

ATHENA FORUM



Report 2

**Athena Surveys of Science
Engineering and Technology
(ASSET):**

Headline Findings on Women's Career Progression
and Representation in Academic Science from the
2003/04 and 2006 Surveys

FOREWORD

This, the second report¹ by the Athena Forum, provides a baseline for the Forum's work, and evidence of where action is needed to improve women's career progression in science, technology, engineering, mathematics and medicine (STEMM) in higher education (HE).

The Athena Forum's mission is *to provide a strategic oversight of developments that seek to, or have proven to, advance the career progression and representation of women in STEMM in UK higher education*. The Forum explores gaps and challenges, and identifies and commends national and international excellence in supporting women in science. Forum members are nominated by the UK's leading scientific professional and learned societies. The Forum is one of three legacy organisations who continue to build on the achievements of the Athena Project². Work by Athena, and by the societies represented on the Forum, shows that bad practice incrementally prejudices women's career progression, and that good practice is not just about how many women there are in a department, but is about processes that are fair, flexible and transparent to and for all. The good practices adopted by the 'best' university departments benefit all: staff and students, men and women alike, benefit from the supportive and inclusive culture such departments develop.

We hope that other UK professional societies will read and discuss this report. As Forum members, we have made a commitment that the societies, who nominated us, will discuss this report at the highest level, review their interactions with university departments and disseminate this report to them. Most particularly, we will look to our societies, and the universities we work in, to endorse and participate in the next ASSET survey in 2010.

The future of ASSET has been secured by a grant from HEFCE's Leadership, Governance and Management Fund to Imperial College in partnership with the Royal Society. Professional societies interested in supporting the 2010 and future surveys, and universities interested in taking part, should contact info@athenasurvey.org.uk³

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	Professor Moira Whyte - Academy of Medical Sciences (AMS)

¹ The Forum's first report outlined what the organisations represented on the Athena Forum are doing to lead, influence and inform action to improve the career progression and representation of women in university STEMM departments.

² Information on the Athena Project, reports and case studies, and information on the two other Athena legacy organisations, the Athena Partnership and the Athena SWAN Charter, and ASSET 2010 are available on www.athenaforum.org.uk.

³ Reports and Findings on ASSET 2003/04 and 2006, and on the next survey in 2010 are available on www.athenasurvey.org.uk

SUMMARY

The report covers the main findings from the surveys in 2003/04 and 2006, on the differences, real and perceived, between women's and men's career progression. The purpose of running the surveys was to provide evidence of, and to improve the understanding of the differences in the career progression, expectations, views and experiences of male and female scientists in UK universities.

ASSET findings point up the institutional processes where changes could make a difference. They suggest that much still needs to happen before women perceive themselves to have the same level of support, encouragement, development opportunities, and recognition as their male colleagues.

A short respondent profile is followed by findings grouped under four sections:

Key career transitions- promotion

- Women are less likely than men to be encouraged to apply for promotion
- Women are less aware of promotions criteria and processes

Career development

Career development provision

- The higher the grade the more likely it is for it to be provided by employers
- Women are less likely than men to have employer provision, and more likely to look for it to their professional societies

Factors contributing to career progression

- Women are more likely than men to rate the following as important: external collaborative working, external networking and support/encouragement from partner/family

Professional activities

- At professorial level women are as likely/more likely to be invited to contribute to conferences, however at lecturer level women are overlooked

Organisation and culture of STEMM departments

- At professorial level women are much less likely than men to head departments, but do carry at least a fair share of all other admin/management roles
- Men feel themselves to be 'better treated/better supported' by their departments
- Women feel their 'disadvantage' far more strongly than do their male colleagues, in particular in relation to promotion and visibility to senior management

Flexibility across the working day, working year and working life

- Over half the female professors and senior lecturers in the 2006 survey had taken career breaks
- For women who had taken career breaks, good quality child care and flexible working were the most important factors for returning to work
- Flexible working was valued highly by men and women
- At senior lecturer level significantly more women than men rated as important meetings finishing on time/being held in core time

RESPONDENT PROFILE

The figures from the 2003 and 2004 surveys are combined.

The 2003/04 surveys together covered 40 universities and 4,282 respondents (F 1,535, M 2,747)

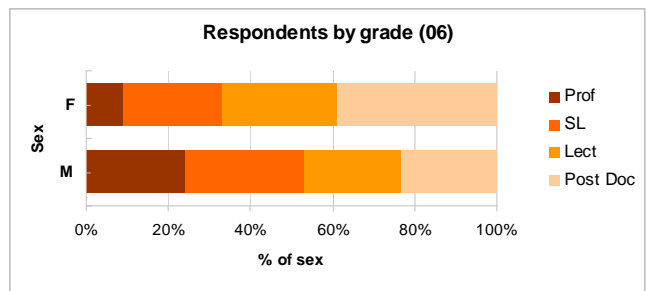
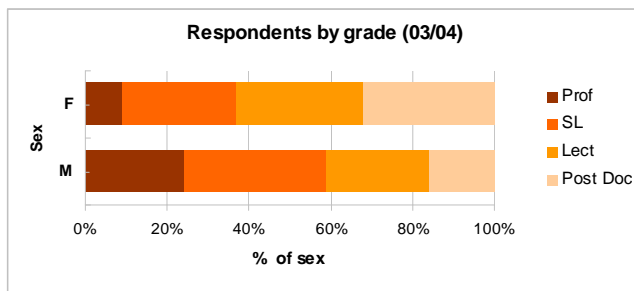
The 2006 survey covered more than 70 universities and 3,453 respondents (F 2,288, M 1,165)

GRADE AND GENDER

The grade profile of respondents was similar in 2003/04 and 2006:

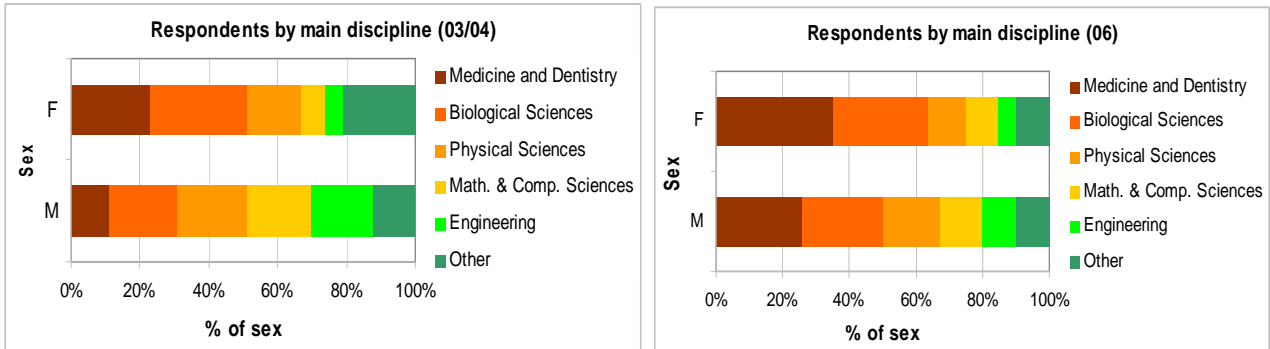
2003/04 Professors	F 9%, M 24% of total respondents, and 2006 F 9%, M 24%
2003/04 Senior Lecturers/Readers	F 28%, M 35%, and 2006 F 25%, M 29%
2003/04 Lecturers	F 28%, M 25%, and 2006 F 28%, M 123%
2003/04 Post-Docs	F 23%, M 11%, and 2006 F 30%, M 18%

The gender profiles in the surveys were quite different. In 2003/04 women were 36% of respondents, and in 2006 the women were 66% of respondents:



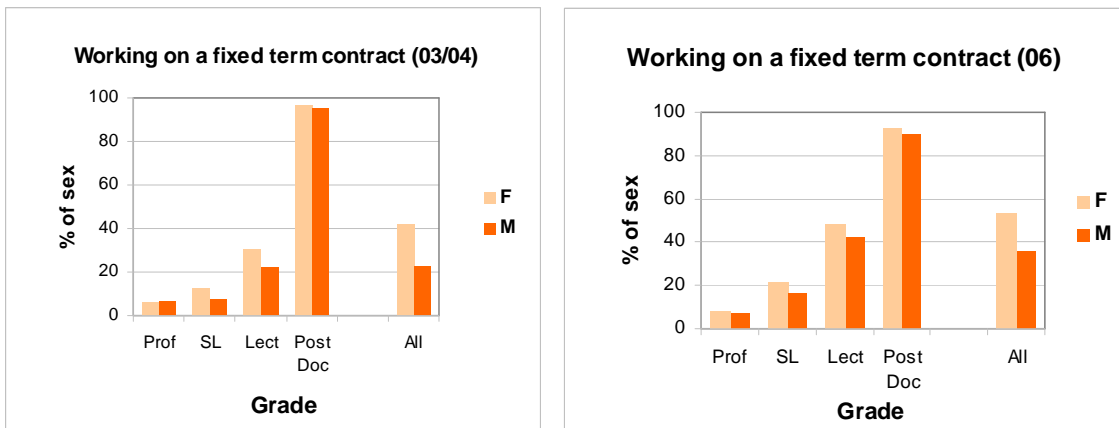
DISCIPLINE

The Biosciences dominated in both surveys, with 1,050 respondents in 2003/04 and 1,056 in 2006, and in 2006 they represented an increased proportion of respondents. Medicine was the only subject where numbers rose significantly, from 491 in 2003/04, to 910 in 2006:



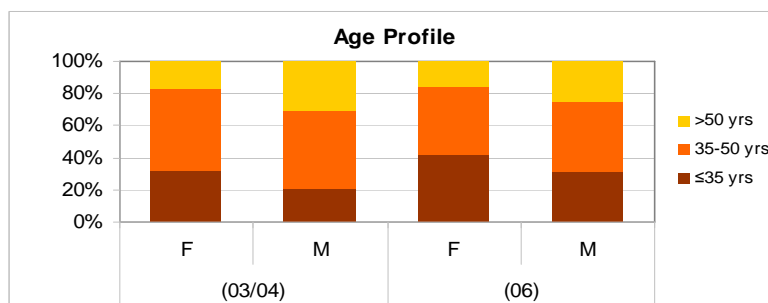
FIXED TERM WORKING

At all grades women were more likely than men to be working on fixed term contracts:



AGE

At all grades and in both surveys the women were younger than the men:



ETHNICITY AND DISABILITY

2003/04	F 93%, M 94% of respondents classified themselves as white ethnic origin
2006	F 92%, M 93% of respondents classified themselves as white ethnic origin
2003/04	F 7%, M 9% of respondents reported some form of disability
2006	F 8%, M 9% of respondents reported some form of disability

PARTNERS, PARENTING AND CARING

In the 2006 survey:

Men were more likely to have partners (F 80%, M 84%)

A substantial number had partners who also worked in STEMM (F 49%, M 36%)

Men were more likely to be parents (F 45%, M 56%)

Women were more likely to have joint caring responsibilities for their children (F 76%, M 68%)

And 10% of women (M 9%) provided care for a partner or parent(s)

NOTE comparable information not available for 2003/04

KEY CAREER TRANSITIONS – PROMOTION

Promotion processes play an important part in a successful STEMM career. ASSET findings indicate that M/F experiences and perceptions differed.

