

From bias to balance: the journey toward equity and inclusive excellence

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VMP/Phi:male Coffee Lectures: [Link](#)

Wednesday, 4. Dec. 2024



Do you think that women and men should have equal rights and opportunities?



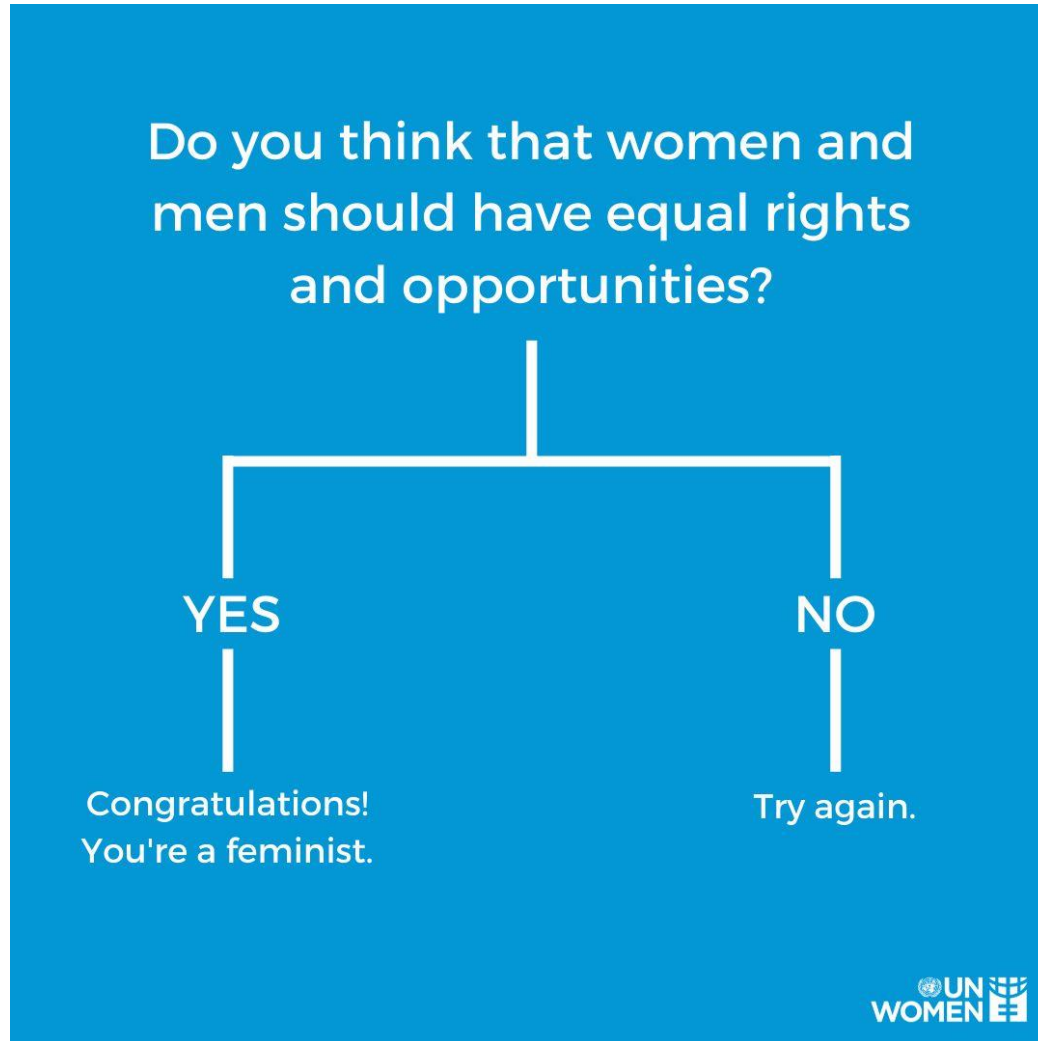
Do you think that women and men should have equal rights and opportunities?

YES

Congratulations!
You're a feminist.

NO

Try again.



- **Equity** focuses on ensuring fair treatment and access to opportunities by addressing systemic barriers:
it is about leveling the playing field
- **Inclusive Excellence** goes further. It emphasizes **the idea that diversity and inclusion are essential to achieving high-quality outcomes and innovation** and linking them directly to quality, innovation, and performance with improved governance and working culture.
- We need everybody to buy in, including our male colleagues in STEMM fields.
- This needs a broader education on the benefits of “equal rights and opportunities”



- 1984: graduating from ETH Zurich with a Masters (i.e. Diplom), I was convinced there where NO MORE gender issues for working women!
- If I brought good **performance**, I could achieve anything ... (and nobody said it was easy ...)
- And I did. I felt supported when I was young, had great sponsors ...



Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich



Stanford University

1985-1989 Ph.D.

Rotation of PhD advisor during the first year

Visiting woman professor helped to find “the right professor” for me

Great experience



Bell Labs, Holmdel

MTS (Member of Technical Staff)

1989-1993

Started independent research immediately after PhD

Formal mentor assigned for all women MTS, better networking

In response to recent gender lawsuit there



Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

ETH Zurich

Since 1993

Political pressure in Switzerland for women professors

First tenured woman professor in physics

Anthony Johnson: take the position and show them you can do it!





