



THE ATHENA PROJECT REVIEW

A report on the Athena Project's impact and learning for future diversity programmes

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Foreword

Successful research science requires diverse skills- commitment, perseverance, drive, patience, imagination, creativity, communication, and collaboration. It is therefore not surprising that diversity in the scientific workforce has a positive impact. However, academic research in the UK has historically been dominated by a rather narrow demographic that is mostly male and mostly white European. Because of this, current norms and practices match that demographic. Long hours, present-ism, metrics-based competition and an emphasis on individual prestige are deeply embedded, despite the fact that none of them is required for, or particularly conducive to ground-breaking science. This is a catch 22. To increase diversity in science, the norms and practices of science need to be more inclusive, but these norms and practices are unlikely to become more inclusive while they resonate so positively with the majority of the workforce.

The goal of the Athena Project was to square this circle. In order to *'advance and promote the careers of women in science, engineering and technology in higher education and research and to achieve a significant increase in the number of women recruited to top posts in the UK'*, it is essential to find ways to shift the culture of academic scientific research to make it more attractive to and supportive of women. Research culture reflects wider UK culture, which is why the problem of under-representation of women, particularly at the top, is endemic in most professions- business, banking, law etc. Therefore, Athena had to find ways to shift university culture against the wider national tide.

There is still a long way to go, but some significant progress has been made and some important general principles have emerged. These are encapsulated in the ten areas of the Athena framework for action. This framework is at the heart of the Athena SWAN Charter and its awards, which provide recognition for universities and departments working to improve their research environments. The Athena SWAN awards provide an excellent illustration of the impact of the Athena Project, but also of the distance still to travel.

The award is based on an iterative self-assessment process, requiring cycles of evidence-based analysis of the local environment, followed by the development and implementation of an action plan to address the issues identified as inhibitory to gender equality. It requires engagement and commitment across all levels of the university and participating departments. It is not about conspicuous initiatives, achieving some particular numerical target, or being better than the next department. It is about finding where the problems are and working hard to solve them.

Recently, major research funders have adopted the awards as evidence that departments are providing the inclusive environment that will support the best research and research training. Because of this, universities and their departments now feel compelled to embark on the process and Athena SWAN has become mainstream. On the one hand, this is an excellent development, but on the other, there is a danger that the process will simply be absorbed into the prevailing culture. I am disappointed by how often I now hear Athena SWAN discussed in terms of high profile events, counting how many women professors you have, and trying to get a higher award than the next department.

This illustrates perhaps the most important lesson learned from the Athena Project. The forces against which culture change must work mean that constant sustained pressure is essential. There is no room for coasting, no letting up, no napping. The Athena Forum is dedicated to keeping up the momentum from the Athena Project. This report can be seen as part of this.

The Athena Project identified ways to change things for the better. Many of these are widely applicable across the diversity agenda, and most of them are applicable to gender equality in fields other than science. In order to make the lessons learned as accessible as possible, this

review provides an overview of the work of the Athena Project with appendices, which summarise the different activities and programmes it supported.

Thanks are due to the founders of the Athena Project Professor Dame Julia Higgins FRS, Dr Nancy Lane and Caroline Fox and to Caroline who wrote the review and to Professor Dame Julia Higgins FRS and Professor Dame Jocelyn Bell Burnell FRS, both members of the Athena Committee, who checked the interpretations, findings and lessons reported.

Ottoline Leyser

Chair of the Athena Forum

Introduction

The Athena Project was a national STEM diversity project, which ran from 1999 to 2007. Its aim was to 'Advance and promote the careers of women in science, engineering and technology in higher education and research and to achieve a significant increase in the number of women recruited to top posts in the UK'.

The rationale for this review is to learn from the project's successes and failures, to draw out lessons on good practice and culture change, to consider the transferability beyond university science disciplines and to inform future work by the Athena Project's 'successor' organisations, particularly: the Athena Forum and its members -UK STEM professional and learned societies, the Athena SWAN Charter and the Royal Society's diversity programme and Athena Survey of Science Engineering and Technology (ASSET).

All the information and documentation in the review are drawn from documents in the Athena Project archive and from Athena Project reports, case studies and occasional papers. These are referenced throughout the review e.g. (*Athena Report 8*) and can be found at www.athenaforum.org.uk. The review also makes reference to project summaries. These are referenced throughout the review e.g. (*Summary 8*) and are available in Appendix B.

Section 1 describes the Athena Project's aims and beliefs, organisation, supporters and funders and the two phases of the project's work: Phase One, the identification, development and encouragement of good practice and culture change in universities and Phase Two, the development of tools and approaches to measure and recognise good practice and culture change in STEM departments and universities.

Section 2 looks at the factors which contributed to the project's success and identifies lessons learned which may be useful for future national diversity programmes.

Section 3 considers the approaches adopted by universities and departments to change their culture (and the processes, practices arrangements and systems, which supported that culture) and how they sustained the changes they introduced. It summarises the project's findings and learning on good practice. These findings are followed by descriptions of the characteristics of the good practice as identified, developed adopted and encouraged by universities and departments in the project's programmes. The descriptions are given under the ten principles of the Athena framework for action.

Appendix A is a personal reflection statement from the Athena Project Programme Manager Caroline Fox. Appendix B is a chronology which provides a timeline, from before the Athena Project's development to after its close.

The summaries in Appendix C provide an outline of the work of the Athena Project and the universities and departments who contributed to it, the difference it made to the culture of the workplace and the practices, processes and policies which supported that culture. The Athena Committee members 1999-2007 are listed in Appendix D and the generic good practice checklist in Appendix E details the Athena Project framework, its principles, the benchmark statements and the indicators which support it and includes examples from university and department contributors. Appendix F is an annotated list of Athena Project publications and Appendix G is the glossary.

Section 1 - The Athena Project Narrative

The UK women in science world of 1999

In 1999, the proportion of women undergraduates studying Science, Engineering and Technology (SET) was 51% compared with 53% in 2013. The proportion of women professors in SET was 11%, compared with 18% in 2013 (*source, HESA*). The barriers to women's career progression were often not discussed unless there was a specific problem, for example PhD student or postdoc supervision, or concerns with bullying or alleged harassment. Many women working in science felt isolated and not well positioned to influence change or offer solutions, and sometimes successful female scientists did not engage positively in debate on women and science.

The women who developed the Athena Project had seen a number of schemes surface that had engaged early career female scientists, but had not changed the system, challenged the culture, or made lasting changes to the working environment. They had seen the considerable energy expended in identifying the problem of women's career progression in science; but little evidence of practical action taken to address the problem effectively.

The Athena Project aims and beliefs

The Athena Project was launched early in 1999. The aim of the project was to 'Advance and promote the careers of women in science, engineering and technology in higher education and research and to achieve a significant increase in the number of women recruited to top posts in the UK.'

The beliefs that underpinned the project were that:

- The advancement of science is fundamental to the quality of life across the globe
- It is vitally important that women are adequately represented in what has traditionally and is still a male dominated area
- Science cannot reach its full potential when half the population is excluded from its activities.

The Athena Project organisation, funding and support

The Athena Project was not a legal entity. Its funding was held by whichever organisation housed it. In its nine years the project moved office from Imperial College, to Universities UK, to ECU and finally the Royal Society. The project never paid rent or any service charges.

The Athena Project's initial funding came from HEFCE, with additional support from OST DTI and SHEFC. However, in 2001, the project's funding council support was cut and in 2002 its main funding came from DTI. From 2003 the project received funding, support and endorsement from the Royal Society and from 2004 to 2007 DTI funding came through the UKRC.

Other supporters of the project included BP, ECU, Engineering Technology Board, European Social Fund, IOP, L'Oreal, Pearson, Pfizer, RAEng, RSC and the Wellcome Trust. The Athena Project was overseen by the Athena Committee. The committee membership is detailed in Appendix D.

Athena Project phase one 1999-2002

The identification, development and encouragement of good practice and culture change in universities

In 1999, the Athena Committee needed to:

- Identify what good practice there was in UK universities
- Explore what universities should put in place to improve the representation of women in SET
- Make sure that the universities owned both the problems and the solutions

- Establish a name and a reputation for Athena.

In this first phase there were three main programmes:

- The 1999 and 2000 University Development Grant Programmes
- Athena Local Networks
- Royal Society Athena Good Practice Awards 2001 and 2002.

The Athena Project's first initiative was an online debate with the Hansard Society and the Parliamentary Office of Science and Technology (POST). This provided the opportunity for the project to engage with, and listen to the women in science community. The debate demonstrated a lack of good practice in UK university science. Most contributors understood the issues and their causes; however, few were able to provide examples of practices, policies, or processes that had made a difference to women's career progression (*Summary 1, Athena Report 8*).

1999 and 2000 University Development Grant Programmes

Seventeen HEIs, ranging from an HE College to Russell Group universities participated in the first development grant programme. The 1999 programme (*Summary 2*) involved women early in their careers, their personal and professional development, and mentoring and networking interventions. The work of the programme is summarised in *Athena Report 7* and *Athena Report 8* describes the good practice developed.

The 2000 programme (*Summary 9*), focused on cultural change and identifying and understanding the processes and practices, which presented barriers to women's progression, and where change would impact universities and departments. Section 3 looks at the changes the programme had and *Athena Report 15* summarised the work.

Athena Local Networks

The Athena Project funded two successful networks for early career researchers in 1999 (*Summaries 4 and 6*). There was insufficient funding for another full programme, so in autumn 2000, the project provided funding for another year to the two existing networks and to three new ones. The networks adopted the name 'Athena Local Academic Women's Networks' (Athena LAWNs). Each LAWN had one or more of the following objectives:

- To raise the profile of female academics and promote the work of less experienced women researchers
- Improved institutional practice in the support offered to researchers
- Increased cross disciplinary collaborative opportunities for researchers
- Sharing information ideas and good practice
- Encouragement for the appointment of women onto university committees.

The networks generated activity that engaged senior male and female academics. They raised the profile of women in their universities, and the level of awareness of barriers to women's careers. (*Summary 15, Athena Report 14*). In autumn 2002, OST DTI provided six months funding to expand the LAWNs and disseminate good practice. The activities, conferences and workshops were organised locally and expanded the project's geographical spread (*Summary 19, Athena Report 22 and Athena Case Studies 1-6*).

Royal Society Athena Good practice Awards

The awards recognised the good practice to address gender inequality, which was developing in UK universities. They recognised successes and achievements that were sufficiently established to demonstrate their effectiveness in contributing to the project's aims. The scheme ran for two years. It encouraged, raised the profile of, and disseminated a range of initiatives, creative approaches and good practice in action, from which other universities could benefit.

The awards provided good practice reports at minimal cost. The prizes were funded externally and event costs came from the RAEng and the Royal Society. The scheme built useful new university contacts for the project and provided useful learning for developing the Athena SWAN award scheme (*Summaries 17 and 18 and Athena Reports 18-21 and 23-25*).

The Athena Project programme review 2003

The Athena Guide to Good Practice 1999-2002 (*Athena Report 22*) summarises the project's work up to the end of 2003. This work identified that the established systems at university and department level, the processes and practices - especially those relating to appointment and promotion, and women's perception of them, were the key barriers to women's career progression. In addition, these barriers were:

- Deeply rooted in the structure and organisation of science and universities
- Invisible to those on the inside track
- Both personal and familial -the unintentional discrimination and departmental exclusion and isolation the perceived absence of support and encouragement.

This work also showed that small, simple changes in practice could make a difference. Individual changes were low cost, other than in people time, but they influenced the processes and culture of academic science. The Athena Project published short reports on the individual programmes, which described what the programme did, the institutional drive and background, the learning, outcomes and plans for the future.

In March 2003 the project was near the end of its original term. The committee wanted to build on their achievements and to continue to:

- Ensure universities did not let women's career progression slide down their priorities list
- Follow the progress of the universities who were beginning to make a real difference to their organisational culture and processes
- Disseminate and publish the results of leading edge good practice
- Provide a source of advice support and contacts for universities and the individuals within them, who were 'getting started'
- Network the networks of women in STEMM.

