



STATUS OF WOMEN AT CERN: PERSONNEL STATISTICS

20 February 2025



WIO
WOMEN IN TECHNOLOGY

INTRO TO WIT

WHY WIT?

An informal grass-roots community born in 2016 to create a network among women at CERN

SOON



WOMEN REPRESENTATION

- Female Members of the Personnel (2023)
 - 23.7% (MPE)
 - 21.1% (MPA)
- Low representation of women in STEM jobs

SUPPORT

- Mentoring program
- Collaborate with CERN D&I program
- News & info sharing
- Reach female job applicants with social media
- Skills workshops

NETWORKING

- Getting to know new people
- Informal lunches
- Visiting CERN labs
- Community outreach



2025 TEASERS

■ Talks

- Current and New DG
- Amalia Ballarino and more

■ Workshops

- Physics Masterclass (with IPPOG)
- Harassment (with all relevant bodies)

■ Mentoring

- Currently accepting applications
- <https://indico.cern.ch/event/1479276/>

■ Visits

- ATLAS experiment

■ More get-togethers :)

- Send us your ideas!

■ EVERYONE is welcome!



WIO
WOMEN IN TECHNOLOGY

Get in touch!

WEBSITE:

<http://cern.ch/wit>

SUBSCRIBE TO:

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CONTACT:

contact-wit@cern.ch

LINKEDIN:

[https://www.linkedin.com/
company/wit-cern/](https://www.linkedin.com/company/wit-cern/)



A large group of approximately 30 people, mostly women, are posing for a group photo in a room. They are arranged in several rows, some standing and some sitting on blue chairs. In the background, a red double-decker bus is visible, with the number '140' and the route 'Queensbury Kenton Harrow on the Hill Marlow Reading Hayes Station' displayed. To the left, a large white sign features the text 'WIP 17' and 'WOMEN IN TECHNOLOGY'. The scene is overlaid with a semi-transparent blue filter.

PERSONNEL STATISTICS

WOMEN AT CERN

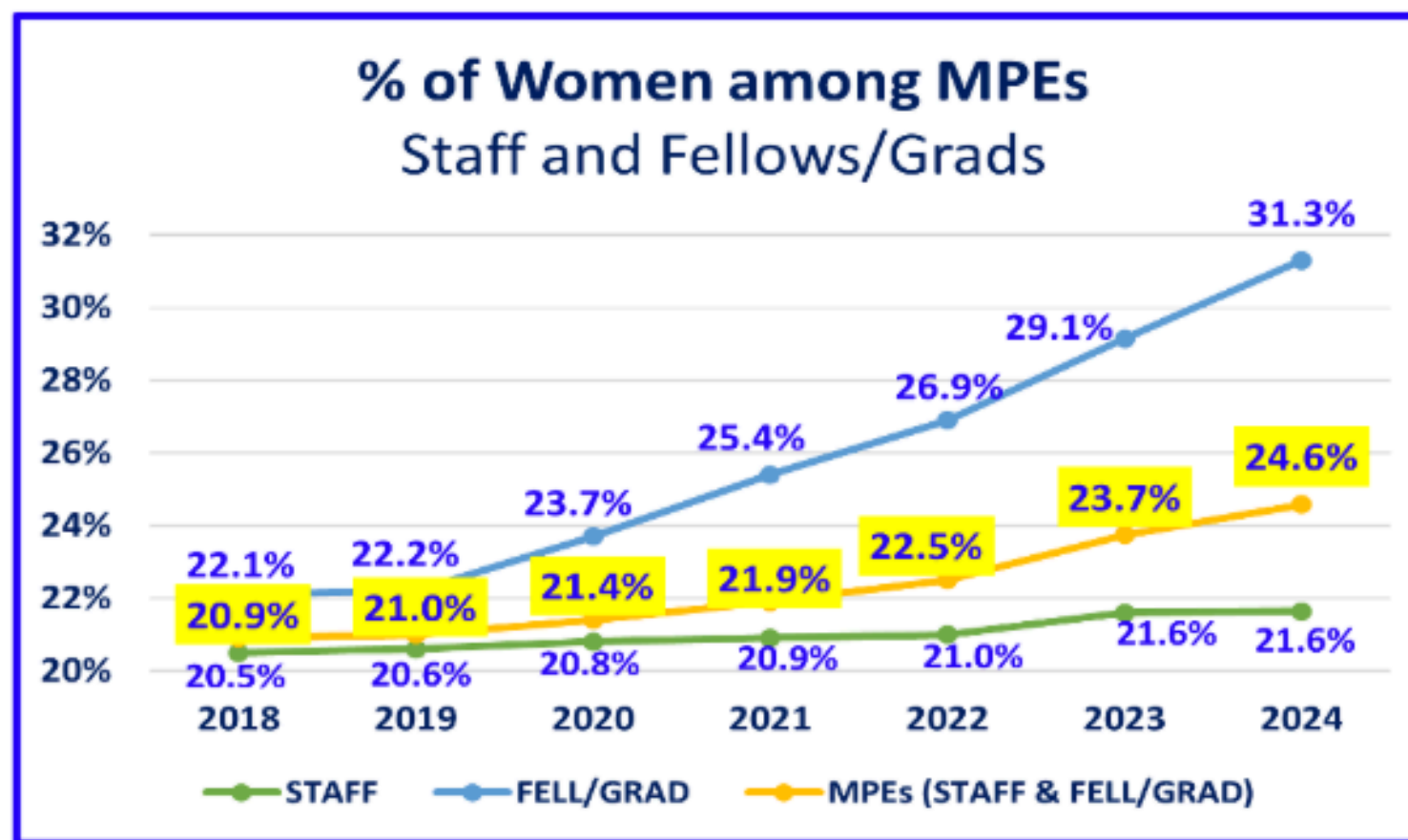
Evolution of Employed Members of the Personnel over time



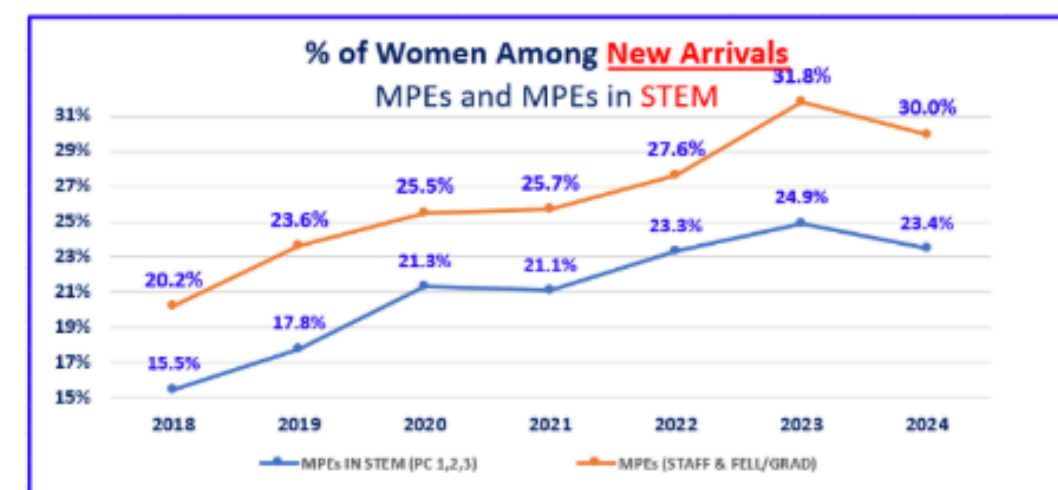
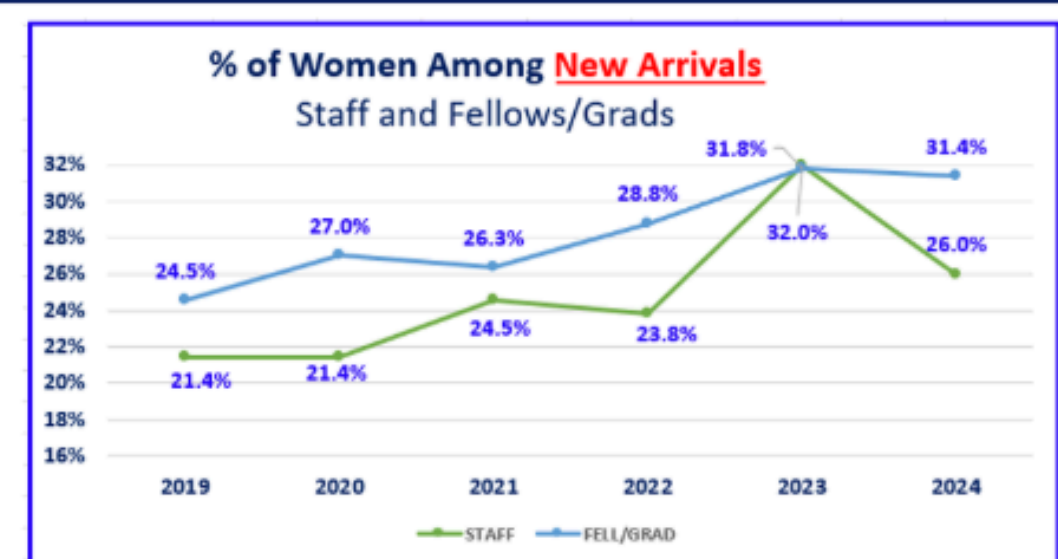
REPRESENTATION OF WOMEN

