

Institute of Physics Report

Women in University Physics Departments

A Site Visit Scheme 2003–2005

The Institute of Physics
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2003–2005: a Site Visit Scheme**

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The Institute of Physics was pleased to be able to offer the Women in University Physics Departments Site Visit Scheme to university physics departments in the UK and Ireland. The idea of the scheme was to allow an external panel to spend a day in the department to investigate its “gender friendliness” – that is, how welcoming it was to female students and staff. Although each visit culminated in a written report, in no way did it constitute a formal audit; instead, it was seen as friendly advice for the head of department to consider as he (they were all men) thought appropriate. The panels ensured that they highlighted good practice as well as issues that were not so satisfactory. Where criticisms were made, they were always accompanied by suggestions for improvement. Most of the feedback received indicated that the majority of departments found the visits very helpful. One or two felt that the panels had misjudged the atmosphere of their department, which was certainly possible, given the relatively short time spent there.

The success of the scheme was due principally to the numerous people who gave their time freely, to sit on a panel. While the Institute covered all expenses, we could not afford to pay honoraria. The visits were hard work, but the panellists were good humoured without exception and many of them expressed some satisfaction and even pleasure in being able to help. The Institute is indebted to them for their efforts.

For continuity, each visit was accompanied either by me or my colleague, Dr Wendy Kneissl. Mrs Sorayah Afful did all the hard organisational work with care and efficiency. The following report represents a distillation of our experiences from all the visits and attempts to point out many of the prevalent issues identified by the panels as well as offering advice on good practice, most of which has been seen on one or more visits.

Finally, what was the overriding impression? Well, it was a mixture of optimism and pessimism. On the down side, it was depressing to see how many young, female research assistants

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and postgraduate students felt that an academic career was not within their compass; such views were more rarely heard from the men. Part of the reason for this attitude is undoubtedly that the average age of permanent appointment is 35, posing serious questions for women who may wish to start a family before that age. On the other hand, it is clear that things are improving in all sorts of ways, not least that the number of women at all levels is slowly, but inexorably, increasing. And will the visits make a difference? I hope so, but their real lasting legacy will be that gender issues have been discussed openly and frankly, perhaps for the first time.

Peter Main
Director, Education and Science

Introduction

The Institute of Physics is committed to doing all it can to improve the gender imbalance in the physical sciences and engineering. The Women in University Physics Departments Site Visit Scheme was initiated following a presentation by Prof. Jocelyn Bell-Burnell to the Standing Conference of Physics Professors in which she described a similar programme organised by the American Physical Society. The principle behind the scheme was that a small panel of women and men would visit each university physics department to provide an outsider's view on its gender friendliness. The Institute wrote to the heads of all physics departments in the UK and Ireland. About 40% of the heads in the UK and none of those in Ireland requested a visit.

“A small panel of women and men would visit each university physics department to provide an outsider's view on its gender friendliness.”

The scheme

The visits took place from 2003 to 2005. Before each visit, the department supplied departmental information and data on such things as admissions etc. A small team then spent one day in the department, first meeting the head and senior management team to discuss general issues and to obtain a picture of how the department was organised, followed by further meetings with staff and student groups. After a tour of the laboratories, the panel reported informally their main findings to the head of department. A few weeks after the visit, a confidential written report was sent to the head. These individual reports form the basis for the current report on the scheme as a whole. In keeping with the advisory and confidential nature of the scheme, this report highlights issues and recommends good practice without identifying particular institutions. Issues affecting particular student and staff groups are considered after a discussion of issues affecting all groups. The numbering below refers to the paragraph in the main report.

General points

- One of the major beneficial effects of the visits was in raising the awareness of gender issues within a given department (2.1). Very few departments were monitoring gender-disaggregated information for all staff and students. As a result, they often made incorrect assumptions about the reasons for the shortage of women within the department. (2.2, 2.3)
- The majority of departments had a policy on harassment, although this was not usually accompanied by a satisfactory scheme (2.4). Similarly with appraisal; frequently staff had not had appropriate training to make the scheme effective. (2.5)
- A formal exit interview is recommended when staff leave, so that any apparent problems can be identified and acted upon. (2.6)
- Visiting panels frequently encountered a long-hours culture within the department. It is not desirable to insist that research staff work fixed hours, but long hours should not be confused with productivity and individuals should be judged on their output rather than hours spent in the laboratory. (2.7)
- The panel found that the social atmosphere in departments varied considerably. It was noticeable that groups with a strong multinational flavour tended to be more welcoming to women and less likely to revolve around “laddish” culture. Isolation of women within particular research groups could also be alleviated by a dedicated social space for the whole department; for example, a coffee room. (2.8)
- The administrative and management arrangements for the department should be agreed

and presented in a transparent manner. The roles of committees should be publicised along with the criteria for membership. There should be clear guidelines for the eligibility and application procedures for sabbatical leave and the allocation of teaching and administration should be made as open as possible. (2.9) Childcare facilities should be re-examined and universities should ensure that there are sufficient places to cover the needs of both staff and students. (2.10)

- Women speakers were under-represented in the programme of colloquia and seminars. There was no evidence of active discrimination, but the organisers had not registered this anomaly. (2.11)
- The appointment of a diversity officer sends a clear message to staff and students that diversity issues are important. (2.12)
- On each site visit, members of the panel toured the laboratories and workshops. In many, refurbishment was long overdue. Priority should be given to undergraduate laboratories, where a pleasant environment makes a huge difference to the experience of students. There is also no excuse for the presence of any posters or pictures that are offensive or alienating. (2.13)

Undergraduate issues

- Most departments are offering an excellent support infrastructure to their students although there was not always a female member of staff available for pastoral support on confidential matters. Secretarial staff who take on a pastoral role should have this recognised in their job description and receive appropriate training. (3.1, 3.2)
- Support is also gained through tutorial groups and project teams. It is a good idea to avoid having just one woman in such a group. Networking between the female undergraduates, postgraduates and research assistants (RAs) should be encouraged, especially in departments where there are very few or no women lecturers. (3.3, 3.4)
- Improvements can be made in laboratory work, where undergraduates often complained of patronising behaviour from demonstrators as well as poor documentation and lack of clarity in what they were supposed to be doing. Gender awareness should be included in training for all demonstrators and tutors. (3.5)
- Admissions material was found to be produced to a generally high standard. Where there are specific measures in place to support female students, explicit reference should be made to them. A simple statement that the department particularly welcomes female applicants is also encouraged. The presence of women students and staff at admissions open days was found to be important. (3.6, 3.7)
- There was a surprisingly wide variation in the proportion of female undergraduates. Where possible, links should be made with schools and colleges to encourage more local students to apply to do physics. (3.8)