ENCOURAGEMENT TO APPLY FOR PROMOTION

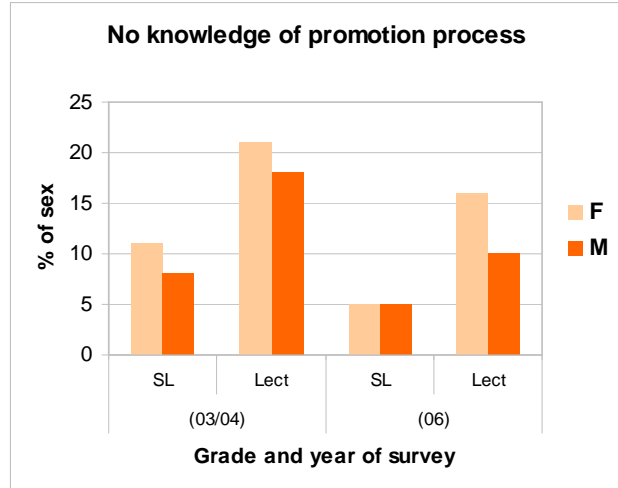
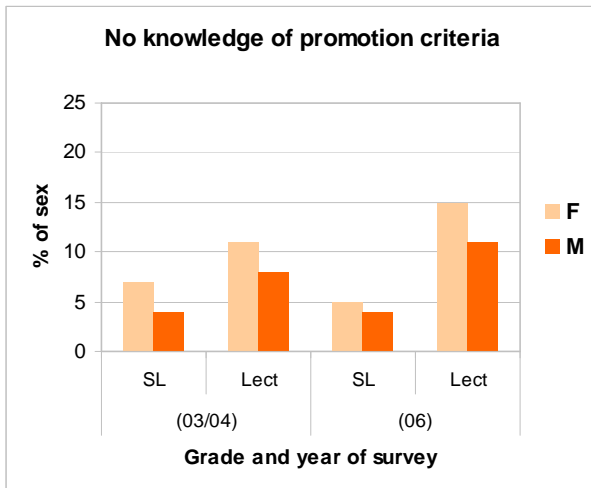
There were M/F differences in the proportions of respondents who received invitations/encouragement to apply for promotion:

In 2003/04 27% of women (M 41%) and in 2006, 35% of women (M 40%) currently at reader/senior lecturer level had received encouragement to apply for professorial posts

Of those currently at professorial level, in 2003/04 88% of women (M 89%) and in 2006 70% of women (M 76%) reported that they had received encouragement to apply for promotion to professor

KNOWLEDGE OF PROMOTION CRITERIA AND PROCESS

The chart shows the proportion of lecturers and senior lecturers with no knowledge at all of the promotion criteria and process.



PROMOTION EXPERIENCE

In the 2006 survey respondents were asked if they had been promoted by their current employer and, if they had, the type of promotion:

At all levels, except senior lecturer, where 66% of women (M 73%) had been promoted, a higher percentage of women has been promoted, for example 72% of female professors (M 66%)

The most usual promotion route was the promotion round, for 45% of women (M 52%)

For 40% of women lecturers internally advertised posts was the most common promotion route (M 32%)

For 40% of male lecturers promotion on recommendation of their line manager was most common (F 27%)

NOTE comparable information not available for 2003/04

CAREER DEVELOPMENT - PROVISION AND ACTIVITIES

ASSET explored the professional and academic activities that contribute to successful careers, and the provision of career development by universities/ departments, and professional societies.

CAREER DEVELOPMENT - PROVISION BY UNIVERSITIES/DEPARTMENTS

In 2006, respondents were asked what provision was available to them in their universities. The more senior the grade; the greater the availability. There was a noticeable gap between post-docs, and the rest.

CAREER DEVELOPMENT PROVIDED BY EMPLOYER 2006	Professor		S/L		Lecturer		Post Doc	
	F%	M%	F%	M%	F%	M%	F%	M%
Management/supervisory skills/training	85	85	72	74	66	69	52	54
Continuing professional development	83	85	74	75	78	73	52	54
Regular appraisal	75	82	70	74	64	68	50	52
Formal mentoring	45	58	39	44	47	50	25	25

NOTE COMPARABLE INFORMATION NOT AVAILABLE FOR 2003/04

CAREER DEVELOPMENT PROVISION – BY PROFESSIONAL SOCIETIES

In 2006 interest in the provision of career development/advice by professional societies was high, with little M/F difference. The only difference in the rank order by grade was that female professors, senior lecturers and lectures ranked networking opportunities above research connections. Overall 63% of respondents indicated interest in the provision of at least one type of career development:

Research connections	(F 41%, M 39%)
Networking opportunities	(F 41%, M 35%)
Continuing Professional Development	(F 36%, M 31%)
Professional support and advice	(F 31%, M 27%)
Career Advice	(F 30%, M 27%)
Mentoring	(F 27%, M 18%)
Personal development	(F 23%, M 16%)

DEVELOPMENT/SKILL FACTORS WHICH WOULD HELP RESPONDENTS PROGRESS THEIR CAREERS

Respondents were asked to select from the list of eight below. Overall M/F rankings were the same. Research performance came highest, by a long way, but below that there were differences. There are differences between the surveys: in 2006 senior staff rate research performance, management training, appraisal and mentoring higher than in 2003/04.

03/04 FACTORS IDENTIFIED TO HELP PROGRESS CAREERS	Professor		S/L		Lecturer		Post Doc	
	F%	M%	F%	M%	F%	M%	F%	M%
'Research performance'	41	39	65	67	78	83	70	75
Management/supervisory skills/training	20	23	27	23	37	27	36	33
Communication skills	20	18	23	18	30	28	36	38
Financial management experience	18	16	11	8	12	7	13	13
'Personal development'	18	16	32	22	45	31	53	40
Appraisal	15	15	36	25	44	36	41	37
Specialist skills	15	12	19	18	31	24	38	34
Personal mentor	9	8	20	9	27	17	29	26

2006 FACTORS IDENTIFIED TO HELP PROGRESS CAREERS	Professor		S/L		Lecturer		Post Doc	
	F%	M%	F%	M%	F%	M%	F%	M%
'Research performance'	58	55	70	65	76	82	70	75
Management/supervisory skills/training	35	32	30	27	38	32	36	34
Communication skills	24	24	19	20	26	25	32	36
Appraisal	23	23	33	31	39	39	32	33
'Personal development'	21	17	29	27	40	38	47	43
Personal mentor	20	10	24	12	27	15	24	16
Financial management experience	18	18	11	12	13	14	12	14
Specialist skills	15	14	14	17	26	24	35	41

IMPORTANT CONTRIBUTORS/FACTORS IN SUCCESSFUL CAREERS

In 2006 two questions were asked, one was what was important in respondents' current employment. The other, what had most helped respondents' own careers. Rank order by grade was the same in lists for men and women.

In terms of what was most important for a successful career in their current employment the biggest M/F difference in all grades was external collaborative working which was rated more highly by women. However, at professorial level the largest M/F difference was on high profile/successful projects/programmes/research which were rated more highly by women.

