



Matters of Diversity and Inclusion at the ALICE Collaboration

41st Edition of the International Conference on High Energy Physics

Fernando Antonio Flor (Yale University)
for the ALICE Diversity Office
July 8th, 2022

ALICE Diversity Office composition and mandate

Composition of ALICE Diversity Office

- First established in September of 2019
 - Most recent office of Diversity and Inclusion of the 4 LHC Experiments

Membership:



Adriana Telesca
(CERN)



Anders Knospe
(Lehigh University)



For the ALICE Juniors
Fernando Antonio Flor
(Yale University)

ALICE Diversity Office mandate

- Monitoring issues of inclusion and diversity within ALICE
 - Periodically reporting to Collaboration
 - Collecting statistics and producing annual reports
- Serving as liaison with diversity offices in other LHC experiments and at CERN
- Advising ALICE Management and collaboration members regarding issues of diversity and inclusion
- Promoting diversity and inclusion initiatives and maintaining diversity website
 - <https://alice-collaboration.web.cern.ch/DiversityOffice>

Initiatives promoted by the ALICE Diversity Office

Colour Blindness Awareness Day

- Last held on September 6th, 2021
 - Things to consider for making plots and presentations accessible to people with colour blindness:
 - Using different symbols, patterns, or line types in addition to colour
 - Using colours contrasting not only in hue, but also in brightness
 - Ensuring that there is adequate contrast in brightness between text and the background
 - Using thick lines
 - There are various online resources that simulate how images look to people with different variations of colour blindness:
 - <https://www.color-blindness.com/coblis-color-blindness-simulator/>
 - <https://www.colourblindawareness.org/colour-blindness/colour-blindness-experience-it/>

LGBTQ+ in STEM Day

- Last observed on November 18th, 2021
 - Celebrates the achievements of LGBTQ+ community, highlighting the barriers they face - in science, technology, engineering, and mathematics
- Pride in STEM website:
 - <https://prideinstem.org/>
- Special thanks to Outreach at ALICE for our Social Media presence



Today for @LGBTSTEMDay
#LGBTSTEMDay

we join friends around the world to celebrate the presence and important contributions of LGBTQ+ people across all STEM disciplines!



9:48 AM · Nov 18, 2020 · TweetDeck

Workshop on inclusive teamwork and work spaces

- Since 2020, the ALICE Diversity Office has helped facilitate a series of workshops aimed at generating inclusive work spaces between collaborators
- Approximately 80 collaborators have attended workshops thus far
 - Primarily collaboration chairpeople, working group conveners, and junior representatives
 - Following a “top-down” approach
- We have generally received very good and constructive feedback regarding the subject matter
 - Workshop content has been adapted through its iterations based on comments and suggestion from collaborators
- 2022 workshops currently underway

Analysis on demographics at the ALICE Collaboration

Demographic study

- Aims at procedurally generating an annual “snapshot” of demographic trends and information at ALICE
 - Correlating demographic data with:
 - Appointments to positions of responsibility
 - Appointments to paper preparation and review committees
 - Distribution of conference deliverables (i.e. posters and presentations)
- The results produced from the study can be used to identify any underlying issues of diversity and inclusion within the collaboration

Methodology for demographic study

- Data from the ALICE membership database (GLANCE) is sampled the first day of September each year
 - Time of sampling is primarily employed to avoid any double-counting in case any collaborator changes employment mid-year
- Data is fixed manually for a small fraction of collaborators who possess multiple simultaneous appointments

Methodology for demographic study

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For September 2021 data set:

- 1907 active members
- 983 scientific authors (only includes PhD Students, Postdocs, “Physicists” *, Senior Engineers and Honorary Members)

* The term “Physicists” was used to group professors, research scientists, and others with permanent positions

Methodology for demographic study

Data Set:

- Information extracted from GLANCE database since 2014 using various demographic variables:
 - **Binary Gender (main focus of this talk)**
 - Geographic region
 - Employment category
 - Appointments to positions based on level of responsibility

Supplementary Data:

- Editorial Board: Work performed for paper preparation and paper review committees
 - i.e. Paper Committee (PC) and Internal Referee Committee (IRC)
- Conference Committee: Deliverables at conferences (i.e. posters and presentations)

