



ASSET 2003

The Athena Survey
of Science Engineering and Technology
in Higher Education

April 2004

THE ATHENA PROJECT

The aims of the Athena Project are 'the advancement of women in science engineering and technology (SET) in higher education and research and a significant increase in the number of women recruited to the top posts.'

Since the project was established in 1999, Athena has worked with UK Higher Education Institutions (HEIs) to identify, develop, share, encourage, report and disseminate good practice, to increase the number of women working in SET at all levels and to improve the career development, recruitment, participation, progression and promotion of women in SET. The commitment, activities and achievements of Athena's partner HEIs is helping to make a reality of Athena's aims. Reports on their work, on Athena's development programmes and Athena's good practice guides are available on the Athena website www.etechnology.co.uk/athena.

When the Athena Project was launched it was a free-standing four year initiative. In April 2001 it became part of the Equality Challenge Unit (ECU) which promotes equal opportunities for all those who are employed or seek to be employed in UK higher education. In November 2003 Athena moved to the Royal Society, where it continues to work in partnership with the ECU.

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ACKNOWLEDGEMENTS

This report would not have been possible without the Athena contacts in the participating HEIs and the two thousand plus SET academics who took the time to complete the questionnaire. It is hoped that the findings and insights that result from this report will justify the time they spent, and that they, their colleagues and the SET and HE communities will make good use of the results to inform, develop and support good practice in SET employment.

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The Institute for Learning Research and Technology at Bristol University

The HEIs and their staff who participated in ASSET 2003

ASSET 2004

Information on the survey which Athena will run in October 2004 (which is open to research and industry SET organisations and to UK HEIs who did not take part in the 2003 survey) is available on the Athena website or email athena@royalsoc.ac.uk.

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of Science Engineering and Technology
in Higher Education

REPORT 26

THE 2003 ATHENA SURVEY OF SCIENCE ENGINEERING AND TECHNOLOGY IN HIGHER EDUCATION

REPORT

Contents		page
	The Report	6
1.	Introduction	7
2.	The Survey	8
	2.1 Participating HEIs	
	2.2 Survey respondents	
	2.3 Representativeness of the survey population	
	2.4 Staff groups used for the analysis	
	2.5 Survey tool	
	2.6 Survey questionnaire	
	2.7 Survey methodology	
3.	The Lecturers	12
	3.1 Key findings	
	3.2 Respondents profile	
	3.3 Research	
	3.4 Teaching	
	3.5 Committees and administration	
	3.6 External activities	
	3.7 Valued, treated and supported by their department?	
4.	The Senior Lecturers and Readers	15
	4.1 Key findings	
	4.2 Respondents profile	
	4.3 Research	
	4.4 Teaching	
	4.5 Committees and administration	
	4.6 External activities	
	4.7 Valued, treated and supported by their department?	
5.	The Professors	18
	5.1 Key findings	
	5.2 Respondents profile	
	5.3 Research	
	5.4 Teaching	
	5.5 Committees and administration	
	5.6 External activities	
	5.7 Valued, treated and supported by their department?	
6.	The 'Other Grades'	21
	6.1 Respondents	
	6.2 Research	
	6.3 External activities	
	6.4 Career ambitions	
	6.5 Concerns specific to the group	
	6.6 Valued, treated and supported by their department?	
7.	Career Progression	23
	7.1 Getting In: Lecturer appointment	
	7.2 Getting Back: After a career break	
	7.3 Getting On: Lecturers and career ambition	
	7.4 Senior lecturer reader appointment and promotion	
	7.5 Senior lecturers readers and career ambition	
	7.6 Professorial appointment and promotion	
	7.7 Professors and career ambitions	
8.	The Working Life of a SET Academic	29
	8.1 Research	
	8.2 Teaching	
	8.3 Administration and committees	
	8.4 External activities	
	8.5 Career progression and its rewards	
	8.6 A sense of belonging	
9.	The Way Forward	34

ASSET 2003

The Report ¹

The report is written for a wide audience - the Vice Chancellors, university and departmental managers who are responsible for the development of action agendas to improve the representation of women in SET, the academics who influence and perpetuate the culture of SET departments, women at all stages of a SET career, the SET professional and learned societies who influence science culture and policy, and the HEIs and research organisations who are considering participation in ASSET 2004.

This report complements and further explores the findings from the preliminary report, published in September 2003 which is available on www.eteachb.co.uk/athena, together with the survey questionnaire and all the analytical tables which support both reports. The preliminary report provided a basic analysis by gender, with some analysis by grade of the respondents' characteristics, career paths and roles beyond their teaching and research.

The preliminary report publicised the existence of the valuable research resource represented by the survey data and stimulated a dialogue with the research community and participating HEIs which helped to determine the focus of this the main report. This work will also inform Athena's future strategy.

The Structure of the Report

Section 1

Provides an introduction to the survey, why ASSET 2003 was undertaken and the issues it covered.

Section 2

This covers the survey, the questionnaire, the methodology, the participating HEIs and the academics who contributed their experiences and their views.

Sections 3 to 6

Each of these sections covers one of the three main academic career grades - professors, senior lecturers/readers and lecturers. They each describe the characteristics of the respondents, their activities internally and externally, their perceptions of how important these activities are for a successful career in SET, how the respondents felt about the equality of treatment of men and women in their department and how their own contributions were valued by their department. ² There is a short section on 'other grades' whose profile, experiences and perceptions are different from their colleagues in the main career grades.

Section 7

This explores the career progression experiences of the respondents, their ambitions perceptions and career development needs at the three key career steps, getting into a first lecturer appointment, getting back after maternity leave or career break and getting on – progressing through the grades to a level which reflects both individual abilities and wishes.

Section 8

Under the heading 'The Working Life of a SET Academic' this draws together some of the key findings, themes and issues raised by the preceding sections.

Section 9

The final section 'The Way Forward' revisits the targets suggested in 2003 by Athena for SET employers in HE in the light of the survey findings and describes Athena's Agenda for 2004/05.

¹ For a short overview of the findings from ASSET read section 1, the key findings at the beginning of sections 3 to 6 and section 8

² Statistically significant differences between men's and women's experiences and perceptions are listed in the boxes at the start of each of the grade sections and are not identified as significant in the textual commentary

2003 Survey of Science Engineering and Technology in Higher Education ASSET

I. INTRODUCTION

Athena's web survey ran for six weeks in Spring 2003 and attracted responses from 2,172 male and female academic staff in science, engineering and technology (SET) in twenty-three UK higher education institutions (HEIs). The questionnaire and the analytical tables that support this report are available on www.etechnology.co.uk/athena. The survey explored the areas which previous work by Athena's partner HEIs had identified as important to career progression, the apparent differences in men's and women's career progression, what underlay the differences, and how far they related to the organisation and culture of SET and HE. This report covers the links between participants:

- activities which may influence their career progression:
 - research and teaching
 - internal committee memberships and administrative responsibilities
 - external professional activities and contributions to professional societies
- career aspirations and expectations
- perceptions and experiences of the practices and processes that can act as a barrier to the advancement of women in SET

Athena's development programmes, which ran from 1999 to 2001 clearly showed that, at institutional level, there was a need for hard information, to engage the attention of Vice Chancellors and senior managers, and against which they could compare their institution and its progress in UK terms. The surveys undertaken by individual HEIs in their work for Athena were not cost effective. Numbers were small and the results could only be read-across to other institutions with caution. Where women were in small numbers and individuals were potentially identifiable, there was a degree of caution in replying to internal surveys.

ASSET offered a UK survey, which required relatively little effort and no direct costs for the participating HEIs. The results of ASSET will be used locally, and nationally, to raise the profile and awareness of the issues of career progression for women in SET. ASSET was designed to capture information on SET career pathways, the experiences, expectations and perceptions of the SET academic community on what contributes to successful career progression, and to:

- raise awareness of the issue of women's career progression in SET
- illuminate differences between men's and women's experiences of SET in HE (reality and perception)
- develop the evidence base to underpin action planning, implementation and evaluation
- enable HEIs to measure their progress/benchmark it against the UK position

ASSET provided the opportunity to explore how those at the top got there, their views on what helped them en route, and what was important for those on their way up. ASSET was seen as a way to check the evidence from Athena's previous work with the perceptions and experiences of a wider community and to make sure that Athena continues to address today's and not yesterday's issues. The areas covered by ASSET are those where HEIs, as employers, have control and where changes at the local level can make a difference and where the findings can inform and influence action by SET professional societies.

The report identifies areas where good practice can make a difference to, and improve the representation and progression of, women in SET. It is hoped that HEIs will use the findings to raise awareness of the issues, to open up discussion and to improve their procedures and organisational arrangements. The problems are not unique to the UK. Throughout Europe, for women in SET, 'the higher the fewer and the more lonely' is the norm. Increasing the supply of well-qualified graduates, PhDs and post-docs will not, on its own, solve the problem. As this report suggests, women are as ambitious as men, they are as academically active, but they do not make it to the top in the numbers that reflect their contributions to SET. And, if they do get to the top, they still feel that they are less valued than their male colleagues and that women in general are disadvantaged in terms of salary, promotion and access to career development.