Postgraduate issues

- Postgraduate recruitment was often done on an informal basis. Close attention to gender-disaggregated data suggests there should be a higher proportion of women postgraduates. This could be encouraged with a more formal and transparent recruitment

procedure. Also, a recurring theme of the visits was that specific supervisors, male and female, were consistently more successful in attracting female students, largely for the simple reason that they made them feel welcome. (4.1, 4.2)

- Isolation of women postgraduates was found to be a serious problem in the smaller departments. Supervisors who were aware of this had arranged specific social events, with the best example being a few days away together for the students at the start of their studies. This greatly enhanced social cohesion. (4.3, 4.4)
- The most common postgraduate issue to arise during the visits concerned the breakdown of the relationship between the student and their supervisor. Most departments had a second supervisor system but this did not always work well and departments are encouraged to ensure these schemes are effective. (4.5)

Research staff issues

- The panels found that the RAs are the least supported group. Frequently, there is no dedicated induction process and no training in teaching. These deficiencies could be addressed by extending the existing schemes for academic staff. Both these activities are good opportunities for gender awareness training. (5.1)
- There was wide variability in how RAs were appraised. They should be included in the university scheme and it is essential that their appraiser is from a different research group so that potential differences between the RA's interests and those of the grant holder can be managed appropriately. There is also a need for careers advice; RAs should see professional advisers a few months before the end of their contract. (5.2, 5.3)
- There was a widespread feeling among the female RAs and postgraduates that a successful academic career is not consistent with having a family. This idea can be countered in several ways:
 - through seminars with role models;
 - family-friendly policies should be given a high profile to show that they are not the exclusive preserve of women;
 - the appraisal system can be used to encourage young women to remain in an academic environment;
 - flexible working and working at home are accepted features of academic life. (5.4)

Academic staff issues

- Many of the departments had no or only one female member of staff. Management often said this was because so few women applied for posts. There is nothing discriminatory in encouraging women to apply. Steps that can be taken include making women feel welcome by stating that the department actively encourages female applicants, and targeting specific women. The best candidate must be appointed but there is no harm in increasing the number of women applicants. (6.1)
- The panels did not unearth any evidence of explicit bias in appointments, but informal steps in the appointment process in the department were not monitored for gender bias. It is good practice for all stages of the appointment process to be transparent. (6.2)

- There was a surprisingly broad variation in management structures, which led to varying degrees of staff participation. It will not always be possible to ensure female representation on all committees and indeed, senior women in particular can be overloaded with committee work. However, the committee structure and outreach activity should be monitored to ensure representation is reasonable. (6.3, 6.4)
- The most common complaint from both men and women staff was the lack of transparency in the allocation of teaching and administrative duties. The workload-allocation model should be fair and be seen to be fair. (6.5)
- Mentoring systems were not well regarded but, if working properly, have a lot to offer probationary staff in particular. Ideally, the appropriately trained mentor should be someone of the same gender in a cognate discipline (perhaps a mathematician, engineer or chemist). (6.6)
- There is substantial diversity in the treatment of staff who have had some sort of career break, including at least one university that forbids promotion committees even to know that a person has had a break. In this extreme case, unexplained gaps in a candidate's publication record can lead to serious disadvantage. There should be institution-wide guidelines as to how such career breaks are considered, which could include using academic age. Again, lack of transparency was seen in the promotions system where many departments relied on the individual making the first move. Mini-CVs should be considered each year for all eligible staff and promotion possibilities should be discussed at each appraisal interview. (6.7, 6.8)
- There should be a formally agreed scheme that women returning from maternity leave should have a reduced initial workload. One of the benefits of the transparent workload-allocation model mentioned above, is that this is seen to be fair, thus reducing resentment from colleagues and removing feelings of guilt from the returner. It was found that male staff were reluctant to use their paternity leave entitlement, particularly when it had to be taken in a single block. (6.9, 6.10)
- Several departments reported the resignation of a female member of staff and, in two cases, there was substantial evidence to suggest that childcare was the main issue. Management at both university and department level should accept that childcare is a universal feature of human life and not a "problem" associated with women. (6.11)

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The following Institute of Physics staff also took part in the visits:

Sorayah Afful	Saher Ahmed	Nicola Hannam
Robyn Henriegel	Sarah Iredale	Shavinder Kalcut
Wendy Kneissl	Peter Main	Carolyn Sands
Dianne Stilwell		

1: Introduction

The lack of gender balance in the physical sciences and engineering is well documented. In terms of physics, only around 20% of A-level entrants are female; there is subsequently a small reduction in this ratio on degree entry for both undergraduate and research degrees, with a more substantial decline in moving into permanent academic jobs, through lectureships to readers and professors (table 1). The Institute of Physics is committed to doing all it can to improve this gender imbalance.

The Women in University Physics Departments Site Visit Scheme was initiated following a presentation by Jocelyn Bell-Burnell to the Standing Conference of Physics Professors (SCPP), in which she described a similar programme organised by the American Physical Society. The principle behind the scheme was that a panel of women and men would visit each institution to provide an outsider's view on the gender friendliness of the department. The Institute immediately set up a steering committee, chaired by Bell-Burnell, and the first visits took place in 2003.

An early decision made by the steering committee was that the visits should be advisory and supportive and should not constitute a formal accreditation process. To that end, the Institute wrote to the heads of all university physics departments in the UK and Ireland, offering the services of a visiting panel to advise on gender issues. About 40% of the heads in the UK and none of those in Ireland requested a visit. The institutions concerned were a broad reflection of the physics community, with a wide range of size, research interests and numbers of female staff.

The scheme

Each visit involved a panel of five or six members, at various stages of their careers, plus a secretary, spending one day in the department concerned. In every case, there was at least one man in the team. The panel members offered

their services for free, although all expenses were covered by the Institute. The departments were asked for a set of information (admission statistics, PhD completion rates, names of seminar speakers etc) to be supplied before the visit. It was immediately apparent that the majority of departments had a great deal of trouble providing gender-disaggregated data, indicating that the idea of looking for evidence of dissimilar treatment was a new one to them. This information was passed to the panel members, who met the night before the visit to discuss any issues identified.

