



Instruct-ULTRA

Integrating Structural Biology

Instruct-ULTRA

WP1 – Advancing Instruct through Instruct-ULTRA

Lead Beneficiary: P1-Instruct

Leader: Ray Owens / Naomi Gray (P1-Instruct)

Deliverable: 1.3 Women in Science Workshop

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Authors of this deliverable: Evangelia Chrysina (P7-NHRF) Naomi Gray and Stephanie Chapman.

Project objective

An important objective of the Instruct-ULTRA project is to support Instruct-ERIC in its efforts to engage with and support the structural biology community. To this end, Instruct-ULTRA proposed to host a Women in Science workshop at the Instruct Biennial Structural Biology Conference 2019, to showcase the high-impact research of female scientists, and to inspire early-career, women scientists.

Executive summary

The first Women in Science workshop was well-attended, with the audience numbering in excess of 90 participants. The selected speakers and panellists provided inspiring, informative, and eye-opening insights into the challenges and opportunities for Women in Science. Audience engagement was supported through a range of media, which stimulated interesting discussions and provided a means to scope the gender landscape in structural biology. The feedback from the Women in Science workshop was very encouraging and reveals the considerable support for such initiatives. It is intended that the Women in Science workshop will be maintained as a satellite event to the Instruct Biennial Structural Biology Conference.



1. Introduction

There is a growing, global initiative to encourage and support women who wish to pursue a career in science, technology and engineering. Whilst structural biology has a long history of eminent, female scientists, continued efforts are required in order to inspire the next generation of leading scientists and to improve gender balance in science.

As a leader in structural biology and a Landmark in the European Roadmap for Research Infrastructures, Instruct-ERIC is well-placed to promote gender equality in life science across Europe. To demonstrate Instruct's commitment to inclusivity and diversity, a Women in Science workshop was organised on 22 May 2019 as a satellite event of the Instruct Biennial Structural Biology Conference, led by the Instruct-ERIC Hub and the National Hellenic Research Foundation (representing Instruct-EL).

2. Aims

The main aims of the workshop were:

- to inspire and empower women scientists
- to explore career pathways for young scientists
- to explore mentoring opportunities across Instruct-ERIC member countries
- to discuss gender policies within Instruct-ERIC.

For this purpose, female scientists from academic/research organisations and the private sector were invited to share their experience, and to discuss the challenges that women scientists may face during their scientific career.

3. Planning the Workshop

The Instruct Biennial Structural Biology Conference draws hundreds of scientists from Europe and beyond, by showcasing ground-breaking research in integrative structural biology. As a hub for the structural biology community, the 2019 Instruct Biennial Structural Biology Conference in Madrid was considered an ideal opportunity to engage with scientists on the topic of gender equity, and to launch Instruct's first, official initiative supporting Women in Science.

The workshop, which was planned and co-hosted by the Instruct Hub and NHRF/Instruct-EL, aimed to disseminate high impact science from women PIs and senior scientists, and to inspire and support young scientists across the life science community. The format of the workshop was intended to promote interactivity between the speakers and the audience, and to stimulate important discussions on the topic of Women in Science. The event was structured to include talks from female scientists working in research organisations and the private sector, with a remark on the progress of the scientific community in Spain. A panel discussion of leading, female scientists offered a personal insight into the challenges and rewards of a career in science. To maximise opportunities for discussions and networking, a



celebratory tapas reception was hosted in the beautiful setting of the walled garden of the hotel in Alcalá de Henares.

3.1 Speakers

Prof Pernilla Wittung-Stafshede was invited as a plenary speaker. Pernilla is a Professor of Biophysics, and Head of the Chemical Biology Division at Chalmers University of Technology in Sweden. She is a member of the Royal Swedish Academy of Sciences and is an active advocate for Women in Science, having published numerous papers on the subject. In January 2019, Pernilla was awarded a large grant to initiate the Gender Initiative for Excellence (Genie), which is a ten-year project to improve gender equality at Chalmers. When Pernilla was approached by the Instruct Women in Science organising committee, she was keen to give the plenary lecture on the subject “Female faculty: why so few and why care”.