It also wanted to encourage and develop approaches that would lower/remove the barriers by:

- Challenging the culture and values of STEMM departments and HE
- Increasing, recognising and celebrating the contribution of women to the research of their departments and universities
- Engaging principal investigators and heads of research groups whose support and understanding or the lack of it, was critical to women's career progression.

The challenge for the Athena Project, identified by Sir David King, the Government Scientific Advisor in his foreword to the *Athena Guide to Good Practice 1999-2002 (Athena Report 22)* was to embed the good practice it had identified into every HEI and research institute and to engage with the project's targets:

Short term -The percentage of female applicants for academic posts reflects the percentage of women at the level immediately below (in their own institution and/or the 'pool' of institutions from which 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.

Athena Project phase two 2003-2007

Development of tools and methodologies to measure and recognise good practice and culture change in departments and universities

There were four main programmes, which continued through to the end of 2007:

- Developing the Athena Framework for Action and Good Practice Checklists
- Athena Surveys of Science Engineering and Technology (ASSET)
- Work with IOP and RSC
- Athena SWAN Charter and Award Scheme.

The Athena Project programme review 2005

The project review programme started in 2003 and was originally designed to run until the end of 2006, when a new government resource centre would take responsibility for any Athena Project initiatives, activities and programmes that had been successful.

However, the 2005 Royal Society Athena Conference identified changes that were still needed on process and practices by universities STEMM departments and professional societies (*Athena Occasional Paper 5*). A second programme review was undertaken late in 2005, when it was agreed with the main funders, OST DTI and UKRC, that the programmes started in 2003, would continue to the end of 2007 in partnership with IOP and RSC and with support from the Royal Society and RAEng.

Developing the Athena Framework for Action and Good Practice Checklists

In 2003, the Athena Project was funded by the DTI to report on good practice in UK universities. A good practice checklist was used to collect evidence from universities and to provide a framework for the report to the DTI.

The completed checklists, and the follow-ups with the universities, showed that universities did not know what was, or was not; happening in their departments and what practices and processes they had in place. Most of the universities confirmed they had leadership from the top of the university committed to changing the organisational culture of SET, but only a minority agreed that the key stakeholders – heads of departments and principal investigators were involved in this change (*Summary 20*).

In 2004, the checklist was adapted for work with the RSC to collect examples of good practice from university chemistry departments (*Summary 22*). The report from this work identified three key areas that posed barriers for women's career progression and where action was needed:

- Appointment and promotion processes
- Personal and professional support and development
- Departmental arrangements, structures and culture.

In 2006, the checklist was revised for the second RSC report. The revisions took account of recent work by the Athena Project, in particular analysis of ASSET and Athena SWAN (see below). This completed the development of the Framework with good practice grouped under five action areas:

- Organisational framework for action
- Appointment and promotion processes and practices
- Structures and systems that encourage and support career progression
- Department arrangements and culture
- Flexibility of working. (*Summary 27*)

The various usages of the checklists led to the framework that now underpins the Athena SWAN Charter, and the IOP Juno Code of Practice, and was used for the analysis of data in the 2010 ASSET survey. The framework was modified for the 2010 ASSET analysis, when each action point was divided in two (*Summary 20*). A Generic Athena Good Practice Checklist with

examples from university and department contributors to Athena's programmes is *at Appendix E*.

Athena Survey of Science Engineering and Technology (ASSET)

The two university development programmes showed there was a need for data that would engage the attention of senior staff and that universities could use to measure themselves and their progress. The use of the good practice checklists provided objective evidence of the good practice that was in place and developing, but could not offer evidence of the impact of the changes made in terms of staff perceptions, experiences and expectations.

In 2002 Athena had a small amount left from its HEFCE funding, which could only be spent in grants to universities. This went to Bristol University and UEA to develop, run and analyse the first ASSET.

The survey in 2003 explored the areas previous work had identified as important for career progression, what underlay the differences of men and women and how far they related to the organisation and culture of SET and of universities), the:

- Activities internally and externally that might influence career progression
- The equality of treatment of men and women in their department, and how their contributions were valued by their departments
- Experiences, perceptions and career development needs at key career transition points.

This first survey ran in 23 universities, 12 of which had not previously had contact with the Athena Project. The universities gave a commitment to use the results to work towards the project's aims.

The survey report identified areas where good practice could make a difference to and improve the representation and progression of women in science. Findings suggested that women were as ambitious as men, and as academically active, but did not make it to the top in the numbers that reflected their contribution to science. However, if they did get to the top they still felt that they were less valued than their male colleagues (*Summary 21 Athena Report 26 and Statistical Tables*).

In 2004, the survey was re-run in 17 universities that had not participated in the 2003 survey. It also covered scientists working in Research Council funded research institutes. The university findings from 2003 and 2004 were combined (*Summary 23 Athena Report 27 and Statistical Tables Athena Occasional Papers 4 & 5*).

The 2006 survey, unlike the previous surveys, was also open to scientists outside of HE, including the NHS and research institutes. Universities were not able to access their own data. Universities, schools and FE institutions that had not previously engaged with ASSET contributed low respondent numbers. The different approach led to reversal of the survey gender balance, which made it impossible to measure change. The lessons learnt from this proved valuable for the 2010 survey (*Summary 25*). Information from the 2006 survey was used by the Women in Academic Medicine (WAM) joint Imperial College BMA project funded by HEFCE (*Summary 26*).

At the end of 2007 the Royal Society became the owner of ASSET. The most recent survey was in 2010. ASSET 2010 was funded by HEFCE with a grant to Imperial College London and the Royal Society. It was upgraded to make it possible for universities and large departments to analyse their results, compare them with national findings, and use them in their Athena SWAN submissions. Headline Findings from ASSET 2003/4, and 2006 findings were published by the Athena Forum in 2009 (*Athena Report 2*).

The Athena Project's work with the Royal Society of Chemistry and Institute of Physics

In 2003, the Athena Project worked with the RSC and IOP. They supported the project financially and had access to departments. The IOP provided funding for the project from 2002 onwards when it offered a prize, which was awarded to the Scientific Women's Academic Network (SWAN).

The Athena Project supported the IOP on its site visits for the report *Women in University Physics Departments A Site Visit Scheme 2003-2005*. The project also worked with IOP in the development of their Juno Code of Practice and awards scheme launched in June 2007. The principles in the Juno Code were based on the Athena Framework. Juno complemented Athena SWAN, with reciprocal recognition at Athena SWAN Silver and Juno Champion level.

In 2006, the Athena Partnership was developed with the RSC, IOP, RAEng and the UKRC. The Athena Partnership was planned as a grouping of STEM professional institutions and learned societies who were committed to fostering good practice in higher education. The partnership did not survive the departure of four key people from the professional societies at the end of 2008 (*Summary 28*).

The Athena SWAN Charter and awards scheme

The Charter emerged from the conference of one of the local networks funded by the Athena Project- the Scientific Women's Academic Network (SWAN). The Athena Project worked with the network to develop the Charter and award scheme, which was launched in July 2005 with ten founder members, drawn from the project's university network.

One of the drivers for SWAN was the Athena Project's experience from its work with the RSC in chemistry departments. A senior scientist, man or woman, on a platform, talking about good practice and culture change and their positive effect was much more powerful than a similar message delivered by an administrator, or an equality and diversity officer.

However, participating departments had been given a guarantee from the RSC that they would not be identified in any way other than in the list of participating departments. Athena SWAN became the answer. The first two Gold Athena SWAN award holders, the Department of Chemistry at the University of York and the School of Chemistry at the University of Edinburgh were two of the five 'best' departments identified by the joint RSC/Athena Project work (*Summary 24, Athena Report 23*).

The Athena Project's legacy

In terms of what the Athena Project set out to do it was successful. The project:

- Identified the barriers to career progression faced by women, raised awareness and improved understanding of them
- Identified the good practice that universities and departments needed to put in place to improve the representation of women in STEM, developed tools and approaches to benchmark good practice and culture change
- Built a women and science community of men and women committed to its aims, who championed its work and who continue numbers to do so
- Engaged the active and continuing support of the Royal Society, the RAEng, IOP and RSC
- Made sure that universities took ownership of both the problems and the solutions.

Learning from the way the project worked and achieved these successes is explored in Section 2 and Section 3 covers the ways that universities and departments changed their culture and the good practice that was identified, developed and encouraged in the Athena Project's programmes. The work of the Athena Project is continued by Athena SWAN which now has over 110 members and the Athena Forum set up in 2008 with the support of the Royal Society on which the main STEM professional bodies and learned societies are represented.

Section 2 - Learning: The Factors Contributing to the Athena Project's Success

The Athena Project- some particular features

The difference between the Athena Project and any future STEMM diversity programme for under-represented groups in STEMM or other academic or research workforce is that:

- Women are an easily identifiable and recognisable group
- Women make up the majority of the UK working age population
- At undergraduate level women make up the majority of students.

However what is clear from the project's work is that anything done to help women helps everyone, women and men, staff and students. One of the strengths of the project was that it crossed the range of scientific (and engineering) disciplines. It brought together scientists from different disciplines, from different and disparate universities.

A science based project led by scientists

The Athena Project was set up by women in the academic science community, for women in the academic science community. It was not led or managed at project, university, or department level by equality and diversity (E&D), HR or staff development practitioners. It was led by research active scientists and engineers and this reflected the focus of the project – women's career progression in science. Delivery of change had to be via that community, which had to own the changes that were necessary.

The Athena Project's committee members were all women and mainly scientists. The committee had a wide network of senior scientists and engineers, deans, vice chancellors and pro vice chancellors, who engaged in support of the project and participated in and championed the project's activities and events locally and nationally.

An understated contribution was the importance of the lead the committee took, and successfully encouraged others to follow - speaking about their family and its influence on their careers and their own setbacks as well as their successes. They were role models, who had made it without being/seeing themselves as super women. They wove this into serious scientific presentations. This now seems quite normal, although on the first few occasions, they may have found it uncomfortable.

From its first university development programme (*Summary 2*) onwards, the committee wanted academic involvement. Projects with no clear academic input or leadership were ruled out. In 2004, when the project completed its study with the RSC on good practice in chemistry departments (*Summary 22*) it became apparent that a senior scientist talking about good practice, culture change and their positive effects was much more powerful than when the same message was delivered by an administrator or manager.

Firm foundations

In 1999 the Athena Project started by listening to the science community, in order to:

- Establish the base line -current perceptions, practices, processes and policies
- Identify areas to support with its development grants - areas where action was possible, and where Athena's seed corn funding could make a difference
- Develop the community's ownership of the Athena Project, its aims and the results of its work.

The two university development programmes (*Summaries 2 and 9*) provided Athena with firm foundations:

- A community of men and women committed to the project's aims who championed its work
- A network of university contacts across a diversity of universities and disciplines

- Local networks of female academics who embraced the project's aims and made a difference locally within their institutions
- Examples of good practice developed by university scientists and disseminated by the project.

Early success factors

In 2003, the strong focus on career progression, dedicated team and high level committee, engagement with the SET community, work involving senior university management and focus on actions rather than research were identified as key to the success of the project. The relatively good funding was also a factor although after its first two years the project struggled to secure adequate stable funding.

One important external factor was the high level of continuing support for the project from the Minister for Science Lord Sainsbury and the Government Chief Scientific Adviser Sir David King.

Building on success

A key success of the project was the leverage exercised by the grants to universities. Small grants with matched funding from the recipient universities led to changes in practices, systems and arrangements, and as several partner universities discovered, small changes built together and could kick start cultural change. Mentoring, networks and early career staff development programme initiatives, which were piloted with support from the project, were continued with university funding and resources.