Determination of geographic regions

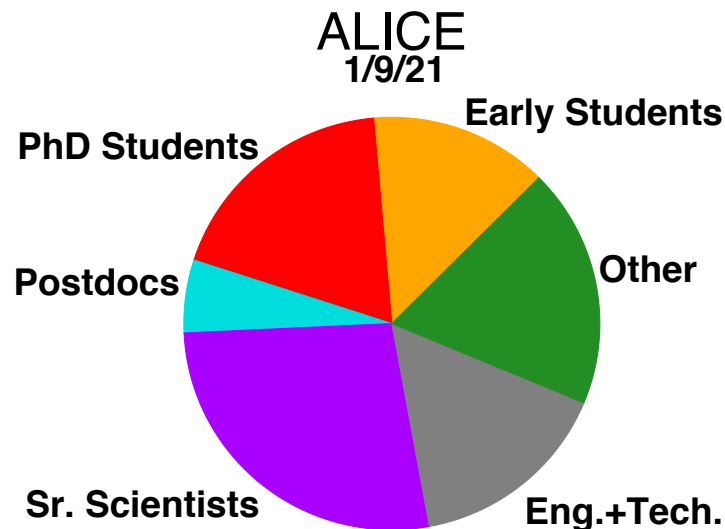
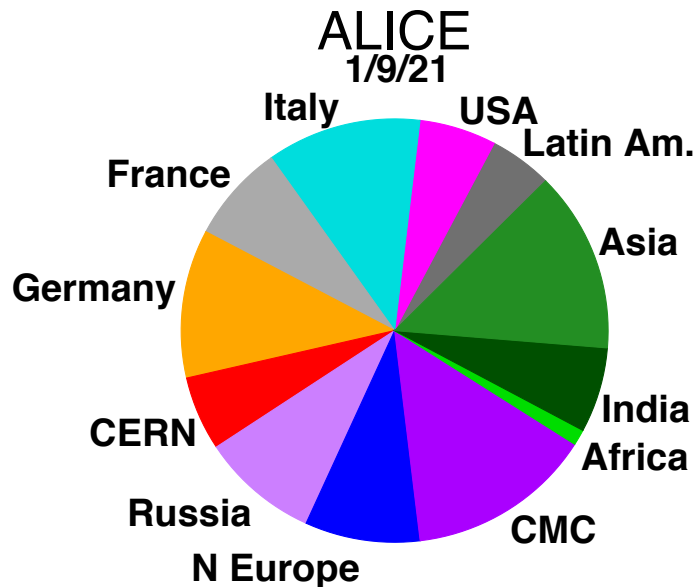
- Geographic regions are determined by the location of collaborators' home institute (with a total of 12 regions)
 - Countries with the largest fractions of ALICE members are grouped into their own category:
 - Italy, Germany, Russia, France, India, and the United States
 - CERN is treated as its own region
 - The remaining countries are grouped into their physical geographic region:
 - Africa, Asia, Latin America, and Northern Europe
 - Central Europe, the Mediterranean, and the Caucasus are grouped into a single "CMC" region

Determination of employment categories

- Employment categories are defined as:
 - Early Students
 - Summer, Bachelor, and Master
 - PhD Students
 - Postdocs
 - Senior Scientists
 - “Physicists” *, Senior Engineers, and Honorary Members
 - Engineers and Technicians
 - Excluding Senior Engineers
 - Other
 - Administrative and Guest Members

* The term “Physicists” was used to group professors, research scientists, and others with permanent positions

ALICE active employments

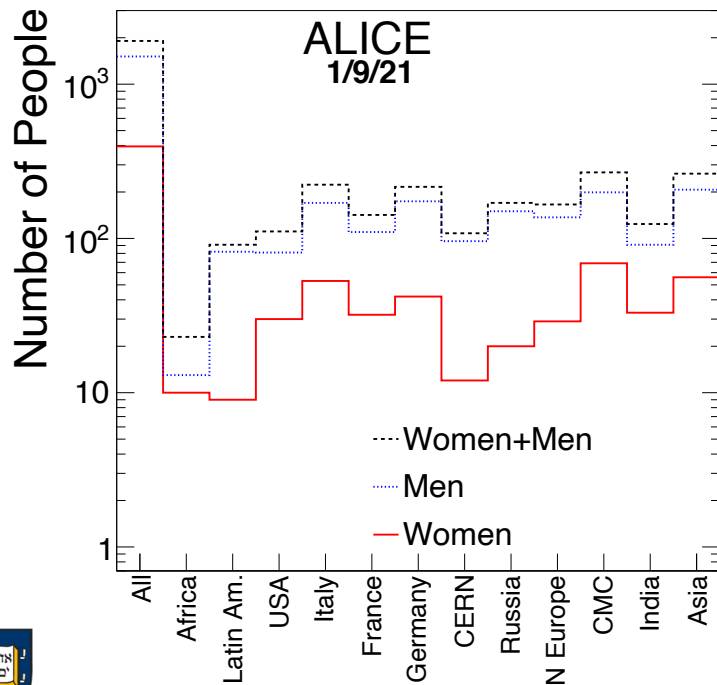


For September 2021 Dataset:

1907 active members

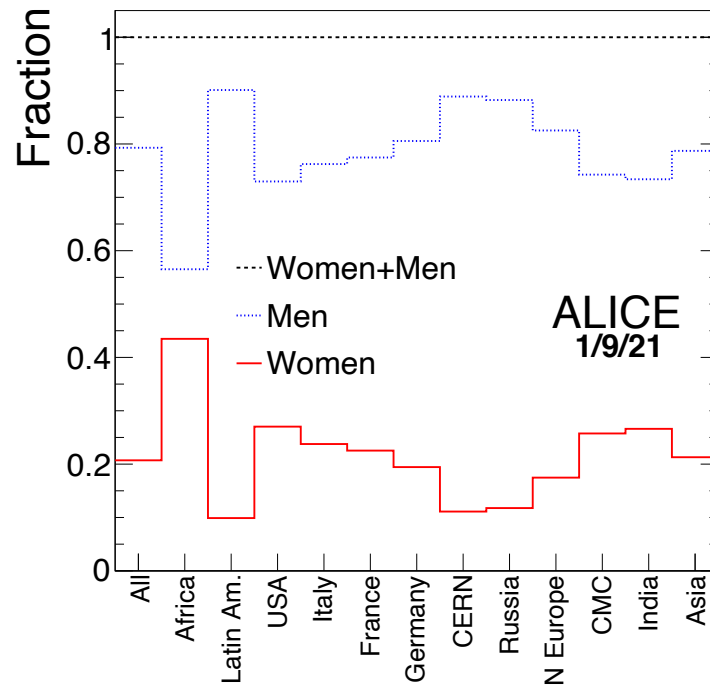
Gender by region

Number of women and men from each geographic region (log scale)