Not Just for the Boys

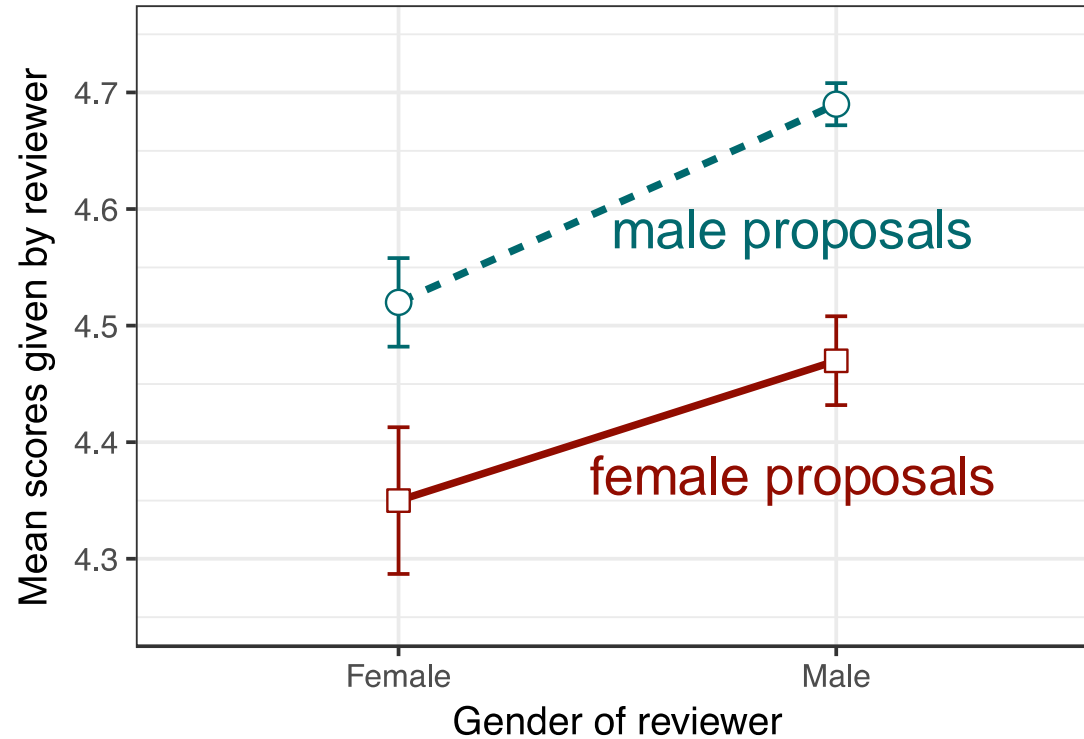
Why We Need More Women in Science

Athene Donald

- A leading scientist highlights the obstacles, blatant and subtle, faced by women in science
- Explores historical attitudes towards women doing science, and what progress has been made
- Contrasts the common, damaging perceptions of science with the creative, collaborative reality
- Examines the impacts of societal expectations and stereotyping
- Considers the ways in which women are belittled, ignored, and harassed in scientific research contexts
- Provides moral and business cases for encouraging girls and women to pursue science



Example of bias in research funding: peer-review is not gender blind



40'000 reviewers in project funding
2009-2015

Gender of applicant

Female

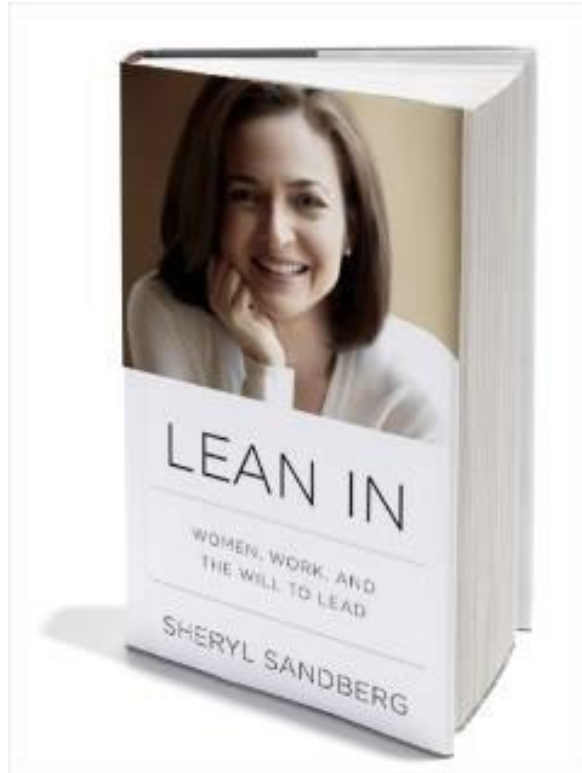
Male

**Women are rated lower
(by men and women)**

**Rating of female reviewers
lower (of men and women)**

Solution for such problems:

- Get gender data first
- Well defined evaluation criteria and reduce conflict of interest in peer review
- Correction of scores for potential gender bias (becomes easier with more women)
- Limit number of funded grants per PI (currently done at SNSF, ERC grants, ...)



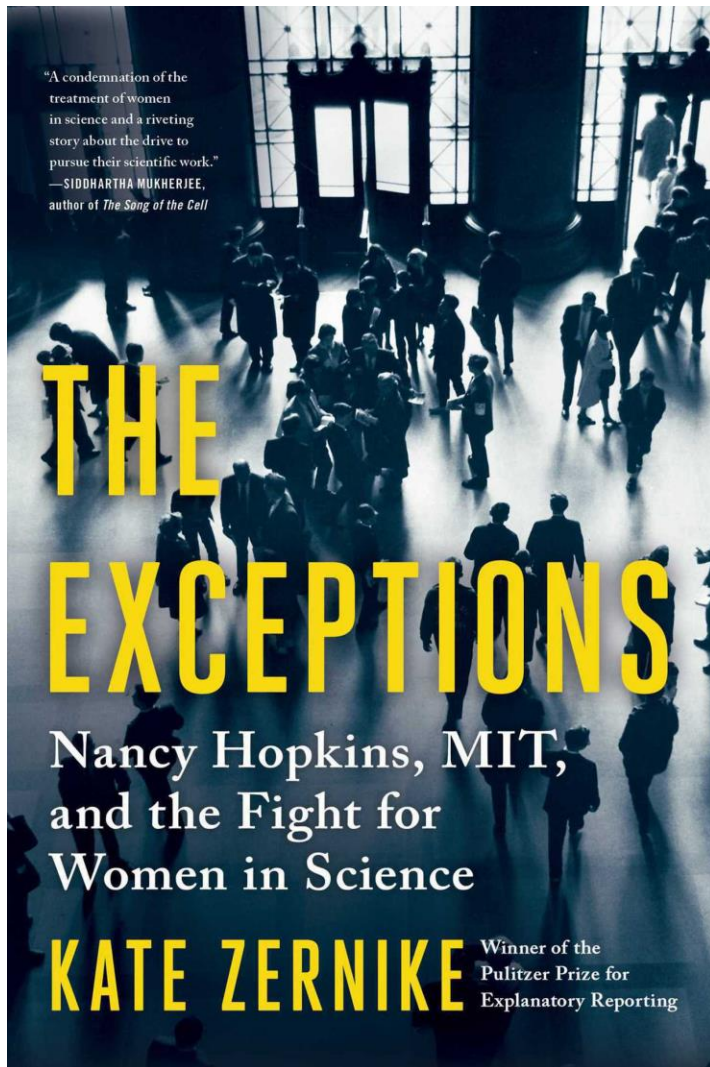
Stereotypical bias:

"When a woman excels at her job, both male and female co-workers will remark that she may be accomplishing a lot but is 'not as well-liked by her peers' .

She is probably also 'too aggressive', 'not a team player', 'a bit political', 'can't be trusted' or 'difficult'."