- Female Members of the Personnel (2023)
 - 23.7% (MPE)
 - 21.1% (MPA)

Periodic Update (Gender): 01 Dec 2024



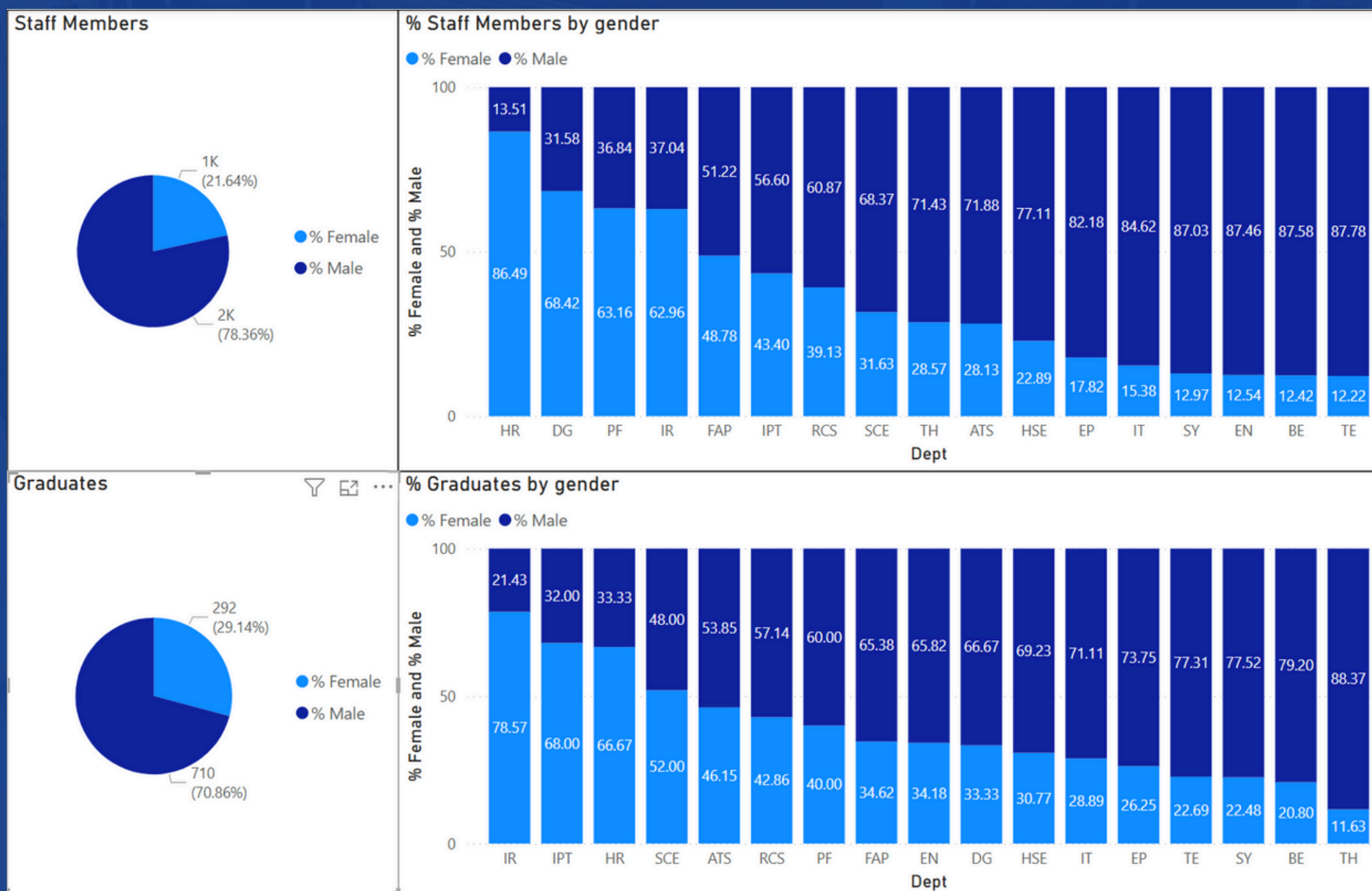
= 0.4% from target!



WOMEN AT CERN

STATISTICS BY DEPT. (2023)

- Fewer than 20% female staff in most technical or scientific departments (EP, IT, SY, EN, BE, TE)
 - Increased numbers of new graduates, but retention is key



