Over 90 female undergraduate students were invited by email. The focus group was also advertised by the year and course reps, and by PhysSoc. 11 students attended; five fourth years, three third years, and three second years. This included one male student who asked if he could sit in but did not contribute significantly to the discussion. One further student sent her thoughts by email, as she couldn’t attend on the day. The event was held in the George Green Library. The low numbers who attended the focus group may be due to the time of year that the focus group was held, or the heavy rain on the day.

**SUMMARY**

We had a long and wide ranging discussion over two hours. Overall the students were extremely positive about their experience with the school. In particular the students were very keen to stress that they had never had any problems with staff (although when we dug further they did report a few unsettling comments or discussions), and that any problems they had experienced came from other students. No one reported any active discrimination or harassment, however there was felt to be a background level of “lad culture” in the student body, and a few “problem students” that all of the female students were aware of and knew to avoid. The students had not felt able to bring this to the attention of the school, and this is an area where I recommend making changes to ensure that students are aware of what is considered to be unacceptable behaviour, and to improve communication between students and staff.

**REPORT ON THE DISCUSSION**

I took notes throughout the discussion. In what follows phrases in quotation marks are direct quotes from the students. The discussion was largely unstructured, and I have organised their comments below by the themes that arose.

**Proportion of women in the school**

Whilst all of the women who attended the focus group were aware that women were under represented in the school, there was a belief that Nottingham has a higher proportion of female undergraduates than other universities (Imperial was mentioned as a particularly bad example). They were surprised to hear we were below the national average. They felt that their underrepresentation in the student body was partly mitigated because the women were more visible, in particular as course reps and as part of PhysSoc.

They were positive about the number of women on the teaching staff, but did note that women tended to teach courses in earlier years. One student said she hadn’t had any female lecturers at all in her fourth year. The students had also noticed the good gender balance of the masterclass speakers, and thought this was a positive thing.
It was noticed that female students were particularly under represented on the theory strand, and that there were proportionally more doing medical physics. No one could suggest a particular reason for this. The theory options were perceived as slightly harder, but the stronger opinion on these options was that they were “duller, more pressured and less useful”. The students on the theory strands noted that they would be less likely to speak up in a lecture or workshop in these courses, as there would be even more pressure not to be wrong.

Recommendations

- Continue to aim for diversity in masterclass speakers.
- Determine whether female staff are concentrated in teaching courses in earlier years. Does this give the impression that harder subjects and research are more likely to be done by men?
- Stress the utility of mathematical techniques in future careers, not just in research, when advertising the theory options.

School diversity activities

Some students were aware of the diversity committee, but no one had heard of Athena Swann. They also weren’t aware of any other activities in the school around women in physics or diversity.

The students were vaguely aware that there was a female tutor, but weren’t sure who it was and didn’t think they had heard this mentioned more than once or twice. They said it would be good to meet this tutor in the first year, so that the students could see that they “were a friendly face”. They mentioned that there could be issues that they wouldn’t want to discuss with their male tutors, but that it was hard to go and see someone you didn’t know if there was a problem. They suggested the female tutor having “office hours” so that students could come to discuss more minor issues, that didn’t rise to the level of a big enough problem to warrant interrupting academic staff.

When I pointed out that all the key members of staff had their photos on the photo-boards, the students said they didn’t feel the current boards were helpful. They said that the photos were too small, and out of date. It was also pointed out that because the hand in point for coursework has moved, they no longer regularly see the board in the foyer. Pharmacy was mentioned as an example of a school where the photo-board was really clear and obvious.

Very few students were aware of the anonymous comment box, and those that were said that it was very hard to find. There was a suggestion to move the diversity comment box to Moodle as the general suggestion box is much more visible there.

The students who came to the focus group would like to see more events and discussion about issues related to women in physics (but note that these students have already demonstrated an interest in these issues). A women in physics panel discussion was mentioned as an event that would be appreciated. There was support for women focused events, but not for women-only events. It was generally felt that men who wanted to engage with the issues should be included, and that women only events were “removing the problem from the room”.