2. THE SURVEY

2.1 PARTICIPATING HEIS

Twenty-three HEIs took part:

<i>Russell Group (66% of respondents)</i>	<i>Pre 1992 HEIs (23% of respondents)</i>	<i>Post 1992 HEIs (11% of respondents)</i>
Bristol	Aberystwyth	Bolton
Cambridge	East Anglia	Coventry
Edinburgh	Heriot-Watt	Hertfordshire
Glasgow	Queen Mary London	Kingston
Imperial College London	Reading	Luton
Nottingham	Royal Holloway London	Plymouth
Oxford	St Andrews	
Sheffield	Stirling	
Southampton		

A number of HEIs who initially expressed an interest in taking part in ASSET, but who then chose not to, variously cited personnel computer systems that did not enable them to identify eligible staff, concerns on survey fatigue, structural changes in the pipeline, the need to improve their position before they invited the views of their staff, and the wish not to raise expectations on follow up action which they would not be able to fulfill.

All the HEIs who participated made a commitment to use the results of ASSET to work towards the achievement of Athena's aims 'the advancement of women in science, engineering and technology in Higher Education and a significant increase in the number of women recruited to the top posts', and to:

- measure their progress and then compare their position against the UK situation
- contribute to the development of their SET action agenda
- raise awareness of career progression issues for women and men in SET
- inform the SET community, heads of faculties and departments
- report to senior managers, governors and equal opportunities committees and to recommend action for improvement

Several of the participating HEIs are already making use of their local results and some are using the findings from the preliminary report on the survey findings, published in September 2003, as a basis for reviewing their processes and prioritising action. Others are awaiting the publication of this report to open up local discussion and to identify the issues for action.

2.2 SURVEY RESPONDENTS

The survey questionnaire was completed by 2,172 male and female academic staff working in SET and allied subject areas in the participating HEIs. 70% of the survey respondents were male. The majority (66%) were in Russell Group universities.

Respondents with children age 16 or under (by grade)

Lecturers - 42% of the men and 41% of the women had children age 16 or under
Senior lecturers/readers - 49% of the women and 45% of the men had children age 16 or under
Professors – 40% of the men and 36% of the women had children age 16 or under

Respondents by discipline

For the purposes of this survey, eligibility was defined as members of staff in the groups listed at 2.4 below, who were working in: medicine and dentistry, subjects allied to medicine, biological sciences, veterinary sciences, agriculture and related subjects, physical sciences, mathematical and computer sciences, engineering, technologies, architecture, building and planning.

Biological sciences had the largest representation with 489 respondents:

102 professors (women 18%)
170 senior lecturers (women 35%)
170 lecturers (women 51%)

Physical sciences came next with 381 respondents:

94 professors (women 14%)
146 senior lecturers (women 16%)
114 lecturers (women 30%)

Mathematical and computer sciences were the third largest group with 329 respondents:

77 professors (women 6%)
117 senior lecturers (women 13%)
122 lecturers (women 24%)

Engineering was next group with 317 respondents:

55 professors (women 5%)
116 senior lecturers (women 14%)
130 lecturers (women 20%)

Medicine and dentistry was the fifth largest group with 276 respondents

75 professors (women 29%)
112 senior lecturers (women 40%)
24 lecturers (women 54%)

2.3 REPRESENTATIVENESS OF THE SURVEY POPULATION

The survey population came from the 23 HEIs who responded to Athena's invitation to all UK HEIs to participate in ASSET. Thus they were self-selecting, and not chosen as a representative sample of UK HEIs. However, the 2,172 respondents were approximately 5% of UK academics working in SET at lecturer level, or above. This representation varies from around 10% for female professors to 3% for male lecturers. On the basis of HESA figures for 2001/02, the ASSET respondents differ as follows:

Diversity

non-UK nationality:	ASSET 15%	all UK 23%
ethnic minorities:	ASSET 5%	all UK 9%
disability:	ASSET 8%	all UK 1%

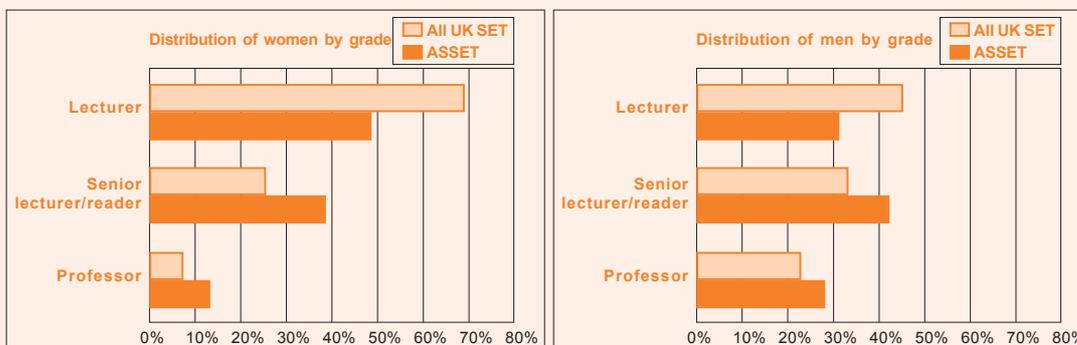
Gender

ASSET has a higher representation of female academics, particularly in the senior grades:

% professors who are female	ASSET 16%	all UK SET 10%
% senior lecturers/readers who are female	ASSET 28%	all UK SET 22%
% lecturers who are female	ASSET 40%	all UK SET 37%

Grade

In the three main academic career staff groups, the ASSET sample contains a higher proportion of senior men and women by comparison.



Lecturers	ASSET	female 48%	male 30%
	all UK SET	female 69%	male 45%
Senior lecturer/reader	ASSET	female 39%	male 42%
	all UK SET	female 25%	male 33%
Professor	ASSET	female 13%	male 28%
	all UK SET	female 7%	male 22%

Discipline

ASSET had a higher proportion of respondents working in the biological, mathematical and physical sciences and a correspondingly lower proportion working in medicine, dentistry, health and engineering and technology.

Age

By comparison with all UK SET academics by grade:

- ASSET professors have a similar age profile
- at senior lecturer/reader level ASSET has a slightly higher proportion in the 36 to 45 age group and a correspondingly lower proportion in the 46 to 65 age group
- at lecturer level 82% are below the age of 45 in comparison to approximately 64% of the all UK SET lecturer population

³ note – where reference is made to senior lecturer it is shorthand for senior lecturers and readers

2.4 STAFF GROUPS USED FOR THE ANALYSIS

For the purpose of the analysis the three main career academic staff groups used were:

- Lecturer – including lecturer (post '92), senior lecturer (post '92), lecturer A or B (pre '92), lecturer (Scottish), locally determined lecturer scales
- Senior lecturer ³ – including reader, senior lecturer (pre '92), principal lecturer (post '92), research grade III (pre '92), locally determined senior lecturer, principal lecturer scales
- Professor - including head of department (post '92), professor (pre '92), research grade IV (pre '92) professor/HOD (Scottish), locally determined professorial scales

A fourth group 'other grades' included research and teaching staff on academic and research related and local scales and grades not included above.

Note

ASSET 2003 did not include junior research staff below research grade III or equivalent in post '92 institutions, as this group had earlier in the year had the opportunity to participate in CROS, the UK contract research online survey run by Bristol University (<http://www.cros.ac.uk>).

2.5 SURVEY TOOL

The survey tool used for ASSET was developed by Bristol University human resources department and their Institute of Learning and Research Technology for the Contract Research On-line Survey (CROS). The key features of the tool were on line access for HEIs to their own results (but not to the free text comments), and no hardware, software or training costs for the participating HEIs, as no technical know-how was needed at local level to get the survey up and running.

2.6 SURVEY QUESTIONNAIRE

The introduction to the questionnaire included a statement that the survey results would be used nationally and locally to identify and disseminate good practice, to contribute to the development of the SET action agenda and to raise awareness of career progression issues for women and men in SET. A guarantee was given that the data collected in the survey would be held anonymously and securely.

The survey took approximately twenty minutes to complete. It opened with a section on the respondent's current job, contract type and subject area. This was followed by sections on the respondent's work history, and activities (department, institutional and external) in their current appointment. The final section covered career aspirations and expectations, linked with perceptions on career progression, the value placed on their contributions by their colleagues and their department and the equality of treatment in their department.