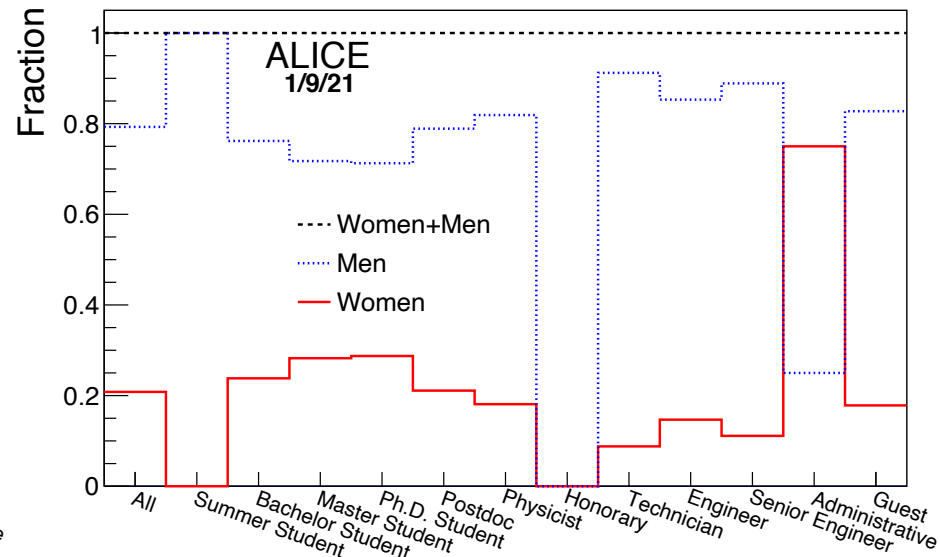
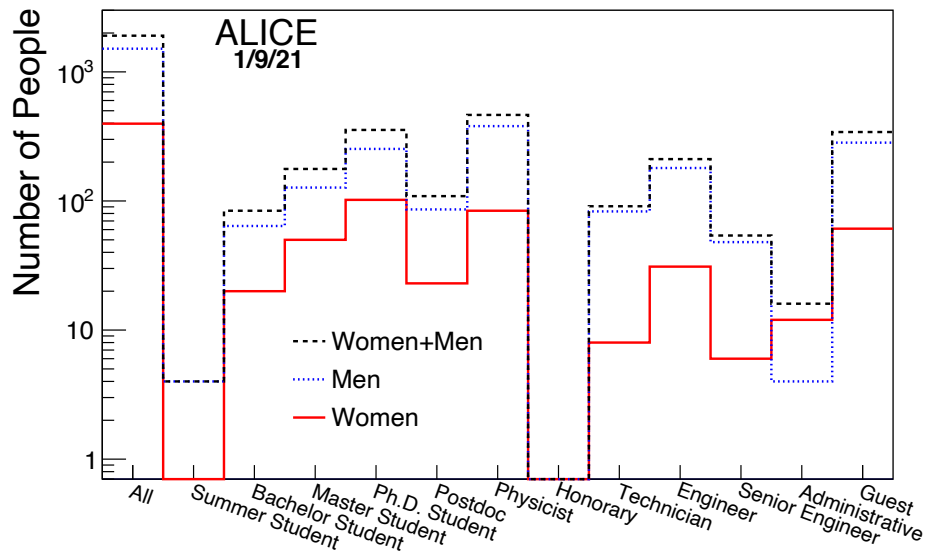