2006 MOST IMPORTANT EVENTS/ACTIVITIES FOR SUCCESSFUL CAREER PROGRESSION-TOP EIGHT	Professor		S/L		Lecturer		Post Doc	
	F%	M%	F%	M%	F%	M%	F%	M%
Research publications	78	81	79	76	79	81	74	72
Obtaining external research funding	73	69	70	67	62	63	49	41
High profile/successful projects/programmes or research	57	45	49	41	43	45	41	41
Attracting new PhD students	41	43	45	33	30	32	9	10
Collaborative working - external	39	28	38	28	37	24	37	29
Collaborative working - internal	33	32	32	22	36	25	37	31
Networking - external	29	21	23	16	23	14	23	16
Networking - internal	26	20	22	17	22	16	22	18

NOTE THE LISTS IN 2006 AND 03/4 WERE SLIGHTLY DIFFERENT

2003/04 MOST IMPORTANT EVENTS/ACTIVITIES FOR SUCCESSFUL CAREER PROGRESSION-TOP FOUR	Professor		S/L		Lecturer		Post Doc	
	F%	M%	F%	M%	F%	M%	F%	M%
Research publications	93	93	86	89	86	89	90	85
Obtaining external research funding	88	79	75	75	76	78	67	68
Attracting new PhD students	44	46	34	41	40	45	26	39
Networking - internal	14	11	21	14	23	17	36	29

In the list of what had most helped respondents' own careers the largest M/F differences overall were the support/encouragement of partners, which was more important to women, particularly at professorial level, and the M/F responses on luck and hard work: men 'believe' in luck, women in hard work.

2006 FACTORS MOST SIGNIFICANT IN HELPING OWN CAREERS- TOP SIX	Professor		S/L		Lecturer		Post Doc	
	F%	M%	F%	M%	F%	M%	F%	M%
Hard work	91	81	84	79	80	74	74	72
Publications	77	79	62	66	50	60	39	48
Size of grant/research income	64	53	38	41	18	18	8	7
Support/encouragement from partner/family	57	39	45	27	41	27	38	28
Active promotion/support by senior colleague/manager	51	50	47	43	37	32	21	31
Luck	38	48	30	38	33	45	30	40

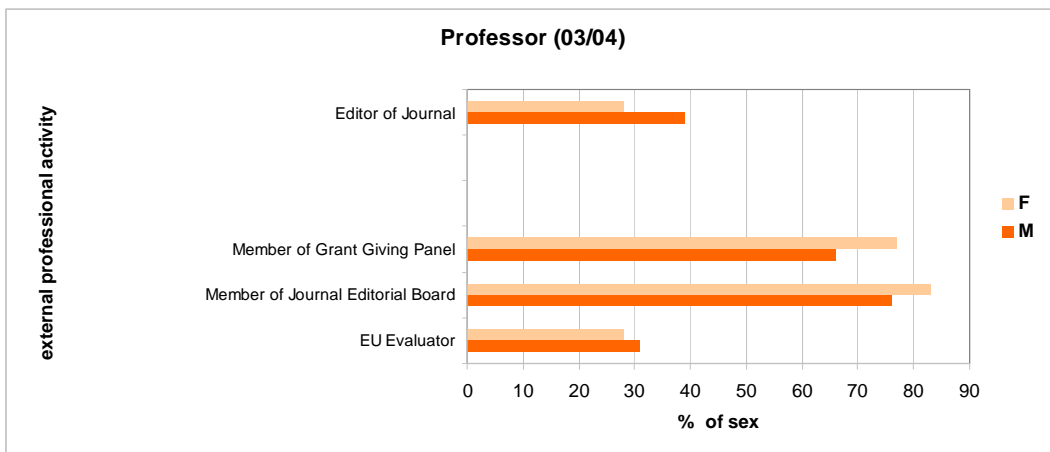
NOTE QUESTION NOT ASKED IN 03/4

CONFERENCE PARTICIPATION

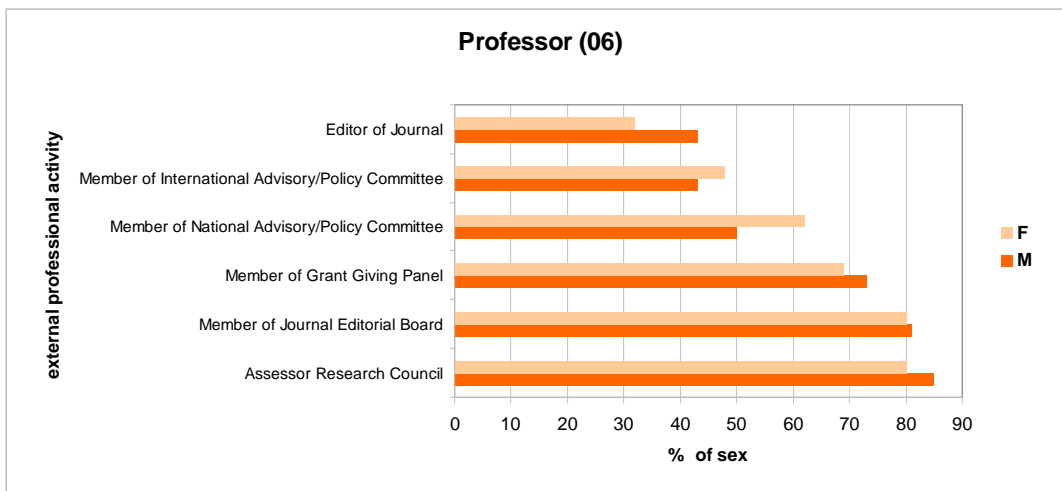
In 2006 51% of female respondents (M 66%) had been 'invited' to contribute to a national or international conference in the last three years as a keynote-plenary speaker, specialist/breakout session speaker or a session chair. There was little M/F difference at professorial and senior lecturer levels, but at lecturer level significantly fewer women reported invitations to contribute, particularly as keynote/plenary speakers and session chairs.