The project built on success and one success led to another. For example, in 1999 the project gave a £5K grant to an early career women's network at the University of East Anglia (*Summary 4*), which ran a small survey (for which they raised external funding). The survey was the precursor to ASSET (*Summary 21*).

The success of the network led the Athena Project to make further small grants for new networks; one based at London Metropolitan University received £3K for its Scientific Women's Academic Network (SWAN). The idea for Athena SWAN and the first draft of the Charter emerged from the plenary session at its opening conference *Women and science, What are the issues, What can we do?* in 2002 (*Summary 24*).

A significant strength of the project was its dissemination of examples of the good practice that was in place and working in UK universities. This started with good practice reports on the first development grants, then with reports on the local networks, winners of the Royal Society Athena Awards, the first recipients of Athena SWAN awards, through to the second good practice report with the RSC, published in 2008. In all over 60 universities participated in one or more Athena Project activity.

From its first workshop in November 1999, which was for the universities who had been offered development grants, the project ran a series of events, locally and nationally. These events included celebrations of its work, conferences, lectures, workshops presentations and award ceremonies, the project also supported and provided speakers for university and networks' events.

The events allowed for valuable networking and experience sharing between people at different universities working towards the same aims, but perhaps at a different stage. The relationships established at these events provided advice and information for attendees which lessened the amount the Athena Project team had to give and helped the project to identify male and female scientists who would be willing to speak on platforms /be ambassadors for the project.

The events also provided the opportunity to show case the project's work to the chief executive and senior staff of STEMM professional societies. The Athena brand became established and

Athena Project events (often early evening) were recognised as useful, and a place to meet senior and influential scientists.

Interactions with STEMM professional and learned societies

In its first year, the Athena Project made little progress with its bid to bring societies together, to share good practice, to support the project's work and to work with university departments. Two events were held, attended mainly by early career women staff with little direct experience of universities and or academic career progression, and who did not have access to committees, senior managers or funding within their societies.

At the time the project had no established track record of work in departments (its work was with universities, not departments) and although most societies had a women's interest member group, they did not have staff expertise in women and science.

In 2003, after the success of the project's two university development programmes, the IOP and the RSC provided funding and access to university science departments. The project's work with the RSC on department good practice continued after the project ended, as did its work with the IOP site visits and the development of their Juno award (*Summaries 22, 27 and 28*).

From 2003 onwards the Royal Society provided funding and a secure office base for the project. The Royal Society Athena Good practice Awards were established with prize funding and support from the RAEng. The scheme harnessed the competitiveness of universities. The opportunity to win a 'Royal Society' badged award was valued, as were monetary prizes. It built useful new university contacts for the project and provided useful learning for developing the Athena SWAN award scheme (*Summaries 17 and 18, Athena Reports 18-21 and 23-25*).

Athena Project tools and approaches

The Athena Project developed three tools/approaches, which could be used or adapted by diversity programmes for other professional workforces.

The Athena framework for action and good practice checklists continue to be used by universities and departments - they are easily adaptable and provide an effective way to identify examples of good practice for dissemination.

The ASSET survey is due to run again in 2015 and could provide useful information on the views, experiences and expectations of minority groups within the UK academic science and engineering workforce. (Previous ASSET surveys had higher proportions of disabled respondents than HESA data suggest). The next run should provide valuable insights into culture change and the impact of SWAN.

The Athena SWAN Charter and award scheme is now well established and continues to expand and deepen its presence and its strengths.

Section 3 – Findings: Good Practice and Culture Change

Approaches to change

The projects in the second Athena Project development grant programme in 2000 (*Summary 9*) focused on cultural change and identifying and understanding the processes and practices in universities and SET departments that presented barriers to women's progression.

This work identified two factors in departments that were changing their culture:

- Leadership from the top, with the Head of Department acting as champion, was critical to changing culture, making the changes stick, and to changing behaviour - simple changes to processes that delivered clear benefits to staff could start to change policy and behaviour, but without a Head of Department prepared to introduce changes and monitor adherence, little would be different in the medium and long term
- The age profile of the department, and the diversity of its staff, made a difference - younger men and women (with and without families) had different expectations and needs to their older colleagues. Those younger staff members' careers (and their science) could not thrive unless the working culture of the department reflected this.

However, work in 2006 on Athena SWAN showed that the departments that did have good practice in place often did not identify what they were doing as good practice. To them it was just how they did things.

Sustaining change

Athena Report 22 reviewed the good practice in the project's first four years work. The contributing universities had all built on previous work and their programmes were based on recent initiatives and activities, or focused on areas already identified by the university as needing action. The work of the universities aimed to tackle the two fundamentally important issues, the nature of the academic career and the culture of the institution.

The universities' work started to change the culture, and the processes, practices, arrangements and systems supporting that culture. It showed the interdependency of good practice and culture; good practice could lead to culture change. However, an open, inclusive and supportive culture was essential to sustaining good practice.

The work of the universities was cumulative. They identified gender imbalances and took action to improve the profile and position of women. The causes of women's under representation were explored and initiatives were put in place to build the confidence of women so that more would put themselves forward for appointments and promotion. They recognised that initiating and sustaining change required different approaches and structures. However, without early successes that were both recognised and celebrated, they would not have had a foundation on which to build.

The universities with a track record of sustaining culture change had a support structure embedded in their organisation. They knew that unless they took action at both institutional and departmental level they would not achieve long term success. They recognised the importance of building awareness and understanding in the academic community at large on the differences in men's and women's career progression, the causes of those differences, the constraints on women's career progression which were embedded in university and the department structures and organisation, and the perceptions on which career decisions were based.

They regularly monitored their work, measured and reported their progress and outcomes to university and department committees to sustain management interest and keep the issue on their agenda. They regularly connected with their women in science community, so that they

were able to contribute to the development and pace of change, and to make sure that changes, perceptions and expectations kept pace with each other.

The project's work showed the importance of individual personal and family circumstances and experiences, which led male senior scientists to become involved in women in science activities and programmes, to champion good practice and to take a lead in changing the culture in their university and/or department. These included:

- Men who had caring responsibilities
- Fathers whose daughters were studying STEMM at undergraduate or postgraduate levels, or embarking on an academic career
- Fathers who had their own experience of taking their families away from their family support networks and into a new culture
- Men in a dual career partnership
- Men whose family responsibilities required them to work flexibly e.g. to do the school run
- Men who had worked in a good practice department or a department where women were reasonably well represented at most levels

The Athena Project's findings on good practice

The Athena Guide to Good Practice 1999-2002 (*Athena Report 22*) summarises the project's findings on good practice from the first four years of the project's work:

- The good practice that worked was simple and was well targeted. It was through small well focused local projects that progress was first made.
- Where the good practice in place had been developed by practising scientists and engineers, it carried more weight than good practice emerging from university HR departments, staff development units, or E&D practitioners.
- The fact that the good practice advocated by the Athena Project had been developed and tested by academic scientists in UK universities removed the excuses for not doing anything.
- The good practice was in the main not institution specific and most of it could be adapted to local circumstances and resources.
- In the short term small and simple changes, which cost little other than in individuals' time, could improve the working environment and career opportunities for women.
- In the medium term, tackling key university processes and practices could be easier than a direct move on the culture - although these changes can ultimately lead to a culture change.
- The culture of science, research and universities, which has developed over many years, would take a long time to change.

The second joint Athena Project RSC report on departmental good practice (*Summary 22*) summarised the findings from work by the project and the RSC at the time the project ended:

- Whereas good practice benefitted all, staff and students, men and women and their science; bad practice had an incrementally prejudicial effect on women's career progression
- Good practice was not about how many women were in the department but about processes that were fair, flexible, accessible and transparent to all
- There was no evidence that the introduction of good practices adversely affected the excellence of the science carried out - good practice equated with good science
- The experience of good practice departments was that the changes they had successfully introduced to their practices and procedures were not expensive in terms of their direct costs but required understanding and planning and took time
- Successful action was based on good planning that took account of a department's academic plan and that was based on evidence.

- Good practice departments appeared to be able to attract and retain women better than other departments.
- Good practice departments didn't target measures specifically at women because improved working conditions benefitted all and made for a supportive and comfortable department.

The Athena Framework for Action

The findings from the Athena Project's work and the characteristics of the good practice as identified, developed, adopted and encouraged by universities and departments in the project's programmes is described below under the framework's action areas.

The framework underpins the Athena SWAN recognition scheme and the IOP Juno Code of Practice, and was used for the analysis of data in the 2010 ASSET survey. The development of the framework and good practice checklist is described in Section 1. Specific examples of good practice are included in the summaries of individual programmes and initiatives in Appendix B. The generic good practice checklist in Appendix E details the framework, its principles, the benchmark statements and the indicators that support it.

Action Area 1 The organisation for action

An established organisational structure is key to sustaining cultural change and the structures, policies, practices, and arrangements that support the culture.

In 1999, (prior to Athena SWAN and its award scheme) few universities had women and science committees or working groups and those that existed made little impact on university senior management. The programmes in the Athena Project recognised the importance of high level commitment and reporting, which gave the work visibility and credibility and enabled action to be taken. They showed the value of a tripartite approach to making change happen, university senior management, heads of departments and women working together:

- Senior managers who were prepared to respond to evidence, to listen to the views and voices of women in their science community and to take action to examine and if necessary change university policies, practices and systems
- Heads of Departments who recognised their critical role in implementing change and who took seriously their responsibility for supporting and developing staff at all levels
- Female scientists who expected more support and guidance from departments and line managers, who took responsibility for their own career development and who understood and engaged in policy development.

Action Area 2 The evidence base for action

The collection, communication and use of quantitative and qualitative data is the basis for successful action planning and for measuring progress.

Before Athena SWAN, the collection, monitoring, use, reporting, and publicising of data on women's representation in management, on committees and women's career progression was not widespread at faculty or department level. Where data were collected it tended to be available only to university senior management and was rarely shared with or checked by departments. Opinion surveys were not carried out or if they were, were often not analysed by gender and data at faculty and department levels were not usually available.

The programmes in the Athena Project were driven by institutional awareness of the under-representation of women, when compared with national statistics. The programmes teams knew evidence before action was important. They analysed their staff progression profile, and compared their qualitative and quantitative data and trends against the UK picture. They surveyed their staff, and held focus groups to identify concerns, attitudes and perceptions. They presented their evidence to senior management and used it to inform action for change. They used survey data to:

- Identify what staff saw as the key factors in promoting career development and the obstacles to career progression
- Provide hard evidence of the largely indirect and unconscious discrimination
- Help improve awareness and understanding of the issues for women in SET
- Move women's underrepresentation higher up management's priorities
- Decide their priorities, set action agendas, provide the base line for setting targets that were realistic and achievable and to measure future progress.

Action Area 3 Appointment and promotion processes

University, faculty and department appointment and promotion processes, systems, and the decisions taken are open, transparent and fair.

Universities monitored lecturer appointments and knew that where women applied, they were more likely to be short listed and appointed. They deduced that the under representation of women at lecturer level was not the result of overt discrimination, but related to their processes and practices. They showed that understanding the differences, in reality and perception, of women's and men's approach to, and preparation for appointment and promotion was an important first step in making the procedures, practices and criteria fair, open, and well understood. They:

- Identified differences in practices between departments, publicised examples of good practices and reviewed procedures and criteria to ensure consistency across departments
- Improved dissemination of information on promotion procedures, eligibility and the constitution of promotion panels
- Published clear guidelines on routes to promotion and eligibility
- Used women's networks to advertise posts
- Included welcoming positive action statements in advertisements
- Reviewed the material/language used in job particulars
- Provided information to candidates on what the selection process entailed
- Asked staff to review selection criteria for any inadvertent negative impact.

Action Area 4 Levelling the appointment and promotion playing field

Universities and departments ensure that men and women are equally likely to apply for appointments and promotion, and are equally likely to be successful.