2.7 SURVEY METHODOLOGY

The distribution of information on the survey, the questionnaire, and subsequent reminders was by e-mail from respondents' own HEIs. ASSET relied on local contacts to identify and contact eligible staff. In some HEIs it proved difficult to identify eligible staff and to set up and use email lists to target them. It was evident that higher responses were achieved in institutions where:

- the ASSET contact was in a position to easily identify appropriate staff and had the time and support to do so
- appropriate e-mail lists were already in existence, or the creation of such lists was not problematic
- there was visible support from senior members of the university
- there was wide publicity within the SET departments

3. THE LECTURERS

3.1 KEY FINDINGS ⁴

The women represent 40% of the lecturer respondents. They are only slightly younger than their male colleagues. They have held appointments at this level and have been at their current institution for a marginally shorter time than the men [3.2] and:

statistically significant higher percentages of the men than the women:

- are included in the RAE, are members of departmental and international research groups [3.3]
- feel their research contribution is valued by their department [3.3]
- are members of departmental academic boards, have departmental responsibilities and feel they have the opportunity to serve on committees [3.5]
- have participated at conferences as keynote, plenary/session speakers and session chairs, undertook professional consultancy work, and are research council assessors [3.6]
- have ambitions to be head of research groups [7.3]

statistically significant higher percentages of the women than the men:

- see innovative teaching and networking as important factors in career progression [3.4]
- feel their professional activities outside their HEI are valued by their department [3.6]
- have been successful at their first application for a lecturer appointment [7.1]
- have ambitions to have a senior management role and have changed their aspirations and expectations since entering HE [7.3]
- rate personal and skills development and appraisal more highly as contributors to career progression [7.3]
- participate in institutional committees, albeit at a low level [3.5]
- report no knowledge of promotion criteria and procedures [7.3]

3.2 THE LECTURERS: RESPONDENTS PROFILE

The 715 lecturers were 33% of the sample total of 2,172 respondents:

- the 432 men represented 29% of male respondents and the 238 women represented 43% of female respondents
- 73% were in permanent posts and 93% were full time
- 89% were engaged in both teaching and research
- 70% of the women and 68% of the men had been in the lecturer grade for 5 or less years
- 19% of the men and 15% of the women had been in their current institution for 11 years or more
- 32% of the men and 27% of the women were age 41 or over
- 42% of the men and 41% of the women had children age 16 or under

⁴ The numbers in [square brackets] refer to the sections of text which support the key finding

3.3 THE LECTURERS: RESEARCH

Activity

- 69% of men and 56% of women were included in the RAE
- 78% of men and 72% of women were members of departmental research groups
- 46% of men and 44% of women were members of an inter-disciplinary research group
- 35% of men and 23% of women were members of international research groups
- 22% of men and 29% of women were members of departmental/faculty research committees

Perception

- research was most commonly cited as the important contributor to successful career progression, with research publications (men 89%, women 86%), obtaining external research funding (men 77%, women 78%), and attracting new PhD students (men 44%, women 39%)
- 66% of men and 55% of women agreed with the statement that their department valued their research contribution

3.4 THE LECTURERS: TEACHING

Activity

42% of men and women were members of departmental teaching committees, but there was a significant difference on faculty academic board membership - 34% of men and 24% of women were members

Perception

59% of men and 56% of women agreed that their department valued their teaching contribution. However, teaching did not feature highly on the list of important contributors to career progression, with 25% of women and 19% of men rating innovative teaching as important.

3.5 THE LECTURERS: COMMITTEES AND ADMINISTRATION

Activity

Participation in institutional committees is low at this level but was higher for women than men, mainly because a larger proportion were or had been on teaching committees. Committee membership at departmental/faculty level is more common and was similar for both men and women, with the exception of membership of academic boards, which is higher for men. Men were also more likely to have held departmental administrative roles:

- 62% of men and 60% of women had served on at least one of the four committees named at departmental/faculty level (academic board, research, teaching, promotions)
- 20% of women and 14% of men had served on any of the named committees at institutional level
- 75% of men and 68% of women had undertaken one or more departmental administrative roles
- 23% of men and 20% of women had held admissions responsibilities
- 30% of women and 24% of men had held student support/welfare responsibilities

Perception

42% of men and 33% of women agreed that they had the opportunity to serve on important committees, and 47% of men and 44% of women agreed that their administrative contribution was valued.

3.6 THE LECTURERS: EXTERNAL ACTIVITIES

Activity

- 67% of men and 55% of women had been keynote, plenary or session speakers or session chairs at a professional conference
- 79% of women and 71% of men were members of a professional organisation and women had higher levels of participation in their activities, although fewer were fellows (women 7% men 11%)
- 14% of men and 10% of women were on editorial boards
- professional consultancy work was undertaken by 47% of men and 32% of women
- 35% of men and 24% of women were research council assessors

Perception

- 34% of women and 27% of men agreed that their professional activities outside their HEI were valued
- 'keynote speaker' was placed fourth in the list of important factors in career progression by 30% of men and 26% of women
- the editorships of academic journals was scored relatively highly for its contribution to career progression, by both men and women (men 22%, women 20%)
- professional consultancy work did not appear high in the lists of what was important to career progression

3.7 THE LECTURERS: VALUED TREATED AND SUPPORTED BY THEIR DEPARTMENT?

Like their senior lecturer colleagues, but unlike the professoriat, this group shows a greater similarity in the views of men and women on the value their departments place on their contributions:

- the support received from senior colleagues - 62% of men and 56% of women agreed
- their social integration within the department - 56% of men and 50% of women agreed
- whether their work successes were celebrated – 34% of men and 33% of women agreed

The issues on which men and women felt there was most inequality for women, but at very different levels of concern, were:

- promotion - 51% of women and 18% of men felt women were disadvantaged - note this was the only time that over half a group of respondents felt disadvantaged
- salary - 41% of women and 9% of men felt that women were disadvantaged
- access to career development – 38% of women and 9% of men felt women were disadvantaged

These were followed, at a distance, by administrative and office support where 17% of women and 2% of men felt that women were disadvantaged, access to departmental funds 15% of women and 3% of men felt women were disadvantaged, office space 16% of women 1% of men felt women were disadvantaged and laboratory space 11% of women and 1% of men felt women were disadvantaged.

4. THE SENIOR LECTURERS AND READERS

4.1 KEY FINDINGS ⁵

The women represent 28% of the senior lecturer / reader respondents. They are significantly younger than the men, have not held appointments at this level for as long and have been at their current institution for a shorter time [4.2] and:

statistically significant higher percentages of the men than the women:

- are members of departmental research groups and felt their research and administrative contributions were valued by the department [4.3]
- undertake professional consultancy, are editors of academic journals and assessors for research councils [4.6]
- are directors of undergraduate or postgraduate studies and had other administrative posts [4.5]
- are members of departmental and institutional academic boards, departmental promotions committees, senate/ council [4.4]
- feel they have the opportunity to serve on important departmental committees [4.5]
- have been encouraged to apply for a professorial appointment [7.5]
- are not interested in moving out of HE [7.5]

statistically significant higher percentages of the women than the men:

- have responsibility for student support/welfare [4.5]
- are session speakers at conferences [4.6]
- express ambitions to be head of department and have senior management roles [7.5]
- see personal /skills development, appraisal and mentoring as assisting career progression [7.5]
- see membership of national or government committees and course directorships as important contributing factors to career progression [7.5]
- had changed aspirations and expectations since entering HE [7.5]

4.2 THE SENIOR LECTURERS AND READERS: RESPONDENTS PROFILE

The 820 senior lecturers/readers represented 38% of the respondents:

- the 592 men represented 39% of the total male respondents and the 228 women represented 35% of the female respondents
- 93% were in permanent posts and 95% were full time
- 91% were engaged in both teaching and research
- 34% of the men and 41% of women had been in the grade for two years or less and 16% of the men and 8% of the women had been in the grade for eleven or more years
- the median time in grade for the men was 4 years and for the women 3 years
- 61% of the men and 48% of the women had been in their current institution for eleven years or more
- 35% of the men and 22% of the women were aged over 50
- 49% of the women and 45% of the men had children age 16 or under

⁵ The numbers in [square brackets] refer to the sections of text which support the key finding

4.3 THE SENIOR LECTURERS AND READERS: RESEARCH

Activity

- 77% of men and 75% of women were included in the RAE
- 78% of men and 71% of women were members of departmental research groups
- 49% of men and 45% of women were members of an inter-disciplinary research group
- 40% of men and 35% of women were members of international research groups
- at departmental level 40% of men and 37% of women were members of research committees, at institutional level 5% of women and 4% of men

Perception

- Research was most commonly cited as the important contributor to successful career progression, with research publications cited by 91% of men and 86% of women, obtaining external research funding by 77% of men and 76% of women
- 66% of men and 55% of women agreed with the statement that their department valued their research contribution

4.4 THE SENIOR LECTURERS AND READERS: TEACHING

Activity

- 25% of men and 22% of women chaired teaching committees
- at departmental level 70% of men and 65% of women were members of teaching committees
- at institutional level 18% of men and 15% of women were members of teaching committees
- 23% of men and 15% of women were members of academic boards at institutional level and at departmental level 59% of men and 46% of women were members

Perception

- innovative teaching was rated by 18% of women and 17% of men as an important contributor to career progression
- 62% of men and 59% of women agreed their department valued their teaching contribution
- 18% of women and 11% of men saw the role of course director as contributing to a successful career

4.5 THE SENIOR LECTURERS AND READERS: COMMITTEES AND ADMINISTRATION

Activity

- 21% of men and 14% of women were members of departmental promotions committee
- 18% of men and 11% of women were members of Senate/Council
- 89% of men and 82% of women had undertaken one or more departmental administrative roles and there were significant differences for particular roles:
 - 30% of men and 23% of women were/had been a director of undergraduate or postgraduate studies
 - 69% of men and 57% of women held/had held other administrative posts
 - 32% of women and 26% of men had responsibility for student support/welfare

Perception

64% of men and 49% of women agreed they had the opportunity to serve on important committees. 58% of men and 51% of women agreed their administrative contribution was valued.