WOMEN AT CERN

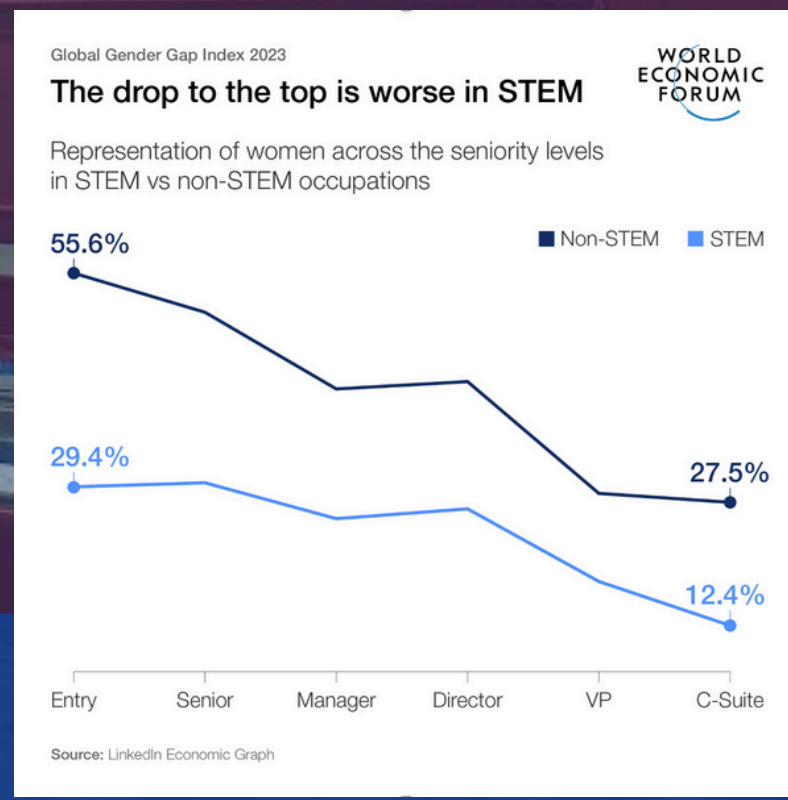
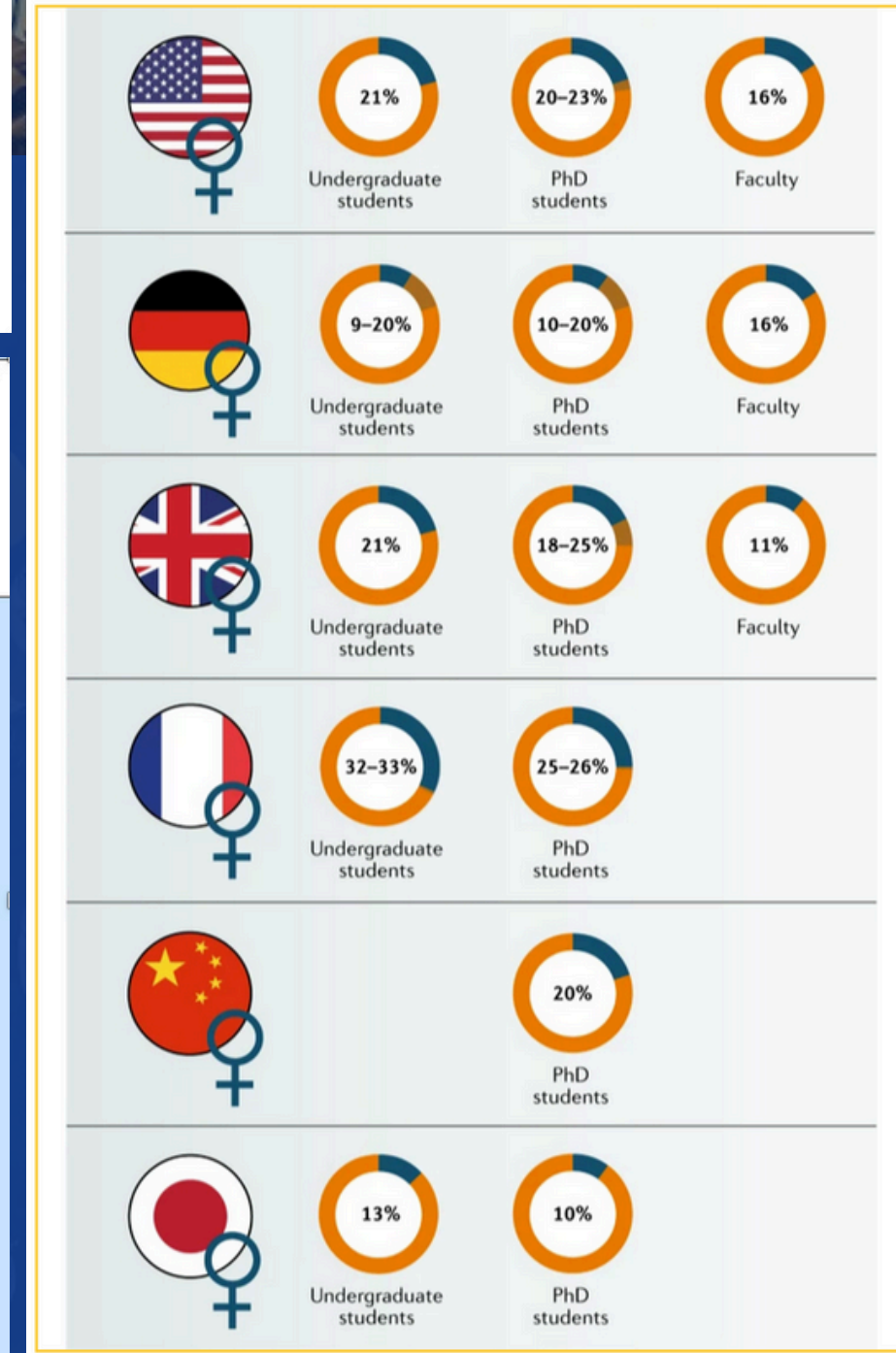


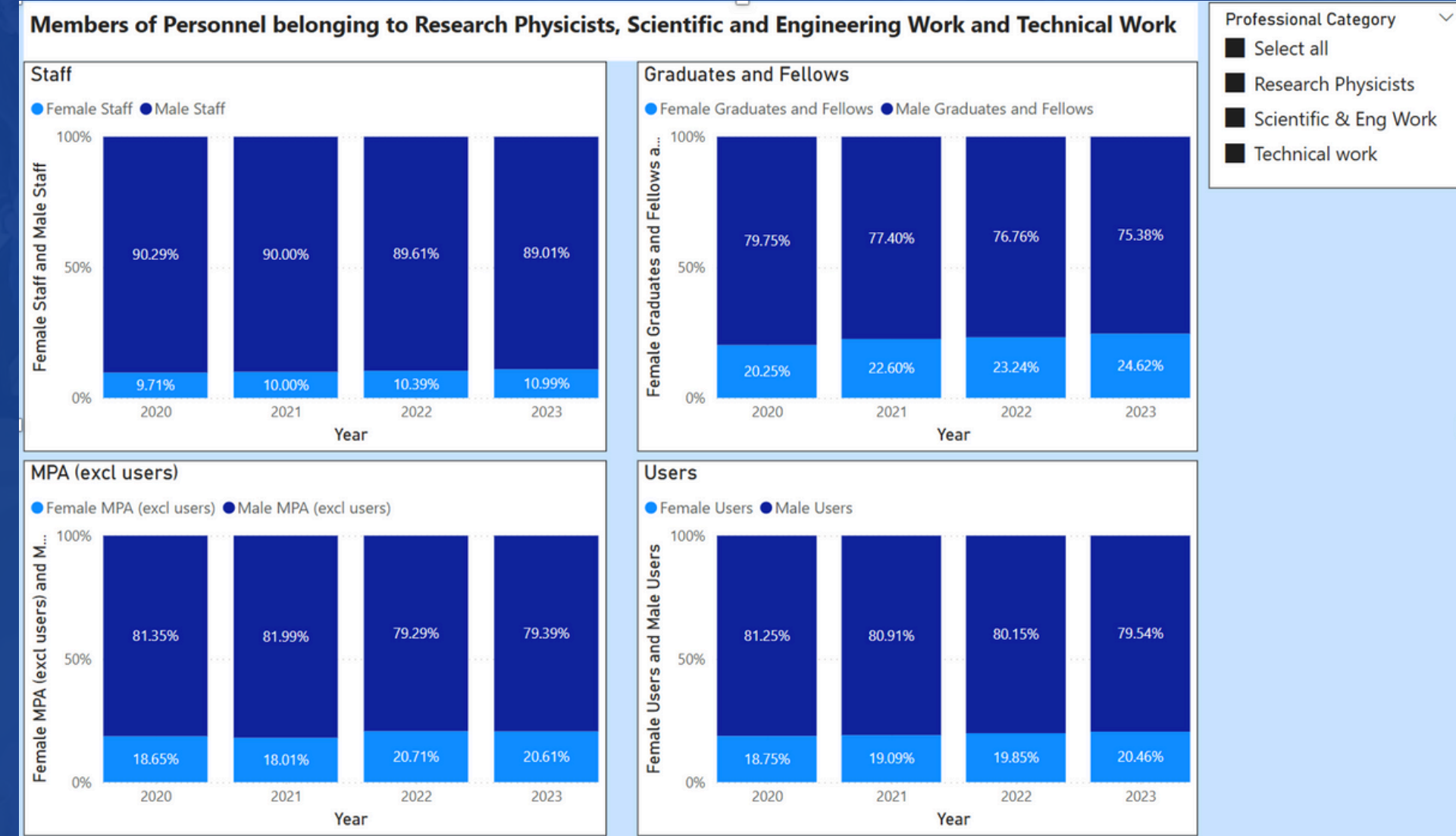
Fig. 1: Women remain under-represented in physics around the world at undergraduate, PhD and faculty levels.