A hostile working culture with this stereotypical bias can result in character assassination ("Rufmord" in German), spreading rumors and isolating targets.

... and often with little or no benefit of the doubt ... "guilty until proven innocent" ...



- **1999 - MIT president Charles Vest “admits discrimination against female professors”** (The New York Times, March 23, 1999, [Link](#))
- A powerful message to promote awareness around gender bias in academia worldwide.
- First published in the MIT Faculty Newsletter (March 1999), now known as the **1999 MIT Report**, [Link](#), catapulted MIT into a pacesetter role in gender diversity in STEM. Also watch a short video here, [Link](#)
- The recent book **“The Exceptions – Nancy Hopkins, MIT, and the Fight for Women in Science”** gives a deeper history behind the making of this report,
- This report came from initiatives by senior women professors in science at MIT, who organized and collected data on resource allocation and gender issues
- This was my motivation to start the ETH WPF in 2012, [Link](#)

- 2010-2022: Earned a leadership position outside of my department, with the award and directorship of a well-funded, multi-institute Swiss research network (NCCR MUST), [Link](#)
 - We created an inclusive leadership team, with shared power and responsibilities for my male co-director and myself.
 - One additional key task: “develop measures for the advancement of women in STEM”, with support from the funding agency, and my co-director! Our results were considered a role model, [Link](#)
- With this support, we started the **Women Professors Forum (WPF) in 2012**, with MIT as a role model (13 years after MIT Report) to better network women academics at ETH. History [Link](#), ETH WPF [Link](#)



2019 Survey of Issues Important to women Professors at EPFL/ETHZ:

Organized by the WPF (Women Professors Forum ETH Zurich and EPFL): <https://eth-wpf.ch/>

And then use link: <https://eth-wpf.ch/category/publications/>

Or directly: <https://eth-wpf.ch/survey-of-issues-important-to-women-professors-at-epfl-and-ethz-2019/>

The work culture is central among the issues raised by women faculty at EPFL and ETH Zurich

- Women are underrepresented among faculty in nearly all academic fields.
- This study analyzes retention patterns using a census of 245,270 tenure-track and tenured professors from U.S. PhD-granting departments.

EMBARGOED UNTIL 2:00 PM US ET FRIDAY, 20 OCTOBER 2023

SCIENCE ADVANCES | RESEARCH ARTICLE

SOCIAL SCIENCES

Gender and retention patterns among U.S. faculty

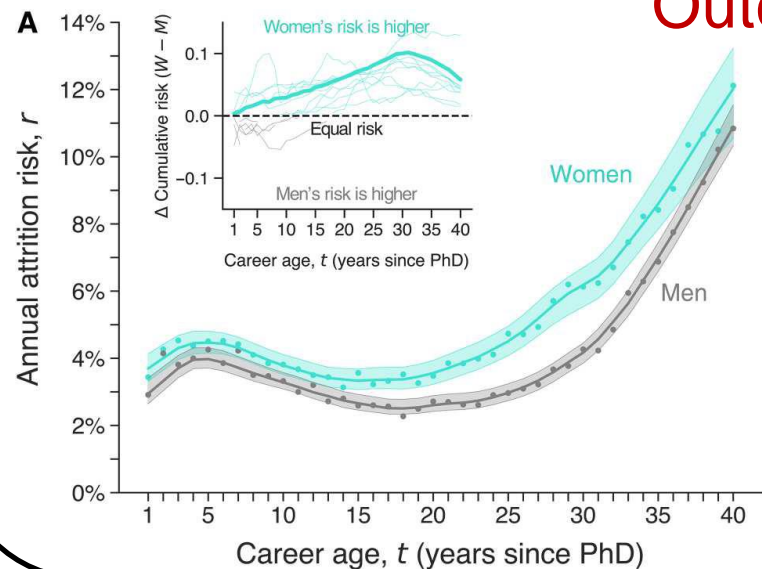
Katie Spoon^{1*}, Nicholas LaBerge¹, K. Hunter Wapman¹, Sam Zhang², Allison C. Morgan¹, Mirta Galesic³, Bailey K. Fosdick⁴, Daniel B. Larremore^{1,5}, Aaron Clauset^{1,3,5*}

Women remain underrepresented among faculty in nearly all academic fields. Using a census of 245,270 tenure-track and tenured professors at United States–based PhD-granting departments, we show that women leave academia overall at higher rates than men at every career age, in large part because of strongly gendered attrition at lower-prestige institutions, in non-STEM fields, and among tenured faculty. A large-scale survey of the same faculty indicates that the reasons faculty leave are gendered, even for institutions, fields, and career ages in which retention rates are not. Women are more likely than men to feel pushed from their jobs and less likely to feel pulled toward better opportunities, and women leave or consider leaving because of workplace climate more often than work-life balance. These results quantify the systemic nature of gendered faculty retention; contextualize its relationship with career age, institutional prestige, and field; and highlight the importance of understanding the gendered reasons for attrition rather than focusing on rates alone.



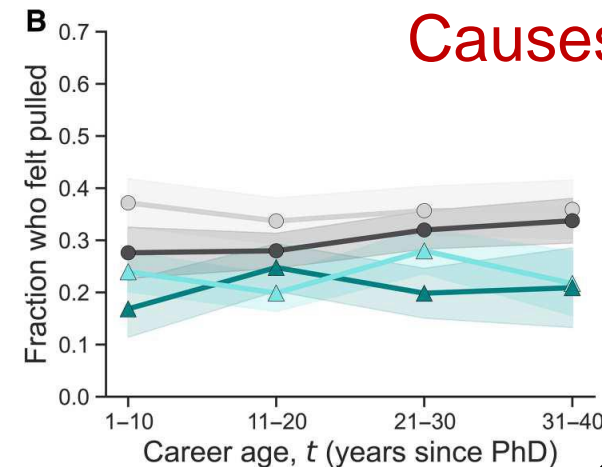
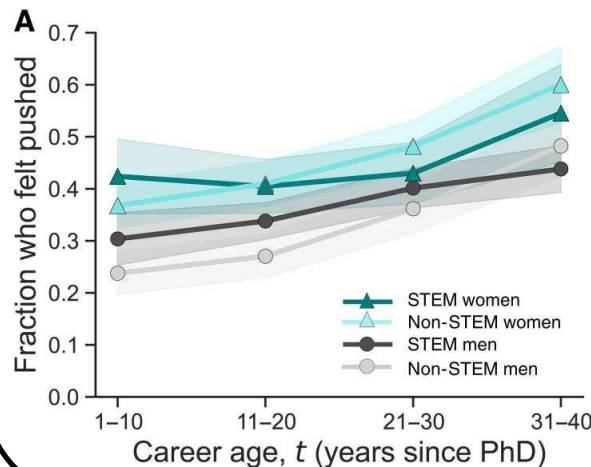
Women experience higher attrition rates than men at all career stages, and especially during mid- and late career stages