Dr Ilaria Ferlenghi of GSK Vaccines, Italy, was invited to give a talk from the perspective of women working in industry. Dr Ferlenghi is a leading structural biologist and is the Head of Structural Microscopy at GSK Vaccines. She is passionate about women in science, and has many collaborations with academic scientists across Europe.

Dr Kajsa Paulsson was asked to speak on the subject of mentoring for women in science. Dr Paulsson is a respected immunologist, with experience of leadership in multi-organisational and cross-disciplinary projects, and has a keen interest in establishing mentoring networks across Europe.

3.2 Panelists

The panellists (listed below) represented a wide geographical area and a variety of career pathways.

- Prof. Maria Armenia Carrondo, ITQB NOVA, Portugal
- Prof Pernilla Wittung-Stafshede, Chalmers University of Technology, Sweden
- Dr Ilaria Ferlenghi, GSK Vaccines, Italy
- Dr Kajsa Paulsson, Lund University, Sweden
- Dr Margarida Archer, ITQB NOVA, Portugal
- Prof. Lucia Banci, CERM, Instruct-IT, Italy
- Dr Susan Daenke, Instruct-ERIC Hub, UK
- Dr Areej Abuhammad, University of Jordan, Jordan
- Elena Carazo, PhD student, Columbia University, USA



3.3 Promotion

The workshop was promoted on the Instruct-ERIC website, <https://instruct-eric.eu/biennial2019/women-in-science-workshop>, through social media (Figures 1 & 2), and by email to the 7000+ Instruct users. Registration was set up online, and the event was hosted free of charge thanks to the generous support of Instruct-ULTRA and the National Hellenic Research Foundation (NHRF).



Figure 1. Promotion of the Instruct Women in Science Workshop on Twitter was timed to coincide with the International Day of Women in Science (11 February), to support wider dissemination efforts in the community.



Figure 2. The second strand of Twitter dissemination for the Women in Science workshop, highlighting the theme and speaker of the keynote lecture.

3.1 Women in Science Fellowships

To support female, early-career scientists in attending the workshop and conference, funding was allocated for eight Women in Science fellowships, to cover the cost of economy travel, shared accommodation for two nights, and registration for the Instruct Biennial Conference. Applicants were asked to submit a 200-word statement justifying their motivation to attend the workshop and conference, along with a letter of recommendation from their supervisor or manager. Researchers, facility managers, technicians, project managers and communication officers were all encouraged to apply. The applications were evaluated and shortlisted by a committee of female structural biologists, and awards made in March 2019.

4. The Event

The Women in Science Workshop was held on Wednesday 22nd May 2019 from 16:00 - 19:00.



Event Programme:

15:30 - 16:00	Registration
16:00 - 16:05	Introduction: Dr Evangelia D. Chrysina, NHRF, Instruct-EL, Greece Welcome Address: Prof. Elena Domínguez, Vice President of International Affairs, CSIC
16:05 - 16:50	Plenary: Prof. Pernilla Wittung-Stafshede, Chalmers University of Technology, Gothenburg: <i>Female faculty: Why so few and why care?</i>
16:50 - 17:20	Networking coffee break
17:20 - 17:50	Dr Ilaria Ferlenghi, GSK Vaccines: <i>Women in Companies</i>
17:50 - 18:15	Dr Kajsa Paulsson, Lund University: <i>The Role of Mentoring in Women Scientists' Professional Development</i>
18:15 - 18:20	Dr Ana Puy, Head of Women in Science Unit, Ministry of Science, Innovation and Universities, Spain: <i>Case Study: Supporting Spanish Women in Science</i>
18:20- 19:15	Panel Discussion – leading, female scientists share their experience and inspiration for career advancement and personal development. Chair person: Prof. Maria Armenia Carrondo
19:15 - 20.00	Small group discussions
20.00 onwards	Networking drinks reception with hot and cold tapas, followed by dessert

The workshop started with a welcome from the event organisers, who explained the aim of the event and gave an outline of the session.