Sources: American Institute of Physics, German Physical Society, Institute of Physics (UK), French National Center for Scientific Research and Chinese Physical Society.

STATISTICS FOR STEM PERSONNEL

- Encouraging trend in graduates and fellows
 - Increase in female Staff members is less inspiring and total (11%) is still very low
- Retention of women in STEM is a systemic problem



Source: Personnel statistics 2023. <https://cds.cern.ch/record/2897705/files/CERN-HR-STAFF-STAT-2023.pdf>

Source: Nat Rev Phys 1, 298-300 (2019)

WOMEN AT CERN

STATISTICS FOR USERS

- User = physicist (mostly)
- Employed by universities and external labs
- Different underlying geographic distributions (member and non-member states)

Figure 11: Proportion of Female Members of the Personnel over the last 10 Years (2014 – 2023)

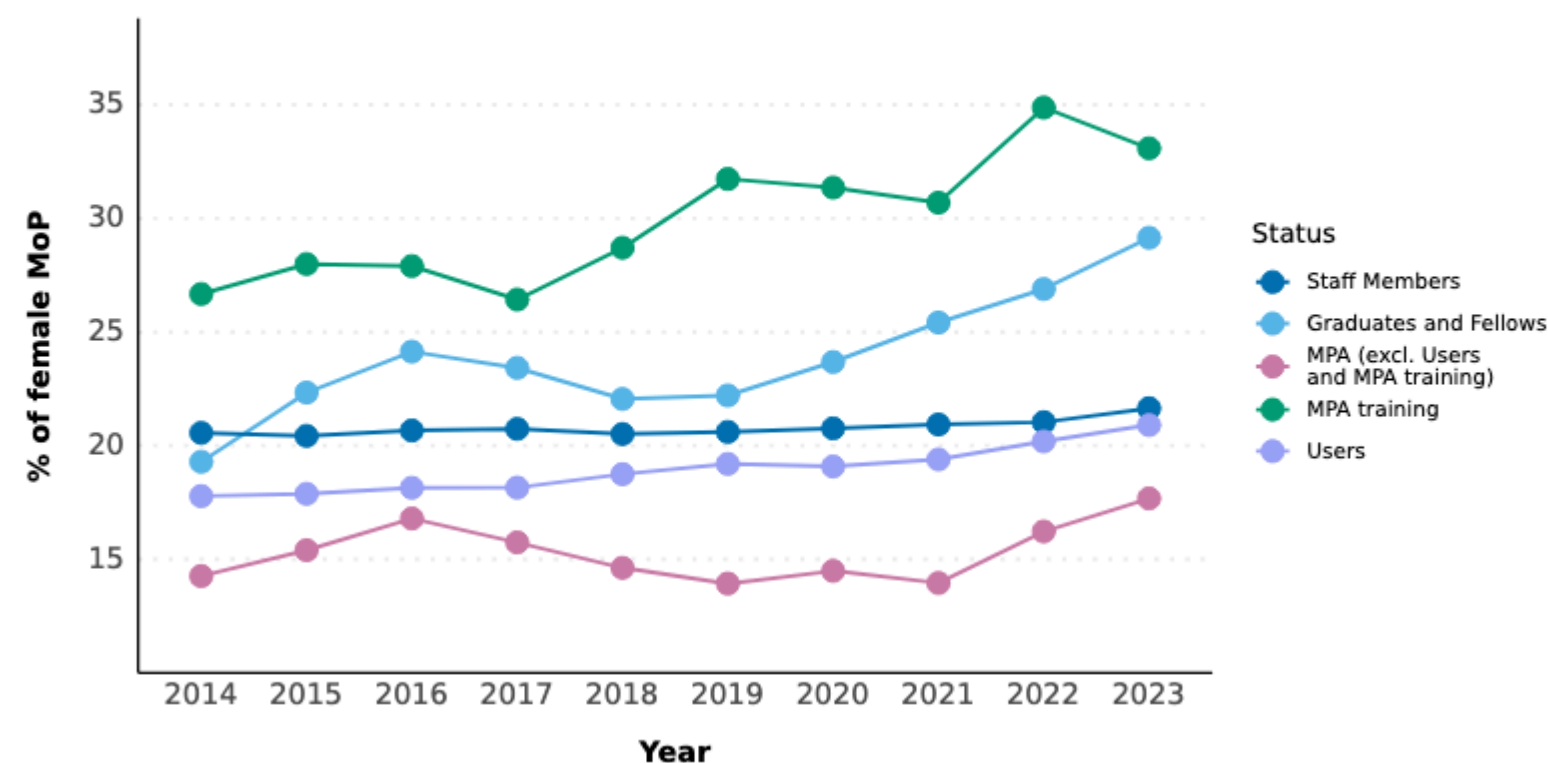
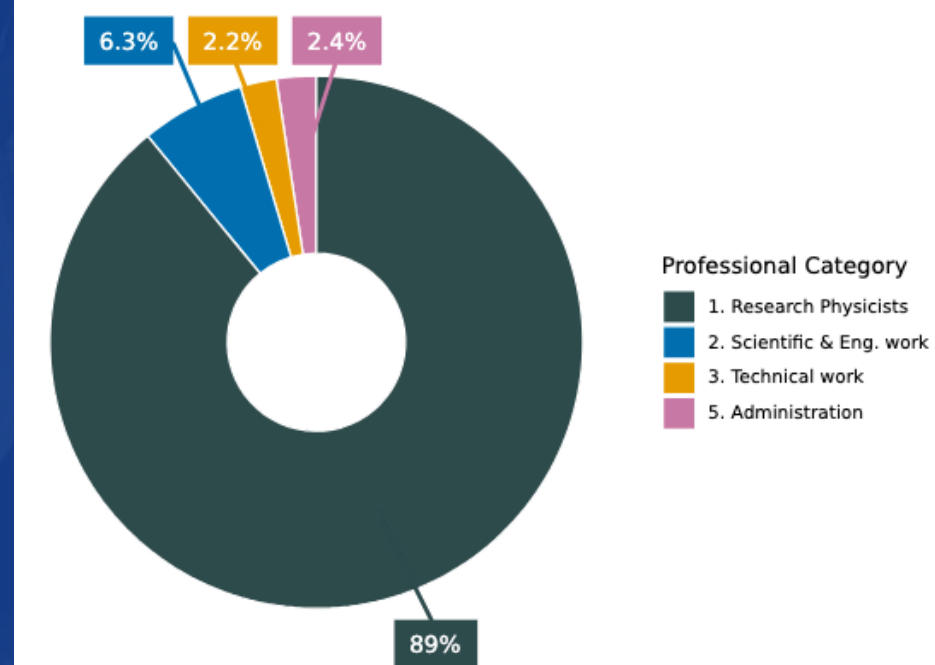