Fraction of women and men from each geographic region

Fraction of women is generally around 20%



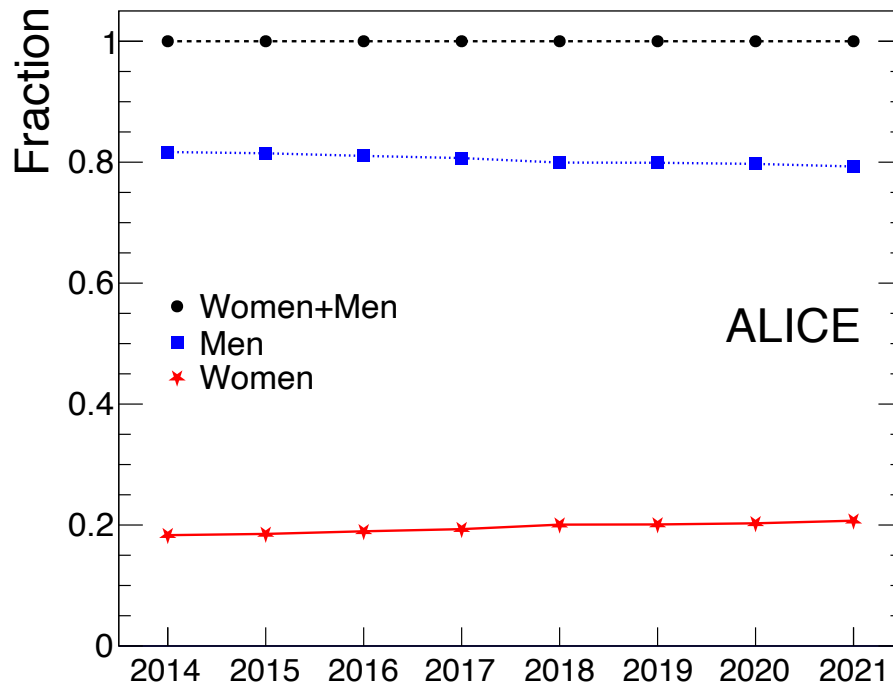
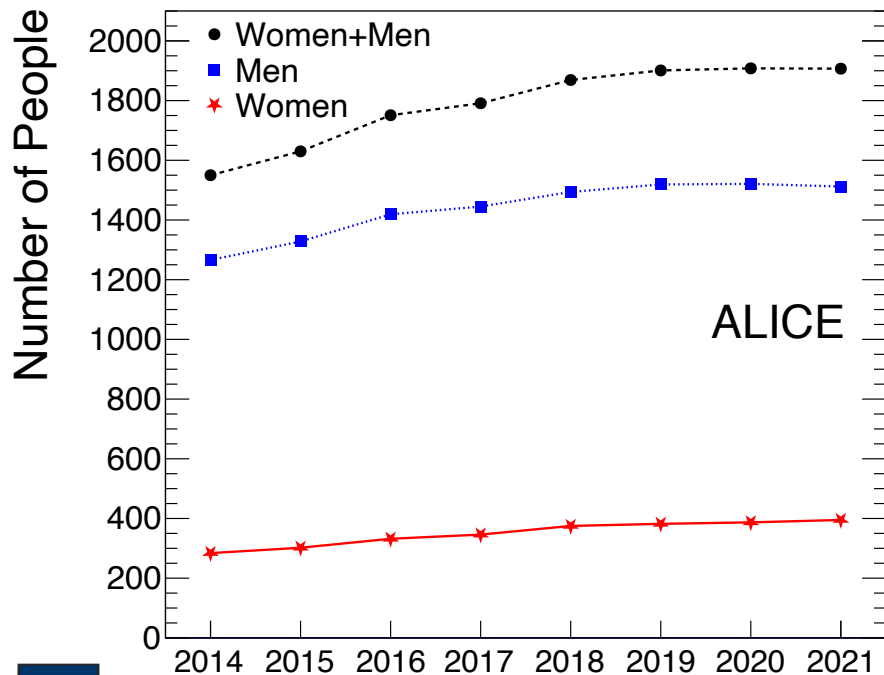
Gender by employment category



- Fraction of women generally around 20%

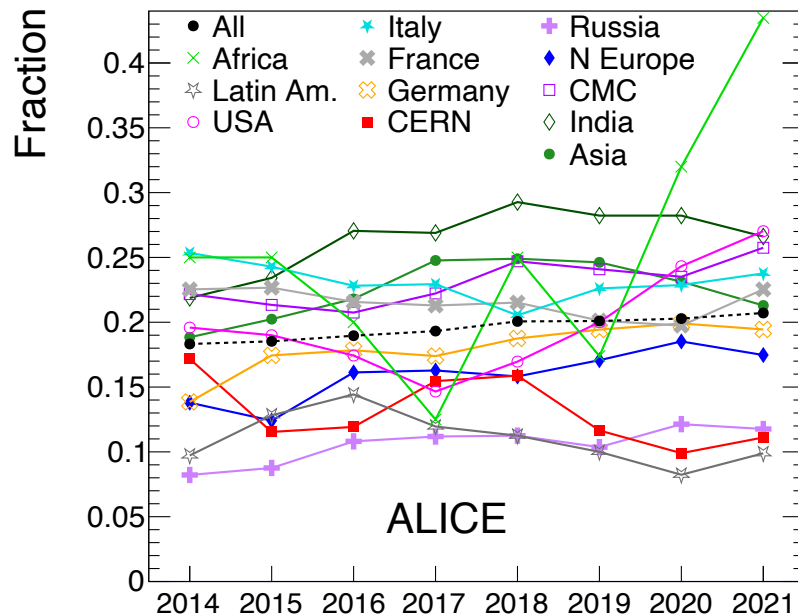
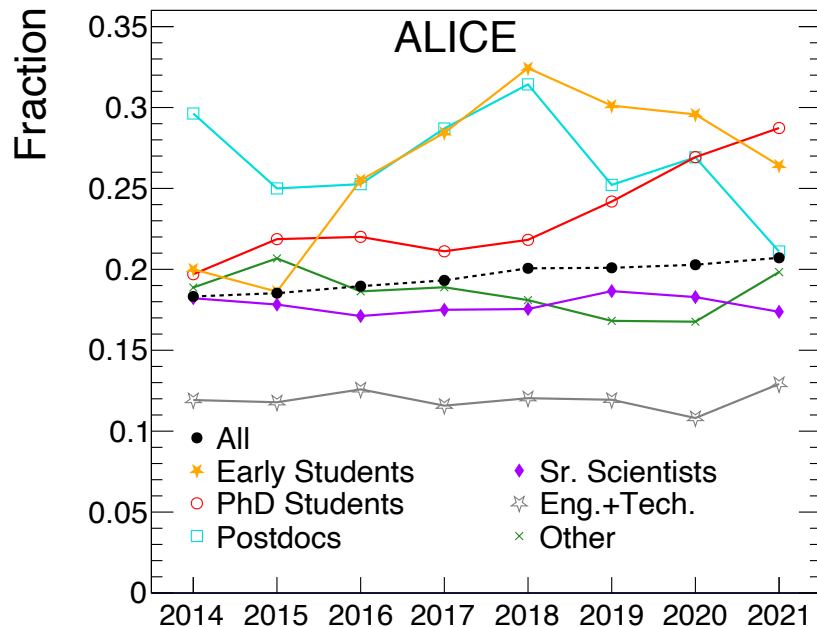
Active employment time evolution 2014 - 2021