Work in the programmes in the Athena Project showed that women:

- Tended to hold back when opportunities arose and waited too long before applying for appointment and promotion
- Lacked confidence and were concerned that failing to be appointed/promoted had a negative impact on subsequent applications
- Saw universities as lacking a management structure, which made career progress a lottery
- Felt promotion was more difficult for women.

Action taken included:

- Pairing women getting ready for promotion with more senior colleagues who advised on their CV/case for promotion
- Provision of feedback to heads of departments on promotion outcomes to cover positive feedback for unsuccessful candidates
- Introduction of department seminars on promotion procedure before the promotion round (which culminated in the celebration of staff who had been promoted)
- Introduction of staff development programmes to make sure mid-career academics thought proactively and strategically about professorial promotion

- Monitoring to determine how far they had achieved their objectives of an increase in women applying for/being shortlisted for/being appointed to lecturer posts, and a greater awareness of the issues among heads of departments and senior staff generally.

Action Area 5 Career development provision

Career development provision and staff appraisal, in particular for early career researchers, is appropriate and effective and its quality is monitored.

University surveys showed mismatches between:

- University commitments in key policy statements and the experiences of research staff trying to establish their careers
- Factors identified by researchers as key to career development (research performance, ability to write research proposals and publication record) and the tasks they undertook most frequently (analysis of data/field work, experiments and menial/housekeeping)
- The career expectations of researchers and senior academics expectations for them. Most researchers received little/no support in planning their future. Senior staff recognised that few would achieve an academic career, but this advice was not passed on.

The programmes in the Athena Project identified support from Heads of Departments as essential to the success of career development programmes, as was the support and participation of principal investigators who held a major responsibility for their research staff's career progression, and senior academics who were responsible for the ethos of the departments. They recognised this in their action plans by including:

- A review of university staff development policy
- Improved communication on the staff management development programme
- A requirement that all staff, including researchers should be appraised
- Introducing an entitlement to staff development for research staff
- Providing coherent career support/staff development opportunities for researchers and guidance for their managers
- Improvements to the management development programme to equip heads of departments and heads of research teams with the management skills they needed
- Training for heads of department and principal investigators to become more effective managers of researchers
- A requirement for heads of department to minimise internal conflicts within their research teams.

Action Area 6 Developmental activities

Systems are in place to ensure that staff engage in activities, internal and external, that contribute to their career progression and professional profile.

Universities in the Athena Project's development programmes found that:

- Senior level support and endorsement was important in order to raise the profile of networks and women's development programmes and activities
- Women were reluctant to 'put their heads above the parapet' if what they were doing was not seen as legitimate academic activity, or viewed as making an obviously valuable contribution to their research or career progression
- Mentoring and networks could in a relatively short timescale be highly effective ways to help equip women early in their careers with the support, self-awareness and confidence necessary for a successful SET career.

Athena Report 7 Good Practice in the 2000 development programme gives information on mentoring schemes, development programmes, and networks for early career women, their benefits for individual participants and institutional impact.

Action Area 7 Effective management

Universities and departments ensure that the administrative and academic contributions of their staff are effectively, fairly and openly managed and resourced.

The Athena Project's programmes showed that department exclusion was often subtle, embedded in the organisational structure, and as such difficult to counter, and that:

- Women's career progression, the extent to which they felt comfortable in their work and the extent to which their careers benefitted from the contributions they made all related to the way their department was managed, the working practices it adopted, the way it allocated resources and responsibilities, and recognised and rewarded individuals' contributions
- The day-to-day pressures of departmental life were critical to women's decisions to leave academia. Women were subject to the competing demands of their careers and their family responsibilities as well as the competitiveness of the science workplace
- There was an inverse relationship between the perceived value/recognition of a role and the time and energy needed to fulfil them
- Committee memberships might help in meeting senior/powerful people but the workload could be out of proportion
- There was little evidence of systems for appointing individuals to administration roles, so individuals could dodge, while women who were competent just got more.

The action they took to address this included:

- Making the systems for selecting committee members open fair and accountable, with clarity on whether members were elected or appointed, and appointments on a fixed term or rolling basis to give more staff committee experience
- Targeting women with training and development opportunities that would equip them for senior department, faculty and university committee appointments
- Introducing fair department arrangements for appointments to and rotation of administrative responsibilities, appraisal, allocating individuals to research groups, and allocating and monitoring teaching loads
- Work shadowing to enable women to see what was involved in senior positions and establishing a university network for female members of committees
- Including in the training programme for committee chairs the behaviours that had been identified as inhibiting the effective contribution of women on committees.

Action Area 8 Workplace culture

Working environments are open, inclusive, responsive to and supportive of staff's career ambitions and expectations. Staff and students are treated with respect, their contributions are recognised, and staff are able to enjoy the rewards of a career in STEM.

The Athena Project's 2000 development programme projects found:

- Overt discrimination was not the problem. It was the established systems and women's perceptions of them that were the barriers
- Variations between departments. The age profile of the department made a difference to the way women felt they were treated and regarded
- Heads of department who saw inappropriate language and behaviour as 'old school', which would eventually disappear did not see barriers within their own departments
- Some male dominated departments where women were not seen as having serious careers and where their onerous admin and teaching loads compromised their research.

Work with the RSC helped to define the characteristics of open and supportive department management - the best departments did not target measures specifically at women but created a culture of diversity where all individuals could thrive and be rewarded for their contribution, regardless of gender and family circumstances.

Action Area 9 Flexibility

Universities and departments ensure the flexibility that underpins successful careers.

Universities found:

- Family friendly policies were of no avail if they were not taken up either because of the culture of the department, or because no one outside central admin/HR knew about them and how they worked
- Young men and women with families had different expectations and needs for flexibility than their older, 'established' colleagues. Younger staff members' careers (and their science) could not thrive unless the department working arrangements were flexible
- Present-ism disadvantaged those with dependants
- Promotion was more difficult for women in reality, as well as perception, due in part to a lack of flexibility in combining career and caring responsibilities
- Departments' early evening timing of inaugural lectures and seminars excluded those with child care responsibilities, not going to them was frowned upon, women missed out not just on the interesting and eminent speakers, but on the drinking and talking afterwards when good connections could be made.

Athena Report 7 on Athena's first development programme gives information on perceptions of the importance of flexible working from surveys by the Open University and University of East Anglia.

10 Career breaks and interrupted careers

Universities and departments ensure that the arrangements made for career breaks enable individuals to maintain a career trajectory that meets their circumstances, abilities and ambitions.

Work by universities showed that:

- Career progression was different for those who were or who had chosen to be childless
- Women were not well informed about the effect of taking maternity leave and part time working
- Women were reluctant to raise such questions within their departments and did not know where to get independent advice and guidance.

Career breaks and returning did not feature in the Athena Project's first development programme where the focus was on early career researchers. However a few universities did have returner arrangements in place (*Appendix E, Athena Report 26, ASSET 2003*). Findings from Athena's first ASSET gave a clear steer on what women and men who had taken a career break suggested they had needed to help in their transition back to work. The Athena Project's second joint report with the RSC (*Summary 27*) did include some examples of good practice but not all departments had any experience of managing career breaks.

Appendix A

A Personal Reflection

Fifteen years ago when we were planning the Athena Project I think we might have been surprised at the difference we made and the success of Athena's legacy. Before 1999 there had been no national university based, management led women in science initiatives. The female scientists who were active in women led initiatives were often not well positioned to make change happen. They knew, often at their own personal cost, what was wrong with women's career progression. Successful female scientists were often reluctant to engage with problems where they could not foresee successful solutions.

The Athena Committee knew what it wanted to achieve but were less certain on how much good practice there was in UK universities; so a substantial good practice prize fund offered by Pearson PLC languished untouched until late 2002 when the first Royal Society Athena Good Practice Awards were made.

Early in the life of the project I was challenged by a Head of Department who contended that if he knew what to do to attract and keep women in his department, he would do it. At the time I couldn't respond with confidence. Today, faced with the same question, I would be spoilt for choice. However, if he were still head of that same department, I might be asking him what he is doing in preparation for his department's gold SWAN renewal.

Athena took away the excuses for inaction, for poor practice, and for exclusive, unsupportive, and unwelcoming departments with impenetrable processes.

Writing this review has reminded me of what we left unfinished. ASSET does provide qualitative evidence for SWAN, but Athena did not provide guidance for SWAN on staff and student data sets to measure progress, or objective measures of the good practice in place. (Both were recommended by the first (2006) SWAN recognition panel as important to developing an objective and robust recognition process). Time and external conflicting interests made their achievement impractical.

The growth and repute of the Athena SWAN Charter and its awards now is starting to achieve what the committee saw as a critical step in achieving its aims, (oft discussed, but beyond our realistic and time limited ambitions) the linkage of research funding to good practice.

Yes, progress is being made, but many of our findings on good practice and culture change are as relevant today as they were ten or more years ago: particularly so for the new generation of early career scientists and those whose universities and/or departments have yet to make a successful bronze SWAN application. For those at the start of their Athena journey, and who do not want to spend too much time reinventing the wheel; I would suggest two useful 'reads' The 2003 Athena Guide to Good Practice 1999-2002 (*Athena Report 22*) and ASSET 2003 Athena Report 26 on the first Athena Survey of Science Engineering and Technology.

Caroline Fox

Athena Project Programme Manager 2001 - 2007

Appendix B Chronology of the Athena Project

This Chronology provides a timeline of the Athena Project, from before its development to its close. It places the work of the project in the context of external events, its finances and changes in office location, main supporters and funders. It has links to summaries of individual programmes and initiatives in Appendix B and to Athena Project and external reports (which are available on the Athena Forum website www.athenaforum.org.uk).

1993

Government White Paper - SET Realising our potential

The Government White Paper *SET Realising our potential a Strategy for Science Engineering and Technology* stimulated interest in the position of women in SET and concluded that women were the UK's single most under-valued and consequently under-used human resource.

1994

Report for the Office of Science and Technology -The Rising Tide

The *Rising Tide* report was a follow up for the OST to the White Paper SET Realising our potential. The report concluded there was scope to attract more women into SET. Recommendations were made on research funding, but none for universities. A dedicated unit was set up under OST for three years to take forward recommendations, and work with employers and professional bodies.

Commission on University Career Opportunity

CVCP (the forerunner of Universities UK) established CUCO (the forerunner of ECU) to encourage universities to realise the educational, economic and cultural value of diversity. Three members of CVCP helped develop the Athena Project, and became members of the Athena Committee.

1995

The Scottish Higher Education Funding Council Initiative on Women in SET

SHEFC launched their Women in SET Initiative. It aimed to 'encourage the development, dissemination and adoption of good practice in relation to women in SET in the teaching, learning and research environment in Scottish HE institutions.' SHEFC responded to the Research Concordat with its own initiative which involved 7 universities. There was no equivalent activity in England.

1996

Voices from Women in SET

Professor Julia Higgins, (who became the founding Chair of the Athena Committee) contributed to *Voices from Women in Science* published by AWISE. The aim of the publication, sponsored by Imperial College, was to improve the understanding of what was required to keep women on the scientific career path. AWISE founded by Joan Mason in the early nineties had a small number of university-based branches. <http://camawise.org.uk/>
<https://sites.google.com/site/oxfordawise/>

1997

SHEFC guides on women's career progression

SHEFC published three guides with examples of good practice in improving access to, participation in, and progression through academic careers in SET.

HEFCE invited proposals for women in SET initiative in England

Brian Fender the Chief Executive of HEFCE invited a small group of women to make proposals for a women in science initiative in England. The Athena Project launched in February 1999 was the result. The Athena Project was seen as the English HE response to the 1994 Rising Tide

report.

Nepotism and Sexism in peer review Nature 387

The Wenneras and Wold Report *Nepotism and Sexism in peer review* Nature 387-(pages 341-343) was published. It showed that in Sweden, women had to be 2.5 times more productive than men in order to get the same peer rating.

1998

Development of Athena Project

The project was developed by a group of women with representatives from HEFCE, Universities UK, OST DTI, and a project office set up at Imperial College with core funding from HEFCE.