The visit itself involved a full day spent in the department, beginning with a meeting with the head of department and other relevant staff, such as the admissions tutor, the director of teaching and a representative from the university's HR team. This discussion was followed by a meeting with the female, permanent, academic staff. In some places, there were no female staff, in which case the Panel met women from other science, mathematics or engineering departments. The panel then met with a selection of male staff who, where possible, were chosen to have an age profile matching that of the female staff. Subsequent meetings involved female postgraduates and research assistants (RAs) as well as their male counterparts. The panel had lunch with the female undergraduates, drawn from all years, and there was a tour of the laboratory and teaching space.

Following a closed discussion between the panel members, the day was rounded off by an informal feedback session with the head of department. A more formal written report was produced, usually within two weeks of the visit, agreed by all members of the panel. The reports identified good practice as well as areas where improvement might be necessary; in the latter case, suggestions for action were always included. Each report was sent only to the head of department.



“About 40% of the heads in the UK and none of those in Ireland requested a visit.”

Table 1: Physics students and staff by gender

	Men	Women	Women (% total)	Notes and data sources			
				Subject	Year	Country	Source
Physics A-level	22 293	6405	22.3%	physics	2004	UK	JCQ
UCAS applicants for physics courses	2364	495	17.3%	physics	2004	UK	UCAS
	89	38	29.9%	astronomy			
Acceptances for physics courses	2223	448	16.8%	physics	2004	UK	UCAS
	120	50	29.4%	astronomy			
Undergraduates and postgraduates	9140	2525	21.6%	physics	2003/4	UK	HESA
	1520	640	29.6%	astronomy			
Research assistants	1795	330	15.5%	physics	2002/3	UK	UKRC & HESA
Lecturers	366.25	41	10.0%	physics	1 March 2004	UK	IOP
Senior lecturers and readers	395.5	33.5	7.9%	physics	1 March 2004	UK	IOP
Professors	412	17	4.0%	physics	1 March 2004	UK	IOP

Sources:
 JCQ: Joint Council for Qualifications,
 UCAS: University and Colleges Admissions Service,
 HESA: Higher Education Statistics Agency,
 UKRC: UK Resource Centre for Women in Science, Engineering and Technology,
 IOP: Survey of Academic Appointments in Physics 1999–2004 (UK and Ireland) IOP 2005

2: General points



“The departments that seemed most welcoming for women were those where there was a high level of gender awareness.”

2.1 One of the major beneficial effects of the visits was in raising the awareness of gender issues within a given department. It was clear in many places that, although there might be specific problems, such as a shortage of female staff, they had never been explicitly discussed. The departments that seemed most welcoming for women were those where there was a high level of gender awareness. Often, this was reflected in their attitude towards the visits themselves.

Good practice: Gender issues should be discussed openly by all staff within a department in as constructive a manner as possible. Often, the mere recognition of a problem can lead to an improved atmosphere.

2.2 In a similar vein, the scheme involved the departments providing specific gender-disaggregated information for all staff and students. On several occasions, the exercise produced apparent anomalies that had not been previously noticed. For example, the completion rate for female PhD students might be lower than for males, or male undergraduates were more likely to drop out than females. It was clear that very few departments were monitoring statistics on a regular basis to look for gender effects.

Good practice: Statistics should be monitored on a regular basis, perhaps appearing as an annual item on the agenda of staff meetings. Of particular importance in terms of gender differences are undergraduate and postgraduate applications and admissions, degree performance, retention rate and PhD completion rates.

2.3 In many of the departments visited, staff were aware of particular problems, such as the absence of any female staff or a below-average intake of female students (it is worth noting, however, that perceptions did not always match reality). Frequently, however, the problem was attributed to some external factor, usually without any detailed analysis. For example, in one university with a below-average intake of women, the explanation was offered that girls did better than boys and so would go to Oxbridge instead. This explanation was not consistent with the situation in other comparable departments and no-one had actually checked through the UCAS applications to look for evidence. Another example was the (incorrect) explanation that a higher status neighbouring university took all the women applicants.

Good practice: Where statistical analysis reveals an imbalance in terms of gender, it is a good idea to search for possible reasons and then test them against the evidence.

2.4 Most, but not all, departments visited had at least a policy statement on harassment, although in numerous places, this was not accompanied by a satisfactory scheme. The visiting panels discovered several cases of

harassment. Although the obvious requirements for confidentiality did not allow the details of these cases to be revealed, it was clear that in every case, there were substantial problems in the way they had been handled. In one case, the matter had not been reported because there was no proper procedure to do so. Generally, where proper harassment procedures were in place, academic staff were well aware of them. The knowledge among RAs and postgraduates was less secure, even though these people had regular contact with students. A few cases of harassment between undergraduate students were also reported.

Good practice: Each university should have a well publicised Harassment Procedure, involving a detailed statement of policy and a set of Harassment Advisers drawn from across the university. All staff and students should be made aware of the policy and, specifically, be conscious that harassment of any sort is a very serious matter. All staff, RAs and postgraduates involved in teaching should have harassment awareness training.

2.5 The majority of departments visited had some sort of appraisal scheme, although the details varied considerably from place to place. However, it was clear that, in many cases, neither the departmental management nor the appraisees took the scheme very seriously. Despite this observation, it was absolutely clear that there was a serious need for good appraisal, particularly among the younger academic staff and the RAs. The principal reasons for staff not taking the schemes seriously were that the appraisers were not sufficiently well trained and that no feedback was ever provided. For RAs in particular, a frequently encountered problem was that the appraiser was either the supervisor of the work or a close colleague, which severely inhibited the RA's ability to speak frankly. For staff, the panels encountered several cases of people who had not been appraised for many years.

Good practice: All staff, including RAs and research fellows, should be appraised on a regular basis by someone who is not directly related to their research. The scheme should be discussed widely and be modified to be of maximum benefit to the staff. All appraisers should receive appropriate training; in particular, they should be aware of how to find information on career guidance, harassment and other staff resources.

2.6 In several departments, a member of staff had left in a manner that might suggest that there had been some problem that had not been picked up. In these cases, the head of department and other senior staff would often offer an explanation for the departure. While the explanations were plausible, they were not always supported by evidence.