- Slight increase of fraction of women



Time evolution 2014 - 2021

Fraction of active employment held by women colleagues by career level and region



Determination of appointment level

Each type of appointment is assigned an integer describing the level of the responsibility granted to each collaborator

- Deputies are generally 1 level below the corresponding lead role

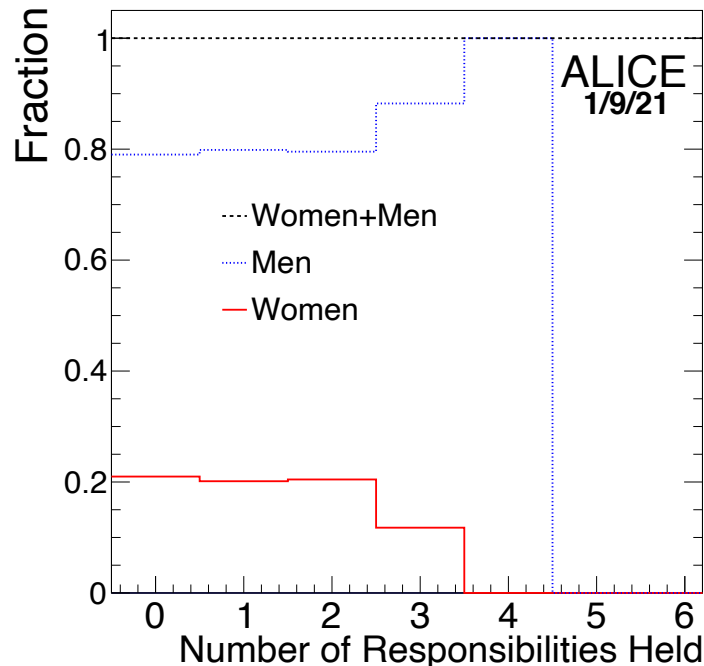
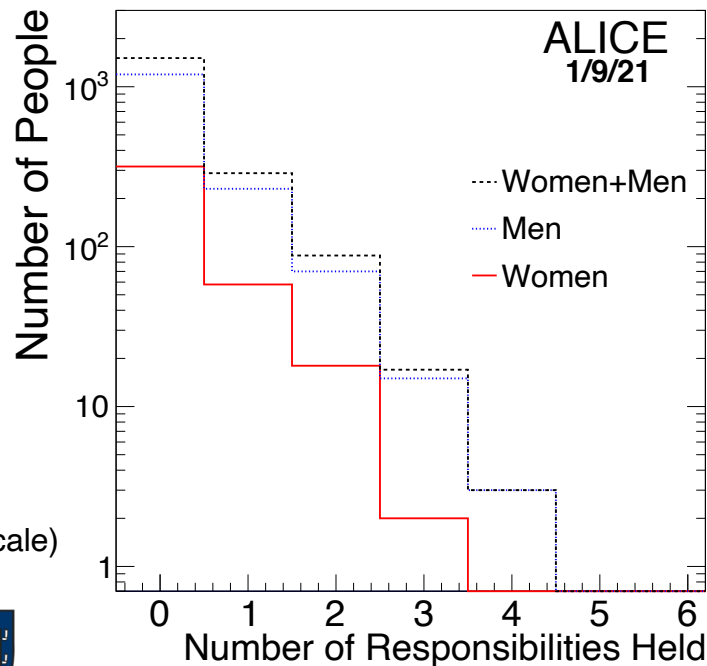
Level	Appointments
6	Spokesperson and Collaboration Board Chair
5	Computing Resource, Electronics, Outreach, Physics, Resource, Service Work Board, Software Physics Data Processing and Computing, Technical, and Upgrade Coordinator
4	Conference Committee Chair, Editorial Board Chair, Project Leader, Run and Trigger Coordinator
3	GLIMOS, Junior Representative, Management Board Elected Member, Physics Board Ad-personam, Physics Working Group Convener, Team Leader
2	Collaboration Board Members (non-voting), RB Member, Technical Board Member
1	Conference Committee Member, Editorial Board Member, SRC



Appointments by gender

Total number (and fraction) of individuals and total number of responsibilities by gender with all employment categories summed

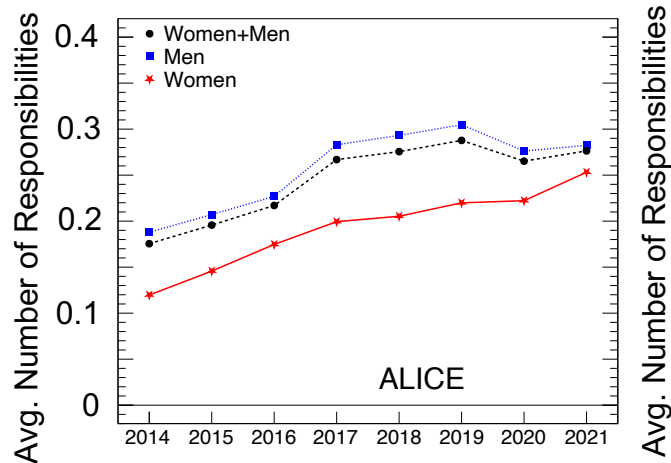
- On average, women hold ~20% of responsibilities
 - On par with expected global average