Outcome



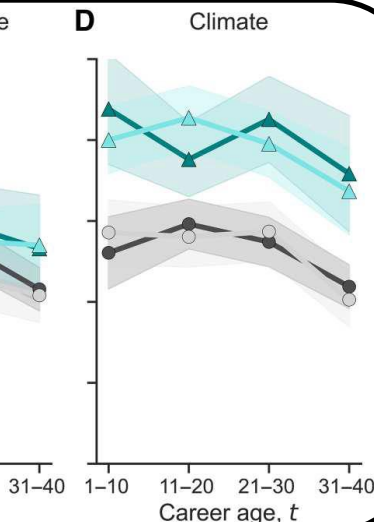
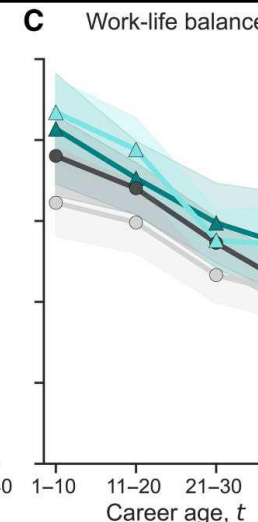
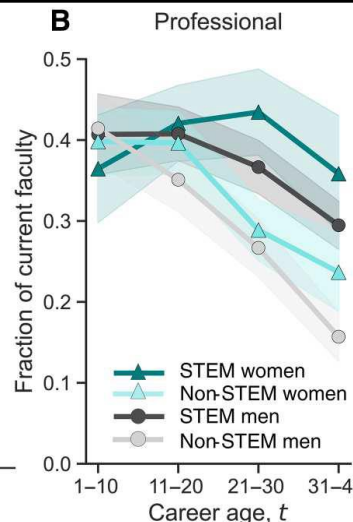
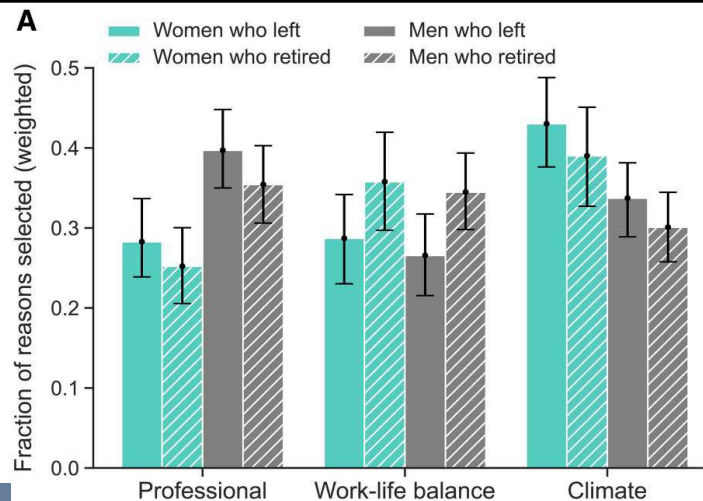
More women leave research careers because they feel pushed out rather than because they feel pulled to better opportunities