Figure 12: Female Users by Professional Category – 31.12.2023

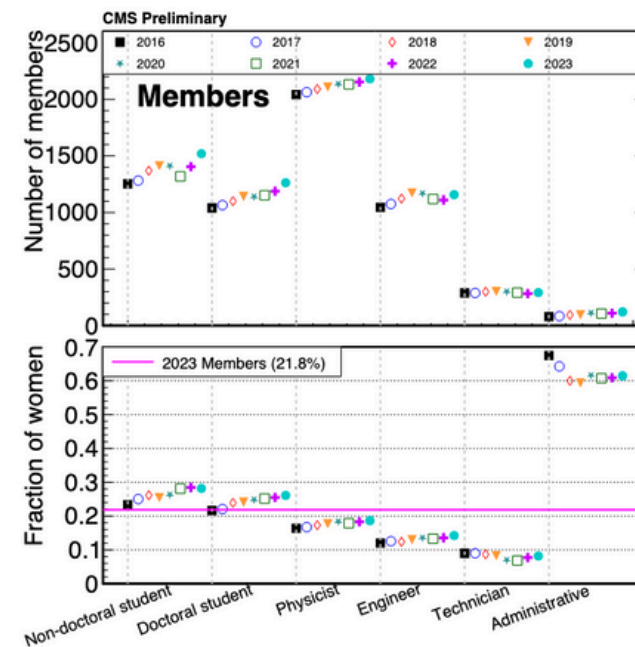


WOMEN AT CERN

SPOTLIGHT ON CMS EXPERIMENT (USERS)

- Experiments dominated by users (~94% for CMS)
- More detailed statistics than CERN
- Retention is still an issue
 - Increase in female students / junior postdocs (age 20-30), but minimal increase in new senior researchers / faculty (age 30+)

Professional Category per year

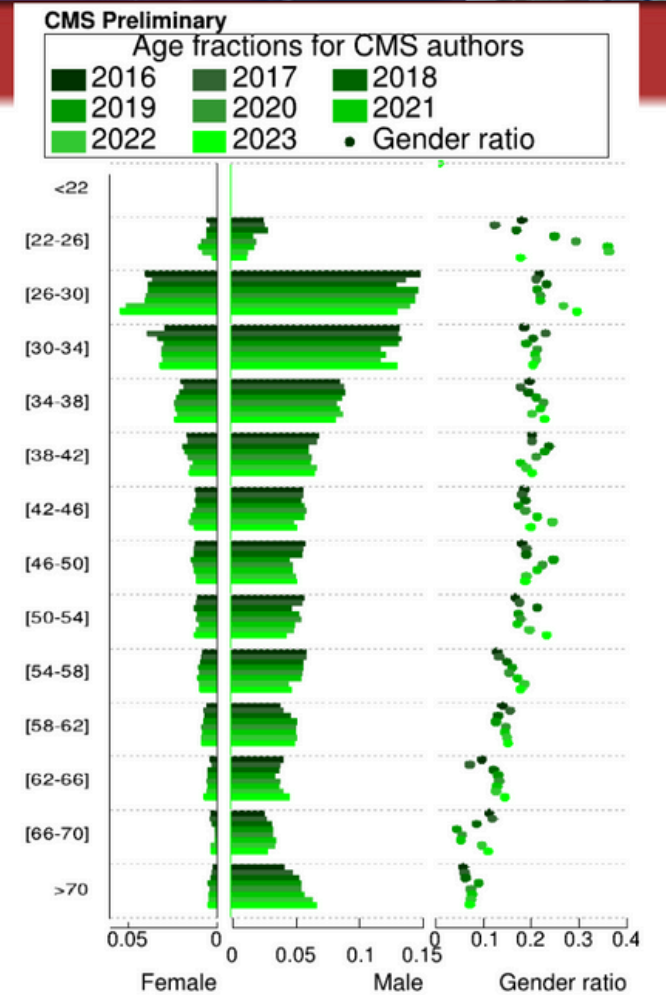


What we have learned

Slow but steady increase in fraction of women in most science-focused professional categories.

Age pyramid for CMS authors

Figure 14: Age pyramid for all CMS authors. Each color represents a different year. The age fraction in each age bin is shown on the horizontal axis, with the female and the male contributions to the total fractions separated. The gender ratio in each age bin is shown with markers.



What we have learned

The dominant age groups for authors are between 26 and 34 years old. A large increase in the gender ratio is seen over the past two years only for the younger population. Globally, the gender ratio decreases as the age increases.

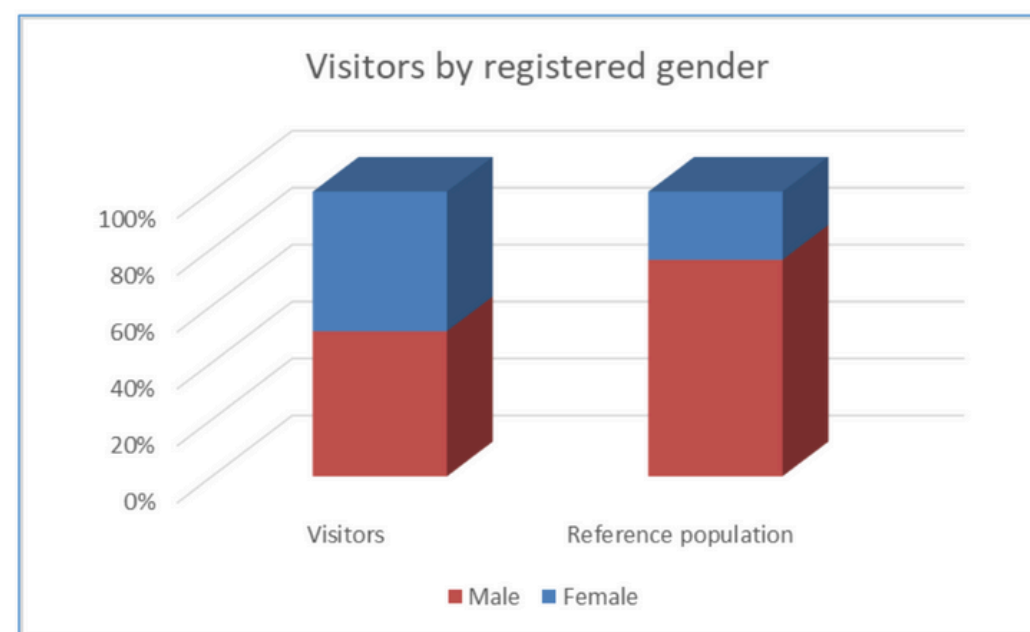
Figure 19: Evolution of the number of members (top) and fraction of women (bottom) over the years as a function of their professional category. In the bottom pad, the magenta line represents the average fraction of women in 2023.

Source: CMS diversity and inclusion statistics from 2016-2023 (CMS DP-2024/030)

WOMEN AT CERN

OMBUD'S REPORT (2022 DATA)