Opening the proceedings, Prof. Elena Domínguez, Vice President International Affairs at the Spanish National Research Council (CSIC) provided a welcome address, describing the progress of female scientists in Spain, who are climbing the leadership ladder. The plenary lecture was given by Prof. Pernilla Wittung-Stafshede who gave a thought-provoking lecture on the challenges facing women working in academia, raising awareness of unconscious bias in the workplace.

In the next part of the session, Dr Ilaria Ferlenghi of GSK Vaccines shared her experiences working in industry, and Dr Kajsa Paulsson from Lund University discussed the need for mentors to support Women in Science. Dr Ana Puy, the director of the Women and Science Unit of the Spanish Ministry of Science, Innovation and Universities presented the case for action on gender equality and science policy in Spain.

After the presentations, a panel discussion was chaired by Prof. Maria Armenia Carrondo of ITQB, Portugal. The panellists were invited to introduce themselves, to explain why they had chosen a career in science, and to discuss their experience of being a woman in science. Questions from the floor allowed the audience to engage with the panellists on a wide range of issues. The option to use the



online Mentimeter¹ software allowed attendees to submit questions anonymously, with these being posed to the panel via the event team.

For the final part of the workshop, participants were asked to form small groups to discuss their views on the topics raised at the workshop, and to suggest ideas to better support Women in Science - including ways that they could volunteer their help. The interactive session was a particularly useful way to engage participants and generated many constructive comments (Figure 3 and Appendix 3).

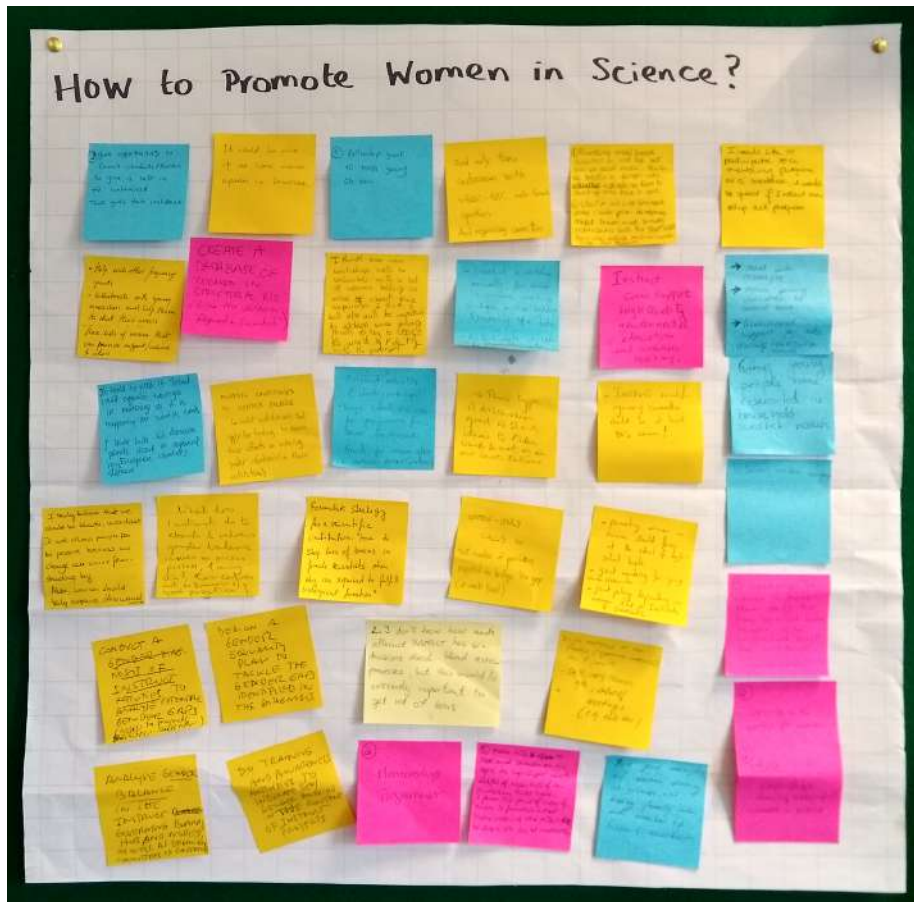


Figure 3. The comments and suggestions from the Women in Science discussion session.