4.6 THE SENIOR LECTURERS AND READERS: EXTERNAL ACTIVITIES

Activity

- 37% of men and 31% of women had been keynote speakers
- 52% of men and 48% of women had been session chairs
- 54% of women and 44% of men had been session speakers
- 14% of men and 7% of women had been or were editors of academic journals, with 38% of men and 33% of women members of editorial boards
- 59% of men and 46% of women participated in professional consultancy (this did not appear very high in the lists of what was important to career progression)
- 57% of men and 46% of women were research council assessors (20% of men were members of grant giving panels and 22% of women)
- 88% of men and 86% of women were members of a professional organisation of whom:
 - a higher proportion of men were fellows (men 31% women 20%)
 - a higher proportion of men were on the editorial board of their professional organisation (men 17%, women 11%)
 - 55% of women and 51% of men actively participated in their societies

Perception

- 33% of men and 31% of women agreed their external professional activities were valued
- 'keynote speaker' came third in the list of important factors in career progression (men 39% women 37%)
- the editorships of academic journals was scored relatively highly for its contribution to career progression, by 26% of men and women
- again professional consultancy did not appear very high in the list of what was important to career progression

4.7 SENIOR LECTURERS AND READERS: VALUED TREATED AND SUPPORTED BY THEIR DEPARTMENT?

By comparison with the professoriat, this group shows a greater similarity in the views of men and women on the value their departments place on their contributions:

- the support they receive from senior colleagues - 59% of men and 54% of women agreed
- their social integration within the department - 60% of men and 58% of women agreed
- whether their work successes were celebrated – 34% of men and women agreed

The issues on which men and women felt there was most inequality for women, but at very different levels of concern, were:

- promotion - 50% of women felt women were disadvantaged, a view endorsed by 15% of men
- access to career development – 45% of women felt women were disadvantaged, a view endorsed by 12% of men
- salary - 37% of women felt that women were disadvantaged a view endorsed by 8% of men

These were followed, at a distance, by administrative and office support where 25% of women and 2% of men felt that women were disadvantaged, access to departmental funds 21% of women and 2% of men felt women were disadvantaged, office space 16% of women and 0% of men and laboratory space 17% women and 1% of men felt women were disadvantaged.

5. THE PROFESSORS

5.1 KEY FINDINGS ⁶

The women represent 16% of the professorial respondents. They are younger than their male colleagues. They had held professorial appointments for significantly fewer years and have been at their current institution for a shorter time than the men [5.2] and, overall, there are greater similarities in the patterns of activity of male and female respondents than shown by their junior colleagues, however:

statistically significant higher percentages of the men than the women:

- are involved in professional consultancy, editors of academic journals, past or present chair of teaching committee [6.3]
- see innovative teaching as an important contributing factor to career progression [5.4]
- feel socially integrated in their department, supported by senior colleagues, and that their administrative and teaching contributions are valued and their work successes celebrated [5.7]

statistically significant higher percentages of the women than the men:

- are members of grant giving panels, research council members, session chairs at conferences, members of appointments committees outside their departments [5.6]
- have ambitions to be head of research groups, members of senior management and heads of department [7.7]
- have changed aspirations and expectations since entering HE [7.7]

5.2 THE PROFESSORS: RESPONDENTS PROFILE

The 471 professorial respondents represented 22% of the survey population:

- the 395 male professors represented 26% of the male respondents and the 76 women represented 12% of the female respondents
- 94% were in permanent posts and 96% were full time
- 95% were engaged in teaching and research
- 53% of the men and 36% of the women had been in their current institution for sixteen years or more and 67% of the men and 56% of the women had been in their current institution for eleven years or more
- 37% of the women and 20% of the men had been in the professorial grade for two years or less and 29% of the men and 14% of the women had held professorial posts for eleven or more years
- 58% of the men and 53% of the women were age 50 or over
- 40% of the men and 36% of the women had children age 16 or under

⁶ The numbers in [square brackets] refer to the sections of text which support the key finding

5.3 THE PROFESSORS: RESEARCH

Activity

- 97% of women and 96% of men were included in the RAE
- 92% of women and 86% of men were members of departmental research groups
- 68% of women and 57% of men were members of an inter-disciplinary research group
- 61% of women and 54% of men were members of international research groups
- 36% of women and 35% of men had chaired research committees
- at departmental level 76% of women and 70% of men were members of research committees and at institutional level 22% of women and 18% of men were members of research committees

Perception

- research was most commonly cited as the important contributor to successful career progression, with research publications cited by 92% of men and women, obtaining external research funding by 87% of women and 76% of men and attracting new PhD students (42% men, women 41%)
- 91% of men and 86% of women agreed with the statement that their department valued their research contribution - much higher levels than for their junior colleagues

5.4 THE PROFESSORS: TEACHING

Activity

- 31% of men and 18% of women were past or present chairs of teaching committees
- at departmental level 61% of men and 54% of women were members of teaching committees
- there was little difference in their memberships of institutional teaching committees or academic boards

Perception

- innovative teaching was rated by 27% of men and 18% of women as an important contributor to career progression
- 74% of men and 56% of women agreed their department valued their teaching contribution

5.5 THE PROFESSORS: COMMITTEES AND ADMINISTRATION

Activity

- 41% of men and 39% of women were/had been members of senate/council and 15% of men and 9% of women were/had been members of their HEI finance/planning/resources committees
- 17% of women and 12% of men were/had been members of an HEIs senior management/executive teams
- 43% of men and 37% of women were/had been head of department
- 28% of men and 20% of women were/had been director of postgraduate/undergraduate studies
- 14% of women and 9% of men were/had been student support/welfare

Perception

84% of men and 75% of women agreed they had the opportunity to serve on important committees. Fewer women (58%) than men (74%) agreed their administrative contribution was valued.

5.6 THE PROFESSORS: EXTERNAL ACTIVITIES

Activity

Externally men's and women's activities were different. Men focused on consultancy and editorial boards and women focused on conference, research council and grant awarding activities:

- 82% of women had been keynote speakers and 89% had been session chairs at a professional conference compared with 73% of men keynote speakers and 80% men session chairs.
- men's editorship of academic journals at 39% and women's 26%, with 76% of men and 80% of women members of editorial boards.
- professional consultancy - something which did not appear very high in the lists of what was important to career progression - for men was 69% and women 57%
- women's membership of research council committees was 53% and men's 43%
- 76% of women were members of grant giving panels as were 62% of men
- 58% of women and 42% of men served on appointments committees outside their institution
- 96% of women and 92% of men were members of a professional organisation of whom:
 - 62% of men and 60% of women were fellows
 - a higher proportion of women were senior officers (23% compared to men's 12%)
 - overall male and female participation as officers/committee members was similar (men 71%, women 70%)

Perception

- 53% of men, 48% of women agreed that their professional activities outside their HEI were valued
- men and women both placed 'keynote speaker' third in the important factors in career progression (both 53%)
- the editorships of academic journals was scored relatively highly for its contribution to career progression, by 30% of women and 26% of men

5.7 THE PROFESSORS: VALUED TREATED AND SUPPORTED BY THEIR DEPARTMENT?

Even at this level, men and women did not feel equally valued, supported or treated by their departments. Although women's levels of agreement were significantly higher than for more junior women in some areas (male professors' levels of agreement were significantly higher than the more junior men in all areas), the difference between the women and their male colleagues was greater than in the junior groups. The responses of the female professors equated more nearly with the views of senior lecturers (male and female) than with their own male colleagues:

- the support they receive from senior colleagues - 75% of men and 55% of women agreed
- their social integration within the department - 77% of men and 55% of women agreed
- whether their work successes were celebrated - 56% of men and 37% of women agreed

The issues on which both men and women felt there was most inequality for women were:

- salary - 45% of women and 15% of men felt that women were disadvantaged
- promotion - 43% of women and 17% of men felt women were disadvantaged
- access to career development - 35% of women and 14% of men felt women were disadvantaged

These were followed, at a distance, by administrative and office support where 25% of women and 3% of men felt women were disadvantaged, office space 14% of women and 1% of men, and laboratory space where 12% of women and 2% of men felt women were disadvantaged.