OTHER EXTERNAL PROFESSIONAL ACTIVITY

Respondents were asked about their external professional activities. The chart below shows the six activities undertaken most frequently by professors in 2006. For senior lecturers the only significant M/F difference was for research council assessors (2003/04 F 33%, M 56%, and 2006 F 44%, M 53%). In both surveys higher percentages of male lecturers had been or were members of editorial boards. (2003/04 F 11%, M 15% and 2006 F 8%, M 14%)



NOTE THE LIST OF QUESTIONS IN 2006 AND 03/4 SLIGHTLY DIFFERED

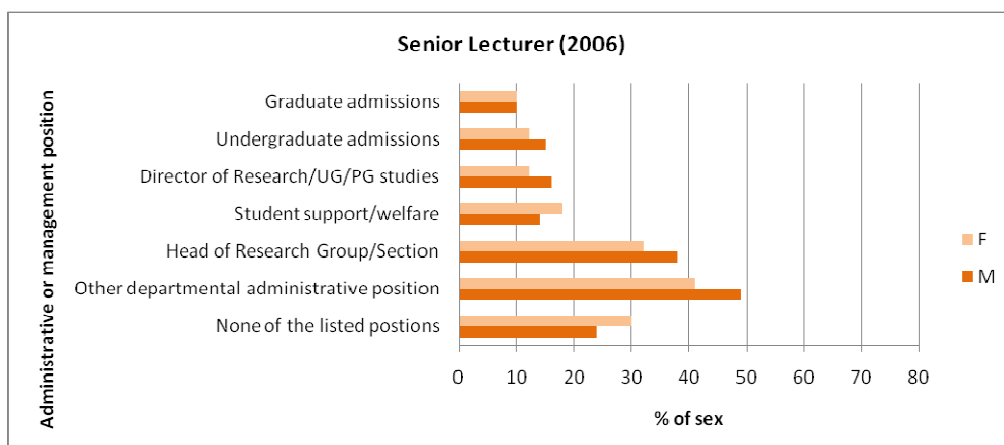
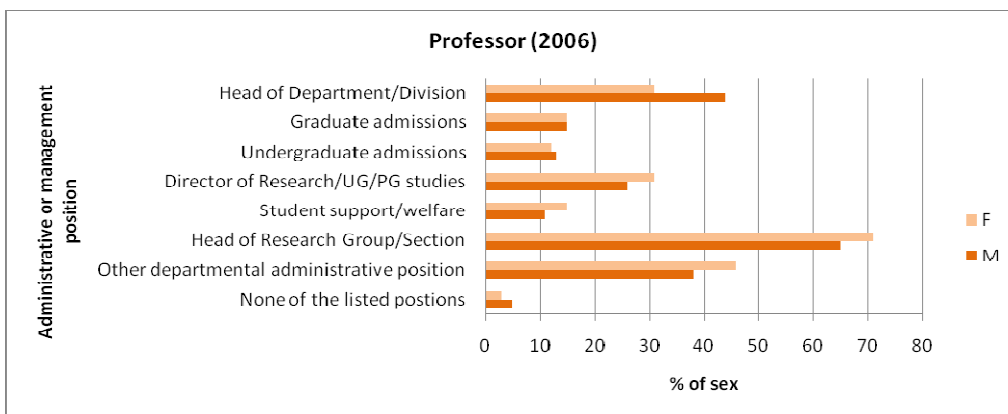


ORGANISATION AND CULTURE OF STEMM DEPARTMENTS

ASSET questions covered the internal administrative and management roles held by respondents, and their views on the culture and values of the department they work in.

ADMINISTRATIVE AND MANAGERIAL POSITIONS HELD NOW OR IN THE PAST

Female professors were less likely than their male colleagues to have been heads of departments/divisions. At senior lecturer level the only position a female lecturer was more likely to have held, than a man, was a student/welfare position. At lecturer level there was a significant difference between the 63% of women who had held none of the listed posts, and the 53% of men. Admissions roles were mostly undertaken by senior academics, but higher percentages of male lecturers held these roles (F 6% undergraduate, 4% graduate admissions, M 10% undergraduate and 7% graduate admissions).



NOTE COMPARABLE INFORMATION NOT AVAILABLE FOR 2003/04

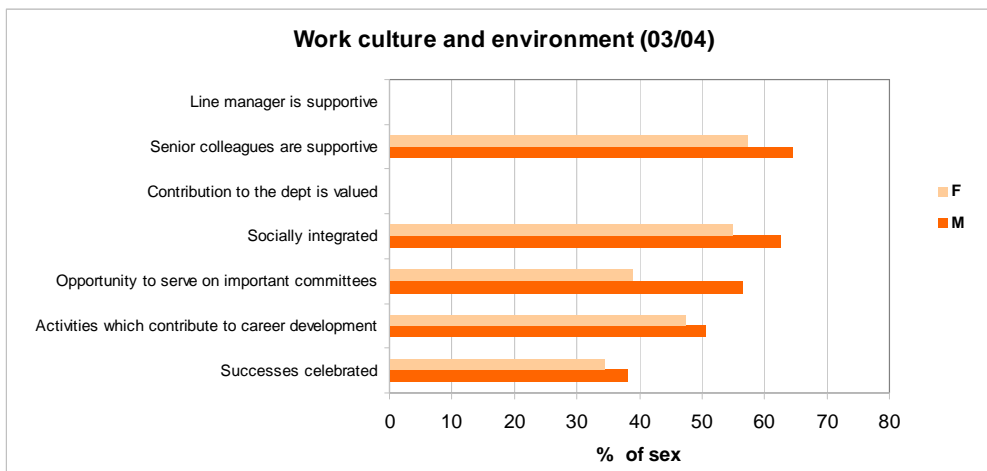
WORK CULTURE AND ENVIRONMENT

Respondents were asked whether they agreed/disagreed with a series of statements on how they were treated by their department. Overall, M/F ranking of agreement on the statements was the same. However, men were more likely to agree with all the statements. This has not changed between 03/04 and 06, the men are still more comfortable in their departments than are the women.