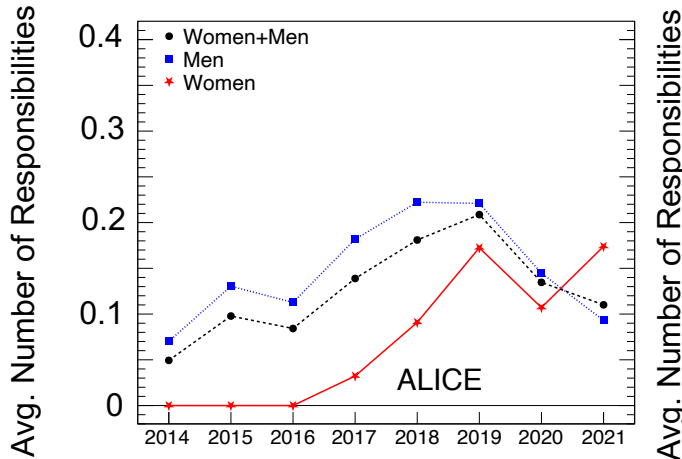
Appointments by gender time evolution (2014 - 2021)

Average number of responsibilities by gender:

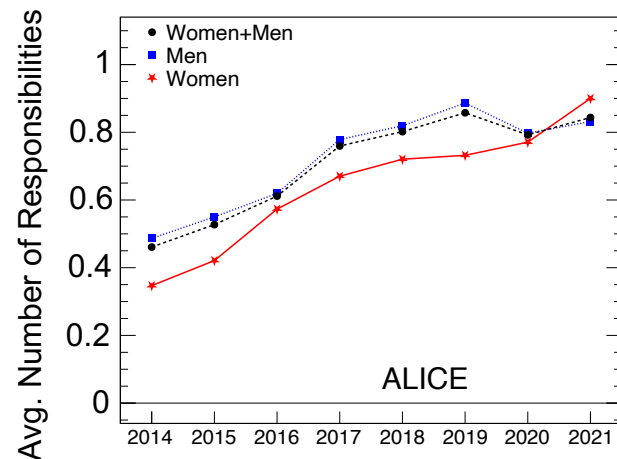
All employment categories



Postdocs



Senior Scientists

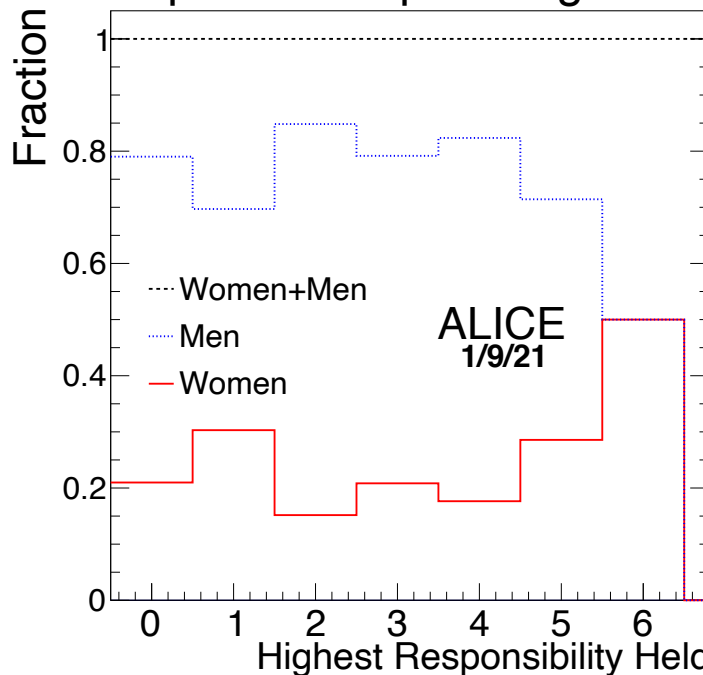
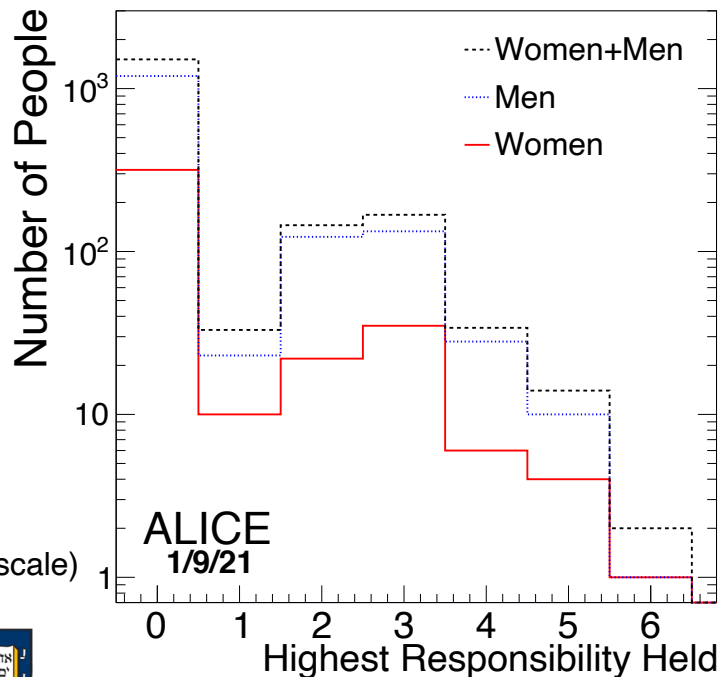


Appointment level by gender

Total number (and fraction) of individuals and highest level of responsibility by gender