2: General points

Good practice: Ensure that all staff that leave before the end of their contract have an exit interview conducted by someone entirely independent of their employment. Normally, this responsibility would be undertaken by the Human Resources department.

2.7 Visiting panels frequently came across evidence for a long-hours culture. This was one of the most contentious issues encountered. On the one hand, it was clear that many people were working exceptional hours because they were excited by the research and would have considered it absurd to be told otherwise. On the other hand, many younger people, particularly those seeking permanent contracts, felt that they had to give up evenings and weekends to maintain their profile; others felt it would be frowned upon if they were to work more normal hours.

Good practice: It is neither possible nor desirable to insist that academic and research staff work fixed hours. However, there are two important principles. First, one should not confuse long hours with productivity. A person who can carry out their duties efficiently over a short period should not be considered inferior to one who works longer hours to achieve the same goals. The second, related principle, is that individuals should be judged on their output and not on their hours in the laboratory. Another related issue is that of working at home. It is often more family-friendly to be able to work from home, for example when a child is sick. It is a good idea to have such arrangements openly discussed within the department. In addition, staff should be encouraged to take reasonable amounts of annual leave. The head of department can set a good example in this respect.

2.8 There was a wide variation in the social atmosphere between the departments visited, particularly with regard to women. For example, in some cases, the RA and postgraduate social life would revolve around male activities such as football followed by an evening in the pub. In these places, the relatively fewer women students reported feelings of isolation, particularly when they came from another country.

On a more general level, it was striking the effect a sympathetic head of department or research group could make. There were numerous examples of groups with a large number of women members as a result of the personal qualities of the group leader. In one case, the mere fact that a (male) group leader had publicly stated that he wished to encourage more women into the subject had had a positive effect. It was also noticeable that groups with a strong multinational flavour tended to be more welcoming to women and less likely to revolve around “laddish” culture.

Equally, women were much more at ease if the head of department was seen to be sympathetic to family-friendly policies. For example, although paternity leave was available at every place visited, it was rare for male staff to take advantage of it, usually because they felt they might be letting their colleagues down if they did. Such attitudes tend to have a negative effect on women taking maternity leave;

male heads of department can set an example by explicitly and openly supporting these initiatives.

Another factor that appeared to have a large effect on the general atmosphere was the presence, or otherwise, of a general social space within the building where staff, RAs and postgraduates could meet.

Good practice: The best atmosphere existed in places where there were several females who could offer mutual support and social interaction.

Perhaps surprisingly, there was little evidence of interactions between different research groups within most departments. It is a good idea to ensure that women are not left isolated; for example, dedicated social functions can be arranged to bring together female staff, RAs and postgraduates.

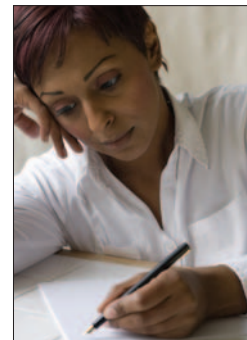
Heads of department should not only be sensitive to family issues, they should be seen to be so, particularly in their own attitude towards such matters as paternity leave, etc.

Also, where possible, there should be dedicated social space, such as a coffee room where people can meet and talk informally. A good way of encouraging people to use the space is to arrange tea and cakes after a departmental colloquium.

2.9 As stated in 2.8, the head of department has a large influence on the general atmosphere in a department. Often, the friendliest places were those where the head was seen as both fair and approachable. On the other hand, under these circumstances, there was a tendency for management and administration to be carried out on an informal basis. While this works well in the majority of cases, there was a potential problem when the head of department changes. Generally, there is a need for a formal management framework, so that everyone is aware of the procedures, even if, in practice, they are usually carried out informally. Two areas that cropped up again and again were those of sabbatical leave and the arrangements for allocating the teaching and administrative load. In the latter case particularly, the absence of a formal, transparent mechanism led to widespread suspicion and resentment. Panels were frequently told that, although the model was “fair”, it was too confusing for the staff to understand.

Good practice: The administrative and management arrangements for the department should be agreed and presented in as transparent a manner as possible, preferably as part of a staff handbook. The roles and relationships of the committees and boards should be publicised as well as the criteria for membership. There should be clear guidelines for the eligibility and application procedures for sabbatical leave and the allocation of teaching and administration should be made as open as possible, with agreed criteria.

2.10 Childcare facilities were seen as essential by all levels of staff of both genders. It was rare to come across facilities that were entirely satisfactory. In some cases, there were none at all. More commonly, the arrangements had some sort of problem, such as unsatisfactory hours or, most





common, insufficient places. Frequently, and not unreasonably, priority was given to students, although this often meant that staff were excluded. Generally, people were more concerned with the quality rather than with the price of the facility.

Good practice: Universities that claim to be good employers should ensure that their nursery and childcare facilities are of high quality and that there are sufficient places to cover both staff and students.

2.11 Most physics departments have a regular programme of departmental colloquia and specialist research seminars. In general terms, women speakers were relatively under-represented, well below the actual numbers active in research (more than 10% of the total). Although there was no evidence for active discrimination in this respect, most seminar and colloquium organisers had not registered this imbalance.

Good practice: It is absurd and unworkable to insist that each list of speakers should have a certain fraction of women speakers. However, over a long period, it should be possible to ensure that at least 10% of the speakers are female. In departments with few or no female staff, it is particularly important to provide role models for the female postgraduates and RAs. In subject areas where there is a higher percentage of female participation, such as astronomy, the speaker list should reflect that fact.

2.12 Good practice: A few of the universities visited had appointed diversity officers, whose responsibilities included gender issues, as well as more general diversity areas such as ethnicity and disability. In most cases, the appointments were relatively recent so that it was difficult to judge their effectiveness. However, in each case, the presence of the officer was a sign of the importance of diversity and sent a clear message to staff and students alike.

2.13 A part of each site visit was the tour of the laboratories and workshops. Generally, there were no problems and the panel was often delighted to meet technicians who were clearly highly dedicated and supportive of students. Many of the actual laboratories, however, were unprepossessing and stark, with refurbishment long overdue. On many visits, the panel found inappropriate pictures openly visible on the walls of workshops, in some cases with female students actually present.