Wellcome Trust - Who Applies for Research Funding

Following the 1997 Wenneras and Wold Report, the Wellcome Trust reviewed its processes. It found no immediate evidence of discrimination. However it did find that women were applying for research funding in much lower number than would be expected, based on representation of women in HE. They subsequently commissioned a study to look at the factors behind these low rates -*Who Applies for Research Funding? Athena Report 8*

European Technology Assessment Network (ETAN) Report

The ETAN Expert Working Group Report for the EU Commission on Women and Science *Promoting excellence though mainstreaming gender equality* included an overview of issues and recommendations from previous reports for women and science across EU countries. The recommendations in the report were at EU and member state level. *Athena Report 8*

Royal Society of Chemistry - Factors affecting the career choices of chemistry graduates

RSC published *Study of Factors affecting the career choices of chemistry graduates. Athena Report 8*

1999

Athena Project launch

The Athena Project was launched in February by the Minister for Science Lord Sainsbury. The Athena Project's offices were at Imperial College London.

The Athena project's first development grant programme

In May the Athena Project invited UK HEIs to bid for development grants for projects to run from autumn 1999 to summer 2000. In November the project held its first event for universities a workshop for the universities which had been offered grants.

Summaries 2 to 8, Athena Reports 1, 8 & 22, Athena Case Studies 1 & 3

Parliamentary Office for Science and Technology

In June POST invited the Athena Project to run an online consultation to provide input to a House of Lords Science and Technology Select Committee enquiry into Science and Society.

Summary 1, Athena Report 8, POST Report

2000

The Athena Project's second development grant programme

UK HEIs were invited to bid for the project's second round of development grants to start work in summer 2000. Athena funded five culture change projects.

Summaries 9 to 14, Athena Reports 9-13, 15, 16 & 22, Athena Case Studies 2 & 6

Athena Project moves to Universities UK and appoints a Research Officer

The Athena Project's office moved from Imperial to Universities UK. An Athena Research Officer was appointed with two year fixed term funding from OST DTI.

Grants to Local Networks

With insufficient funding for a third full programme, the Athena Project funded two of the networks developed in its 1999 programme for a further year, and made small grants to three more.

Summary 15, Athena Reports 14 & 22

2001

Reports launched

In February the Athena Project's first reports were launched. The Government Chief Scientist David King challenged universities to adopt the approaches suggested for tackling the under-representation of women, and urged Vice Chancellors to look out for the good practice forthcoming from the project. *Summaries 2 to 8, Athena Reports 1-8*

Meeting: How can the number of women in senior SET posts in the UK be increased?

In March the project's work was presented at the Royal Society. The meeting: *How can the number of women in senior SET posts in the UK be increased?* considered the UK position in the light of the ETAN and Wellcome Trust reports and ways in which the Royal Society might make an impact. This led to Royal Society support and funding for the project.

Athena Project moves to Equality Challenge Unit

In April the Athena Project moved offices to ECU. Direct HEFCE funding ended.

Athena Lecture at Imperial College

The first Athena Lecture at Imperial College was delivered by Professor Lotte Bailyn of MIT. Work at MIT showed bias existed against women faculty members. The report from this work hit the front page of the New York Times. www3.imperial.ac.uk/events/athenalecture *Athena Occasional Paper 2*

First Athena Good Practice Guide

The first Athena Good Practice Guide was published. *Summary 2, Athena Report 8*

Athena Project Research Conference

In September the Athena Project held its first conference at the Royal Institution. *Summary 16, Athena Report 17, Athena Occasional Papers 1 and 3*

Royal Society Athena Awards Scheme

In September the Royal Society Athena Good Practice awards were launched. *Summaries 17 & 18, Athena Reports 18 to 21 & 23 to 25*

The Athena Project's first event in Scotland

In November, the project held a conference on Athena's Second Development Programme at Heriot-Watt University and launched reports on the work of the universities contributing to the programme. *Summaries 9 to 15, Athena Reports 9 to 13*

2002

By spring, there was little left of the project's development funding earmarked by HEFCE for university use. What was left went to support Bristol University and UEA on the ASSET survey. *Summary 23*

Athena Network and Dissemination Programme

In September DTI offered the project six months funding. (The Greenfield report was due to be published later in 2002). This enabled the project to support its Local Academic Networks (LAWNs) programme. The project saw a UK-wide network of LAWNs as part of its exit strategy. *Summary 19, Athena Case Studies 1 to 6*

Scientific Women's Academic Network (SWAN) launched

In October this network was launched with a conference at London Metropolitan University *Women and Science: what are the issues? What can we do?* The idea for a Charter and its first draft emerged from the Conference plenary session. *Summary 24, Athena Report 24*

Royal Society of Chemistry - Recruitment and Retention of Women in Academic Chemistry

The RSC published its report, a follow up to their 1999 study on women's career choices. The report identified what it was about certain departments/institutions which caused women to apply for and accept posts and subsequently encourages them to remain in those departments/institutions. The report included examples of good practice in university chemistry departments. *Summary 22*

SET Fair Report to secretary of state for trade and industry

The report, commissioned by Professor Susan Greenfield, was published in November. The report recommended *an integrated approach on the difficulties for women in science*. It considered *the successes and failure of UK women in science organisations and ways to address the apparent blockage of promotion in HE to ensure more women are recognised for their contribution*. It recommended a Working Science Centre.
http://www2.set4women.gov.uk/set4women/research/the_greenfield_rev.htm

Royal Society Athena Good Practice Awards

Also in November, the Royal Society Athena Good Practice Awards for 2001/02 awards were presented by Lord Sainsbury, Minister for Science. *Summary 17, Athena Reports 18 to 21*

2003

In February, OST DTI agreed further funding for the project to end December 2003. This funding was for a report on the state of good practice in UK universities, to provide a picture of the UK position at university level. This was the first development/use of a good practice check list for universities.

Summary 20, Athena Case Study 7

First Royal Society Athena Conference - Athena Advancing

The March conference at the Royal Society celebrated four years work with the publication of *Athena's Guide to Good Practice 1999-2002*. *Athena Report 22 Athena Guide to Good Practice 1999-2002*

Royal Society Rosalind Franklin award

In March the first Royal Society Rosalind Franklin award was made.

First Athena Survey of Science Engineering and Technology

ASSET ran for six weeks, in 23 universities, 12 had no previous contact with the Athena Project. There were 2,172 respondents, 30% were female. *Summary 21, Athena Report 26*

A Strategy for women in science, engineering and technology

In April the Government response to *Set Fair* was published *A Strategy for women in science, engineering and technology*. The government committed to establish a new resource centre.

Athena Project moves to the Royal Society

In the autumn the project moved to the Royal Society. The Athena Project was a partner in an unsuccessful bid to DTI led by the Royal Society (other partners included the Engineering Technology Board, the Institute of Physics and the RAEng and SEMTA) to provide a Resource Centre for women in SET.

2004

Royal Society Athena Awards

In March Royal Society Athena awards for the 2002/03 were presented on the occasion of the first Royal Society Athena Lecture. *Summary 18, Athena Reports 23-25*

UKRC

The UK Resource Centre for Woman in Science was established in Bradford.

ASSET Report

In April the report on ASSET 2003 was launched at a conference hosted by Bristol University. It provided publicity for a second run of the survey in 2004, which was open to any universities who had not participated in the 2003 survey. *Summary 21, Athena Report 26*

ASSET 2004

ASSET ran in the autumn and was open to scientists working in 17 universities that had not participated in the 2003 survey. Of these 17 universities 12 had no previous contact with the Athena Project. The survey was also open to scientists in research institutes. *Summary 23, Athena Report 27, Athena Occasional Papers 4 & 5, Athena Forum Report 2*

Report on Good Practice in Academic Chemistry Departments

In December the joint report with RSC *Good Practice in Academic Chemistry Departments* was published. This was the project's first work in partnership with a professional society. *Summary 22, RSC report Good Practice in Academic Chemistry Departments*

2005

ASSET at American Association for the Advancement of Science

In February comparative university and research council data from ASSET were presented at AAAS in Washington. *Athena Occasional Paper 4*

Athena SWAN Charter and Award scheme

The Scientific Women's Academic Network won a 2002/03 Royal Society Athena Award and an IOP prize for the work of the network in developing the SWAN Charter. *Summaries 19 & 24 Athena Report 23, Athena Case Studies 8-20*

ASSET 2004 Report

In December the reports on ASSET 2004 were submitted to the Research Councils and Wellcome Trust. *Summary 23, Athena Report 27*

Royal Society Equality Challenge Unit Athena Conference

The focus of the conference *Maximising UK ASSETs* was the under representation of women in science, particularly at higher levels in HE. *Athena Occasional Paper 5*

2006

Women in University Physics Departments A Site Visit Scheme 2003-2005

In February 2006 the IOP published their report *Women in University Physics Departments A Site Visit Scheme 2003-2005*. http://www.iop.org/publications/iop/archive/page_42615.html

ASSET 2006

ASSET 2006 was opened to scientists outside of HE. The majority of the 6,243 respondents were employed in HE the next largest group was NHS, followed by research institutes. Unlike the previous surveys, individual universities couldn't access their own data. *Summary 25, Athena Forum Report 2*

Women for Science Advisory Report

In June the *Women for Science Advisory Report* was published by the Inter Academy Council. Its advice and the actions proposed were for national academies.

First Athena SWAN awards

The first Athena SWAN recognition awards were presented in November. Case Studies were written on the department and university winners of awards. *Summary 24, Athena Case Studies 8 to 20*

2007

IOP Project Juno Code of Practice

In June the IOP published the Juno Code of Practice and its JUNO awards scheme. It was designed to be complementary to the Athena SWAN Charter and awards.

Athena SWAN

An administrator was appointed for Athena SWAN. In July, Athena SWAN transferred to ECU and responsibility for the Athena SWAN Charter and award scheme passed to ECU and UKRC.

Women in Academic Medicine (WAM)

The Athena Project was a partner in a project led by Imperial College and the BMA. ASSET 2006 collected data from academics and NHS staff and this was used to inform the report. *Summary 26*

Planning for Success: Good Practice in University Science Departments

Work with RSC started on second initiative on good practice. The report *Planning for Success: Good Practice in University Science Departments* was published by the RSC in 2008. http://www.rsc.org/images/GoodPractice_tcm18-127915.pdf *Summary 27*

Athena Partnership

The Partnership was developed with the RSC, IOP and UKRC, with support from the RAEng. It was planned as a grouping of STEM professional institutions and learned societies committed to fostering good practice in HE. *Summary 28*

Final Royal Society Athena Conference

In November the final Royal Society Athena Conference took place *UK Research Assets – Use them or Loose them*. The conference explored how far the project had delivered on the action programme it set for itself after the December 2005 conference, and celebrated the Project's achievements.

December 2007 Athena Project closed

Appendix C

Summaries of Athena Programmes and Initiatives

The Athena Project ran a variety of programmes and initiatives; individual summaries are provided in this section. The summaries cover:

- What was done
- Aims and objectives
- Findings - success or failure and contributing factors
- Lessons on good practice and its transferability
- Outputs, outcomes and impact

References to Athena Project and related external publications are provided at the end of each summary. A short description of all the programmes and initiatives below can be found in the Chronology of the Athena Project in Appendix A.

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Summary 1

(Athena Report 8)

(www.parliament.uk/briefing-papers/POST-Report-10.pdf)

1999 Parliamentary Office of Science & Technology Online Consultation on Women IN SET

In 1999, the Athena Project enabled the online debate between POST and the Hansard Society as input into a House of Lords Science and Technology Select Committee inquiry into Science and Society. The Athena Committee provided the keynote and other contributions to the debate. The resulting POST action agenda submitted to the Select Committee was based on suggestions from the Athena Committee.

Aims and objectives

- To influence Government policy
- To raise awareness of the Athena Project (before it had a programme/was known)
- To drive the Athena Project agenda.