- On average, women hold ~20% of high level responsibilities

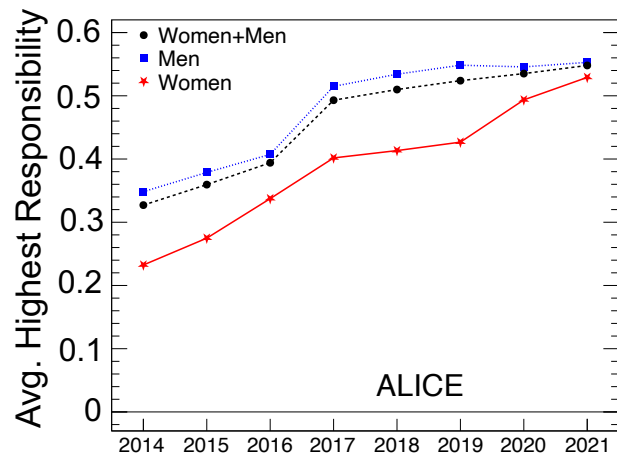
- On par with expected global average



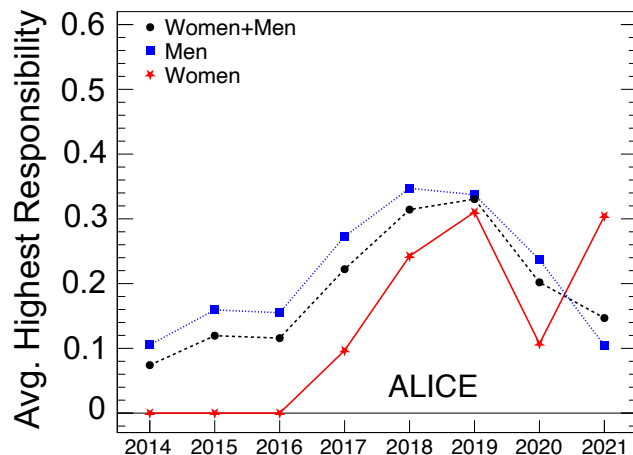
Appointment level by gender time evolution (2014 - 2021)

Average highest level of responsibilities by gender:

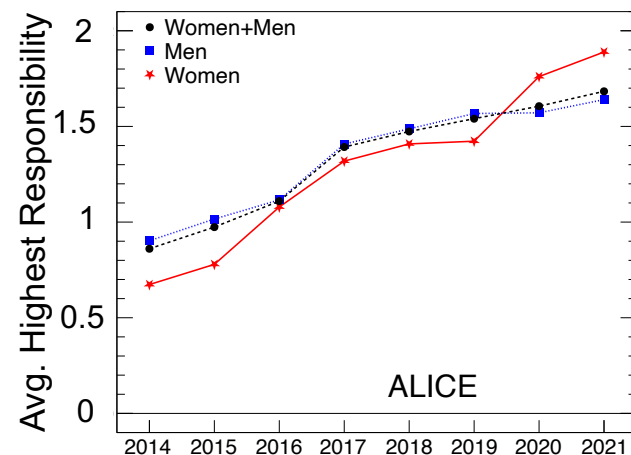
All employment categories



Postdocs



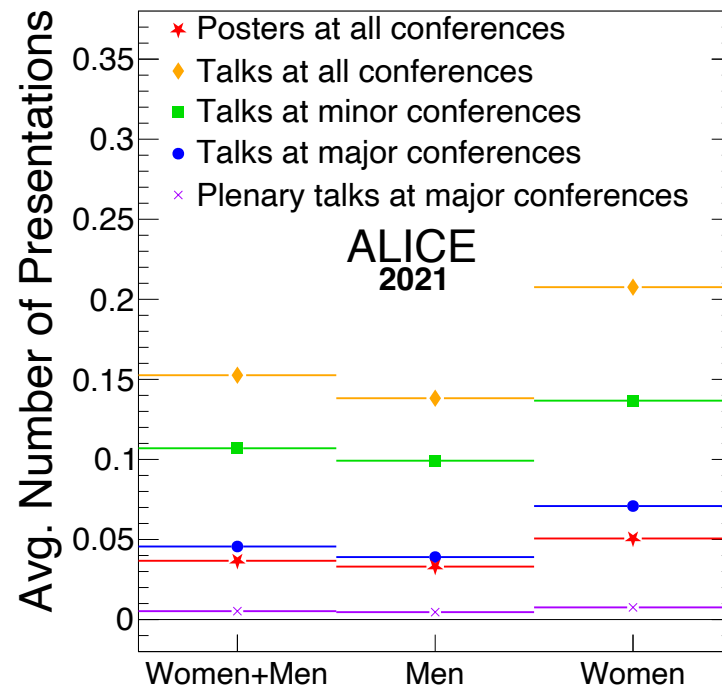
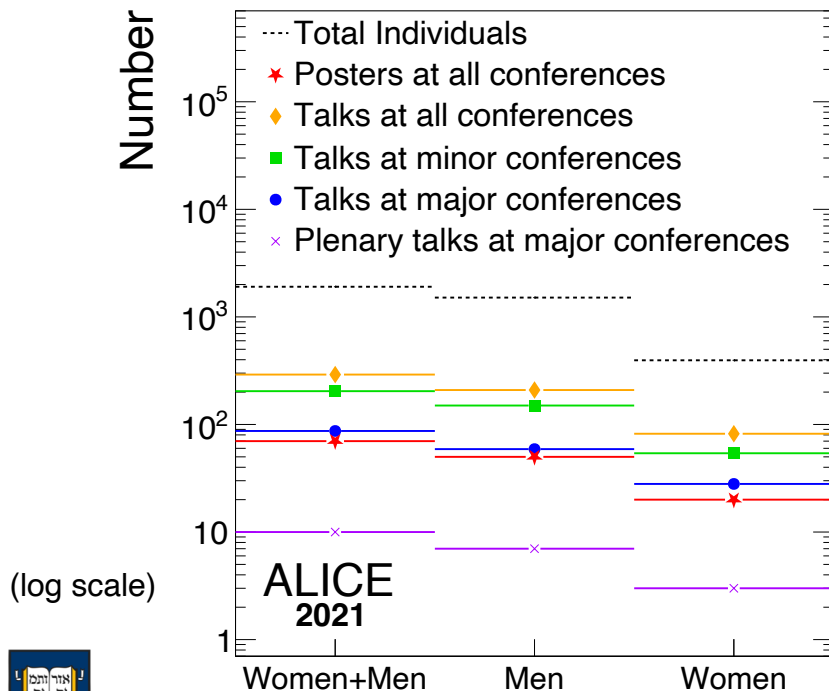
Senior Scientists