Good practice: The current under-resourcing of physics departments has led to several being in urgent need of decoration. Priority should be given to undergraduate laboratories, where a pleasant environment makes a huge difference in the experience of students. There is no excuse for the presence of any posters or pictures that are offensive or alienating. The workshop manager should have the responsibility to remove such material and to ensure that staff are aware of its inappropriateness.

3: Undergraduate issues

3.1 Each visit incorporated a meeting over lunch between panel members and female undergraduates. What was striking about almost every visit was the way in which the students were highly appreciative of the efforts of staff to support them. Part of the reason for this may have been pride in their own institution, but it was clear that most departments are offering an excellent support infrastructure to their students. It was also noticeable that the students were pleased to be able to talk to women from other years and courses, perhaps for the first time. A general but not universal observation was that the smaller the department, the friendlier the atmosphere.

3.2 All departments visited offered some sort of tutorial system, providing a mixture of pastoral advice and academic support. Sometimes the same person provided both, other times they were separate, but each student always had access to a permanent member of staff. Far less common was the provision of a female member of staff specifically to advise female students on any confidential matters. Perhaps surprisingly, some male staff did not appreciate even why such a person might be required. Often, a female secretary or administrator took on this role, although almost always on an informal basis without training or compensation.

Good practice: A female member of staff should be available for any female student who wishes to speak confidentially. The availability of such a person and her contact details should be publicised in the student handbook and elsewhere. For balance, a similar male advisor should be provided for male students. The two student advisors should receive appropriate training in counselling. Secretarial staff who do take a pastoral role should have this recognised in their job description and receive appropriate training. Again, their availability should be advertised to the students.

3.3 It was clear that there is a great deal of mutual support between female undergraduates. Occasionally, panels heard stories that the male students were inclined not to take their work as seriously as the females, but these were rare, although statistically it was noticeable that proportionately more men dropped out than women. Many female students also reported that it was important for them to find “work partners”, that is someone with whom to revise, discuss lectures, etc, and that these partners were usually women.

Good practice: When setting up tutorial groups, it is a good idea to avoid having just one woman in a group. Similar remarks apply to all occasions where academic groups are formed, for example for team projects.

3.4 It was not unusual in the small or medium-sized

departments for there to be one or even no female member of staff. As a consequence, the female undergraduates were often unaware that there were any graduate women in the department at all. Where links were made between the undergraduates and the postgraduates and RAs, such as during final year projects, they were often very beneficial to the students.

Good practice: Where student demonstrators are used in teaching laboratories, it is a good idea to ensure that at least one of them is female, particularly in years one and two. In all years, networking between the female undergraduates, postgraduates and RAs is seen as a good thing. It is possible to organise occasional social events along these lines, some of them perhaps involving female staff who can act as role models.

3.5 Laboratory work was one of the few areas where the undergraduates were not entirely happy. There were generally two reasons given for this dissatisfaction. First, there were many complaints of patronising behaviour from demonstrators, both staff and postgraduate. Without direct observation, of course, it was impossible to tell if the behaviour was actual or perceived. Nonetheless, it was clear that demonstrating staff should be made aware of the problem and take every step possible to avoid it. Second, it appeared that female students were irritated more than their male counterparts by poor documentation and lack of clarity in what they were supposed to be doing.

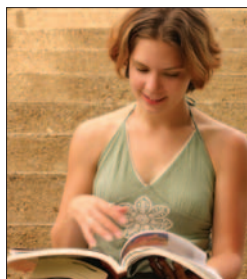
Good practice: Include gender awareness in the training of all demonstrators and tutors. Students spend a lot of their time in laboratories and it is essential that there is a good working relationship between the demonstrators and the students. Laboratory procedures should be clear and unambiguous; students should know at all times what they are supposed to be doing.

3.6 By and large, the undergraduate admissions material is of a high standard almost everywhere, in the sense that the design is attractive and the brochure is usually printed on high-quality paper. However, it was rare to find anything that was particularly appealing to women. For example, although there were usually photographs of both male and female students, it was noticeable that the men were usually the active ones, with the women shown in more passive roles. It was also noticeable that, even for places that offer a great deal of support to women students, none of it was specifically mentioned in the material.

Good practice: All material produced for external use should have an appropriate mix of both men and women, in active roles if possible, in the photographs. Similar remarks might also apply to students from different ethnic backgrounds or with disability. Where there are specific mea-



“It was clear that most departments are offering an excellent support infrastructure to their students.”



asures in place to support female students, explicit reference should be made to them. A simple statement that the department particularly welcomes female applicants, highlighting the support provided, is also to be encouraged.

3.7 Conversations with female undergraduates indicated that an important factor for them was the presence of women at the admissions open days. They thought that it was particularly useful to have undergraduates to talk to, but there was some evidence that the presence of female staff was also important.

Good practice: Use undergraduates and postgraduates to help with admissions open days and ensure that there are always one or two women present. If a female member of staff or an RA can be present, so much the better.

3.8 There was a surprisingly wide variation in the proportion of women undergraduates in the various institutions. Some of this variation was undoubtedly due to the range of subjects on offer; for example, courses involving astronomy or astrophysics consistently attract more women as do those in mathematical physics and bio/medical physics. Another possible factor was the degree to which the university attracted students from its local community. Where there was a high proportion of students living at home, there tended to be a higher proportion of women.

Good practice: Where possible, links should be made with local schools and colleges, with a view to encouraging more local students to apply to do physics. It is also helpful to develop similar links with the local community in general. The strategy is likely to be most successful in universities in large cities.

4: Postgraduate issues

4.1 Statistically, the percentage of graduate students that are female is close to the overall percentage of female undergraduates, which appears to indicate that there is no extra leakage of women from the subject following graduation. However, the picture may be a little more complex since the statistics also show that women are more likely than men to achieve 1st Class or 2(i) degrees, so one might expect the ratio of women postgraduates to be higher than the ratio of undergraduates. A common feature unearthed by the panels was that postgraduate recruitment was often done on an informal basis, either in response to student approaches or by staff targeting specific candidates in their final year. There was some evidence to suggest that these procedures might lead to a male bias in recruitment.

Good practice: Students can have misconceptions about staying on to do postgraduate research and many of them have little idea what it entails or whether the department would consider them as suitable candidates. It is a good idea to have a relatively formal procedure for postgraduate recruitment, in which each internal student is given an equal opportunity to apply and a specific invitation to an open day, or possibly one of a series of open days, in which they are able to find out about research and chat informally to staff, RAs and postgraduates. It is important, where possible, to have women present at these open days.