Findings - success or failure and contributing factors

This was an early Athena Project success, with high level interaction, with POST and House of Lords Science and Technology Committee. The POST debate was the first opportunity for Athena to engage with, and listen to the women in science community and to put the project on the map.

Lessons on good practice and its transferability

The debate demonstrated a lack of good practice in UK university science. Most contributors understood the issues and their causes; however, few were able to provide examples of practices, policies, or processes that had made a difference to women's career progression. There was a clear role for the Athena Project in filling this gap.

Outputs outcomes and impact

This initiative identified the areas where action was needed if the representation of women in science in HE was to improve, and helped to frame the Athena Project's own agenda and set the project on its action orientated good practice programme.

The (Athena Project) POST recommendations, based on the contributions to the debate clearly identified and informed and underpinned the project's programme. The recommendations were the project's first venture in identifying and recommending area where good practice was needed.

POST Report133 was published in January 2000. A summary of the report was circulated by CVCP to all Vice Chancellors.

The POST Report recommendations for action are included in *Athena Development Programme 1999 Good Practice Guide* <http://www.athenaforum.org.uk/media/1056/report08.pdf>

Summary 2 1999 Athena Project First University Development Programme

(Athena Reports 1-8)

HEFCE ring fenced some of its Athena Project funding for work by universities. This was used for university development grants. Bids were invited from universities for projects which would address one or more of the key issues identified by the Athena Project: Culture, attitudes and behaviour, institutional policies, systems and practices, research staff and their progression and personal and career issues for individuals.

Six grants ranging from £4-8K were awarded by open competition. The recipients ranged from an HE College to Russell Group universities. They were expected to provide matched funding and include a personal commitment statement from their Vice Chancellor. All the initiatives involved early career women, with personal and professional development, mentoring and networking interventions.

Short reports on the projects were produced for use by other universities. In February 2001, the Government Chief Scientist, speaking at the launch of the reports challenged universities to adopt the approaches suggested by the Athena Project for tackling the under-representation of women, and urged Vice Chancellors to look out for the good practice forthcoming from the project

Aims and objectives

The aim was to support action programmes (not research and development) which would address the keys issues identified by the Athena Project and would:

- Demonstrate the capacity to identify and develop good practice to improve the access, participation and promotion of women in SET
- Be designed to help their own organisation and to have the potential for the dissemination of findings to the HE sector as whole.

The Athena Project needed to:

- Identify what good practice was in place in UK universities
- Obtain examples of good practice that worked, and could be disseminated
- Build a community among university female scientists and engineers
- Connect with individuals, men and women, who might champion the Athena Project and the issue of women and science
- Explore what universities needed to do to improve the representation of women in SET
- Establish a name and a reputation for the Athena Project (originally the project had three years funding from HEFCE, so quick wins were important)
- Engage/raise awareness of senior scientists on the differences in the academic career progression of men and women (their perceptions, expectations, experiences, choices and outcomes, and the constraints and barriers both structural and individual to women's progress to the top).

Findings - success or failure and contributing factors

The Athena Project's first engagement with universities was successful:

- The projects engaged senior scientists and raised awareness of the differences in the academic career progression of men and women
- The Athena Project communicated well with the university community- it used Universities UK information notes/communications to Vice Chancellors
- The selection criteria and process used to award grants was successful and projects with no clear academic input or leadership were rejected
- The Athena Project successfully managed the grants to universities and the Athena Project programme Manager kept in touch regularly with the fund recipients

- Although the grants were small (for universities used to receiving substantial research funding) they had PR value because they were external and had been achieved through a national bidding process.

Lessons on good practice and its transferability

The seven different universities gave the Athena Project its first good practice case reports to disseminate, they showed what could be achieved in a year, and developed grass roots support for the project. In their organisation they shared common features:

- They built on previous work by their universities
- They demonstrated that small simple changes and short interventions could make a difference
- They showed the value of a tripartite approach to making change happen -- university senior management, heads of departments, and women working together
- They were clear that high level commitment within their university was important. It gave credibility, opened doors, provided resources and helped when taking action
- The involvement; of Governors and lay members of Council on project steering groups, School Directors and Deans, in shaping the project gave them ownership, and led to practical support.

Staff development and training programmes that ran alongside mentoring schemes and networks helped participants clarify their career goals, identify their strengths, balance workplace demands and family responsibilities and understand how things work in universities and departments. Matching mentors and mentees to take account of career focus and personal chemistry was important and external (to department or university depending on size) mentoring reduced the potential for conflicts of interest and helped to widen mentees' career horizons.

The projects recognised the importance of Heads of Departments recognising their own critical responsibility for practices and process at department level.

Outputs outcomes and impact

The projects engaged senior men and female scientists and raised awareness of the differences in academic career progression. For the Athena Project they provided good practice for dissemination.

- The projects made a difference to the individuals, both men and women, to the universities who took part and to others who learnt from them
- The HEIs became the Athena Project's ambassadors; they built grass roots support, and provided a support network for each other, and role models for others
- The programme showed that good practice could make a difference to individual women's careers
- The programme findings and good practice were endorsed by the Government Chief Scientist
- The work by universities provided some useful starting points for other universities who wanted to increase the representation of women at all career grades
- A report on the development programme and a good practice guide summarised the good practice from the programme
- The report launch event provided an opportunity for individuals working in their own universities on women and science to network.

In addition to the individual Athena Project Reports 1-6 there are two other reports, *Report 7* is on the 1999 programme as a whole. *Report 8* is a guide to the good practice from the programme.

Summary 3 **1999 Bolton Institute External Mentoring Programme**

(Athena Report 1, Athena Case Study 1)

The Institute ran a mentoring programme for female post graduates and academic staff. The programme was led by a recently established women in SET group at the Institute. At the time, there were no female STEMM academics above principal lecturer level. The mentors were all women and external to the Institute.

The programme was well structured and managed: care was taken in pairing mentors and mentees, mentors and mentees were trained, separately. Mentoring contracts were signed by both parties to guarantee confidentiality. Mentees were given brief details and contact information on their mentors and were expected to arrange their first session, after that it was down to the individuals. At the end of the project there was a meeting of mentors and the project team, at which mentees gave presentations on the benefits of the programme.

Aims and objectives

The objectives of the project were to address the under representation of women in the Institute, to raise their profile, to reduce any feelings of isolation and to encourage more women to apply for/take on more senior roles.

Findings - success or failure and contributing factors

The project was successful in meeting its objectives. For the mentors, mentees and the women who ran the programme it reduced their isolation. Mentees reported increased self confidence and doing things to further their careers which they would not otherwise have done.

Lessons on good practice and its transferability

- Mentoring is important where women are an isolated minority
- A year long mentoring scheme with face to face sessions can be successful and can be the beginning of a long supportive professional relationship
- The role of a mentor needs to be cleanly differentiated from that of line manager
- To be successful, both mentor and mentee need to be committed
- The more prepared the mentee is the more they will get from the relationship
- Mentor training is essential but can be done in a single session.

Outputs outcomes and impact

The programme raised the Institute's profile with other HE institutions locally, 40 of the external academics approached by the project offered to become mentors.

- They achieved 80% success rate for successful mentor pairings
- An academic who listened to the advice she gave her mentor reported that she had successfully applied for a professorial appointment
- For the external mentors the reduced feeling of isolation was an unexpected benefit
- One mentor and mentee put together an EPSRC grant application, and supported by her mentor the mentee applied for full membership of her professional institution.

In 2002 Bolton held a regional conference to disseminate their findings and achievements, and in 2004 the North West Universities Mentoring scheme managed by Bolton was launched with two years funding from seven universities.

Athena Case Study 1 covers the impact and benefits of the scheme and the key features of the regional mentoring scheme which incorporated much of the practical and organisational learning from the 1999 pilot scheme.

Summary 4 **1999 UEA Network for Early Career Researchers**

(Athena Reports 2, 14 and 22)

UEA developed a network (ResNet) for postdoc researchers at the university and the Norwich Research Park (John Innes and Institute of Food Research). ResNet launched with a half day conference which helped shape the programme (nine lunchtime events, 225 attendances). Members went to a European women and science conference and met the Chancellor and Vice Chancellor to discuss career development for female scientists. ResNet obtained additional external funding for a survey of the perceptions of male and female scientists on career development. A prize draw encouraged 176 contract researchers to participate (F43% M 30%). Survey results were presented at a conference attended by the Vice Chancellor and other senior staff.

Aims and objectives

The aim was to deliver a network for women researchers with a programme of activities to develop its members' knowledge, confidence, attitudes and skills. The network was intended to:

- Raise awareness of the current situation of female scientists
- Provide a discussion forum to explore common concerns and issues
- Provide data on female research contract staff
- Empower its members to improve their outlook on their career in science
- Feed into policy making to improve the gender balance
- Increase the visibility of women at UEA and the Research Park.

Findings - success or failure and contributing factors

ResNet was successful and met its objectives. It was valued by its members and grew its support among postdoc researchers. Members recognised that to make realistic career choices, researchers need information and support from their line managers, their employers and the research councils.

The ResNet survey identified key factors in promoting career development: increased motivation, secure funding, support interest and encouragement from principal investigators and an identifiable career structure. It also identified obstacles to career progression including short term contracts, lack of funding, few permanent jobs, lack of opportunity and poor department management structures.

Lessons on good practice and its transferability

The network learned that if they wanted to influence mainstream thinking, this could only be achieved if anecdotes and intuition were backed with data and evidence. ResNet's programme of events recognised the importance of role models. Female speakers, principally, with a science background were invited to share their experiences. They learnt a number of practical lessons:

- Networks require organisation to succeed. However, the organisational skills involved are useful transferable skills which build individuals' confidence, but take time to develop
- Networks need an 'umbrella' to provide advice support and guidance
- The nature and environment of contract researchers work makes them a difficult group to reach and one that does not find it easy to take time out for their own development
- The value of a task to focus on gave the network a purpose (the survey gave them a voice)
- It takes time to build a network – which made it important to circulate information regularly.

Outputs outcomes and impact

ResNet increased the level of awareness among UEA senior management of contract researcher issues. ResNet's survey was the forerunner of ASSET and its findings helped frame the content of ASSET in 2003. *Athena Report 7* also gives information on the Network. The Network continued and was funded by the project for a further year (*Athena Reports 14 and 22*) and is still continuing.

Summary 5 **1999 Imperial College – Early Career research mentoring**

(Athena Report 3)

Imperial College developed and piloted a number of mentoring strategies for women. It committed to continue the activities the project team judged successful. The Rector signed letters to all potential mentors and mentees and mentor partnerships were in different departments.

Imperial set up a Rector's committee to create/ensure a level playing field for women. The committee felt that women might be willing to continue their SET careers if they had more opportunities to discuss the problem they faced and if they received advice about their career development.

Aims and objectives

To raise the profile of women's careers at Imperial, and compare, contrast and evaluate the value (for participants and Imperial) and feasibility of:

- Personal mentors for all female postdocs and academics under 35.
- Career issue workshops
- An email discussion site for issue relating to women and science.

Findings - success or failure and contributing factors

The project succeeded in heightening awareness and understanding of the issues around progression and retention of women at Imperial and endorsed the value of mentoring.

Lessons on good practice and its transferability

The evaluation of their mentoring programme (through interviews and questionnaires) showed the most highly rated benefits of the scheme were having someone impartial to talk to, advice on career progression, advice on balancing career and family and learning about a different department/field. The career issues workshops were rated highly by those who went, but were poorly attended for reasons of time, lack of relevance, or having attended similar sessions already. The email discussion forum was publicised but few subscribed (for lack of awareness and time and an aversion to more emails).

The College learnt some practical lessons:

- Time pressures mean time will only be given for activities that add value
- High level support is essential to establish the credibility of the scheme and give visibility
- Mentors would benefit from a briefing on managing the initial meeting, the expectations of mentees and to get some feedback on their impact.