¹ www.mentimeter.com



The workshop was closed with a drinks and tapas reception, where the participants had the opportunity to interact informally with the invited speakers and panellists.



Figure 4. A collage of photos from the Women in Science Workshop.

5. Survey of the gender landscape within structural biology

There was good engagement from the audience (using Mentimeter and through direct Q&A), particularly during the panel session and the group discussion session. During the workshop, Mentimeter provided an interactive environment for participants to respond to questions surveying the gender landscape within the structural biology community, and to express their views on the subject of Women in Science. Targeted questions were distributed between the talks given by Professor Pernilla Wittung-Stafshede, Dr Ilaria Ferlenghi, Dr Kajsa Paulsson, and Dr Ana Puy, allowing participants to reflect on their personal experiences in the context of the material being presented.



The survey questions were:

- Did you have a mentor while being at the first stages of your career as a Structural Biologist? (Yes / No)
- Do you think there is a need for a Women in Science initiative in the field of Structural Biology? (Yes / No / Possibly / None of the above)
- As a structural biologist, where would you go to advance your career prospects (Academic or Research organization / Industry / SME)
- Do you think that women can have leading/senior positions in the industrial sector? (Yes / No / Possibly / None of the above)
- Do you think there is a need for mentoring in the field of Structural Biology? (Yes / No / Possibly / None of the above)
- If yes do you think that gender aspects should be taken into account? (Yes / No / Possibly / None of the above)
- Do you think that policy/decision makers can make an impact in the position of Women in Science? (Yes / No / Possibly / None of the above)

There was good participation in the online questionnaire hosted on Mentimeter, with an average of 46 responses across the nine questions. For a full breakdown of the responses to the Mentimeter survey, please refer to Appendix 2.

6. Participation and feedback from the workshop

Prior to the Instruct Biennial Conference, a total of 70 people were registered for the Women in Science workshop but the decision was made to welcome further participants on the day itself, when the audience numbered 92 attendees. The excellent attendance at the workshop demonstrated the receptivity of the scientific community towards gender equality initiatives and justified the Instruct Biennial Conference as an ideal event to reach a wide and captive audience. Particularly gratifying was the presence of over 20 men, who demonstrated their support for their female colleagues.

Overall, the feedback from attendees was that the Women in Science Workshop had been a “great session” that was “inspiring”, “empowering” and “worthwhile”. In a Mentimeter survey, 75% of participants rated the workshop as “very interesting” and the remaining 25% “interesting”.

Several attendees identified the panel discussion as a particular highlight of the conference, with one attendee acknowledging the panellists for “showing me that it’s possible to succeed” and another saying that “I wish that the session was much longer”. Attendees also recognised the value of the workshop for



establishing “contact with ladies who are doing a lot for Women in Science” and for identifying people “who are really trying to involve women in the scientific community”.

Feedback from the invited speakers was also very positive, with both Pernilla and Ilaria expressing support for the Instruct Women in Science initiative and offering to assist in future efforts.

6. Outcomes and next steps

6.1 Dissemination

Following the workshop, a Women in Science page was established on the Instruct-ERIC website at <https://instruct-eric.eu/women-in-science>. The Women in Science webpage contains resources from the workshop, and further resources from the Instruct community will be published on the page to continue to support the community.

Among the resources on the Women in Science webpage are podcasts of the talks by Pernilla Wittung-Stafshede and Kajsa Paullson, which were filmed so that the material could be shared with a wider audience. The video footage was edited and aligned side-by-side with the PowerPoint slides and then uploaded to both the Instruct website (<https://instruct-eric.eu/women-in-science>) and YouTube (<https://youtu.be/fNtWDFsl1oM>; https://youtu.be/HmX7qO8Fq_0), using key words to make the material easier to find.