6. THE OTHER GRADES

6.1 THE OTHER GRADES: RESPONDENTS

The women represented 44% of the 'other grade' group. The 166 respondents in this group represented only 8% of the survey population and there were some noticeable differences in the profile of this group in comparison with the three main staff groups⁷:

- the 93 men represented 6% of total male respondents
- the 73 women represented 11% of the female respondents
- 30% were in permanent posts and 87% were full time
- the majority (57%) were engaged in research only
- 85% had been in post for five years or less, with 4% in post for more than ten years
- 54% had worked outside HE -a significantly higher proportion than those at lecturer and above
- 13% currently working part time (average 6%) more have had a period(s) of part time working
- fewer than average had children under 16
- the age profile was similar to the lecturers, but fewer were in their 30s and more were over 50

6.2 THE OTHER GRADES: RESEARCH

- 43% of men and 35% of women were included in the RAE
- 69% of men and 59% of women were members of departmental research groups
- 44% of men and 33% of women were members of an inter-disciplinary research group
- 37% of men and 25% of women were members of international research groups

6.3 THE OTHER GRADES: EXTERNAL ACTIVITIES

- 70% of men and 64% of women were members of a professional organisation
- 58% of men and 53% of women had been keynote, plenary/session speakers/chairs
- 33% of men and 32% of women undertook professional consultancy work
- 22% of men and 16% of women were research council assessors

6.4 THE OTHER GRADES: CAREER AMBITIONS

- 21% were satisfied with their current grade compared with 6% of lecturers and 24% of senior lecturers
- 25% of women and 11% of men aspired to a 'lecturer' level post
- 42% aspire to a 'professorial' level post (no difference between men and women)
- 11% had no aspirations to work outside HE (the same percentage as the lecturers, but lower than the 20% of the senior lecturers/readers and professors who were not interested)
- 35% had aspirations to work outside HE (24% of lecturers, 18% of senior lecturers/readers)

⁷ Caution should be exercised when comparing male and female responses in this group as differences will be magnified due to small numbers

In common with the lecturers, the importance for this group of appraisal and personal development came second to research performance as assisting career progression. The women placed a higher importance on networking as an important contributory factor than any other group of respondents.

6.5 THE OTHER GRADES: CONCERNS SPECIFIC TO THE GROUP

Holders of 'other grade' posts were asked to comment 'on any aspects of your working conditions where you feel you are disadvantaged in comparison with those on lecturer grades and above'. Over half the group commented. The over-riding issues for both men and women were:

- the destructive nature of fixed term appointments - the lack of security, the limited ability to apply for grants in one's own name, the lack of opportunity and difficulty in obtaining promotion
- working conditions - poor/no allocation of space/office, no sabbatical leave, less holiday, less pay, more hours

Other concerns mentioned by at least 10% of respondents were:

- lack of recognition from colleagues/department
- exclusion from any involvement in management structure/decisions
- work/family/life balance
- difficulties of the lack of female colleagues and the attitude of senior male colleagues
- lack of recognition of experience gained outside HE

Illustrative comments included:

expected to contribute to teaching and other duties that are not (in practice) considered for promotions, despite being in a research post. Damned if you do, damned if you don't!

no credit given, including financial, for voluntary lecturing. 'Voluntary' lecturing dare not be refused.... Short-term contracts make it difficult to say no to requests for pro bono work from members of the established staff who may influence contract renewal

we are completely invisible within the departmental organisation, we can't even apply for a car-parking space even though we might have children to get to and from childcare - that might sound petty but is important if you have children

ambiguous status - awkward situations arise in situations where status matters. In communication - needing to know about and take action to get onto relevant circulation lists, etc

6.6 THE OTHER GRADES: VALUED TREATED AND SUPPORTED BY THEIR DEPARTMENT?

Respondents were asked for their views on their departments and how their departments valued different contributions. Unlike their colleagues, women and men had generally similar views. Their responses are shown in descending order of agreement:

- research contribution valued - 71% of men and 55% of women agreed
- support received from senior colleagues - 62% of men and 58% of women agreed
- administrative contribution valued - 53% of men and 48% of women agreed
- teaching contributions valued - 50% of men and 49% of women agreed
- social integration within the department - 57% of men and 41% of women agreed
- encouraged to improve their CVs - 48% of men and 33% of women agreed
- the opportunity to serve on committees - 31% of women and 30% of men agreed
- the celebration of work successes - 33% of men and 27% of women agreed
- professional activities outside their HEI valued - 33% of men and 25% of women agreed

7. CAREER PROGRESSION

Previous work by Athena's partner HEIs identified three key steps in an academic career in SET:

- Getting In - the first big step, the transition from post-doc to lecturer where men and women behave and fare differently
- Getting Back – the second hurdle which often comes at a time when contemporaries' research is forging ahead
- Getting On – the final and long running challenge to achieve the career level which adequately reflects and rewards individuals' abilities and their wishes

Once a lecturer appointment is secured, thereafter progression is most often within the same institution and is, more particularly for men, by promotion. It is the men who receive the encouragement to apply and it is the men who are positioned for promotion in terms of external activities (editorial, conference and research) and internally (administrative responsibilities, committee memberships and their understanding of the promotion criteria and promotion procedures).

The 51% of women lecturers and 50% of women senior lecturers who felt that women were disadvantaged at promotion says something about the views of those staying the course but nothing about those who may have left or perhaps not started the 'race'.

7.1 GETTING IN: LECTURER APPOINTMENT

Contract research staff were not included in ASSET, so the survey provides no information on why women do not apply in the percentages that reflect their representation in this the major source of recruits into an academic career. However the views and experiences of the survey respondents who made it through the appointment process at lecturer level are relevant.

It is at first lecturer appointment that the majority of staff move institutions, something which does not recur at senior lecturer or professorial levels (when the majority achieve seniority through promotion). 61% of men and 58% of women moved institution to gain their first lecturer post. The highest scored reason for moving, at 54%, was 'first opportunity to get a post at this level', followed at 29% by 'attracted by working in HE', then grouped at around 24% - 'reputation of institution and/or department and 'the only way to get a post at this level'.

Of those appointed in the last two years, 35% of the men and 26% of women had been appointed by all male interview panels, an improvement on the past:

- 3 to 5 years ago - 41% of men and 28% of women were appointed by all male panels
- 6 to 10 years ago - 55% of men and 28% of women were appointed by all male panels

58% of women and 45% of men had been successful at their first application for a lecturer appointment, but in terms of what contributed to success in gaining a first lecturer appointment, men and women differed, with women indicating that prior contact with the department was as important for them as research fit and publications:

- 64% of men and 50% of women - research fit with the department
- 62% men and 48% of women - research publications
- 51% of women and 45% men - prior contact/knowledge of the department

and for those who were unsuccessful the first time around, the most commonly cited reasons were:

- 21% men and 12% of women - lack of research fit with the department
- 15% men and 11% of women - insufficient experience

7.2 GETTING BACK: AFTER A CAREER BREAK

Work by Athena's partner HEIs has suggested that career progression in SET is different for those who are or who have chosen to be childless. Of the respondents:

- 43% of both the men and the women had children aged 16 or under - 31% of women and 3% of men described themselves as the main carer of a dependent child
- 7% of the men with children age 16 or younger did not describe themselves as having main or shared care responsibilities
- 48% of women and 41% of men currently had care responsibilities
- 33% of women and 12% of men identified a future need for flexible working because of care responsibilities as 'very likely' and 28% of women and 26% of men identified it as a possibility
- 15% of women and 14% of men had care responsibility for a parent and 7% men and 4% of women had care responsibility for a partner.
- approximately 20% who currently had children aged 16 or under, had taken a career break - women 57% men 5%

Although the numbers were small, it was clear that those who had taken career breaks, and particularly those who then had difficulties in returning, had stronger aspirations to work outside HE. Of the respondents with children age 16 or under, who had taken a career break 80% indicated an interest in one or more of the options for working outside HE, compared with 65% of those who had not taken a career break.

A higher proportion of women than men had taken career breaks and had worked part time. Of those who had taken a career break, 17% of men and 30% of women had experienced difficulties returning to work. The percentage experiencing difficulties increased with the length of career break. For the women the difficulties were mainly centred on finding work, hours of work, flexibility and childcare, lack of work load cover while away, and difficulties with the attitude of colleagues and managers.

Suggestions as to what would help the transition back to work after a career break

Male respondents who had a career break	N=76	Female respondents who had a career break	N=187
contact with department while away	59%	childcare	79%
peer networks	39%	flexible working	78%
flexible working	26%	contact with department while away	63%
childcare	22%	part-time initially, building up to full time	56%
part-time initially, building up to full time	21%	shorter hours	34%
mentoring	14%	mentoring	33%
training	14%	peer networks	29%
shorter hours	8%	training	16%
other	4%	other	13%

As comments showed attitudes on childcare vary:

M - the main question which affects women's careers in science is childcare. Maternity leave obviously breaks careers to some extent, but more serious is the pressures of caring for children as they grow. School hours effectively impose part-time work upon a parent. In many couples it is a woman who does much of the caring, and it is her career which thus suffers. However, increasingly these duties are shared and then both careers are correspondingly held back

F - I like to think I am not disadvantaged by being a woman, but I look at academia and notice it's mostly men in senior positions. I am pregnant and really don't feel confident that taking a break to have children will not have a substantially adverse affect on my career. In fact, I feel unable to take the amount of time off I would really like. The opportunity for flexible working is a real plus, but the lack of workplace childcare is a real problem. There seems to be less provision for childcare compared to other public sectors, and the private sector. Also, it is as much the attitude of female senior academics ("I managed it so you should to") that is unsupportive as senior male academics