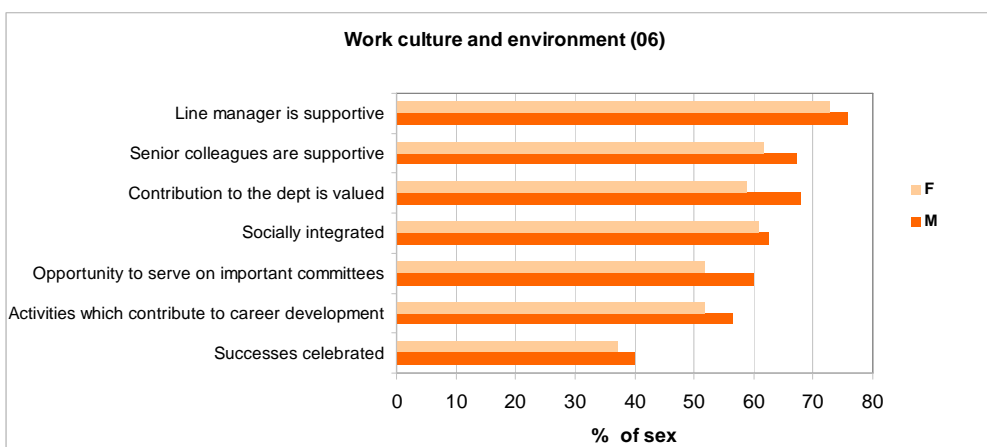
The widest gap in perception of departmental culture was at professorial level, where the proportion of men who reported a positive experience of all the factors was consistently higher.

Women at post doc (65%) and at lecturer levels (63%) were more likely to agree with the statement 'senior colleagues are supportive' than women at the more senior levels (senior lecturers 57%, professors 59%).

The only statement that more women, than men agreed with at any level, was 'I have the opportunity to participate in important committees, meetings, projects'. In 2006 56 % of female lecturers agreed (M 52%), and post docs (F 41%, M 38%).



NOTE DIFFERENT QUESTIONS WERE ASKED IN 2003/04



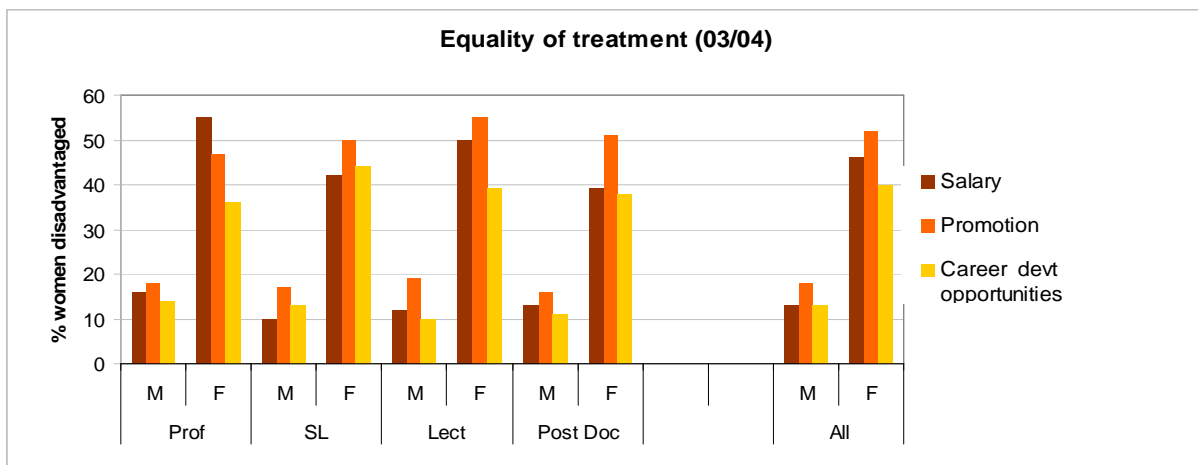
EQUALITY OF THE DEPARTMENTAL TREATMENT OF MEN AND WOMEN

Respondents were asked whether women or men were disadvantaged in terms of the equality of departmental treatment on a range of topics. In all cases lower percentages of men thought that women were disadvantaged:

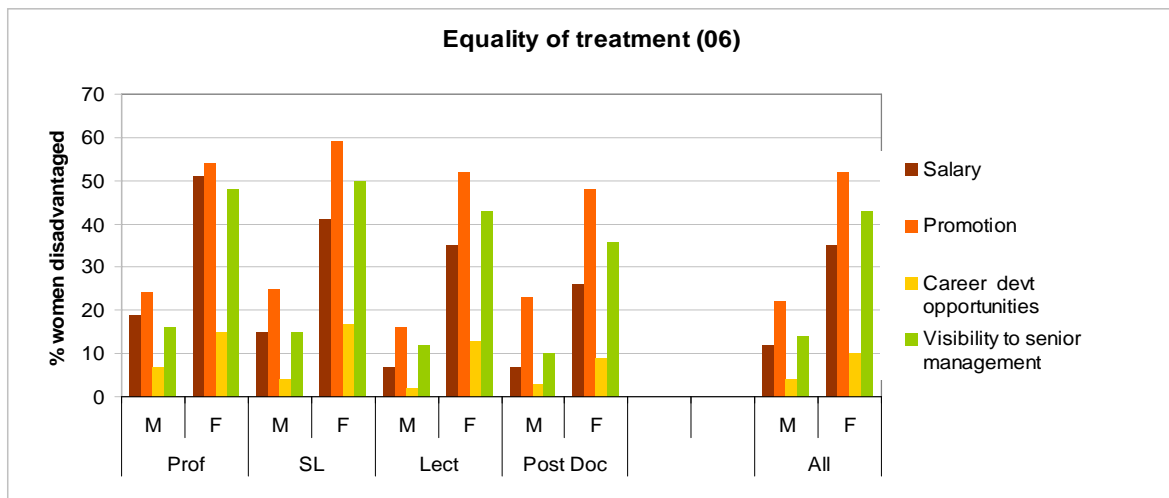
In 2006 of all the questions asked on disadvantage, women's disadvantage on 'career progression/promotion' was rated the highest overall, by women and by men. Women at senior lecturer level were the most conscious of their disadvantage.

In 2006 'visibility to senior management' produced the second largest M/F difference of opinion overall, with the largest M/F difference at senior lecturer level.

In relation to access to career development opportunities there was a substantial difference between the two surveys, with a considerable reduction in the proportion of women agreeing they were disadvantaged.



