, and Medicine. 2018. *Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/24994>.



**GORDON RESEARCH CONFERENCES**

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**NUCLEAR CHEMISTRY**

John M. Alexander, Chairman  
Raymond Sheline and G. D. O'Kelley, Co-Vice Chairmen  
20-24 June 1966



**2018 Nobel Prize winner Mourou shown dancing in a lab surrounded by female students, some of whom do a striptease**



<https://www.theguardian.com/science/2018/oct/05/bizarre-video-of-nobel-physics-laureate-gerard-mourou-surfaces>



# CUWIP

## 2020 Texas A&M





# Solutions to “massive diversity problem”





# 5TH IUPAP INTERNATIONAL CONFERENCE ON WOMEN IN PHYSICS



If you build it  
they will come...



Parting thoughts