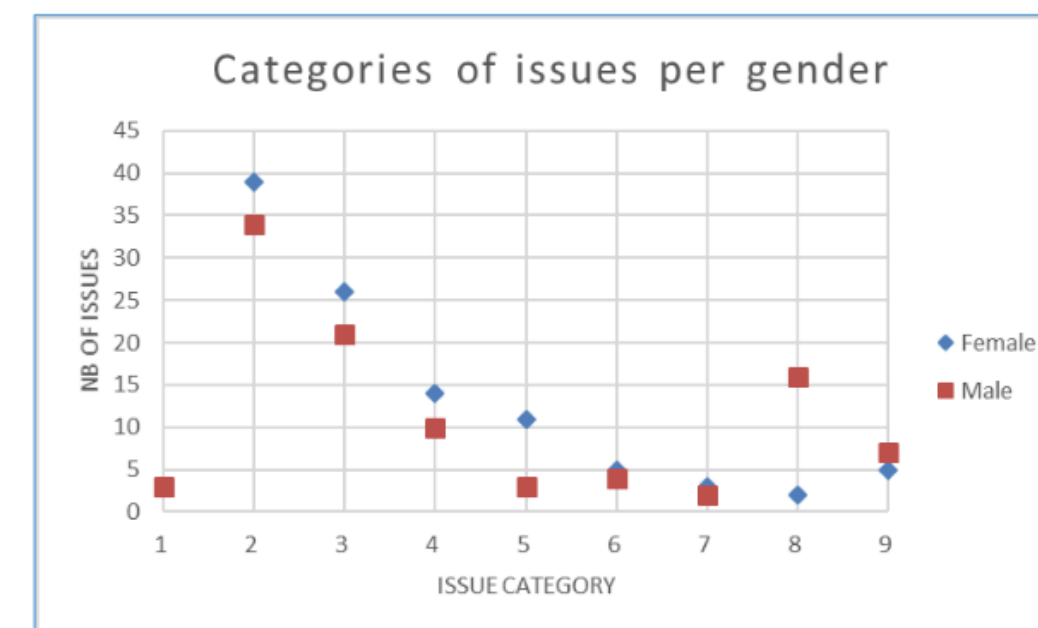
- Women make up a disproportionately large fraction of visitors to the Ombud
 - Harassment, discrimination, respect are key issues
 - Less confidence to give input on global issues?



49% of visitors are female. Considering the gender distribution of the reference population, at the end of the year 2022, female visitors were over represented by a factor of 2.

ANALYSIS OF ISSUES RAISED

- In category 5, which includes harassment cases, issues are raised significantly more by women.
- In category 8, which are concerns related the whole or part of the organization, .i.e. comments/complaints on how the overall system is working, are significantly raised by male colleagues. Some research indicate that women may have less trust in their capacity to provide input on global, strategic issues¹⁵.



Digging further into the gender/issue category question using detailed categories, I can add that the top 4 detailed categories, totalling 30% of issues raised by **female colleagues** are

- Harassment (all forms) (5.c)
- Diversity related issues / Discrimination with peers and colleagues (3.g)
- Communication with the hierarchy (2.e)
- Respect, treatment in relationships with peers and colleagues (3.b)

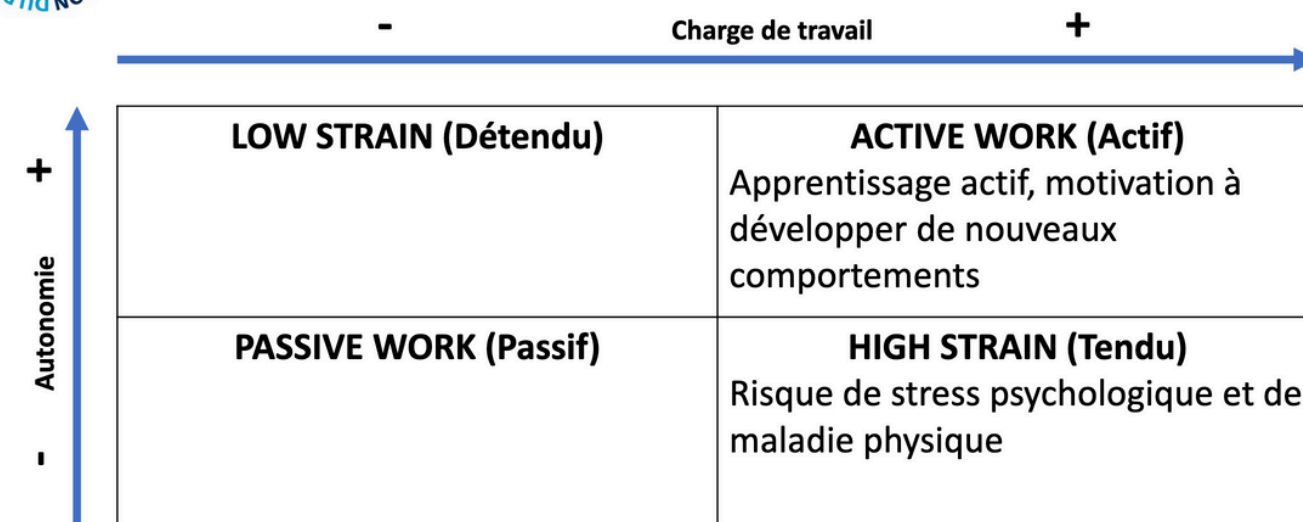
On the other hand, the top 5 detailed categories, totalling 30% of issues raised by **male colleagues** are:

- Departmental/Group climate created by the hierarchy (2.n)
- Trust/integrity in relationships with peers and colleagues (3.c)
- Leadership and management in general (8.b)
- Communication with peers and colleagues (3.e)
- Supervisory effectiveness (2.o)

WOMEN AT CERN

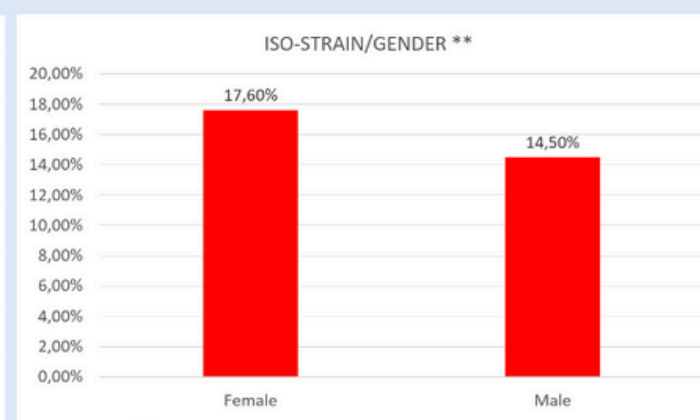
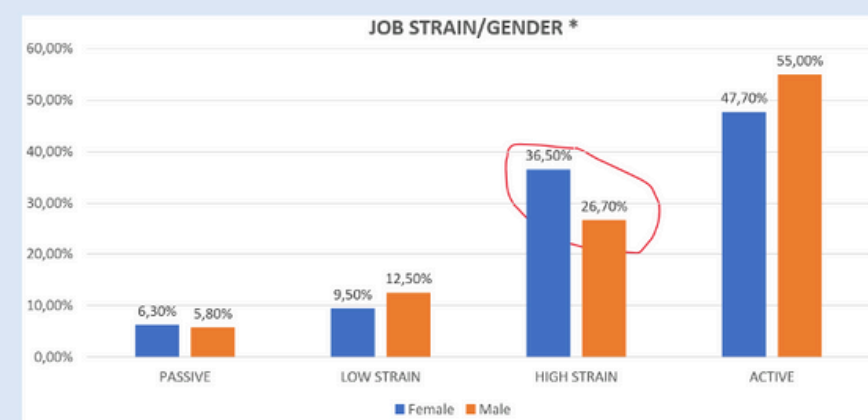
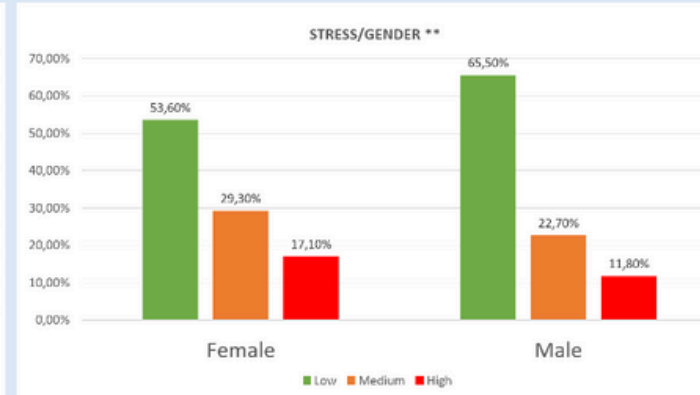
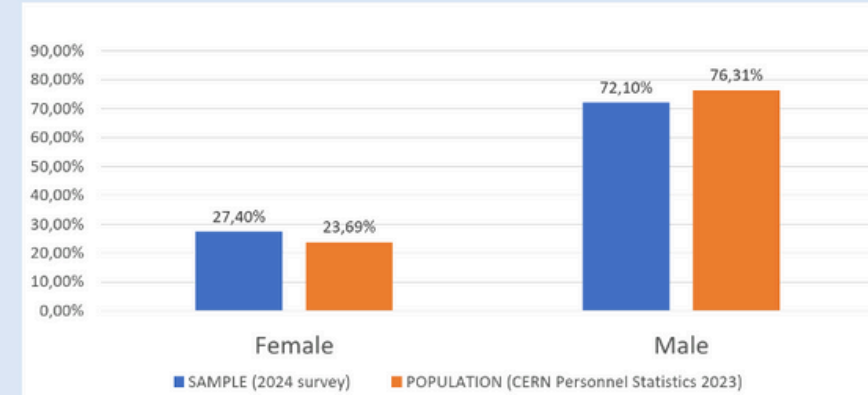