Causes

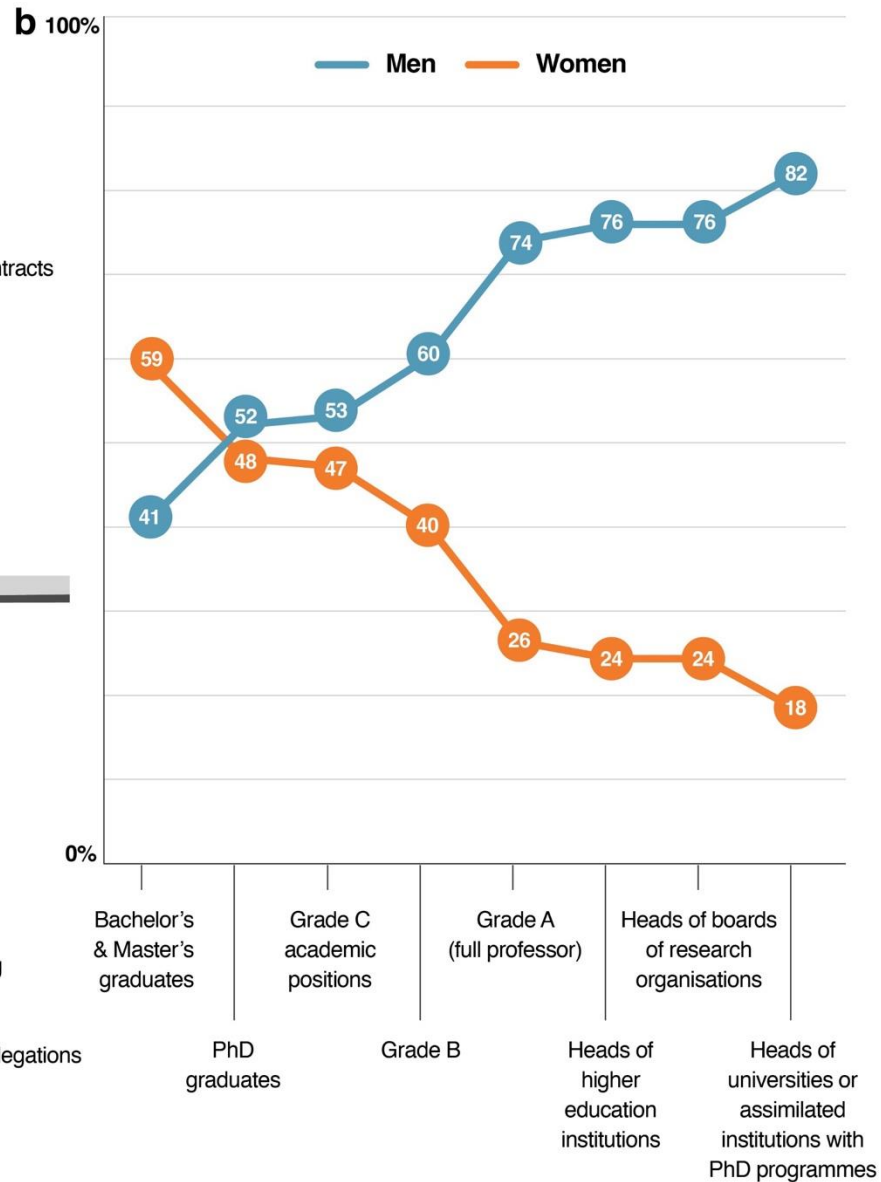
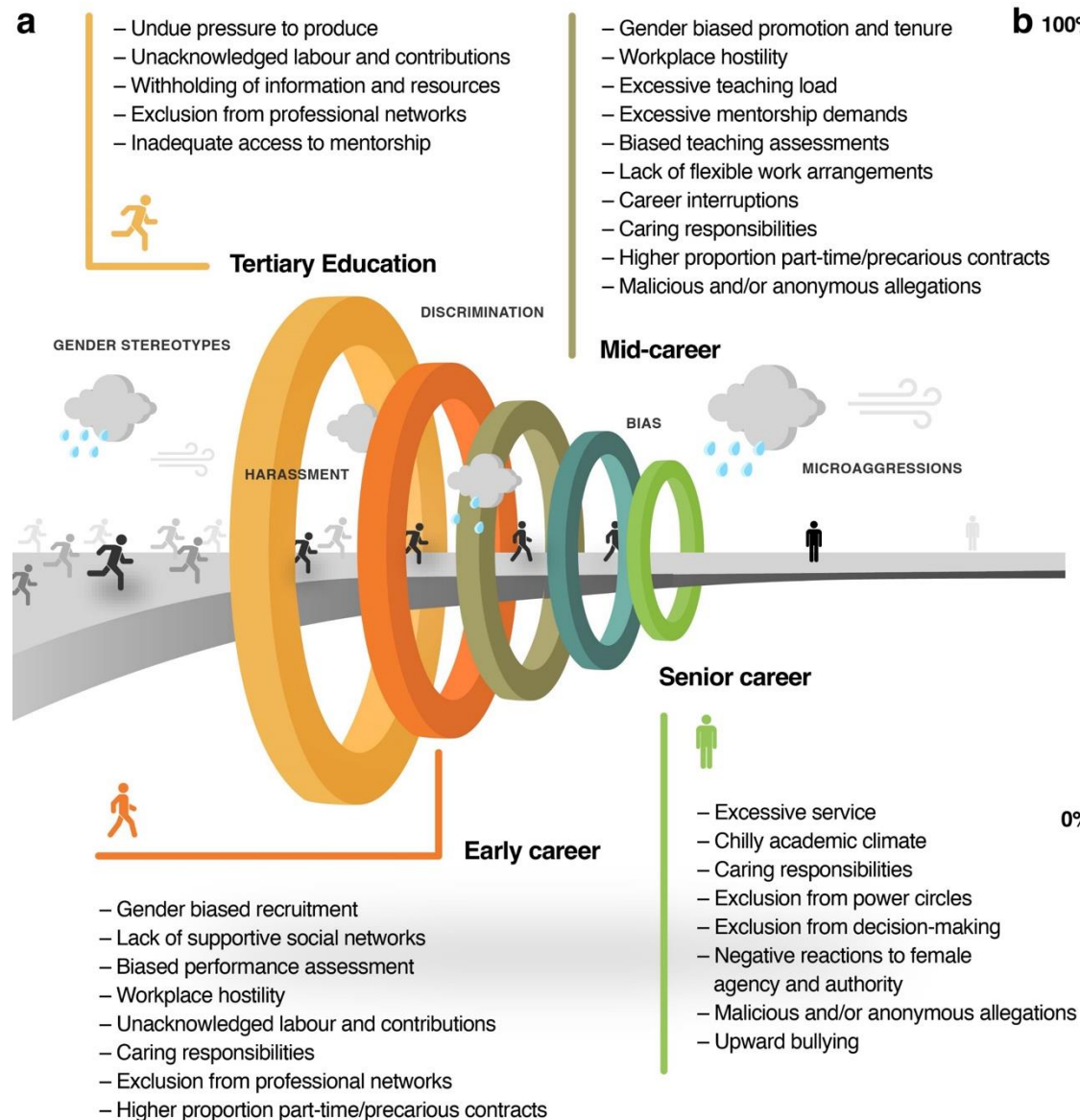


Causes

More men leave academic jobs for professional reasons than due to workplace climate, whereas more women leave academic jobs due to workplace climate than for professional reasons