The students would appreciate some leadership from the school about what was, and wasn’t, appropriate behaviour within the student body. A popular suggestion was to have a tutorial on diversity in physics. There was some concern that single tutorial groups might be too small to do this well, and that pairing up tutor groups might be better.
Recommendations

- Ensure that the female tutor introduces herself during the first year induction. Consider also having regular office hours for this tutor, so that students feel more willing to raise issues before they become big problems.
- Make the photos on the photo-boards bigger, and ensure that they are up to date. Reconsider the placement of these boards, so that they are either very obvious when you come into the building, or they are near the coursework hand in point.
- Move the diversity committee anonymous suggestion box on to Moodle.
- Consider holding a Women in Physics panel discussion, either as part of Ada Lovelace day, or the masterclass program.
- Consider introducing a tutorial on diversity.

Interactions with staff

The students were overwhelmingly positive about their interactions with the staff in the school. The students said that they never felt looked down on by members of staff, and the interactions with project supervisors were highlighted as particularly egalitarian. Students were also aware that other schools did not do this so well (engineering was mentioned).

However they did report a few comments that had made them feel uncomfortable:

From a demonstrator: “All the best programmers have beards.”

Students also mentioned they were uncomfortable with course materials being provided that referred to a generic physicist or physics student as he.

Repeated minor issues with demonstrators in labs were mentioned. Demonstrators were often condescending and “lacked tact”. This was particularly a problem in the first year when the students were asking for help with equipment that was unfamiliar to them, but extremely familiar to the demonstrator. There was a perception that the demonstrators patronise the female students more if they ask for help, whereas if male students report a problem they are just given help.

We had a discussion about whether staff stepped in to address problematic comments or behaviour between students. A number of examples were given where staff failed to do this: (1) In project labs a male student kept repeatedly coming over and trying to explain to a female pair what they should be doing despite not actually understanding the project at all. The supervisor was there and aware of this but didn’t intervene. In this context the female students didn’t feel they could just tell the male student to leave them alone. (2) In a project meeting a male student made “problematic comments”. The supervisor pulled a face which seemed to indicate that he didn’t agree with the comment, but didn’t say anything directly to the student who had made it.

When issues had arisen with other members of the student body the students in the focus group reported feeling uncomfortable approaching members of academic staff with these issues. There was a fear if they came to staff with a smaller issue, such as with a project partner making borderline inappropriate comments, they would be told “that’s just life”, or “so what do you want me to do about it?” However, one student had asked directly for accommodations to avoid a “problem student” and reported that the staff had been very supportive. It was generally felt that students would benefit from having a clearer idea of who to approach if there was a problem.
Recommendations

- Provide training about diversity / unconscious bias for demonstrators.
- Remind staff that even comments made as light relief can alienate some students.
- Provide staff with guidance and/or suggested scripts for how to address problematic comments and behaviour from students in the moment.
- Ensure that course materials do not use gendered language.
- Raise the profile of the female tutor, as described above.
- Make the diversity committee suggestion box much clearer, so that students can report inappropriate behaviour that they don’t feel warrants interrupting academic staff.
- Ensure that students are believed if they report inappropriate behaviour from a project partner.

Undergraduate culture

It was very clear from the discussion that there are a number of specific individuals in the student body who are known (to the other students) to be a problem. These students will regularly make comments designed to make female students uncomfortable. It was acknowledged that these students “are not very nice to anybody”. As discussed in the previous section female students felt that they couldn’t tell a module convenor that they didn’t want to work with one of these problem students. In general students didn’t know what they could do, or who they could go to, if they had a problem with their project partner.

It was also felt that there was a background level of “lad culture” in the student body, and that this was particularly evident in labs. They mentioned male students being on Tinder in labs, and making “off colour” comments about the appearance of female students. They reported that amongst the male students it was “cool to hate feminism”. The women in the focus group said that they tended to avoid having discussions about these topics with male peers because their opinions and experience would be “steamrollered”. Many male students would dismiss any discussion around diversity, saying they would only believe large peer reviewed studies. It was noted that PhysSoc seems to have a high proportion of female exec members, and so didn’t suffer from the laddish culture.

Recommendations

- Consider introducing a tutorial on diversity in physics. As part of this provide links to studies on discrimination and unconscious bias. Include a discussion about not discounting the lived experience of people from minority groups.
- As above, raise the profile of the female tutor and the anonymous comments box.
- Discuss whether we are, or would want to be, aware of who these problems students are. If so, would we want to address the behaviour of these students directly?