2. JOB STRAIN

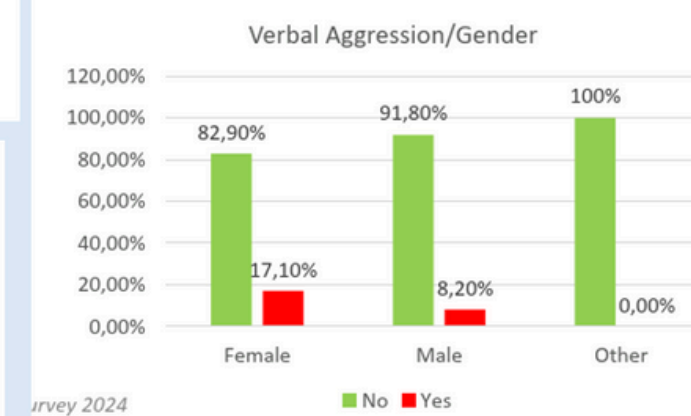


WELLBEING AT WORK (STAFF ASSOC. SURVEY)

- Women experience more medium to high levels of stress and strain at work
 - Strain: high workload, low level of autonomy
 - Impact on physical and psychological health
- Higher rate of verbal aggression against female personnel



887 replies

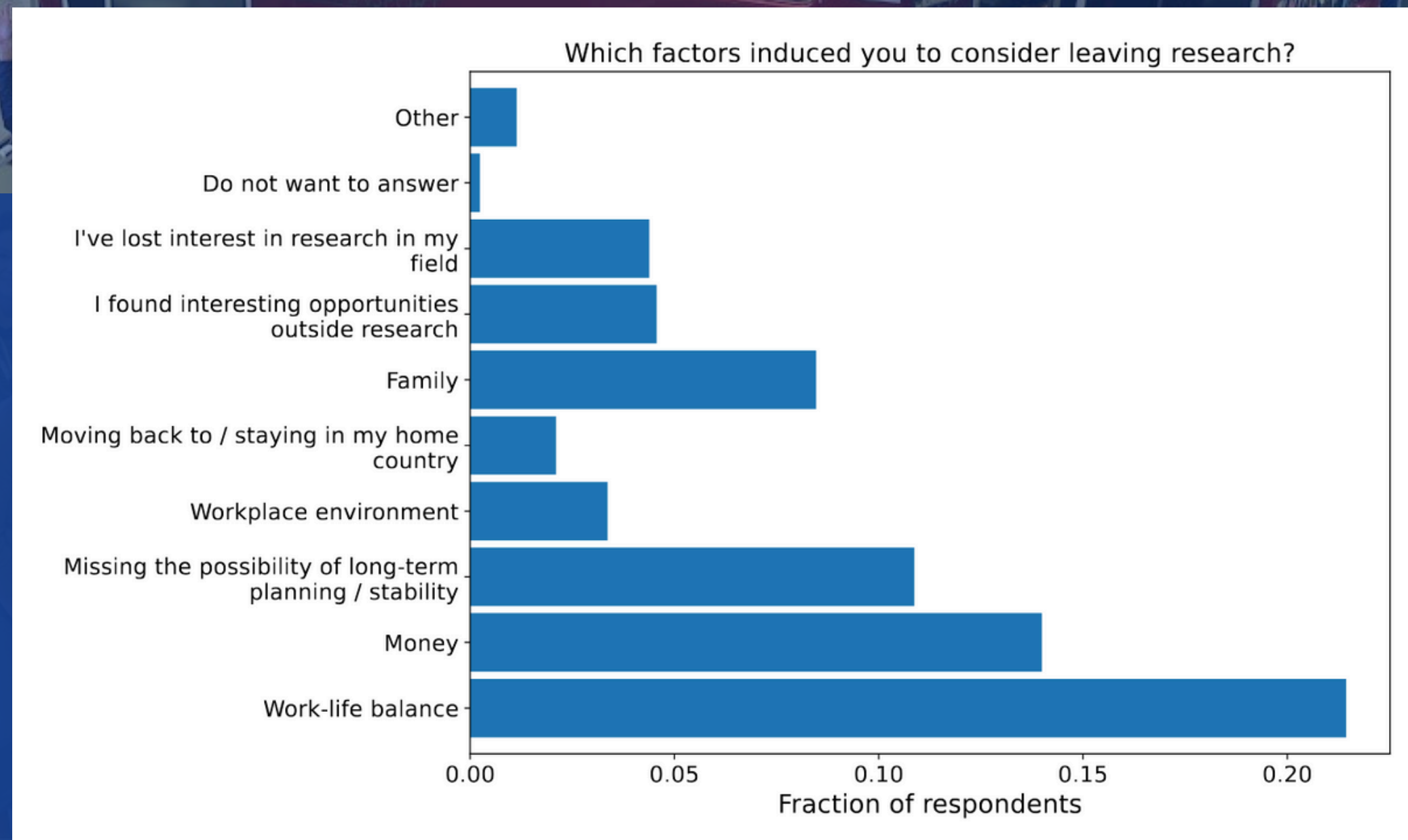


Source: Staff Association Well-Being Survey 2024, <https://indico.cern.ch/event/1478513/>

RETENTION OF EARLY-CAREER RESEARCHERS

ECFA ECR SURVEY(2022)

- 759 particle physics researchers
 - 31% women
 - 85% PhD students or postdocs
 - Not exclusive to CERN
- Work-life balance, financial security, stability, and family are critical factors when considering leaving academia
 - Can be intertwined!