During the conference, workshop participants were invited to be interviewed for a short video that would act as a tool to promote discussions about Women in Science. The motivation of the interviews was to find out how young, female scientists feel about the Women in Science initiative, and to give them a platform to vocalise their views. Eight young women were keen to participate in the interviews, and a 2 minute 20 second video was produced and posted to the Women in Science Webpage and social media. On release to Twitter, the video was viewed more than 170 times within three days (<https://twitter.com/instructhub/status/1184417563448631296>).

6.2 Future events

The Women in Science workshop has generated numerous requests for further events supporting this initiative. It is the intention that the Women in Science workshop will continue to be held as a satellite event to the Instruct Biennial Structural Conference. There has also been particular demand for an industry-focussed workshop for female scientists, which could be developed into a broader workshop exploring non-academic, scientific career pathways.



6.3 Task force and forum

Since the workshop, several of the speakers have offered to make time and resources available to support female, early-career researchers who need advice regarding specific career challenges. Also, a number of the workshop participants felt that they would benefit from a Women in Science forum, where general questions, issues, and ideas could be shared and discussed with the community. The Instruct-ULTRA project team will carry these ideas forward into 2020, with the aim of establishing both a task force and a forum using appropriate technology and promotion.

6.4 Greater engagement of the Instruct community in gender initiatives

The Women in Science workshop has proven invaluable in stimulating discussions about the role of Instruct in supporting and empowering female scientists in structural biology, with a number of initiatives being proposed, including a one-day workshop addressing specific issues faced by Women in Science. Instruct-ULTRA is keen to build on the success of the workshop, in order to maximise the long-term impact of this initiative.

6.5 Opportunities to engage with like-minded organisations on the topic of gender equality

Leading up to and following the workshop, Instruct-ULTRA has been exploring ways to engage with initiatives from other networks, where these promote and share resources in support of Women in Science. A number of initiatives have been identified:

- Ox-FEST (Oxford Females in Engineering, Science, and Technology) – a student-led society at the University of Oxford.
- The UK BioIndustry Association ‘Women in Biotech’ events, which target entrepreneur communities in the UK to inspire more women to take up founding roles in biotech companies.
- The Federation of European Biochemical Society (FEBS) Women in Science Working Group. Instruct are closely involved in FEBS and will support the 2020 initiative.
- Social media campaigns #WomeninScience #WomeninSTEM, and the International Day of Women and Girls in Science (11 February).

All Instruct Centres have access to resources and are encouraged to look for national initiatives and advocates of Women in Science.

7. Conclusion

The Women in Science Workshop on 22 May 2019 was a great success. The 92 participants were presented with a number of interesting and thought-provoking talks on the challenges and

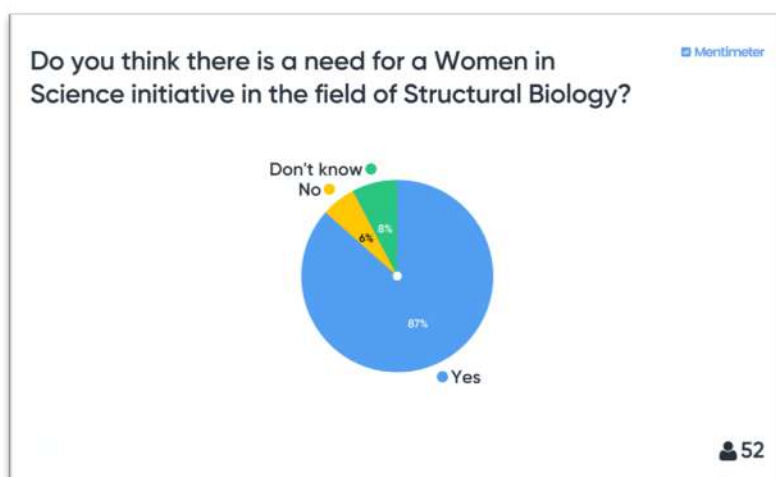


opportunities for Women in Science, which included an insightful talk by Prof Pernilla Wittung-Stafshede that highlighted important issues relating to gender discrimination in science. Participants were able to engage in a range of activities to stimulate discussions on the topic of Women in Science and were provided with various channels to get involved. A Women in Science taskforce will be established so as to provide ongoing support to women in structural biology, and Instruct-ULTRA will continue to be involved in wider dissemination and networking initiatives across Europe and beyond.