Number of talks by gender

Deliverables (and average number) given by women and men

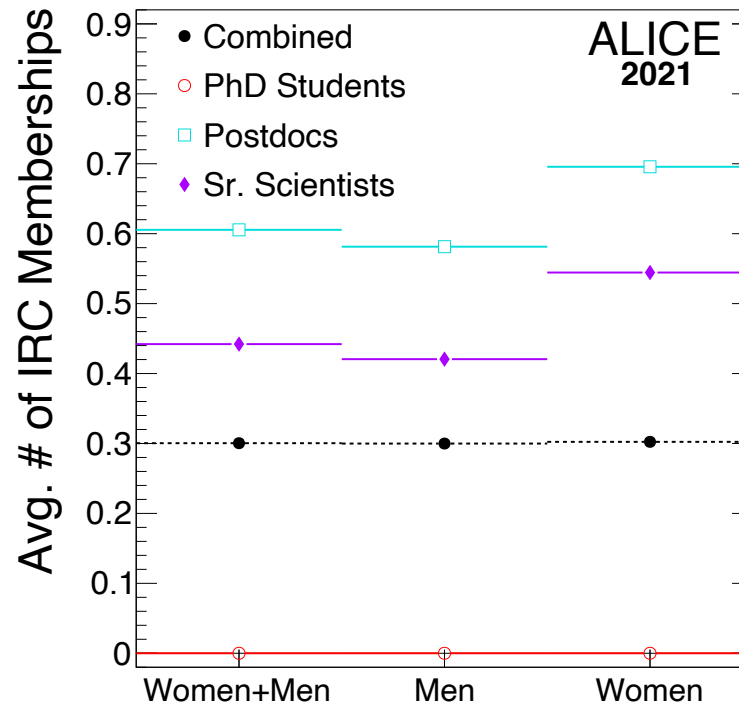
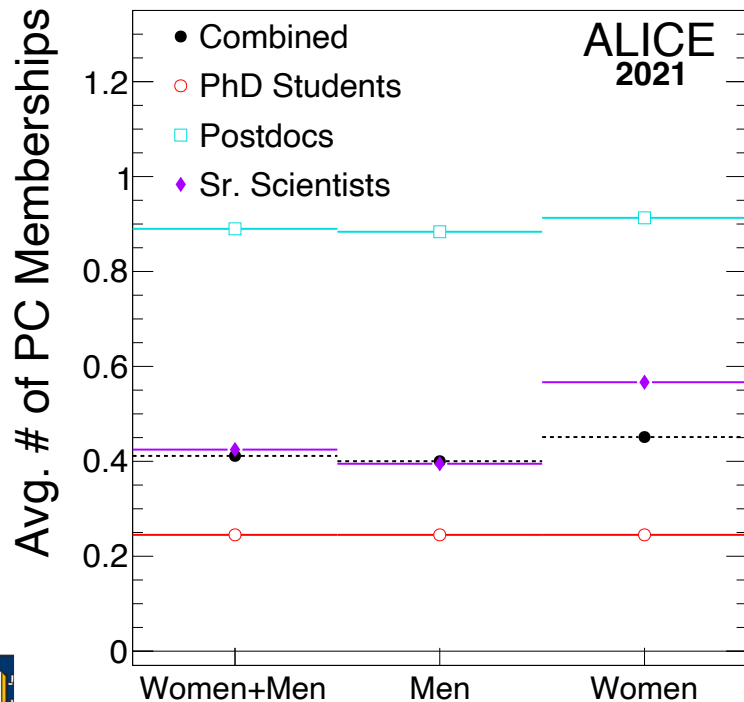
- On average, women are more likely to give talks at conferences



Categorized PC and IRC membership

Higher fraction of postdocs for PC membership

Higher fraction of women postdocs and senior scientists for PC and IRC membership



Summary

- Since its inception, the ALICE Diversity Office has promoted various initiatives regarding diversity and inclusion at CERN
- Our findings from the analysis on the 2021 data set provides useful insight regarding membership dynamics of the Collaboration
 - With a particular emphasis on monitoring the time progression of young collaborators and those identifying as women
 - Results are to be summarized and published

Feel free to contact us! alice-diversity-office@cern.ch

THANK YOU!

Backup

Time evolution 2014 - 2021

Fraction of active employment by region