Outputs outcomes and impact

There were two unexpected outcomes for some senior male academics who had been mentors. For the first time many saw the College through the eyes of early career women and they found out what was, or was not, happening in other departments in terms of good practice. As a result of the project Imperial developed a mentoring scheme open to men and women and introduced an Annual Athena lecture (Athena Occasional Paper 1). Imperial provided a number of senior academic champions of the Athena Project and was a major contributor for the duration of the project.

The College won a Royal Society Athena Award in 2003. It was a founder member of Athena SWAN and a strong supporter of ASSET. It was one of the first two universities to receive a Silver Athena SWAN award and its chemistry department received the third Gold Athena SWAN award.

Summary 6

(Athena Report 4)

1999 Nottingham & Loughborough Universities Early Career Skills Acquisition

The universities' joint project developed a support programme for postdoc women in SET. The programme had three strands: personal and professional career development, a self help network during and after the programme, and a mentoring scheme. A five day course for 25 participants was held, with the objective that the participants would: clarify their personal and professional goals, prepare themselves to take/ create opportunities for professional and personal growth, identify their strengths, abilities and enrich their performance in their present jobs.

The discussions and sessions on the course covered writing grant proposals, managing a research team, applying for jobs, and being effective on committees. The mentees were the participants in the development programme. The mentors, all women, were trained; a secondary objective was to improve the inter-personal skills of the mentors. There were two events for mentors and mentees, one at the beginning to allow participants to meet their potential mentors, the second at the end which celebrated the success of the programme.

Aims and objectives

The aim of the project was to equip postdoc women with the skills and confidence to embark on a long term career in SET.

Findings - success or failure and contributing factors

Feedback from the participants reported the project was a success. Participants felt that it had empowered them by giving them confidence and the ability to focus on goals. The programme was designed to address key issues for women's career progression:

- women often did not benefit from the advice and support of senior colleagues
- women may be working in an environment with few senior role models
- lack of confidence and adequate mentoring are barriers to advancement
- women often wait too long before applying for promotion.

Lessons on good practice and its transferability

The project programme built on an earlier scheme at Nottingham which had identified that in SET schools few women rose to senior grades and that the greatest loss of women was at postdoc level. Shared experience and mutual support was important for women in male dominated environments and career development courses specifically for women could be particularly successful.

Athena Report 7 also gives information on the project's professional development programme for early career women, including the rationale for the programme, key findings and learning on individual participants benefits and institutional impact.

Outputs outcomes and impact

The universities used the results of the programme: to raise awareness and gain support from heads of departments for programmes supporting the career development of women, and to give male academics a wider appreciation of the difficulties for young women of balancing their career aspirations and child rearing.

Both universities continued to support the Athena Project and established the East Midlands Local Academic Women's network in 2000. The Vice Chancellor of Loughborough included ongoing support for the Athena Project in his own objectives for the year.

Summary 7 **1999 Open University HE Career Barriers and Constraints**

(Athena Report 5)

In 1999, as part of the development programme, the OU were commissioned to:

- Explore why the OU was more successful than HE generally, in recruiting women both as full time academics and as part time associate lecturers
- Identify barriers/constraints in women's careers in HE and how the OU helped its associate lecturers to overcome them.

Aims and objectives

- To explore the staff development opportunities for women associate lecturers who teach part time
- To collect evidence from OU female academics in SET on the impact of the OU on their careers
- To identify appropriate professional development and support for women re-entering careers in SET.

Findings - success or failure and contributing factors

The evidence and analysis from the work helped the Athena Project identify the issues key to career differences between men and women. It showed that:

- Career progression in SET in HE was different for those who were single and childless
- Ways though the indirect barriers were not as obvious as for the direct barriers
- OU associate lecturers had opportunities that did not exist elsewhere – flexible part time work and professional development and training opportunities.

Lessons on good practice and its transferability

The report includes (based on OU experience and their survey) what other HE institutions should consider if they want to increase the number of women they employed:

- How to retain those who become primary child carers
- Be more receptive to highly qualified re entrants who need to update their skills
- Actively develop the careers of all staff not just full time staff
- Ask their female academics what experience or training they need
- Assist women to move between research and lecturing, and back again, to allow for family commitments
- Returner schemes which cover research and teaching skills
- More part time posts and job shares
- Updating opportunities for women on career breaks
- Possibilities for distance learning and virtual teaching for carers
- More flexible employment terms and conditions.

Outputs outcomes and impact

The survey flagged an issue for the OU – the lack of research opportunities for associate lecturers. In the survey two thirds of respondents wished to re enter HE in research careers. A number of suggestions were made by the associate lecturers. The report identified a number of potential areas for future development, including returner schemes and initiatives for retraining women who had had carer breaks and needed to update their teaching and research skills.

The OU subsequently developed a career break returner scheme with the UKRC. *Athena Report 7* also provides information on the survey undertaken by the OU of its associate lecturers experiences and perceptions particularly in relation to flexible working.

Summary 8

(Athena Report 6)

1999 Sheffield Hallam University -Developing Mentoring

The project was based in the WiTEC unit at the university (WiTEC-Women in science engineering and technology- a pan Europe network). Mentoring was seen as a way for the university to address its under representation of women in SET by: fostering a more supportive and collaborative team culture, and improving university communications. Their approach was interventionist, challenging university culture and attitudes detrimental to women's career progression and targeting senior managers.

The project team attended a European training programme which enabled the transfer of best European practice into the project.

Aims and objectives

To improve the retention and progression of women in SET by the development of a mentoring training course and mentoring training package (which would become part of the university's staff development programme).

Findings - success or failure and contributing factors

As part of their research into the culture of SET schools the project team met school directors, they were supportive, they acknowledged the existence of a problem, and helped to disseminate information on the project. Interviews with staff gave the team an idea of the working environment for women in SET and the barriers to women's progression. The results of the interviews were used as the basis for a questionnaire to all men and women academic staff in the target schools. The report on the analysis of the survey generated interest, it was sent to governors, school directors and staff in SET schools.

Lessons on good practice and its transferability

The project team engaged with senior management. All school directors supported the project aims; this support increased the credibility of the project, and meetings with senior staff helped to develop their ownership of the project.

The questionnaire sent to potential mentees informed the development of the training course. The questionnaire was based on interviews, with a small number of academics, which explored the working environment for women and the barriers to women's progress. A report on the findings from the survey was widely disseminated and generated interest. The findings from the interviews and questionnaire informed the development of the university's mentor training package.

Outputs outcomes and impact

An important outcome for the project was that senior management acknowledged the under representation of women in SET and in particular at senior levels. A women's forum was established and mentor training was incorporated in the university staff development programme and heads of schools were made responsible for mentoring.

The individuals involved in the project were closely involved in the UKRC when it was set up, and the Athena Project continued a useful working relationship with them.

Summary 9

(Athena Reports 9-13, 15 and 16)

2000 Athena 2000 Second University Development Grant Programme

The majority of the Athena Project's remaining HEFCE ring fenced funding was invested in a second development grant programme in 2000. The programme funded five culture change projects. The universities involved explored the difficult career move from postdoc to first academic appointment (the point at which women started to leave academia) and women's representation on committees. The projects started in Summer 2000 and ended Autumn 2001. The largest grant was £10K.

The participating universities all developed action plans to tackle the practice and processes in their institutions which presented barriers to women's progression and some identified targets against which they would measure their success.

Aims and objectives

The aim of the second grant programme was to look at institution's organisational culture and identify and understand the processes and practices which presented barriers to women's career progression and where change would impact universities and departments.

Findings - success or failure and contributing factors

The projects added to the Athena Project's understanding of the keys to the differences in the career progression of male and female academics. The success factors common to the projects were:

- A clear institutional rationale for their work
- Building on previous work
- The need for evidence before action. Surveys of women raised organisational awareness/understanding and supported recommendations for change
- The focus on practical approaches/solutions rather than the underlying issues.

Lessons on good practice and its transferability

The organisational culture of SET and HE can be changed by good practice; changes to processes and practices change academics' working lives which makes a difference. Departmental exclusion was often subtle and embedded in the organisational structure making it difficult to counter. E.g. the early evening timing of lectures excluded those with caring responsibilities, not attending was frowned upon, women missed out on the interesting speakers and the valuable networking afterwards.

Overt discrimination was not the problem. It was the established systems and women's perceptions of them which were the barriers. The barriers were unintentional but deeply rooted and often invisible. This was summarised by a Dean of Science *'The male dominated academic system in which we operate was largely developed by men for the benefit of men. It is one in which characteristics more typical of men, such as competitiveness and aggressiveness are rewarded, while those associated more with women, such as cooperativeness and collegiality are much less likely to lead to success'*.

Outputs outcomes and impact

Within their own universities they improved the visibility of women and raised awareness of the barriers to women's progression. They identified elements of departmental exclusion which were built into their systems and culture, and helped the Athena Project's understanding of unintentional discrimination. They provided examples of good practice to disseminate. They identified issues which were explored in ASSET. The programme expanded the number of universities who engaged with the Athena Project and these universities continued to engage with and contribute to through to the end of the project and beyond in their membership of Athena SWAN.

Summary 10

(Athena Report 9 Case Study 2)

2000 Edinburgh University Bridging the Postdoc and Lecturer Gap

The university's monitoring revealed a disparity in the representation of women in researcher and lecturer grades compared with the national picture (a slightly higher proportion at researcher level and markedly lower at lecturer level). The monitoring also showed that where women applied for lecturer posts they were slightly more likely to be short listed and appointed.

Aims and objectives

The project aimed to explore, assess and understand the move from researcher to lecturer, and to:

- Review the practical opportunities for improving opportunity for women
- Provide a clear link between university commitments as described in key policy statements and the experiences of researchers trying to establish careers in SET
- Improve those institutional practices which disadvantaged women
- Recommend changes to processes and practices which constrained women's career potential and ensure that women were not disadvantaged in the selection process.

Findings - success or failure and contributing factors

The project was successful in providing the university with a clearer understanding of:

- The career plans and aspiration of male and female researchers and the institutional barriers to achieving their aims
- The experiences of men and women applying for lecturer posts
- Department appointment processes which influenced women's career opportunities
- Decisions to apply for promotion affected by uncertainty about eligibility, lack of positive support from the line manager and difference in promotion procedures within faculties that made it difficult to assess application rates.

Lessons on good practice and its transferability

There was a mismatch between the career expectations of researchers and senior academics expectations for them. Most researchers received little or no support in planning their future. Senior staff recognised that only a few would succeed in an academia career, but this advice did not filter down to those who needed it.

There was little evidence of overt discrimination but rather a wide range of more subtle and complex systems and practices which had a long term and persistent effect in disadvantaging some women. The research showed a gap between the university commitments (key policy statements) and the experiences of research staff trying to establish their careers, who had clear perceptions of; the barriers the university needed to address; the extent to which they need to be involved in department activities: the need for equity and transparency in selection to ensure all those shortlisted were treated equitably; and poor employment practices.

Outputs outcomes and impact

A range of materials was developed for those making selection decisions including standard, objective selection criteria for academic posts. Recommendations for changes to university practices were made, many of which has been implemented by 2005. The project identified longer term objectives, an increase in women applying for, and being appointed to lecturer posts, a greater awareness of the issues among senior staff and changes in institutional practices resulting from the project's findings. The findings and recommendation were shared with other Scottish universities.

Athena Case Study 2 explored the University's range of complementary initiatives from 1996 onwards designed to support women.

Summary 11

(Athena Report 10)

2000 Heriot-Watt University Development, Promotion and Retention

The project was driven by the university's concerns on the number of women who had left in recent years, and the need to improve their development, promotion and retention. Female academics and researchers were consulted to identify the reasons for women not seeking promotion and why women might leave. Heads of departments were consulted to find the barriers they could identify.

Aims and objectives

The university wanted to find out why female academics and researchers left the university and what the barriers were, that prevented women from progressing their careers at the university. It also wanted to make women more aware of promotion procedures and make the procedures more transparent.