NOTE QUESTION ON VISIBILITY NOT ASKED IN 2003/04



FLEXIBILITY ACROSS THE WORKING DAY, WORKING YEAR AND WORKING LIFE

ASSET questions covered both the specifics of career breaks; and returning to a career in research, and the flexibility which enables men and women to enjoy and progress careers that are sustainable and successful.

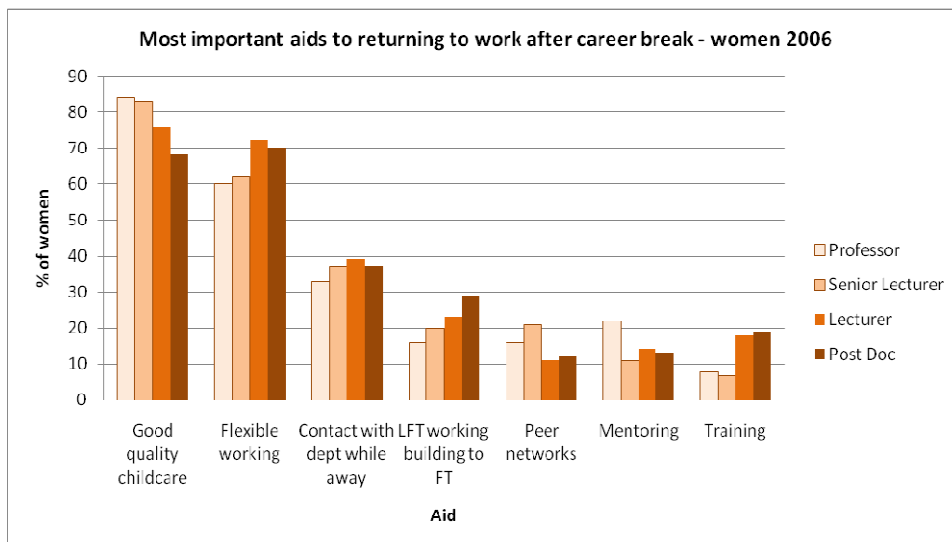
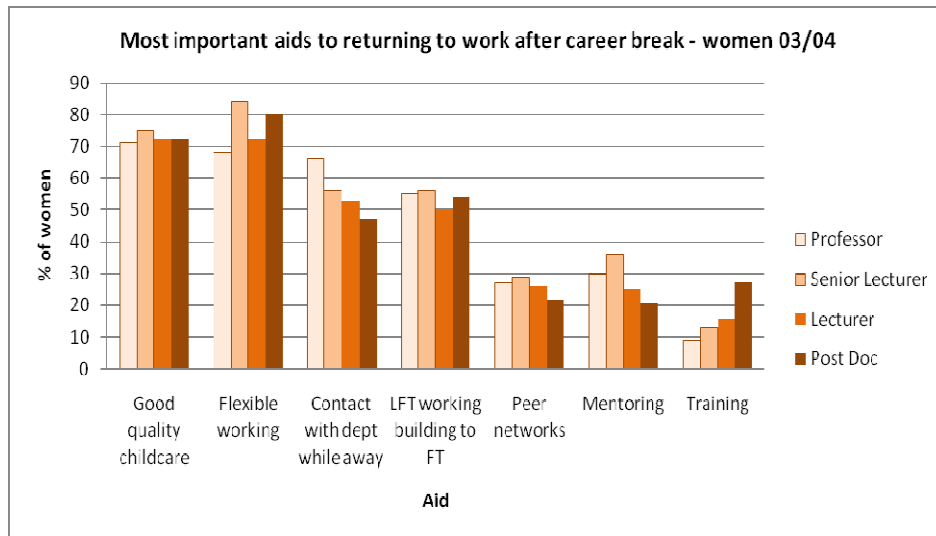
CAREER BREAKS AND RETURNING TO WORK

Except for post docs, higher percentages of women in 2006 had taken career breaks, the biggest increases, around 20%, were for professors and senior lecturers.

Respondents who had taken career breaks were asked whether they had experienced difficulties in returning to work. In both surveys professors were the least likely to report having past difficulties, in 2006 lecturers were the most likely to report difficulties, and in 2003/04 it was post docs.

DIFFICULTIES IN RETURNING TO WORK	2006	2006	03/04	03/04
	F%	M%	F%	M%
Professor	28		22	
Senior Lecturer	35		31	
Lecturer	41		34	
Post Doc	33		37	
All	34	28	32	19

Respondents who had taken career breaks were asked what was the most important in helping their transition back to work. Good quality childcare was top overall in both surveys, but there were differences by grade:

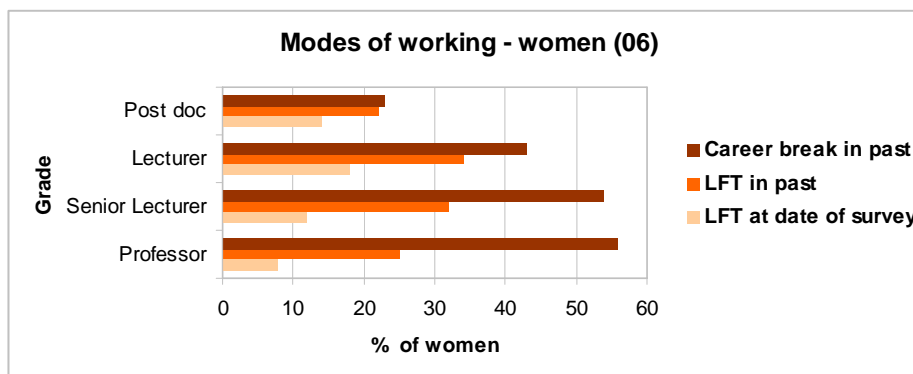
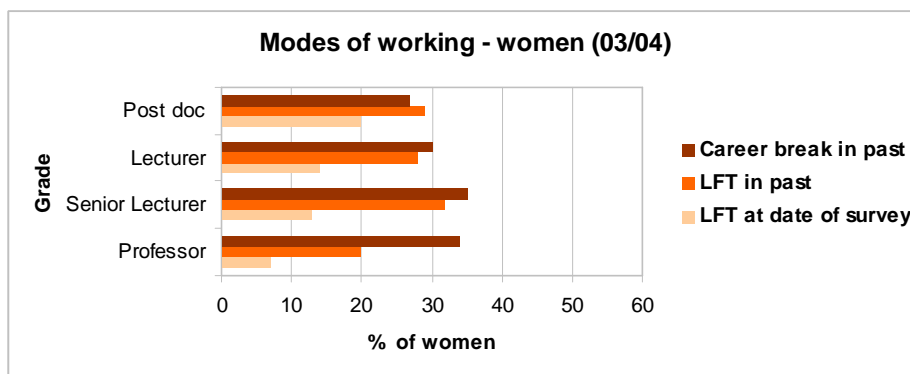
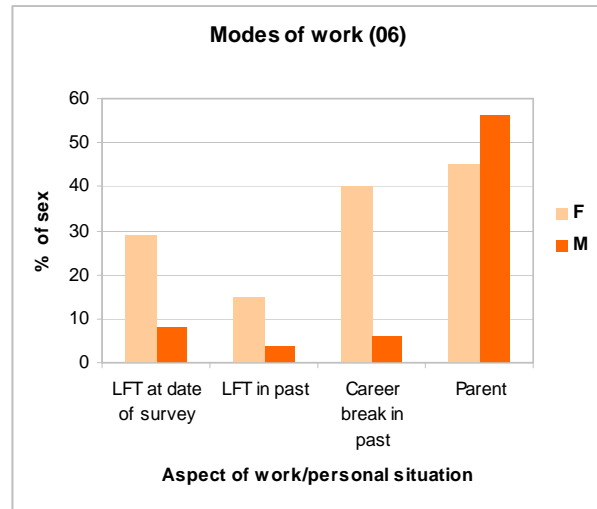
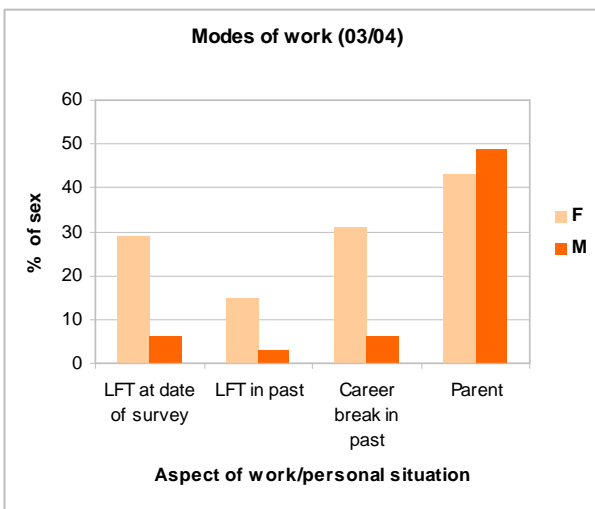


LESS THAN FULL TIME WORKING

In 2006 a significant percentage (40%) of female respondents had taken a career break, including 56% of professors and 54% of senior lecturers, which suggests perhaps that the 'non traditional career path' is not necessarily a barrier to a successful career. However, the increased proportion of women who had taken a career break in 2006 is not matched by any increase since 2003/04 in less than full time working.

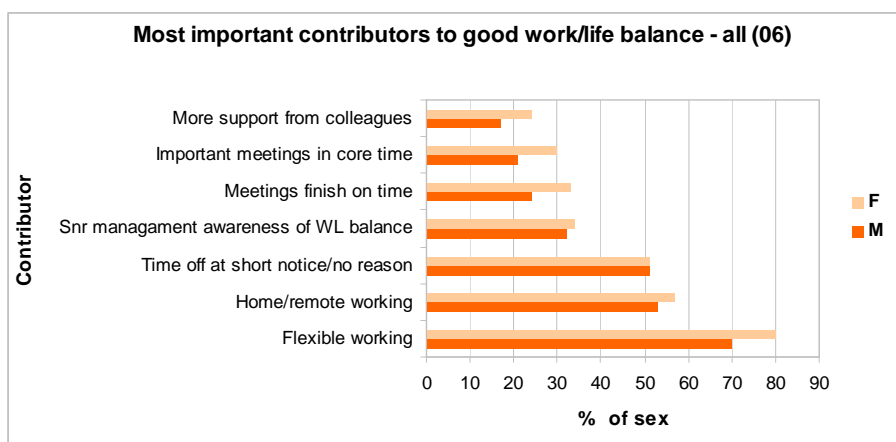
The majority of respondents were working full time at the date of the surveys (2003/04 F 85%, M 97%, and 2006 F 85%, M 96%). The highest percentage of women working less than full time in 2003/04 was at post doc-level (20%) and in 2006 was at lecturer level (18%), the lowest was at professorial level (2003/4 7%, 2006 8%).

Women were more likely than men to have had periods of less than full time working, in 2003/04 and 2006 29% of female respondents had periods of LFT working.



IMPORTANT CONTRIBUTORS TO A GOOD WORK LIFE BALANCE

Respondents were asked to select, from a list of twelve, the most important contributors to a good work/life balance. Most factors attracted higher percentage responses from women, however, M/F rankings were the same. Flexible working, was a clear top choice, for 80% of women, and 70% of men. By level, it was more important to women at lecturer and post doc levels. For post docs home/remote working was less important than being able to take time off at short notice without the need to give a reason. Overall, this was the only factor selected by a higher percentage of men. However, male professors also rated senior management awareness of work/life balance higher than did their female colleagues.



MOST IMPORTANT CONTRIBUTORS TO GOOD WORK/LIFE BALANCE 2006	Professor		Senior Lecturer		Lecturer		Post Doc	
	F	M	F	M	F	M	F	M
Flexible working	71	67	76	72	81	72	83	72
Home remote working	65	55	63	60	61	53	52	41
Time off at short notice/no reason	42	45	44	45	47	50	58	65
Senior management aware of work/life balance	36	38	41	31	32	29	29	23
Meetings finish on time	34	29	39	23	32	26	28	18
Important meetings in regular/core time	29	20	35	22	33	23	23	17
More support from colleagues	20	13	24	16	26	19	23	18

NOTE QUESTION NOT ASKED IN 2003/04



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