Appendix 1: Gender landscape for the structural biology community

The results below are a summary of the responses to a Mentimeter survey, as discussed in Section 5 above.

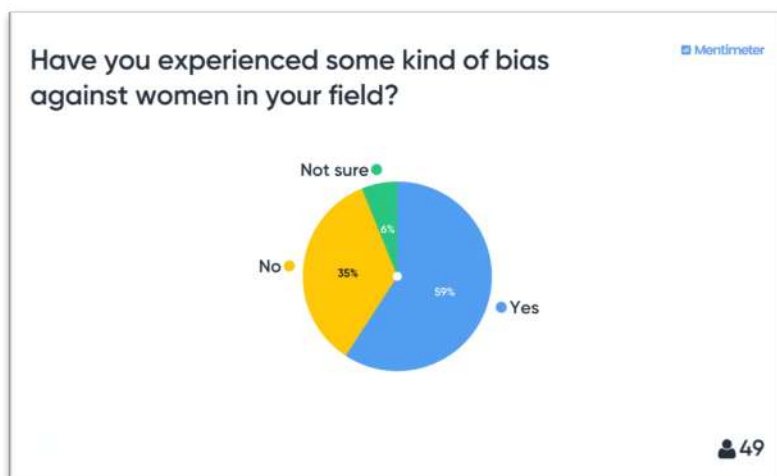
Question 1:



The response to Question 1 gave a strong indication that the audience felt a need for initiatives that support women in working structural biology, vindicating the Instruct-ULTRA Women in Science Workshop.

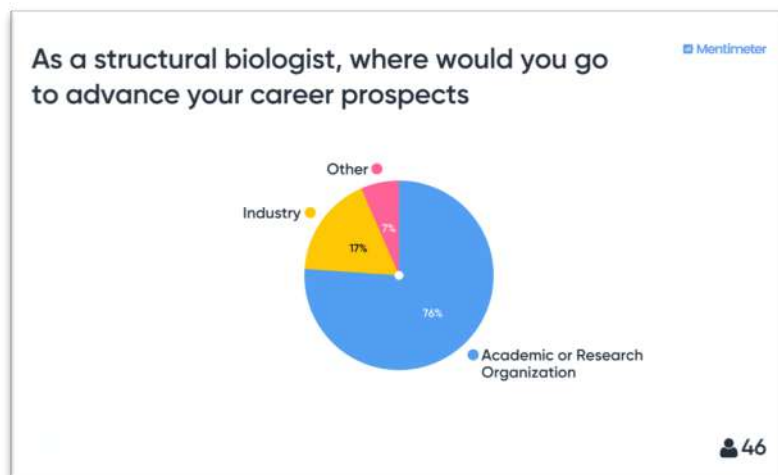


Question 2:



The response to Question 2 was revealing, with almost 60% of responders having experienced gender bias against women. In her presentation, Professor Pernilla Wittung-Stafshede discussed conscious and unconscious bias and explained how a greater awareness of bias will be important in progressing towards equity in science.