Challenges faced by women in research

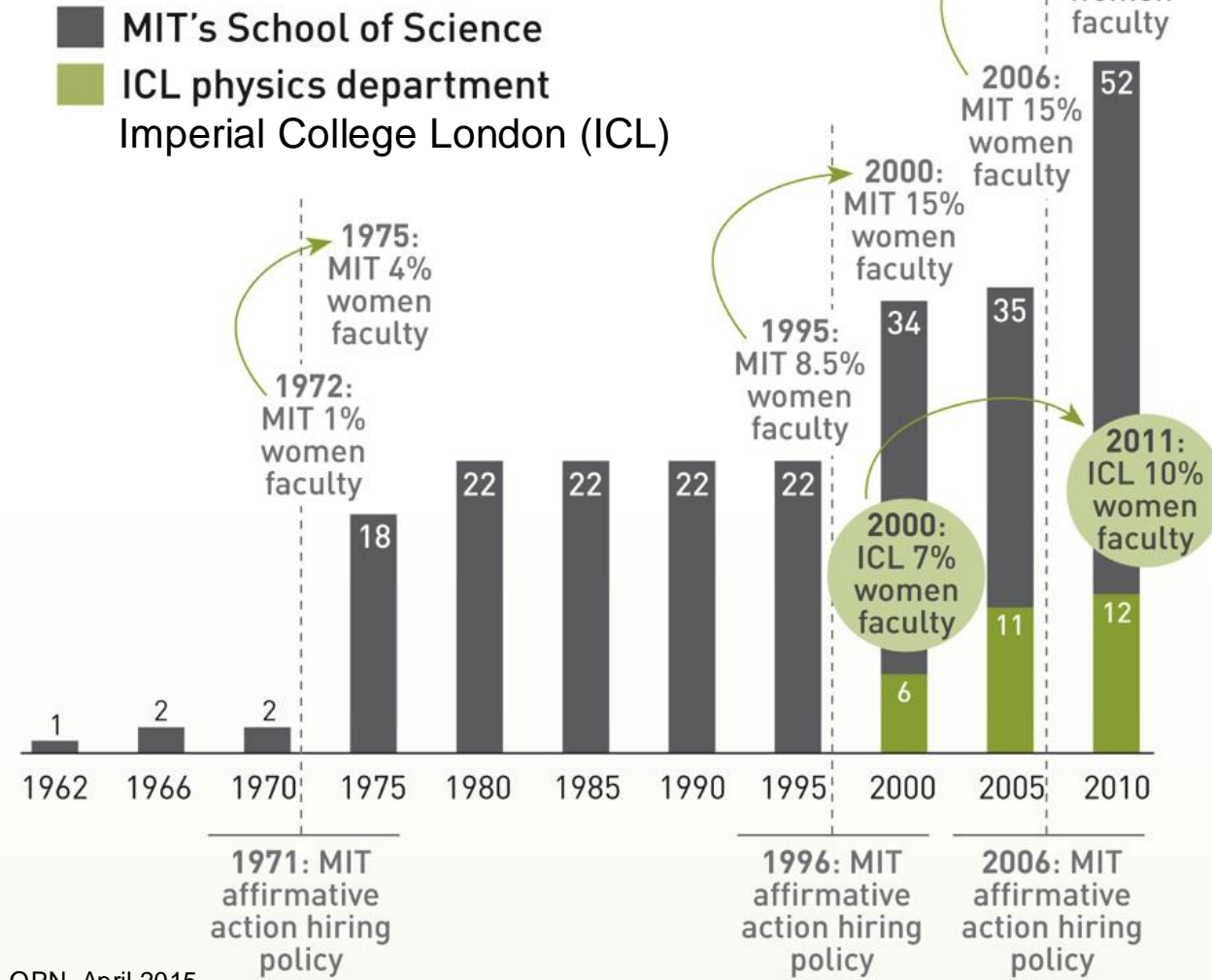


Continue to recruit more women: goal >30%

- Affirmative action to hire more women, to establish inclusive excellence, to change culture
- Address stigma of “token woman”, and “perception of reverse discrimination”
- Better honest education on Diversity, Equity and Inclusion (DEI), and a clear plan with everybody on board (buy in)



Women faculty members



Progress at MIT tied to affirmative action hiring: 1971, 1996, 2006 (see "The Exceptions," 2023)

1994: establishing a committee on women faculty in the school of science (16 out of 17 tenured women Professors): 1999 MIT Report

"the feeling of an injustice, the anger that accumulates from this recognition, and the strong desire for change for themselves and future generations"

2018-2020: Crisis in physics department at ETH Zurich triggered progress. For 22 years, 24:0 male professor selected 5 hires for tenure-track female assistant professors, with a focused search for excellent women. **And many found!!!**

Source: OSA, OPN, April 2015

http://www.nccr-must.ch/equal_opportunities/opn_column_reflections_in_diversity/opn_column_april_2015.html



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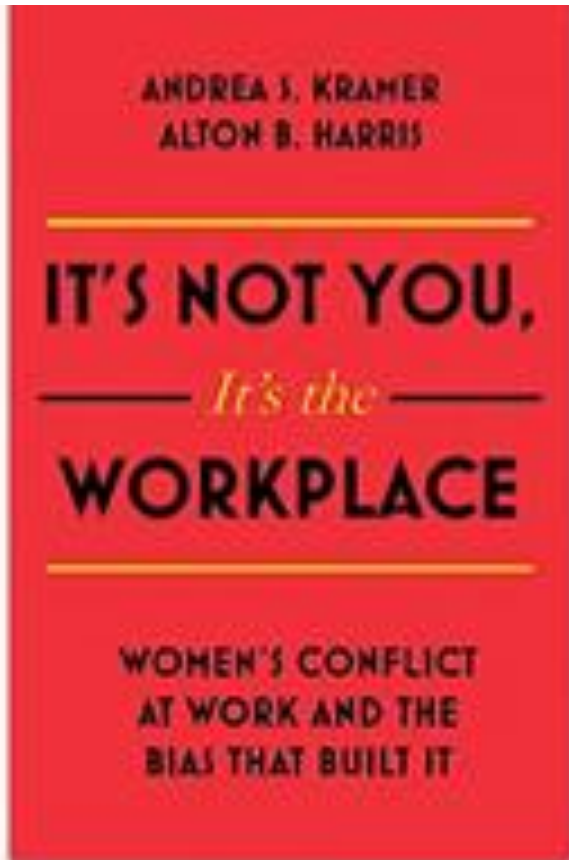
Stronger efforts on retention, performance, promotion, and culture change

- Maintain a diverse community and reward their contributions
- Give access to sufficient resources to establish inclusive empowerment
- Establish leadership and networks to promote a culture change with better governance
- Fix the institutional practices, not only the individuals
- Everybody is welcome to join these efforts, and it should benefit us all.



Recommended for reading: Kramer and Harris in their book

It's Not You It's the Workplace: Women's Conflict at Work and the Bias that Built



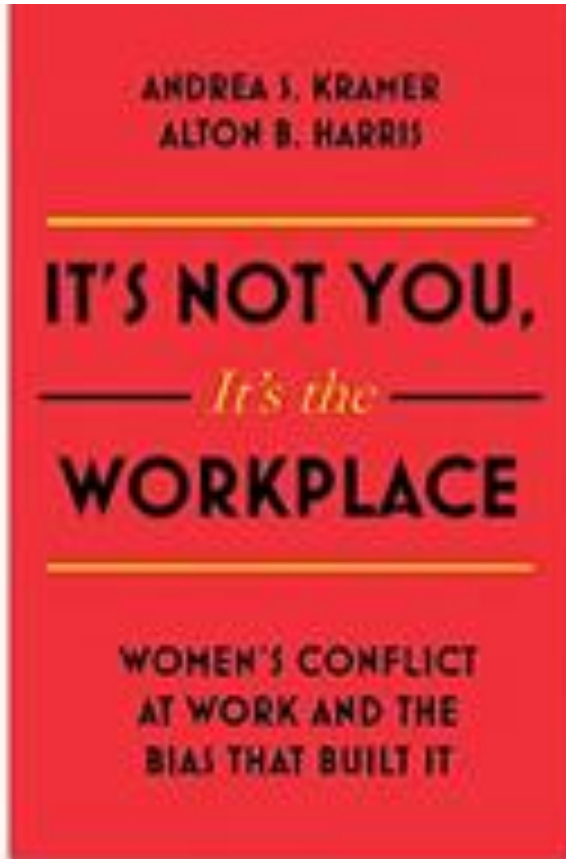
- There is no evidence that women have more frequent conflicts in working with other women
- Women actually spend more time supporting, counseling, and advocating for women than men do
- Unfortunately, when women actively promote other women, they often face career penalties
- Not even white male executives received any career-related advantage for actually working to create diversity (diversity is clearly not a woman-only topic!)
- Many highly educated and talented women are opting out of their careers because they are rejecting the workplace
- **Cultivate women-only networks to feel more welcome in current work culture & broader education of issues**

2017 Forbes report (p. 62):

women leave the tech field at a rate that is 45% higher than men

Recommended for reading: Kramer and Harris in their book

It's Not You It's the Workplace: Women's Conflict at Work and the Bias that Built



On page 62: Women in bad working culture have the following options:

- 1) Leave
- 2) Accept second class status
- 3) Try to get ahead by becoming one of the boys, try to ignore any gender harrassment, become the one woman needed to show that everything is ok, so that we can continue to fix the women instead of the organization!
- 4) **By building sisterhood and seeking systemic changes**

Sisterhood is not the same thing as friendship (... some will become friends)

Sisterhood is women supporting, mentoring, and advocating for other women

TOGETHER we can change the work environment with better governance

Team up with successful senior women with a track record of option 4, be aware of option 3 and your own gender bias as well.