F - academia is always going to be a job that favours men and women without children. The need to go to conferences, do fieldwork away from home, etc is very difficult for those who have a family. It is hard to find

suitable replacement people who can replace you whilst on maternity leave. Effectively your research has to go on hold, when you return you can, as in my case, find yourself given even more administrative and teaching workload, so your research time is minimal but research time is the main thing that enables you to progress in academia. It has taken me ten years to get promoted. It is hard to come up with any factor other than my ruthless determination and desire never to give in that has helped me to stay here and to finally get promoted

F - the attitude of my male colleagues has almost been that children should be incidental to a working career. I continued my administrative responsibilities through maternity leaves, this was to the detriment of my research, which are the yardstick by which we are judged. I think more allowance should be given to absolve women of onerous administrative responsibilities whilst children are young. Unfortunately the opposite tends to occur, with women viewed as more empathic - as they are in the minority in many departments, they tend to have more student care/teaching/mentoring responsibilities

Women's comments illustrated the poor people management practice that exists:

all teaching was moved to after maternity leave which meant that when I got back I had no time to consolidate the research. There was no effective cover for supervision of my research staff so I had to deal with problems when on leave. When I returned I discovered some severe problems had not been dealt with due to my absence and the lack of effective replacement

was not kept informed of changes, even a move out of my own office

returning was not easy. I was given new courses to teach as well as trying to pick up everything which had accumulated throughout the leave.

after taking maternity leave I had to come straight back into lecturing on my first day back with no preparation time allocated and no induction into new initiatives developed (or time to implement them) during my time away

returning after first maternity leave I had to fit in a whole year's teaching and student supervision into 6 months as well as revive a research programme after my absence

Their other comments reflect the importance of research for career progression and of support in making the return to work a good experience:

I would love to work slightly short hours (or four days per week). However, if I did so, it would be my research and career that would suffer because my teaching load would stay the same

a period of research-only employment, before teaching assignments would be beneficial. This would allow a research profile to be recovered

part-time returners' research fellowship enabled me to retrain and return to work, but finding work after that was a problem, and probably will be again after this fixed term post

I arrived as a part time member of staff with family responsibilities and can honestly say that I have been encouraged and supported all along the way to my present full time post

when I had responsibility for 4 young children I was allowed not to teach in the late afternoon and allowed to work at home in vacations, this made a huge difference

7.3 GETTING ON: LECTURERS AND CAREER AMBITION

66% of the women's and 51% of men's aspirations and expectations had changed since they entered HE, but the men and women at this level displayed no differences in their consideration of working outside HE and overall 6% were satisfied with their current level. However:

- head of research group was the most frequently cited ambition by 72% of men and 64% of women whereas 19% of women and 17% of men had ambitions to be head of department
- 48% of women and 40% of men aspired to achieve senior lecturer/reader level and 63% of men and 45% of women aspired to professorial appointments
- 39% of women and 24% of men were interested in university senior management
- 6% of men and women wanted to become a Dean, 5% of women and 4% of men a Pro Vice Chancellor and 3% of men and women Vice Chancellor

51% of women lecturers and 18% of men felt women in their department/faculty were disadvantaged with respect to promotion. In terms of what would help them to progress to their 'ideal' level, aside from research performance, which topped the list for 83% of men and 81% of women, lecturers saw greater needs for developmental activities than their senior colleagues:

- personal development (women 44%, men 30%)
- appraisal (women 40%, men 29%)
- management/supervisory skills (women 37%, men 29%)
- communication skills (women 33%, men 27%)
- mentoring (women 31%, men 14%)

In terms of preparedness for promotion:

- 55% of men and 46% of women had a good or fairly good knowledge of the promotion criteria
- 47% of men and 35% of women had a good or fairly good knowledge of the promotion procedure
- 50% of women and 48% of men were encouraged to improve their CVs
- among current lecturers 46% of men and 24% of women had been encouraged to apply for a senior lecturer post, and 20% of men and 5% of women had been encouraged to apply for a professorial post

7.4 GETTING ON: SENIOR LECTURERS AND READERS APPOINTMENT AND PROMOTION

The all male appointments committees persist at this level, which is also the level with the least movement between institutions on first appointment. Promotion is the main route into the grade, and significantly so for men. There is little difference between the percentage of men and women who had been encouraged to apply for their current posts, although significantly more men had received encouragement to apply for a professorial post. The picture is different for women now working at professorial level, as a higher percentage of them had received the encouragement to apply for their first senior lecturer/reader posts, although the small numbers here contribute to an apparently large percentage difference.

- 62% of women and 61% of men had been successful at their first application for a senior lecturer appointment
- 78% of men and 68% of women had been promoted into their first senior lecturer appointment
- Similar proportions of current male and female senior lecturers had been encouraged to apply for their post (men 60%, women 58%).
- of those who were now working at professorial level, 61% of women and 49% of men had been encouraged to apply for their previous posts as senior lecturer/readers.

For the few (women 19%, men 13%) who moved to gain their first senior lecturer appointment, the highest scored reason given for moving was 'first opportunity to get a post at this level', with reputation of research and/or institution following closely for men and 'widen experience' and reputation of institution for women.

Of those appointed in the last two years, 47% of men and 32% of women had been appointed by all male interview panels, an improvement on the past: ⁸

- 3 to 5 years ago - 54% of men and 49% of women were appointed by all male panels
- 6 to 10 years ago - 64% of men and 33% of women were appointed by all male panels

⁸ The number of female respondents here is below 100 and therefore percentage differences could be magnified

7.5 GETTING ON: SENIOR LECTURERS AND READERS AND CAREER AMBITION

72% of women's and 60% of men's aspirations and expectations had changed since they entered HE. Overall 24% were satisfied with their current level, and 66% aspired to professorial appointments:

- head of research group the most frequently cited ambition by 59% of women and 58% of men, and 21% of women and 19% of men had ambitions to be head of department
- 66% of men and 65% of women aspired to be professors
- 39% of women and 29% of men were interested in university senior management
- 10% of men and 9% of women wanted to become a Dean, 9% of men and 6% of women a Pro Vice Chancellor and 5% of men and 2% of women aspired to be a Vice Chancellor

In terms of what would help them to progress to their 'ideal' level aside from research performance, which topped the list for 70% of women and 69% of men, women's perceived need for developmental activities were greater, but their ranking of factors was very similar:

- personal development - (women 33%, men 21%)
- appraisal - (women 29%, men 21%)
- management/supervisory skills - (women 29%, men 22%)
- communication skills - (women 24%, men 17%)
- mentoring - (women 18%, men 7%)

In terms of preparedness for promotion:

- 47% of women and 46% of men were encouraged to improve their CVs
- 48% of current male and 37% of female senior lecturers had been invited/encouraged to apply for a professorial appointment
- 71% of women and 67% of men had a good or fairly good knowledge of the promotion criteria
- 73% of men and 60% of women had a good fairly good knowledge of the promotion procedure

7.6 GETTING ON: PROFESSORIAL APPOINTMENT AND PROMOTION

Promotion was the main route into the professorial grade:

- 59% of women and 50% of men had been successful at their first application for a professorial appointment
- 63% of men and 60% of women had been promoted into their first professorial appointment
- 90% of the men and 84% of women had been encouraged to apply for a professorial appointment

For the 32% who moved to gain their first professorial appointment the highest scoring reason for moving, at 49%, was 'first opportunity to get a post at this level', with 'reputation of institution' at 43%, and bunched together at around 30% were 'widening experience' and 'reputation of research and department'.

Of the professors appointed in the last two years 42% of men and 41% of women had been appointed by all male interview panels - no noticeable improvement on past practice: ⁹

- 3 to 5 years ago - 43% of men and 43% of women were appointed by all male panels
- 6 to 10 years ago - 69% of women and 42% of men were appointed by all male panels

⁹ The number of female respondents here is below 100 and therefore percentage differences could be magnified

7.7 GETTING ON: PROFESSORS AND CAREER AMBITION

80% of women's and 63% of men's expectations had changed since entering HE. Overall, 66% were satisfied with their current level, however:

- research group head was the most frequently cited ambition, by 67% of women and 50% of men and 33% of women and 18% of men had ambitions to be head of department
- 44% of women and 31% of men were interested in university senior management
- 25% of women and 15% of men wanted to become a Dean, 23% of women and 16% of men a Pro Vice Chancellor and 9% of men and women aspired to be Vice Chancellors
- in terms of what would help them progress to their 'ideal' level (respondents were asked to select from a list of eight skills and activities):
 - research performance scored highest for 36% of men and 34% of women
 - then management and supervisory skills for 24% of men and 22% of women
 - then communication skills for 24% of women and 17% of men

61% of men and 50% of women had been encouraged to improve their CVs

Recognising that it is professors who play a major role in the promotion process for junior staff, it is relevant that 91% of women and 87% of men had a good or fairly good knowledge of promotion procedures and 96% of women and 92% of men had a good or fairly good knowledge of promotion criteria.

8. THE WORKING LIFE OF A SET ACADEMIC

This section draws together some of the key themes, issues and findings from preceding sections, compares and contrasts them in terms of the activities, ambitions, experiences and perceptions of the survey respondents in each of the three main career grades and includes some of their comments. Like the rest of the report, the focus here is on the differences between men and women, not on the important issue on which they were united, that of time. As their many heart-felt comments reflected there is decreasing time for research, impossible workload, more students, more administration, more teaching. These and the expectations of extremely long hours all have a damaging effect on family life.