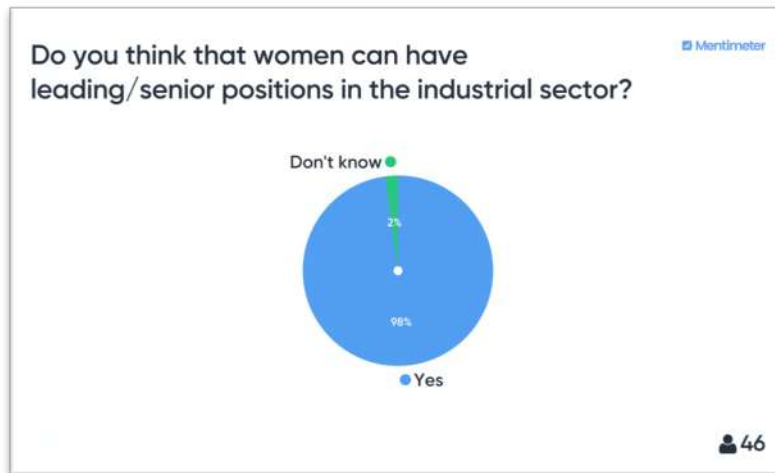
Question 3:



More than three quarters of people who responded to Question 3 identified academic research as the predominant route for career development in structural biology.

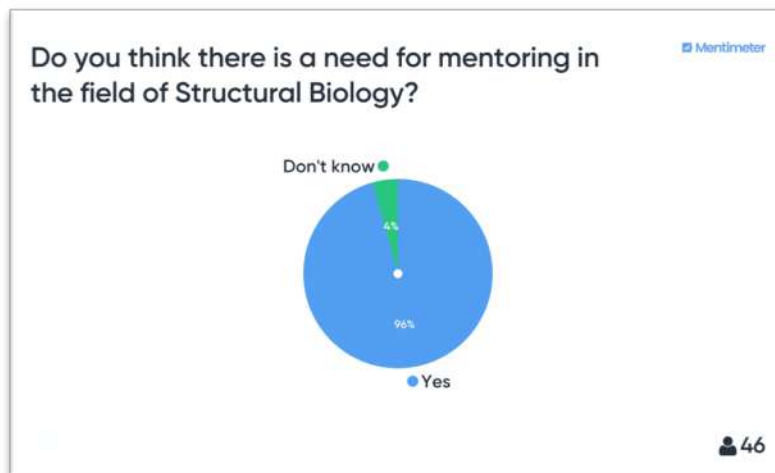


Question 4:



When asked whether women can occupy senior positions in industry, the response was overwhelmingly positive, suggesting that responders recognised that women are capable of taking leading roles in the corporate environment (whether or not this is realised in practice).

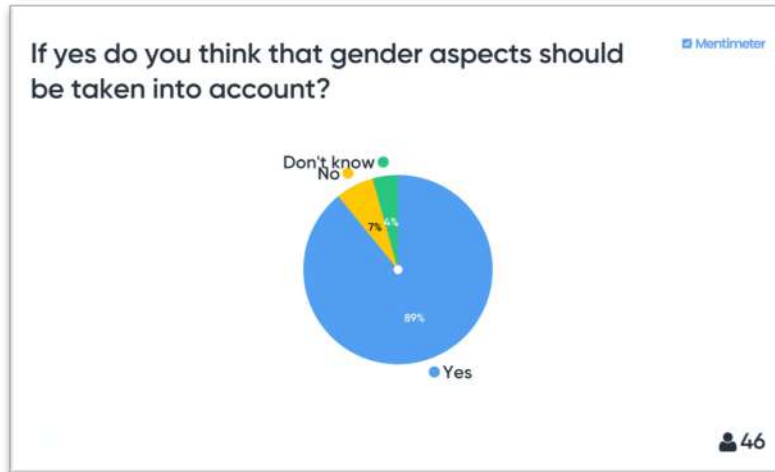
Question 5:



Question 5 identified a lack of mentoring for scientists undertaking a career in structural biology, which provided an incentive to establish an Instruct mentoring scheme (discussed below).