The “traditional power game” is to play women against each other and women need to understand this!



Mentoring for physics students at ETH Zurich (start Sep. 2020)

<https://www.phys.ethz.ch/studies/mentoring.html>

Mentoring for Physics Students

The Department of Physics offers a peer mentoring programme for first-year students.

> Mentees

> Mentors



Photo: Michael Ferguson

Students from advanced semesters and doctoral students will mentor first-year students regarding questions about their studies and all aspects of life as a physics student.

Based on my experience as a former first year student at ETH and my positive experience at Stanford University during my PhD, I asked Dr. Anna Garry (NCCR MUST) to get peer mentoring going at ETH.

Improving the learning environment:

- Confidential interviews with open-ended questions with students from different genders, years and background
- Learning atmosphere very challenging for all
- But there were some gender differences
- New peer mentoring introduced (first for women only, now also for men)
- Anonymous grading system (i.e. no name on the exam sheets)

V. V. Vogler-Neuling, K. Berg, M. Beck, A. M. Garry

<https://learningteaching.ethz.ch/index.php/lt-eth/article/view/202/174>

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Women professors forum (WPF)

www.eth-wpf.ch



ETH Zurich / EPFL WPF

established by NCCR MUST in 2011
expanded to EPFL in 2016.

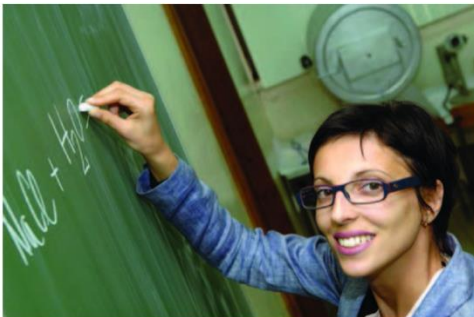
Membership (2020): ETHZ (70%) and EPFL (87%)



- Motherhood is a significant (but not the only) contribution to the leaky pipeline
- More women professors today consider having children (as most men have been doing).
 - Where we can make a change: Reliable daycare, support for sickness, important deadlines, ...
 - Need special measures. **Having children is not “business as usual.”**
 - Positive examples: ERC starting grant - within 7 years after PhD + one more year per child. For professors - no teaching for one year around birth. Postdoc program - add additional PhD.

OPN Column December 2016

Retaining Postdoc Mothers in an Academic Career, Ursula Keller and Anna Garry



Many female postdocs do not return to academia after their position ends. One way to increase retention could be fellowships specifically geared to the needs of postdocs who are also mothers.

Here, we introduce the idea of competitive fellowships for postdoc mothers that enable them to pay for a Ph.D. student or early postdoc researcher, whom they will then supervise while in the early stages of motherhood. Such grants, we believe, could help these scientists maintain ties to their labs, their research, and their academic career path during a period of significant personal transition.

Department of Physics, ETH Zurich
introduced Fellowship for Postdoc Mothers in 2018

<https://www.phys.ethz.ch/research/research-promotion.html>

Explanation why this makes sense:

For example read OPN Column, Dec. 2016

[Link](#)



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Stronger efforts on retention, performance, promotion, and culture change

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- Everybody is welcome to join these efforts, and it should benefit us all.

Real incentives for both men and women to engage on these issues

- This does not happen on its own based on my experience!
- There is much written material on university websites, but action plans are limited.
- Develop institutional plans for an inclusive work culture, with measurable results and independent checks
- Tie funding to results – to increase motivation and willingness to change, e.g. Juno in the U.K., [Link1](#) and [Link2](#)

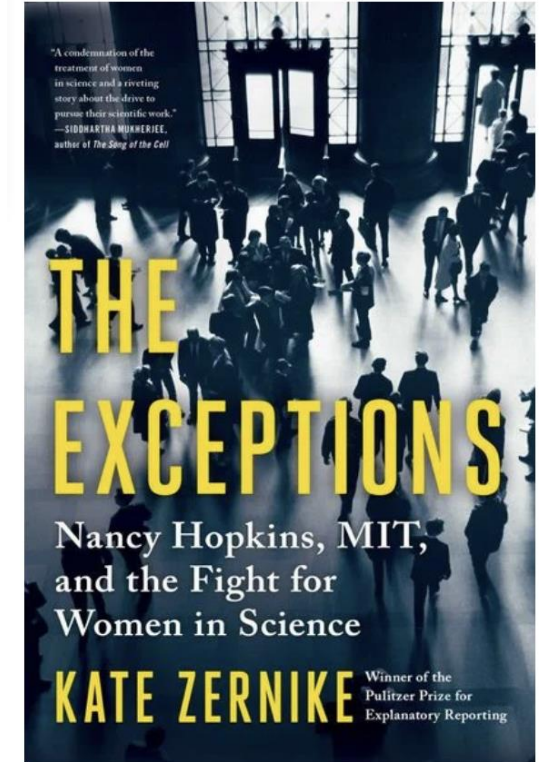
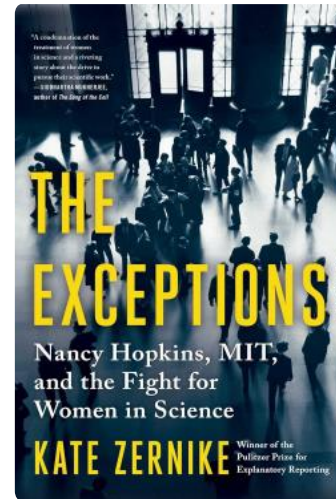




Breaking Barriers Session at the 161st Annual Meeting

Short listed for the Royal Society Science Book Prize, and selected as one of the 100 top books of 2023 by *The New York Times* and one of the 25 Notable Books of 2023 by the American Library Association, *The Exceptions* by Pulitzer Prize-winning journalist Kate Zernike tells the “fascinating, heartening account” (Kirkus Reviews) of the extraordinary female scientists whose work to document the inequities in science prompted the extraordinary admission by the Massachusetts Institute of Technology in 1999 that it had discriminated against women on its faculty.