4.2 A related point about recruitment is that, in several places, there was a substantially reduced ratio of women staying on to do postgraduate work relative to the ratio of female graduates. In most cases, the department had not spotted the discrepancy, highlighting the need to monitor statistics. In other cases, the effect was attributed, without evidence, to some external influence. For example, in one university it was stated (by the male postgraduates) that the women were cleverer than the men and could therefore choose to do postgraduate work at a better university!

Good practice: It is essential to monitor gender statistics to see if there are important differences in behaviour between men and women. Where differences are discovered, they should be investigated to find the reason. For example, since it is clear that women have a greater preference for, say, astronomy, a department without astronomy might have trouble in retaining its fair share of female graduates. On the other hand, it is also entirely possible that some aspect of the admissions procedure is discouraging women applicants. A recurring theme of the visits was that specific supervisors, male and female, were consistently more successful in attracting female students, largely for the simple reason that they made them feel welcome.

4.3 A serious problem was found in several smaller departments where there might only be one woman in a

research group. In these circumstances, the woman may feel isolated, particularly where the social life of the rest of the group centred around male activities, such as football, etc. The problem may be exacerbated if the student is from another country. On one or two occasions, the panel met a postgraduate student who was having a miserable time.

Good practice: It is inevitable that, from time to time, there will be situations when there is only one female student in a particular group. Under these circumstances, it is essential that the supervisor pays attention to the social aspects of the student's work, particularly when the student is from another country. Good practice might involve the provision of a student mentor or the arrangement of specific social events. In either case, it should be the specific responsibility of the supervisor to ensure that the student does not feel isolated.

4.4 Good practice: The departments with the best atmosphere and where female students were most at ease were often those where there was some sort of social contact encouraged between the students. The best example involved the students having a few days away towards the beginning of their studies. Although much of the time can be spent on physics or department-related activities, one of the principal benefits is the enhanced social cohesion. Another good idea is to have specific graduate seminars, given by and for postgraduate students, which can include either a lunch or tea and cakes.

4.5 Perhaps the most common issue that emerged to do with postgraduate students was what to do if something goes wrong with the supervision, or if the student-supervisor relationship breaks down. Most departments had some sort of second supervisor system but it usually emerged that, for one reason or another, the schemes did not work effectively. In the majority of cases, the students felt that, in the event of a problem occurring, they would probably feel obliged to leave. Although one should not exaggerate the problem, there were many cases of students who had had some sort of problem with their supervision and at least one case of a student being harassed by her supervisor.

Good practice: Every student must have the opportunity to speak, in confidence, to a person who is not part of their research group on a regular basis. The arrangements need not be time consuming and may only be a check to see if everything is fine, but it is important that the student can feel confident that whatever they say will not affect their position in their group. Each postgraduate student should have a second supervisor who is responsible for their work if the primary supervisor is absent for an extended period. For this scheme to be effective, the second supervisor should be aware of the student's progress in the project.



“A common feature unearthed by the panels was that postgraduate recruitment was often done on an informal basis.”

5: Research staff issues



“It was noticeable that, even where research assistants were involved in teaching, it was unusual for them to have received explicit training.”

5.1 It is often said that RAs are the least well supported group in universities and the evidence of the visits tends to corroborate that view. A particular example is the almost universal lack of a dedicated induction process for RAs. Part of the reason for this is that, unlike students, RAs arrive at any time during the year. However, a similar problem could be said to apply to academic staff but, in that case, induction is the norm. It was noticeable that, even where RAs were involved in teaching, it was unusual for them to have received explicit training, again unlike academic staff or postgraduate demonstrators. As a result, visiting panels often heard that RAs appointed from another department often took a long time to learn how a department works.

Good practice: Induction should be provided for all RAs. In many cases, it will not be possible to arrange a course for just one or two people but, in most departments, it should be possible to offer a couple of courses per year, supplemented by appropriate written material. It should not be acceptable for anyone involved in teaching to begin their duties without some sort of training, which should include awareness of gender issues.

5.2 There was wide variability between institutions on how RAs were appraised. In some departments, RAs were part of the normal scheme; in others they were not appraised at all. Frequently, where they were included in the system, the appraiser was the grant holder or a close colleague. As a result, there were few opportunities for RAs to speak confidentially to someone outside their research group.

There are two important issues here. First, the RA may have an issue to raise about the way the research is progressing and that may involve implicit or even explicit criticism of the grant holder. Second, there may well be occasions where the interests of the RA are different from those of the grant holder. For example, it might benefit the RA to attend a particular career development course, which might delay the research. It is essential that under these circumstances the RA is advised by a disinterested party.

Good practice: RAs should be included within the university appraisal scheme. It is essential that the appraiser is someone from a different research group and that the appraisal is seen as developmental to the career of the RA. There should also be a mechanism for dealing with complaints from RAs about their grant holder.

5.3 On a related point, careers advice for RAs was almost non-existent in the majority of places visited. This is a serious matter, as the end of the first or second postdoctoral position is very much a watershed in a scientist's career, where he or she has to make the decision on whether to keep trying for an academic position or to look elsewhere. Panels found many examples of RAs who had been allowed

to continue with multiple, successive appointments and who had never been given any personal careers guidance. In one institution, there was a female researcher who, despite having been in the department for more than 10 years, only knew if her contract was to be renewed just a couple of weeks before it was due to end. Such circumstances can be particularly destructive to female RAs, who might be trying to decide when to start a family.

Good practice: All RAs should be given the opportunity to receive explicit careers guidance by professional advisers; it is particularly important for RAs to be reminded that such advice is available a few months before the end of their contract. Although mentoring schemes appear to be unpopular, largely due to inadequate training of mentors, it would be highly beneficial to an RA to have access to a disinterested mentor, who would be solely concerned with the RA's personal development. An alternative would be to have career progress as an explicit part of the appraisal interview, although this should not replace the professional adviser.

5.4 Perhaps the most depressing aspect of the visits arose from meetings with female RAs and postgraduates, who were seen as a single group. Although they were often lively, enthusiastic and obviously enjoying their work, there was a widespread feeling that a successful academic career was not compatible with having a family. It was not that they felt that they were academically incapable; it was more that they saw the effort and commitment required by the academics in their own department and did not feel that they could be as active while having children at home. Perhaps surprisingly, this view was not confined to departments with very low numbers of female staff. Similar attitudes were not as prevalent among the male RAs and postgraduates.