Speaking up

There was a significant level of anxiety about interrupting the lecturer to ask a question, and that being surrounded by “over-confident men” made this harder. They also said they often didn’t want to speak up as their views would be taken to be representative of the whole group, and they felt they would be “letting the girls down if they did badly”. The students taking the theory options, mentioned that it was even harder to speak up in those contexts.
Recommendation

- Continue to use the first year tutorial discussions to help female students gain the confidence.

Working in Groups

The students were aware that they were put into tutorial groups with at least one other woman. This was generally felt to be a good thing, but they were happy that this didn’t extend to assessed work.

The students felt that they were sometimes underestimated by their peers when working in groups, and that this lead to a fear of speaking up because they didn’t want to say something wrong and reinforce this perception. They also found it difficult to call out other students in the group who weren’t pulling their weight, as they didn’t want to be seen as nagging.

The problems with some male students were particularly pronounced in matlab and electronics labs. It was felt that the male students were much more dominant in these situations, particularly those who came into university with a lot of experience of e.g. coding. The female students would follow the recommended school style, and the male students would say that this is not how it should be done. Students felt that they didn’t know what to do when they were overridden in these circumstances. They suggested that it might be useful to have a workshop on good project skills. They mentioned the egg race as a good example of this, but that different issues arose when working in groups of two or three compared to larger groups.

There was a specific issue raised about 4th year projects. There was a very strong feeling that in boy-girl pairs the girls did the vast majority of the project report writing (students estimated this as about 80% of the writing work.) This happened after the end of contact with the project supervisor, and even though the rest of the division of work in the project had been approximately fair. There was no confidence that they would be believed if they wrote this on their declaration, especially if their project partner declared a different balance of work.

Recommendations

- Consider introducing another activity, along the lines of the egg race, so that students can practise working in smaller groups.
- Give training and / or suggested scripts to demonstrators, so that they are able to address domineering behaviour by students in the moment.
- Discuss whether we can monitor the division of writing work on projects.
- Is it possible to make declarations of work for joint projects private, so that students are not pressured into misrepresenting their contribution?
- Clarify to students what the procedure is if group members report differing balances of work.

Transition from school to university

Two students at the focus group were from all girls schools, the other students had mixed A-level classes where women were in the minority. Students with mixed classes reported that all the girls in these classes went on to do physics or a related subject at university, which was not true for the boys.

There was strong agreement that what made them choose to come to Nottingham was the friendly down-to-earth atmosphere of the open day / ucas visit. This was often in stark contrast to their experiences at other university open days. They noticed that the school appeared to have a better gender balance on the open day. They also liked the attitude that Nottingham was lucky to have them,
and this was in contrast to other universities e.g. a talk at Oxford which was a list of all of the reasons why they wouldn’t get accepted.

Recommendations

- Continue to ensure that the school is represented by a diverse range of staff and students on the open day.
- Continue to present a friendly and down-to-earth atmosphere on open and ucas days.

Careers

Thoughts about when to have a family and how to balance it with a career were important to all of the students, and issues about maternity discrimination were mentioned. It was felt that this would be a problem for all potential career paths, not just those directly related to physics.

There was a perception that academic physics careers required long hours and a lot of moving around, which were seen as downsides because of the difficulty of combining this with family life. However flexible hours, and provision of child care by universities was seen as a positive of an academic career.

There was also a discussion about potential stigma for their partners if they became a ‘stay at home Dad’ to prioritise the female partner’s career.

The students thought that they needed more on their CVs than their male peers, both for academic and non-academic jobs.

Recommendations

- Hold a women in physics panel event, which includes discussion of career paths both in academia and industry.
- Address issues about bias in tutorial on CV writing.

Social media

The students felt that the year group Facebook pages worked very well and were a good thing to have. Anything inappropriate or “weird” was seen to be shut down very quickly. They didn’t have any issues to report with social media.

Safety

The students felt very safe on campus. Security was very visible especially at night, and having card access to the buildings meant that if someone was hanging around, who was clearly not from the university, then they could easily escape indoors.