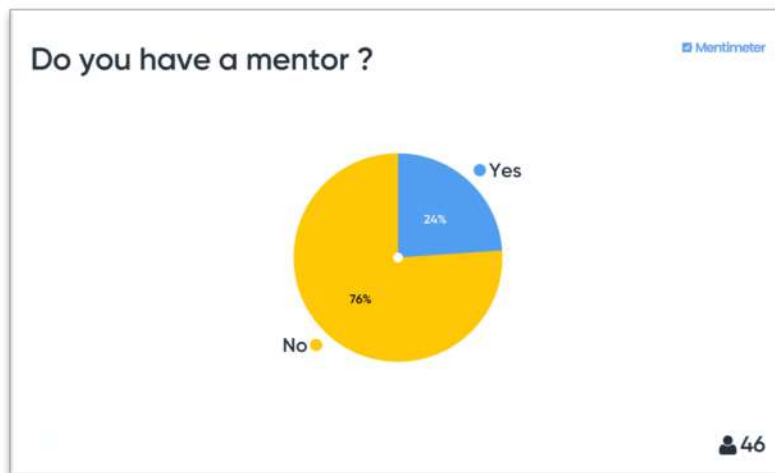


Question 6:



Following on from Question 5, Question 6 aimed to establish whether the gender of mentors and mentees should be a consideration of mentoring schemes. Question 6 was asked in the context of the talk by Kajsa Paulsson, during which it was suggested that female mentees may feel more comfortable interacting with a mentor of the same gender due to relatability.

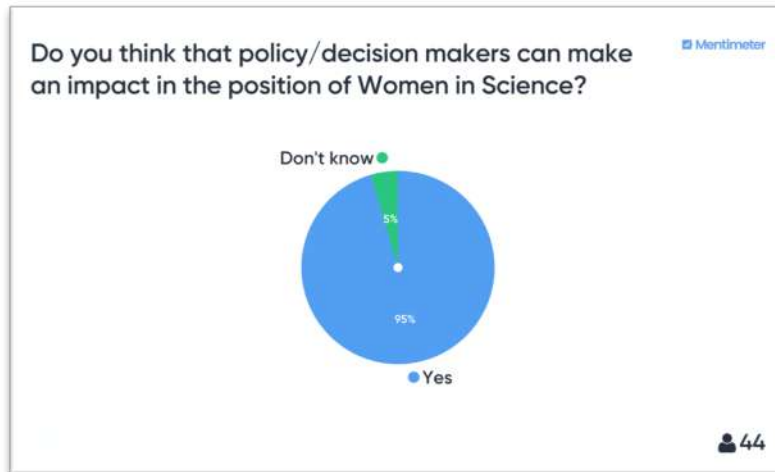
Question 7:



Less than one quarter of those who responded to Question 7 confirmed that they had a mentor. Again, this data identified the need for mentoring schemes in structural biology, which was identified as an initiative that might be facilitated by Instruct.



Question 8:



Question 8 indicated a strong sentiment from the audience that policy makers can have an important influence on the careers of Women in Science. The response suggested that any initiatives supporting Women in Science should aim to include policy makers in order to be more impactful.

Question 9:



The final question posed on Mentimeter asked attendees to rate the Women in Science Workshop as 'very interesting', 'interesting' or 'not interesting'. Encouragingly, all who responded to Question 9 rated the workshop as either interesting or very interesting.



Appendix 2: Discussion questions for small groups:

- a) What did you find most interesting from the material presented today?
- b) What are the next steps that you could take to promote Women in Science?
- c) What ideas do you have for us as the Instruct community, how we can work together to promote Women in Science.
- d) What would you volunteer doing for promoting Women in Science as part of the Instruct community?

The first two questions were designed as discussion topics, to encourage participants to reflect on the workshop themes, and to stimulate discussions. Participants were asked to write their answers to the last two questions onto post-it notes, so that their responses could be collated, leading to action within future initiatives.

Appendix 3: Outline of key themes mentioned on the post-it notes:

The photos below show a close-up of the post-it notes (Figure 3) written by the participants in response to questions (c) and (d) from Appendix 2. Some key themes from the post-it notes include:

- Develop mentorship programmes and training for men and women at all levels.
- Run workshops for Women to teach skills and boost confidence.
- Offer research grants (with quotas) for women.
- Share examples of women working in science and having a family.
- Ensure gender balance in governing bodies and organising committees.
- Fund outreach activities about gender equality for school children.