Good practice: The problem must be countered on several fronts:

- Have role models that show that it is possible for women to have families and a successful academic career. The Women in Physics Group of the Institute is able to supply volunteers who are prepared to talk to young women researchers about how they manage.
- Issues concerning family-friendly policies should be given a high profile within the department and both the management and the male staff should be seen to be involved in them, i.e. family issues are not the exclusive preserve of women.
- The appraisal/mentoring systems can be used to encourage young women to remain in academia.
- It is helpful if issues such as flexible working hours and working at home are seen as acceptable ways of coping with the dual constraints of a young family and a developing career and are not seen as something to be avoided.

6: Academic staff issues

6.1 Many of the departments visited had either no or perhaps one member of staff who was female. In most, if not all, of these cases, the departments were suffering in various ways. Not only were there the obvious problems of the lack of role models, the lack of a female adviser for students etc, it was also apparent that the whole atmosphere of the department was affected. Even the male staff recognised how much better the atmosphere would be if there were female lecturers.

Often, management stated that the reason there were no female staff members was that few of them had applied. However, in most cases there had been no efforts explicitly to encourage women applicants and, in some cases, the further particulars sent out with the details of the post were downright discouraging. In a few cases, female RAs or research fellows had actually left and obtained good permanent posts elsewhere.

Good practice: It is in no-one's interests to have an affirmative action policy that preferentially appoints women to posts above better qualified men. However, it is also true that the absence of a reasonable female presence on the academic staff is a disadvantage for a department. Under these circumstances, it is helpful to have a full and frank discussion at a meeting of the academic staff so that the issue is aired. If it is thought that the best interests of a department require one or more women staff, then that could be identified as a strategic priority.

In addition, there is absolutely nothing wrong with trying to encourage female applicants to apply for posts. There are four things that can be done:

- The first, and easiest, is to include details of family-friendly policies and staff benefits in the material sent to potential candidates. It is astonishing how making someone feel welcome can make a big difference.
- Second, the advertisement can mention that the department actively encourages applications from women.
- Third, specific women can be targeted and invited to apply for the jobs (this is a routine procedure in some departments to encourage research fellows to apply). In the end, the best candidates must be appointed but there is no harm at all in increasing the proportion of women applying.
- Consider explicitly recruiting younger staff. Generally, the more experience that is required, on average the less likely it will be to recruit a woman.

6.2 The panels did not unearth any evidence of explicit bias in appointments arrangements. However, in the majority of departments, there were examples of poor practice at some point of the procedure. Generally, the final interviews, under the auspices of HR departments, were fair and

were seen to be fair, although a few universities did not insist on at least one member of the interview panel being female, even where there were female candidates.

Where there were some worrying features was in the selection of candidates for interview and in the informal sessions in the departments before the main interview. Candidates were often expected to give a talk in the department and, possibly, undergo some informal interviews with other staff. In the majority of cases, the selection process was not monitored for gender bias; the panel found sufficient evidence for (unconscious) bias in the views of some of the male staff to indicate that this was a real problem. Following the pre-interviews, there was usually some mechanism for individuals to feed back their views on the candidates before the main interview; in some cases, the feedback was offered individually on a confidential basis, so again there was the opportunity for biased views to be offered unchecked.

Good practice: It is essential for all stages of the appointments process to be transparent and monitored for gender bias. There is considerable evidence to suggest that, on average, applications from women are of a higher standard than those from men, in that there are fewer frivolous applications. It should be a concern if, over a period of time, the ratio of women shortlisted is less than that of the applicants.

The transparency of the process should include the selection mechanism and the procedures for feedback after the pre-interviews, which should be as open as possible. For the formal interviews, it is good practice to have at least one woman on any panel, but it is essential when there are one or more female candidates.

6.3 There was a surprisingly broad variation in the management structures of the departments visited, with a correspondingly variable degree of participation of staff. Many of the women staff met by the panels expressed a view that there was a tendency for them to be given "softer" administrative responsibilities, for example dealing with the pastoral support for students, while not being involved in the committees making the important decisions.

Good practice: It will not always be possible to ensure female representation on all committees, particularly when the number of women staff is small. Nonetheless, the committee structure should be monitored on a regular basis to ensure that the representation is reasonable. In particular, women should not be given relatively unpopular administrative responsibilities simply because male colleagues either do not want them or because they do not do them well.

6.4 While it is certainly good practice to ensure that women are represented on major committees, promotion panels etc, there is the potential problem that women staff,



“Even the male staff recognised how much better the atmosphere would be if there were female lecturers.”



and senior women in particular, are asked to sit on more than their fair share of committees. This can be a severe problem where there is only one female member of staff and there is a danger that the effect of the time-demands exceeds the benefits of the representation.

Good practice: It is important to monitor the workload of every member of staff on a regular basis and to include all duties as part of the workload, including all committee work and outreach activities, etc. A person should not be penalised for taking on duties that other people have refused to do.

6.5 Perhaps the most common complaint from the staff seen was the lack of transparency in the allocation of teaching and administrative duties. Both men and women were concerned about this but the women often felt, rightly or wrongly, that they were being disadvantaged. Most heads of department, or directors of teaching, did have an allocation model but, curiously, the majority of them thought that it would cause even more disquiet if they were to release the details of the allocation model.

Good practice: The workload allocation model should be agreed by all staff and operated in as open and transparent a fashion as possible. The allocation should be fair and be seen to be fair.

6.6 Most departments have some sort of mentoring scheme for new staff, although the quality of these schemes is patchy and, with a few notable exceptions, they are not well thought of by the staff. The principal reasons for this lack of enthusiasm are that the mentors themselves are often unenthusiastic and that the training provided for mentors is insufficient. While it is clearly nonsense to force a mentoring system on people who do not want it, panels found several examples where a disinterested mentor would have been a considerable aid to young staff, and women in particular. It is important to emphasise that the mentor must be someone outside the management structure of the department, so that the person on probation feels able to speak frankly about any problems they might have.