8.1 RESEARCH

Research is seen by men and women at all levels as the key to career success. Research activity increases with seniority. Women start from a lower base as lecturers, by senior lecturer they have very nearly caught up and at professorial level are 'equal'. Nevertheless at senior lecturer level, women's and men's perception of the value placed on their research has not shifted from that at lecturer level. At professorial level the men's view of the valuation of their contribution matches the level of their activity, but the women's sense of value does not.

inclusion in the RAE

female professors	97%	female senior lecturers	75%	female lecturers	56%
male professors	96%	male senior lecturers	77%	male lecturers	69%

membership of inter-disciplinary research group

female professors	97%	female senior lecturers	75%	female lecturers	56%
male professors	96%	male senior lecturers	77%	male lecturers	69%

my research contribution is valued

female professors	86%	female senior lecturers	55%	female lecturers	55%
male professors	91%	male senior lecturers	66%	male lecturers	66%

F - cutting edge, topical research, high profile articles and reviews, putting myself forward for fellowships, initiating contact with other researchers. Support from supervisor and colleagues

F - support from my research group here, particularly my post-doc supervisor and colleagues in the USA, Europe, and research institutes. I am well 'networked' in my research field and have built an international reputation in my area with the support of my research colleagues outside

F - bring in large sums of grant money, do no teaching, and have a mentor who pushes you forward and speaks up for you in committees

M - I realise academic posts are now more about selfishly boosting one's career in order to retain the right to do research or else succumb under a mountain of administration and bureaucracy. Teaching is undervalued and something to be avoided when possible

M - despite lip service, teaching is not really valued (though admissions numbers are) administration has some value and research especially research money has the greatest influence on career progression

M - career most hindered by heavy teaching load - this affects both research and teaching

M - good research. Being visible to international top researchers. Research fellowships

M - top class research, high grant income, many citations, backing of HOD

M - being in the right place at the right time, support from successive heads of departments. being willing to take on my share of the administrative load (and doing it) two extremely supportive senior members of the research group which I now co-lead. Supportive PhD supervisor and post-doc supervisor

M - doing a good job at teaching and doing a good job at research at the appropriate times

M - two or three senior people have acted as mentors over a long period, taking an interest in my career and my research and writing recommendation letters

M - success in research ideas and research leadership; research vision. Good results in teaching

8.2 TEACHING

Teaching does not score highly in its importance for career progression, however, views of innovative teaching by men and women undergo a reversal - the contribution of innovative teaching to career progression is rated more highly by women than men at lecturer level. There is no difference in their views at senior lecturer level, but at professorial level, men view it as more important than women. Also, at professorial level, views of the value placed on their teaching widen, with women professors having a lower view of the value placed on their teaching than either their male colleagues or male senior lecturers. Are more men promoted to professor on the basis of their teaching contribution and are they then more involved in teaching than their female colleagues?

innovative teaching is important for progression

female professors	18%	female senior lecturers	18%	female lecturers	25%
male professors	27%	male senior lecturers	17%	male lecturers	19%

membership of departmental teaching committees

female professors	54%	female senior lecturers	70%	female lecturers	42%
male professors	61%	male senior lecturers	65%	male lecturers	42%

my teaching is valued

female professors	56%	female senior lecturers	59%	female lecturers	56%
male professors	74%	male senior lecturers	62%	male lecturers	59%

8.3 ADMINISTRATION AND COMMITTEES

One area where women are more active than men is student support, but the difference is less than anecdote suggests. At all levels, men's perception of their opportunity to serve on important committees reflects reality. At professorial level, men and women appear to place more importance on committee memberships than on administrative contributions. But again, women professors' view of the value placed on their administrative contribution matches that of the male senior lecturers rather than their male professorial colleagues.

I have the opportunity to serve on important committee

female professors	75%	female senior lecturers	49%	female lecturers	33%
male professors	84%	male senior lecturer	64%	male lecturers	42%

student support/welfare responsibilities

female professors	14%	female senior lecturers	32%	female lecturers	30%
male professors	9%	male senior lecturer	26%	male lecturers	24%

my administrative contribution is valued

female professors	58%	female senior lecturers	51%	female lecturers	44%
male professors	74%	male senior lecturers	58%	male lecturers	47%

F - I think I was initially more ambitious for a chair, but I have always been a reliable contributor to teaching and admin when told my Department needed me to do it - to the detriment of my research progress. Others have shunned departmental admin and teaching responsibilities to concentrate single mindedly on their research - gaining chairs faster, all men and they are not considered unreasonable - just difficult

M - at first I was flattered to be given administrative responsibility; I now think that the most precious commodity is time to think and do research, and this involves a greater degree of resistance in accepting administrative duties

F - whatever I do it doesn't seem to be enough - so while on the one hand my admin load is highly valued, at the same time I'm told I need to do more teaching and so should give some up - but then have more admin loaded on - what has helped most is stopping worrying too much about others and doing some of the things I like doing - and am good at and which may be valued elsewhere in the organisation - even if not in the department

8.4 EXTERNAL ACTIVITIES

External activities are an area where men's and women's views change little, however it is the only occasion where women at any level feel their contribution is more valued than do their male colleagues, and this occurs at lecturer level, but women's strong start is not maintained. It is only at the professorial level that women's fellowships nearly equal men's, although women by then have overtaken men as conference speakers and session chairs. Are the consistently higher participation rates by men on editorial boards and in professional consultancy relevant?

Fellowships of professional societies

female professors	60%	female senior lecturers	20%	female lecturers	7%
male professors	62%	male senior lecturers	31%	male lecturers	11%

participates in professional consultancy

female professors	57%	female senior lecturers	46%	female lecturers	32%
male professors	69%	male senior lecturers	59%	male lecturers	47%

my external activities are valued

female professors	48%	female senior lecturers	31%	female lecturers	34%
male professors	53%	male senior lecturers	33%	male lecturers	27%

F - travel to conferences and making outside contacts, especially abroad

F - keeping ones head down and achieving within ones limits. Mentoring from key players (external to department). Contributing to societies relevant to specialty and research as committee member, Council member, and presentations and chairing sessions and inter-professional working

M - always trying to do one's best, successful collaboration with industry which resulted in substantial research income from industry. This provided funding to attend conferences abroad which helped me develop my research profile

M - international contacts, largely through editorial work

8.5 CAREER PROGRESSION AND ITS REWARD

Women's success in being appointed on first application is often seen to reflect the time women spend in preparation and their reluctance to put themselves forward until they fully match job requirements. The changes in women's career expectations, their apparently lower ambitions at lecturer level and their higher ambitions at all levels for university senior management posts may reflect the realities that women recognise of having a family and the impact that career breaks and child care have on research. Women remain ambitious but look laterally for their career progression.

success on first attempt to enter grade

female professors	59%	female senior lecturers	62%	female lecturers	58%
male professors	50%	male senior lecturers	61%	male lecturers	45%

changed expectations since start of HE/SET employment

female professors	80%	female senior lecturers	72%	female lecturers	66%
male professors	63%	male senior lecturers	60%	male lecturers	51%

career interest in university senior management

female professors	44%	female senior lecturers	39%	female lecturers	39%
male professors	31%	male senior lecturers	29%	male lecturers	24%

F - I have recently been interviewed for a SL post, one of the candidates, all internal, fulfilled the criteria for appointment. The others were male, one was appointed. No one from personnel was present at the appointment committee. I was the only candidate to be asked how do you think you will cope with this job?'

F - promotion is directly linked to assertiveness. Men are much more assertive than women. Universities are places where there is less 'moderation' of individual's competitive behaviour. This is to the disadvantage of women

F - promotion procedures are unfavourable, only because you are expected to put yourself forward and I think women are less likely to do this than men

F - I have just been promoted, my departmental colleagues have been supportive. I have written undergraduate textbooks and developed a considerable scholarly profile in what the procedures describe as 'teaching and administration'. I believe strongly that a non-traditional career profile seriously disadvantaged my promotion prospects up to now

F –it's not experience I need, just recognition of it by senior colleagues...Fair assessment by professorial staff in charge of putting people forward for promotion. There have recently been cases where less qualified candidates have been put forward ahead of others - based on personality and this has negative effects on men and women

F - the importance of networking ,my promotion to Professor was not achieved simply by my CV, it was necessary to 'get to know' committee members, all male, to make them aware of my existence

M - getting to know and work the promotions system, finding out who can be helpful. Nobody will volunteer to provide you with this information

M – ever higher expectations of productivity, responsiveness to external requirements, etc., are not matched with ever higher salary. I got into academia to do research. But like many others, I find that there is less and less time left over to do it. I am unwilling to sacrifice my family life in order to find that missing time

M – I just did not realise the lack of career structure, the glass ceilings and the lack of good management