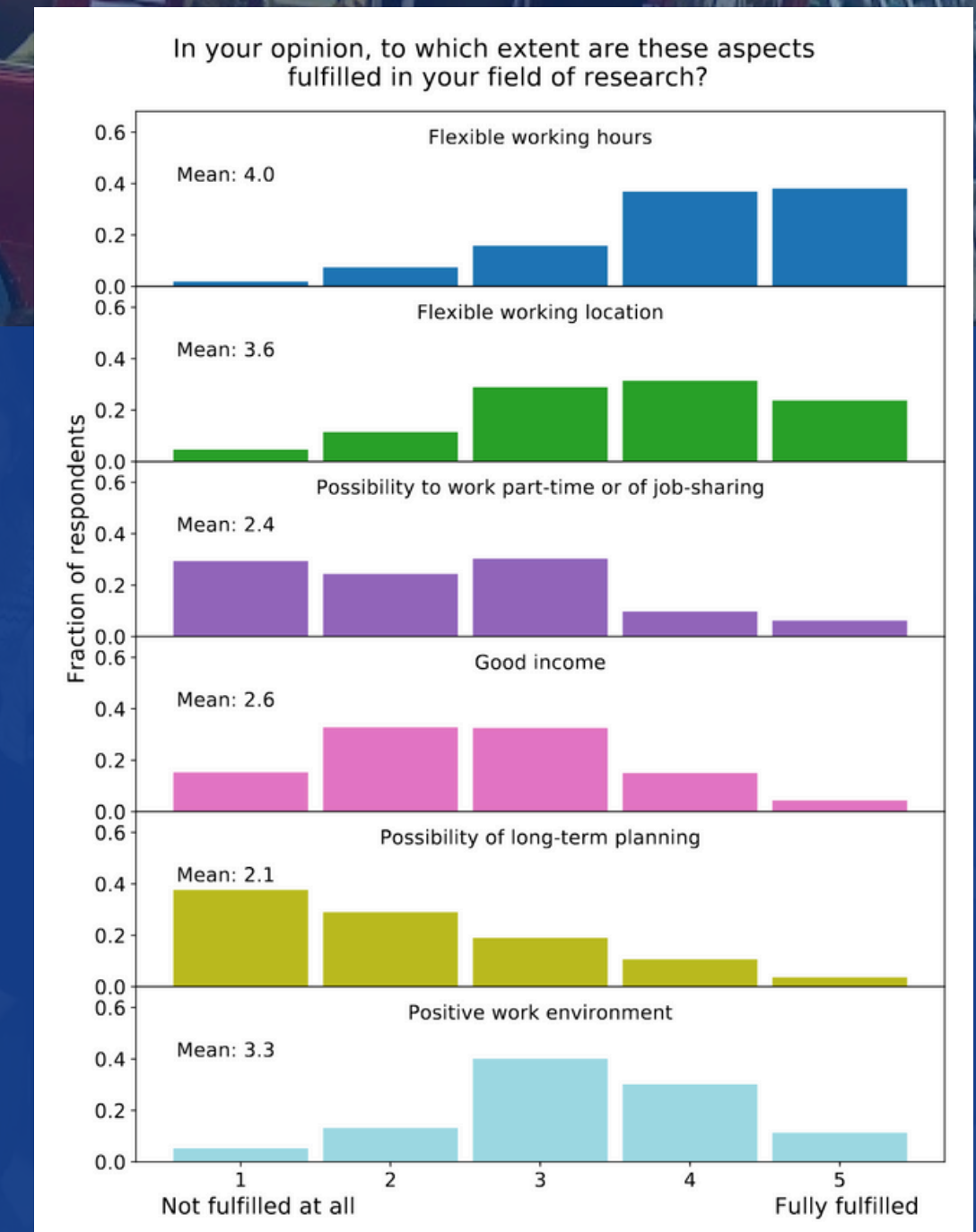
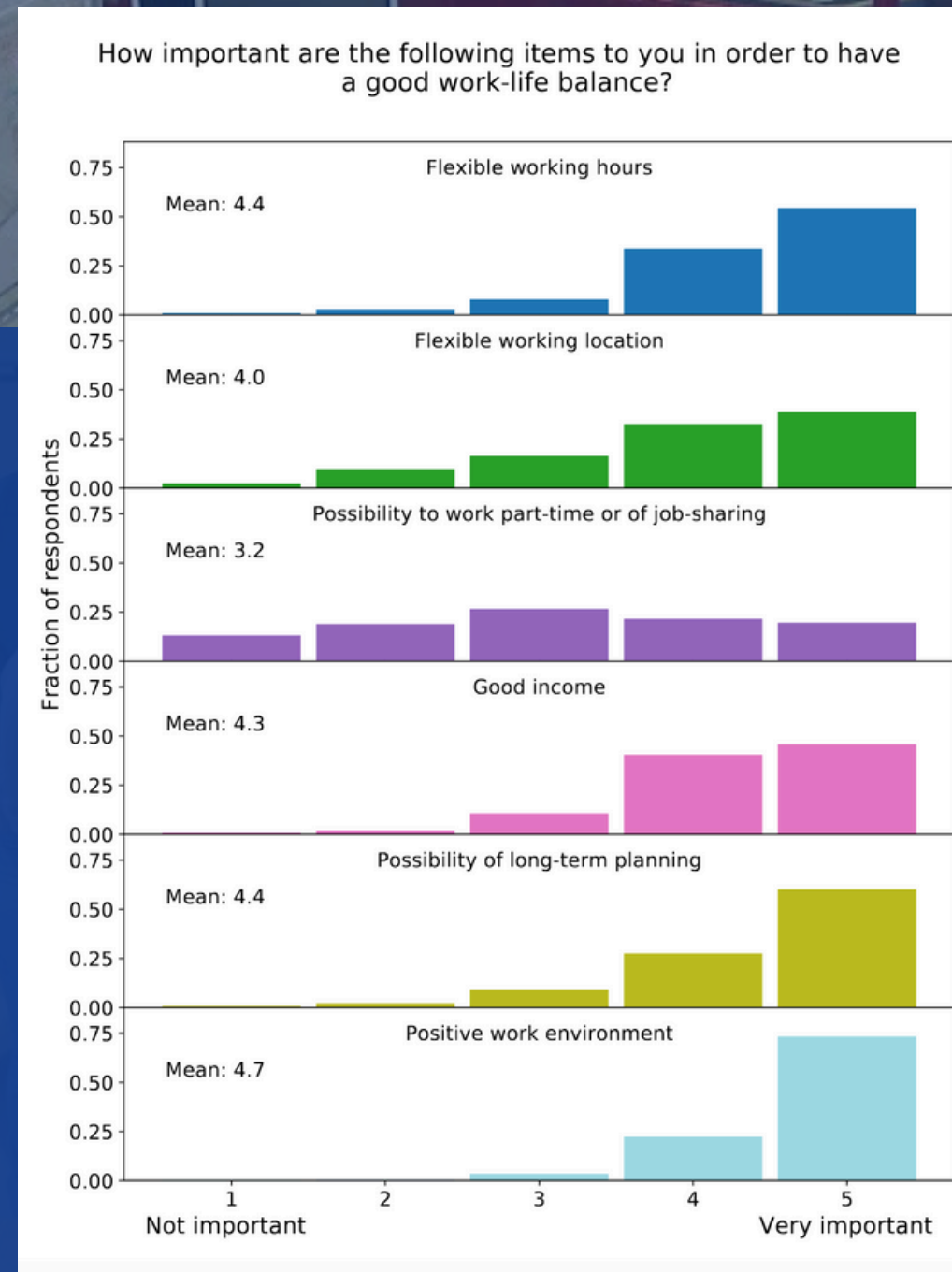


Source: Results of the 2022 ECFA Early-Career Researchers Panel survey on career prospects and diversity ([arXiv:2404.02074v1](https://arxiv.org/abs/2404.02074v1) [[physics.soc-ph](https://arxiv.org/abs/2404.02074v1)]).

RETENTION OF EARLY-CAREER RESEARCHERS

ECFA ECR SURVEY(2022)

- The field of particle physics does not currently align with quality-of-life priorities important to the next generation of physicists



Source: Results of the 2022 ECFA Early-Career Researchers Panel survey on career prospects and diversity ([arXiv:2404.02074v1](https://arxiv.org/abs/2404.02074v1) [[physics.soc-ph](https://arxiv.org/abs/2404.02074v1)]).

CONCLUSIONS

- We are seeing a slow but steady increase in the fraction of women in entry-level STEM roles at CERN
- The fraction of women in senior roles remains low
- Retention of new female hires is critical
- Concerning trends in well-being and psychological safety for women
- What should we prioritize to improve quality of life and retention?