Good practice: All probationary staff should have access to a mentor who has received proper training and who has their mentoring duties included as part of their allocated load. Ideally, the mentor should be someone of the same gender from outside the department, but in a cognate discipline (perhaps a mathematician, engineer or chemist). In any case, the person should be outside the research group of the probationer and should not have a direct line-management role.

6.7 There is a substantial diversity of treatment of staff who have had some sort of career break when they apply for a post, apply for promotion, or are considered for some sort of accelerated increment. Many places do not have a policy at all. Even where there is a policy, it consists of a simple statement that such candidates will not be discriminated against, but there is no guidance as to how that might be achieved. At

least one university has a rule that it is forbidden for, say, a promotion committee to even know that a person has had a career break. The latter situation is highly undesirable as it means that candidates with a career break may appear to have damaging holes in their publication record when compared with those who have worked continuously.

Good practice: Any candidate applying for a post, for promotion or, where there is a formal procedure, for an extra increment, should be encouraged to state that they have had a career break, where applicable, in their application. There should be an institution-wide policy that no-one having had a career break will suffer as a consequence. Furthermore, there should be explicit guidelines as to how such career breaks are considered, for example using academic age rather than actual age.

6.8 A similar diversity of treatment was observed in the way that candidates for promotion were identified in the various universities. Most institutions had a system in which it was up to the individuals to put themselves forward. However, it was clear that such an application would only stand a reasonable chance of success if it was supported by the head of department. The principal problem here lies in identifying the candidates for promotion or, equivalently, for a person to know when she or he has a CV that is sufficient for an application.

Almost all the schemes are flawed in one way or another. In particular, many systems rely on the individual making the first move. Given that some people are more modest than others, this is not a system that is likely to lead to equality of treatment. There was a similar variability in the degree of assistance given to promotion applicants in writing their case.

Good practice: Each person for whom promotion is a possibility should be explicitly considered each year. One method of achieving this goal is for the department management group, or a delegated committee, to consider mini-CVs for all eligible candidates. By making every eligible member of staff submit a mini-CV, the scheme removes any problems associated with the candidates knowing if their CVs are of a sufficient standard. It also allows appropriate feedback to be provided and the whole process is seen to be fair and open. Promotion possibilities should also be a standard agenda item in appraisal interviews.

6.9 The panels met many female staff who had taken maternity leave at some point in their career. There was some evidence that the current situation was substantially better in some places than it had been in the past and the specific details of the actual leave were similar in most universities.

However, there was significant variability with respect to the arrangements for those returning from maternity leave. In one case, the panel heard of a woman who had been expected to pick up a full load immediately on her return. Such an arrangement would be intimidating enough for anyone returning from a break, but it would be much worse for a woman getting used to organising her life around a

small child. More commonly, some reduction of workload was allowed but only on an informal basis, depending on the head of department. There was some concern that such arrangements caused some resentment among male staff and, correspondingly, some guilt for those women involved.

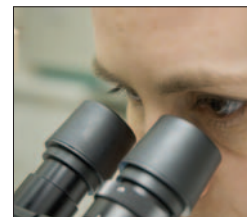
Good practice: Maternity leave should be seen as a right and not a concession. There should be a formally agreed scheme that women returning from maternity leave should have a reduced initial workload. Note the importance of a transparent workload model in this respect. One university had a scheme whereby women on maternity leave continued to accumulate annual leave. The accumulated leave could then be used to allow a part-time return to work on full pay. Where someone does wish to work part time, the HR department should be able to put them in touch with existing part-time staff who may be able to help in managing workloads, etc.

6.10 Most universities have paternity leave schemes although, as discussed above, male staff do not always take advantage of them. In some universities, paternity leave has to be taken in a single block, which is highly restrictive and often means that it is not taken at the optimum time.

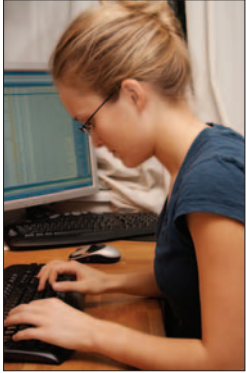
Good practice: The best paternity leave schemes are flexible and allow the man to take the permitted leave at various times within a specified period.

6.11 Several departments reported the resignation of a female member of staff. In none of these cases had there been a convincing exit interview and, in two of the cases, there was substantial evidence to suggest that the person had left because she was unable to reconcile her academic duties with the requirements of childcare. More anecdotally, there were feelings among some of the remaining staff, both male and female, that more could have been done to retain the women by offering more flexible arrangements and/or part-time working. It is clear that academia has lost several able women due to the departments' inability to implement flexibility in childcare arrangements.

Good practice: Management at both university and department level should accept that childcare is a universal feature of human life and is not a "problem" associated with women. Wherever possible, heads of department should be as accommodating as possible to staff, and particularly women with small children. Where it would be helpful for a new mother to switch to part-time working, on either a temporary or permanent basis, every effort should be made to support them. Ideally, for a part-time employee, it is best to make the actual hours as flexible as possible. In addition, where it is necessary to organise administrative meetings, it should always be done in school/nursery hours.



7: Conclusion



“The most positive outcome of the visits was that, possibly for the first time, gender issues were discussed openly.”

Generally, the panels were met with co-operation and the discussions were frank and helpful. The only outright opposition voiced was from some women who felt that the visits were counterproductive and were either dealing with a problem that did not exist, or were unnecessarily drawing attention to women physicists. Generally, the men were co-operative and there were very few instances of any explicitly sexist remarks during the visits themselves.

The majority of heads of department were very receptive to the recommendations in the reports. Because the reports were confidential, it was up to the particular heads to decide what to do with them. In most cases, the reports were circulated to all staff and discussed in a subsequent meeting. In some cases, however, the head felt that the team had either been misled or had misinterpreted the situation, and the report was not widely circulated.

Most departments were happy to take on board some of the recommendations, but there was a certain reluctance to accept criticisms in some areas, particularly where relatively radical action had been suggested. However, the most positive outcome of the visits was that, possibly for the first time, gender issues were discussed openly. In a similar vein, departments realised that they had not been monitoring disaggregated statistics and, consequently, had missed some important differences between men and women. In a small number of departments, no general discussion had taken place before the visit and, in those cases, it was noticeable that meetings with the panel were less open, with a degree of suspicion occasionally apparent.

Women in University Physics Departments

A Site Visit Scheme 2003–2005

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