How far does women's lateral approach to career progression reflect their view of the academic and departmental culture of SET and the barriers in terms of promotion and salary? Women's view of the disadvantages, faced by women generally, do not diminish as they progress up the ladder. Women professors, not unsurprisingly, are more concerned about salary than about further promotion and career development. As men rise the ladder they show slightly increased concerns on women's disadvantage. Women lecturers and senior lecturers are very clear about their disadvantages, so why when they get to professor do they not do something about it - perhaps because they still lack the support and position which would make it possible to influence change?

agreement on extent to which women disadvantaged on salary

female professors	45%	female senior lecturers	37%	female lecturers	41%
male professors	15%	male senior lecturers	8%	male lecturers	9%

agreement on extent to which women are disadvantaged on promotion

female professors	43%	female senior lecturers	50%	female lecturers	51%
male professors	17%	male senior lecturers	15%	male lecturers	18%

agreement on extent to which women disadvantaged on career development

female professors	35%	female senior lecturers	45%	female lecturers	38%
male professors	14%	male senior lecturers	12%	male lecturers	9%

F - the issue is the pervasiveness within the department of attitudes and behaviours that are disadvantageous to women

F - there is no gender discrimination in access to departmental funds, office and laboratory space, administrative support and teaching resources because there are no resources in the first place so none of us get anything

F - despite a previously almost effortless rise to senior lecturer I found myself in an apparent grey suited male club. I feel both undervalued and under-utilised. In the external environment I believe I have a good reputation but I am not in the inner circle. If personal circumstance made it possible I would leave /have left already

F - not being promoted in my previous Institution made me apply elsewhere, raised my profile, gave me confidence and opportunity. I believe I was not promoted because married with young children I was felt not to be a high risk in terms of moving. It was much more male dominated and female hostile than my present Institution

8.6 A SENSE OF BELONGING

The pessimistic view of women about the lot of women in SET generally is slightly less gloomy when women look at themselves and the support and encouragement they personally receive, but is still a long way short of the feeling of 'comfort' expressed by their male colleagues. This may make it difficult for women to establish themselves in the positions of influence where they could improve the situation for those still climbing the ladder. What is a concern is that the views of women professors on support and integration are 'worse' than those of senior lecturers, both men and women. It is difficult to see how they can act as good role models. The higher level of disenchantment of more senior women academics is often explained on the basis of a reflection of past poor practice which will be a thing of the past when this cohort retires; the relative youth and time in grade of the 10% plus of the women professors in SET in the UK who contributed to the survey suggests the jury may still be out.

senior colleagues are supportive

female professors	55%	female senior lecturers	54%	female lecturers	56%
male professors	75%	male senior lecturers	59%	male lecturers	62%

I feel socially integrated within my department

female professors	55%	female senior lecturers	60%	female lecturers	50%
male professors	77%	male senior lecturers	58%	male lecturers	56%

my work successes are celebrated

female professors	37%	female senior lecturers	34%	female lecturers	33%
male professors	56%	male senior lecturers	34%	male lecturers	42%

F - now being at a more senior level, the world is a colder place in some ways, and I am more aware of having to fight my group's corner

F - blind determination, dogged perseverance and fear of failure (can't imagine what else I would do!) belief in myself, engendered by comments from outside my department, but virtually no active support from within

F - I am the only female in our department, in my opinion it is not the opportunities of the employer that cause differences between male and female staff development. It is slightly different needs in appraisal. Our head of department is extremely good at spotting when I need to hear something nice and it really makes a difference. I sometimes feel I am the only one who has this craving for praise

F - I don't think my answers are representative as I have been extremely lucky all along to have had excellent mentors who have been supportive and helpful at every stage. Most are not so fortunate

F - this survey really gives no opportunity to discuss informal hurdles for women - the culture does not recognise all the things women value such as teams and looking after individuals. Women tend in this direction and then find that they have published less and are consequently less valued

M - one or two individuals have been helpful but this has often been a problem because they may not be the people with power and influence. I feel I have been significantly disadvantaged by not being offered positions like research director which is within the gift of the Head of Department

M - I find the current climate too aggressively competitive and ruthless

M - the high level of corruption, malice and backstabbing in my university

M -disillusioned with current management style, the managers who are happy to take the pay without caring about promotion lotteries etc

M - nepotistic backstabbing unprincipled colleagues in an impersonal institution

9. THE WAY FORWARD

The findings from the ASSET survey reported here:

- suggest that changes in HEIs' procedures and practices could make a difference to women's career progression in SET, and to the satisfaction, recognition and rewards that women receive
- provide the hard evidence that is needed in order to raise awareness and understanding of the issues
- should help Vice Chancellors, heads of SET faculties and departments and senior academics, both in their departments and in their professional societies, to identify priorities for action

Last year, Professor Sir David King, the Government Chief Scientific Adviser, in his foreword to Athena's Guide to Good Practice 1999 to 2002 expressed the hope that universities would engage with Athena's targets:

- Short term: the percentage of female applicants for academic posts to reflect the percentage of women at the level immediately below (in their own institution and/or the 'pool' of institutions where they usually recruit)
- Medium term: the percentage of newly appointed / newly promoted women in academic posts to reflect the percentages at the level below
- Long term: the percentage of women at each career level to reflect the percentage at the level below (including the undergraduate intake)

The survey findings suggest that for many HEIs achieving the short term target should not be a problem at lecturer level, where the proportion of women who move HEI for a first appointment is slightly higher than for men and when women are more often appointed at their first attempt. However at senior lecturer and professorial level there is more to do, with the persistence of all male appointments committees and promotion as the more common route for men than for women.

In terms of the medium and long term goals the survey findings suggest there is rather more to do, before women perceive themselves to have the same level of support, encouragement and development opportunities as their male colleagues. Much is for departments to organise and influence, but at university level there need to be clear expectations, reporting and feedback mechanisms. In 2003, in her introduction to the same good practice guide Professor Julia Higgins, then Chair of the Athena Committee, referred to the continuing need for Athena to encourage and develop activities and methodologies which:

- challenged the culture and values of SET departments and HE
- increased, recognised and celebrated the contribution of women to their research success
- engaged principal investigators and heads of research groups whose support and understanding, or the lack of it, was critical to women's career progression

The findings reported here serve as an endorsement of what she wrote. What is needed is action, action in HEIs at all levels.

Athena, working with the SET professional societies, will continue to support and encourage this work. The good practice reports, guides and checklists published by Athena will be supplemented during summer 2004 with additional material from its new work programme.

The Athena Alliances Programme, core funded by BP and the Royal Society, was launched in March 2004. This programme will identify and share good practice across the wider SET community, including research facilities and industry. The first output will be the publication in July 2004 of a joint Athena Royal Society of Chemistry Report on good practice in academic chemistry departments.

ASSET 2004, which will run in October 2004, will be open to HEIs who did not participate in the first survey and to research facilities and industry employers. A report drawing together the findings from ASSET 2003 and 2004 will be published in summer 2005. Based on this work, an Athena Benchmarking Club will be set up in autumn 2004 to develop a benchmarking tool kit for SET employers.

ATHENA PROJECT

Athena Publications 2001 to 2004

- Report 1** Bolton Institute – Mentoring Women in SET
- Report 2** University of East Anglia – ResNet2000
- Report 3** Imperial College London – Might Mentoring Help?
- Report 4** Nottingham & Loughborough Universities – Skill Acquisition and Mentoring in Early Career Stages
- Report 5** The Open University – Beating Barriers and Constraints in HE Careers
- Report 6** Sheffield Hallam University – Developing a Mentoring Training Programme
- Report 7** The1999 Development Programme
- Report 8** The Athena Project Good Practice Guide 1999
- Report 9** The University of Edinburgh – Bridging the Gap
- Report 10** Heriot-Watt University – The Development and Retention of Academic Women
- Report 11** The University of Luton - Inclusive Committees
- Report 12** The University of Oxford – Encouraging Applications from Women Scientists
- Report 13** The University of Surrey – Moving Up
- Report 14** Local Academic Women's Networks (LAWNs)
- Report 15** The 2000 Development Programme
- Report 16** The Athena Project Good Practice Guide 2000
- Report 17** New Research on Women, Science and Higher Education
- Report 18** The University of Cambridge – Women in SET Initiative WiSET1
- Report 19** Imperial College London – Challenging Culture The Rector's Committee on Academic Opportunities
- Report 20** Queen's University Belfast – Addressing the Gender Imbalance at Queen's University Belfast
- Report 21** University of East Anglia – ResNet 2000 The Maturing Network A Powerful Tool
- Report 22** The Athena Guide to Good Practice 1999 to 2002
- Report 23** London Metropolitan University - SWAN Scientific Women's Academic Network
- Report 24** Loughborough University – Embedding Gender Equality and Diversity
- Report 25** Oxford Brookes University – European Women in Mathematics Web-based Mentoring Scheme
- Report 26** The 2003 Athena Survey of Science Engineering and Technology in Higher Education ASSET Report

Athena Occasional Papers

- No 1** Bebbington, D. Women Scientists in Higher Education: A Literature Review
- No 2** Bailyn, L Gender Equity in Academia: Lessons from the MIT Experience September 2001.
- No 3** New research on women, science and higher education: proceedings of the conference Royal Institution of Great Britain September 2001 ed. Bebbington, D.



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