For her leadership of this effort and her work to promote gender equity in the decades since, **Nancy Hopkins** is being honored this year with the Academy’s **Public Welfare Medal**. At the Breaking Barriers Session on Saturday, April 27 at the **161st Annual Meeting**, Hopkins and Zernike will discuss the book, how the women came together and enlisted allies to help make change, how the story became public and reverberated around the country and the world, and how the work remains essential today. A book signing event will follow the talk, and a copy of *The Exceptions* will be provided to members and guests who attend.



- Senior women professors at MIT got organized and reported discrimination in resource distributions and culture to president
- MIT President started a more detailed survey
- MIT report published, acknowledging gender discrimination and announced additional measures

MIT Faculty Newsletter

Vol. XI No. 4

Introductory Comments

President Charles M. Vest

I commend this study of Women Faculty in Science to all of my faculty colleagues. Please read it, contemplate its messages and information, and act upon it personally and collectively.

I learned two particularly important lessons from this report and from discussions while it was being crafted. First, I have always believed that contemporary gender discrimination within universities is part reality and part

perception. True, but I now understand that reality is by far the greater part of the balance. Second, I, like most of my male colleagues, believe that we are highly supportive of our junior women faculty members. This also is true. They generally are content and well supported in many, though not all dimensions.

However, I sat bolt upright in my chair when a senior woman, who has felt unfairly treated for some time, said "I also felt very positive when I was young."

We can take pride in the candor of dialog that these women have brought to this issue and in the progress that we have made, but much remains to be done. Our remarkably diverse student body must be matched by an equally diverse faculty. Through our institutional commitment and policies we must redouble our efforts to make this a reality. ❖

[Charles M. Vest can be reached at cmvest@mit.edu]

- This helped me to stay in academia, after I just had two children in 1997-1998
 - *"I am not alone and it is not my fault ..."*
 - *"the best I can do is to be successful ... then one day my colleagues will treat me with more respect"*



- We experience an escalation of hostility against women, partially triggered by the political pressure to hire more women
- This partially results from a perceived feeling of injustice and a feeling of “reverse discrimination” of many male colleagues.
- There is a lack of understanding of current gender issues and problems and requires broader education

In the beginning, equal treatment may feel like “reverse discrimination” – but it’s not!

Example of a broader education effort:

The Juno-type project maybe a possible approach for a culture change that will benefit not only women, but will improve science for all.

<https://www.iop.org/about/IOP-diversity-inclusion/project-juno - gref>



What can happen if there is a “good governance vacuum”?

- Toxic workplaces drive women away from STEM fields (based on CLEO DEI Plenary Talk 2023)
<https://ulp.ethz.ch/news/ulp-news/2023/11/hostility-towards-excellent-women-in-leadership.html>
- 2022, Open letter signed by 145 women scientists expressing their concerns, [Link](#)
My motivation to co-organize and sign this:
“The current culture with informal, mostly male-dominated networks with gender bias, limited accountability and transparency in decisions and resource distribution, negatively affects women in leadership positions, and discourages the next generation to step up into leadership positions. My goal is to change this with better governance.”
- Publish examples what can happen if there is a “good governance vacuum”: Tell the story!
A better understanding what can go wrong, so that this will never happen again. Unfortunately, this was not a single case.
Prof. Simon Lilly’s farewell lecture on 26. March 2024: how come an excellent tenured woman professor was fired at ETH Zurich? Lilly’s Lecture on YouTube: https://www.youtube.com/watch?v=Ua_BhZ0pl30&t=1974s
Janet G. Hering and Patricia A. Maurice, published 16. April 2024, DOI: 10.5281/zenodo.10939841, [Link](#)
- Podcast with three senior women in science leadership: 20. March 2024
a professor (U. Keller), a former director of a national lab (J. Hering), a former president of a German university (U. Beisiegel)
Apple: <https://apple.co/3ebWO4n>, Spotify: <https://open.spotify.com/episode/20QGYebx5BB2QM9BlE1V1x>



- Separate **scientific autonomy** and **management autonomy**
- One of the root causes of our slow progress has been a conflation of scientific and management autonomy.
 - **Problems typically eat up management's time** – taking away from core efforts in education & science. Professors mostly not motivated to get involved, but ignoring problems often makes them worse. And good science does not guarantee good management ...
 - **Life is more complicated:** there is upwards and top-down bullying! Bullying does not always follow the direction of power differential. Often it is about stereotypical bias; realistic and well-defined performance criteria [Link](#)
 - **Leadership:** “sign up” and empower a consortium of stakeholders – the people affected, the critical voices, experts, administration – and empower them to make actual change, not just “recommendations”.
 - **Improve grievance procedures, free of conflict of interest** (or even the appearance of potential conflict of interest). These procedures must be independent and worthy of trust from the community.
 - **Develop some excellence criteria** ... otherwise we fall back on “I recognize excellence when I see it”, sometimes called “gut-feeling” ... this tends to maintain status quo and limit diversity.
 - Reduce excessive standards of “data privacy” as an institutional shield against addressing systemic issues ...



- Linnes et al. (2024) *Framework for department-level accountability to diversify engineering*, Nat. Rev. Bioeng. <https://doi.org/10.1038/s44222-024-00183-4>
- Kozlowski et al. (2022) *Intersectional inequalities in science*, Proc. Nat. Acad. Sci. USA 119, <https://doi.org/10.1073/pnas.2113067119>
- Boivin et al. (2024) *Sexism in academia is bad for science and a waste of public funding*, Nat. Rev. Mat. **9**, 1-3 <https://doi.org/10.1038/s41578-023-00624-3>
- O'Connor et al. (2021) *Naming it: the problem of male privileging in higher education*, Academia Letters, <https://doi.org/10.20935/AL1653>
- Eagan, Garvey (2015) *Stressing Out: Connecting Race, Gender, and Stress with Faculty Productivity*, J. Higher Ed. 86
- T. A. Stadnyk (2024), *Overstaying our welcome: On the rise of women's seniority in the academy*, <https://onlinelibrary.wiley.com/doi/10.1002/hyp.15166>
See Section 2: Why women may feel unwelcomed? And then later discussing solutions ...