Findings - success or failure and contributing factors

Findings from the survey were reported and discussed at the Principal's away day attended by senior managers and heads of departments. They identified what they saw as key issues where action was needed: problems around maternity leave, women's awareness of promotion procedures, greater transparency of promotion criteria, reducing the number of women academic leavers and achieving more senior female academics. They made some practical suggestions on changes to university processes. This early involvement helped their ownership of the 'solutions.'

Lessons on good practice and its transferability

In a small institution, some women were uncomfortable with documenting their views on barriers, despite the guarantees of anonymity and independent analysis.

There were variations between departments. The age profile of the department made a difference to the way women felt they were treated and regarded. 'Older' departments were seen by women as male dominated 'clubs'. Heads of Departments saw inappropriate language and behaviour as 'old school' which would eventually disappear. Heads did not see barriers within their own departments. They viewed positively the attendance of staff on courses. This conflicted with the information from women's questionnaires.

Outputs outcomes and impact

Recommendations for action were made by the Steering committee. Their focus was staff development, which they saw as centrally driven with significant HR input.

2000 Luton (Bedfordshire) University-Representation on Academic Committees

Committee participation was recognised as an important part of academia but gender representation was not considered. Research into the existing practices and procedures in HE and identified this as a neglected area. A questionnaire and focus groups were used to action an agenda.

Aims and objectives

To develop, implement and evaluate systems to ensure appropriate representation of female academics on university committees, to ensure that committees function in an inclusive manner, to feed any lessons into the university's committee systems and the HE sector.

Findings - success or failure and contributing factors

In 1999, a women's forum was established to provide support and improve the promotion of women. From the forum, the university learnt that: roles could be rotated to spread experience and transparent procedures would improve opportunities for committee participation. The university incorporated, into its chairs training programme, its responses to the comments it heard:

- Weak chairs cannot prevent senior management dominating
- The loudest voices are heard
- Overall men are allowed to speak for longer and are not interrupted
- Male Chairs often disregard women's contributions
- Those who aren't privy to the networks/know the politics are excluded.

Lessons on good practice and its transferability

The senior Pro Vice Chancellor chaired the project committee and ensured that the university questioned the representation of women on all its committees and asked the Academic Board to review the membership of its committees. Analysing committee data was difficult as figures from different years were not comparable, however differences were found. Women represented 70% of administrative committees but only 13% of research committees. Men were more likely to be on more than one committee.

Some survey respondents' perceptions were equally relevant to men's careers (e.g. inconsistencies in the application of promotion procedures, the need for promotion procedures to be explicit and transparent and for staff to be aware of them).

Outputs outcomes and impact

This review flagged a number of concerns on university corporate management. The university recognised that the first step was for a woman to get herself onto a committee, and took action to:

- Make the procedures for appointing committee members open and clear
- Make committee appointments fixed term with 'rolling' replacements
- Introduce secret ballots with numbers of votes undisclosed to encourage people to put themselves forward
- Ensure that all committees continue to be held in normal working hours
- Set target and monitoring women's representation on committees
- Introduce opportunities for men and women to be committee observers
- Establish a network for women committee members
- Ask that appraisal meetings with women explored gaining committee experience.

This project attracted interest among the universities who were working with the Athena Project. It identified a number of important areas where women's and men's experiences and perceptions differed. These areas were included in ASSET.

Summary 13

(Athena Report 12 and Case Study 6)

2000 Oxford University- Barriers to Academic Appointments

The Athena Project commissioned a study from Oxford University to identify and research the barriers which prevented women from applying for academic appointments for which they were eligible. The project had three main components:

- A report identifying barriers based on interviews and focus groups
- A residential careers event for women who might be interested in working in Oxford
- A university action plan.

Aims and objectives

To ensure that all who were eligible were informed of the opportunities available, to identify and remove barriers that prevent women applying for academic appointments, to increase the number of applications from women and to produce realistic and achievable recommendations.

Findings - success or failure and contributing factors

Oxford expanded a self organised network of women tutors to a university network of over 700 members. Network meetings helped publicise the project. The Vice Chancellor and two head of SET divisions were interviewed. The third head of a SET division was on the project committee.

The evidence from the work demonstrated that women were appointed to academic posts at least in proportion to their applications, but that the rate of applications from women was low. Talented early career researchers wishing to develop an academic career were likely to perceive posts at Oxford and similar universities as being at a too senior level for a first permanent appointment.

Lessons on good practice and its transferability

The interviews and focus groups provide an insight into women's career progression, and included:

- The absence of a career plan, just progressing from PhD to postdoc
- Those thinking of a move into industry looked for an environment with career progression
- Men and women mentioned women's low self-confidence, being less likely to apply and that failing to be appointed had a negative impact on subsequent applications
- The importance for internal candidates of a sign that their application was welcomed
- Differences in confidence at interview, men ad lib, women say I don't really know
- Selection criteria which judge on experience rather than potential
- Appointments for more senior posts based on who you know rather than merit
- Opportunity to discuss flexible working with someone independent of the selection process.

Outputs outcomes and impact

The recommendations which were adopted by the university included:

- A welcoming positive action statement added to advertisements for posts
- Providing candidates with an up to date information on the selection process
- Mentoring for researchers and encouragement to consider an academic career
- Staff development opportunities for researchers and guidance for their managers
- Development of a more comprehensive and consistent approach to part time working.

Oxford responded to the findings with university career development fellowships (the design was funded by HEFCE), 12 fellows were appointed in 2002-04, all were women and the majority were from minority ethnic or national backgrounds. The scheme was seen as a

stepping stone between research posts and permanent lectureships. The fellowships had teaching and research components and a high level of individual support.

2000 Surrey University - indirect discrimination and career progression

Surrey University were concerned that, despite increasing numbers of women in SET and in higher grade posts; women were under represented on most university committees and the university found it difficult to retain the women it attracted. The perception in the university was that promotion was more difficult for women. This perception that was ascribed to:

- Entrenched attitudes of older staff
- Culture in some male dominated SET departments
- Differential allocation of responsibilities -differently valued for promotion
- Lack of flexibility in combining career and caring responsibilities.

The indirect discrimination and career progression project had three components: the establishment of a women's forum as a sounding board for the project team (and to test their perceptions and suggestions for change), a survey of male and female academics to explore progression histories and links with different areas of responsibility, and the development of career programme for women in SET-informed by the results of the survey. Discussion of women's development needs, at the forum's first meeting, set the agenda for future meetings:

- Promotion procedures- examining what was valued and how to prepare a suitable profile
- The university's finance and planning systems
- Achieving outcomes at meetings- preparation, body language, voice control and interventions.

Aims and objectives

The aim of the university's project was to improve the recruitment, retention and career progression, of women in SET and to support women in playing a more significant role in shaping the university's direction and culture.

Findings - success or failure and contributing factors

The project identified what it saw as key to women's career progression and promotion prospects:

- Administration -there was little evidence of systems for appointing individuals to admin roles - departments lacked structure which allowed individuals to dodge, while women who were competent just got more
- Good/successful academics made different contributions to department life - management training to develop abilities to take decisions and to delegate were essential and good academics encouraged collegiality and enthused others
- Committee memberships might help in meeting senior/powerful people but the workload could be out of proportion - it depended on the committee
- Teaching- the only academic activity where academics did not have autonomy- early career staff often saw its allocation as unfair and it was seen as undervalued in terms of promotion
- Research -its organisation and the membership of research groups were seen as ad hoc- individuals had to be known to be invited to do/bid for work
- Present-ism disadvantaged those with dependents.

Despite the university's established and effective equal opportunities (EO) policies and a track record of fair appraisal and good staff development and management training, the university's subliminal culture tended to disadvantage certain groups- a disadvantage that the university's training provision did not address and its EO data collection and monitoring took no account of. The project team knew that things would not change unless they could provide the university senior management with hard evidence of the largely indirect and subconscious discrimination.

Lessons on good practice and its transferability

The project survey went to all male and female academics, to allow a comparison of SET and non SET academic pathways. The questionnaire covered career and promotion history, areas of responsibility and issues which had emerged from forum discussions. The results were used with focus groups to explore the issues further.

Members of the university promotion committee gave a session on promotion to Senior Lecturer/Reader and Professorial levels. They covered the formal process and criteria, but what most interested the participants was the discussion of the 'real' criteria and the effect of taking maternity leave and part time working – issues which the presenters took back to their committee.

The project recognised that allowing women to see what was involved in senior positions through work shadowing and targeting women for training to fit them for places on university committees were ways for women to achieve higher levels of self-confidence.

The women's forum was recognised as an effective means to deliver the learning activities needed to equip women to play a full and satisfying role in department and university life.

Outputs outcomes and impact

The work of the project resulted in improvements to the university's management development programme, changes to promotion procedures and department arrangements. Findings from the project contributed to the development of questions for ASSET.

2000 Local Academic Women's Networks (LAWNs)

By autumn 2000 there was insufficient funding left for another full years development grant programme. The Athena Project was impressed by the networks in the 1999 programme. Two based at UEA and Loughborough were given small grants for a second year, together with three new ones (based in the universities of Leeds, Plymouth and St Andrews).

The five networks were each given £3k, with a matched contribution from the lead university. They were self identified groups of women in SET, allied disciplines and industry. They had support from the senior management of the participating universities and adopted the name coined by one of them 'Athena 'Local Academic Women's Networks' (LAWNs). The network programmes included:

- Seminar programmes to show case female academics
- Workplace shadowing
- Discussion seminars for (potential) returners, part timers and job sharers
- Research meetings to identify/generate cross disciplinary research opportunities
- Seminars for female undergraduate and graduate students
- Regional conferences for early career women
- Workshops on writing successful research grant proposals.

The East Anglia network ran two conferences. The first, funded by the DTI was on applying for European funding. The second, sponsored by Pfizer, was on career options and career stocktaking (See *Athena Reports 2 and 21*).

The focus of the East Midlands network of five universities was supporting women in making successful grant applications. The network steering committee developed a statement of commitment which was signed by the Vice Chancellors of all five universities.

The Northern network expanded across all the north-west universities. It ran quarterly seminars and networking meetings. It ran a half day interactive workshop for graduate and undergraduate students.

The St Andrews network wanted to alter attitudes in the male dominated science faculties and raise awareness of the UK pool of highly qualified women. The network supported a high profile lecture series by successful British female scientists.

The South West network was concerned with the research profile of women who were not good at pushing themselves forward. One of steering committee was invited to attend the EPSRC grant awarding committee as an observer and EPSRC provided a speaker for a network session on grant applications.

Aims and objectives

Each network had one or more of the following objectives:

- To raise the profile of female academics and promote the work of early career female researchers
- Improved institutional practice in the support offered to researchers
- Increased cross disciplinary collaborative opportunities for researchers
- Sharing information ideas and good practice
- Encouragement for the appointment of women onto university committees.

Findings - success or failure and contributing factors

All the networks were successful and met their original objectives. They all continued for at least one further year with new initiatives supported by their institutions.

Lessons on good practice and its transferability

The networks demonstrated the power of networking in making small but important changes in the culture of universities and in the working life of their members, and showed that:

- Informal networks of women brought together with a purpose and clear short term objectives can be a powerful influence for change at local level
- Women's networks needed support from senior colleagues both male and female, particularly in terms of their attending network organised events
- Senior level support was important to raise the network's profile, chipping away at the bottom did not work
- The 'inspiration' for early career women of successful women role models who shared their 'models of success'
- The national Athena Brand was useful, for example when approaching potential speaker.

Outputs outcomes and impact

The networks brought more universities and more scientists male and female into the Athena Project's network. They empowered a substantial number of early career female scientists. They generated activity, which engaged senior male and female academics, and raised the profile of women in their universities and the awareness of barriers to women's careers. The statement of commitment that the East Midlands Network chancellors signed up to was a forerunner of the Athena SWAN principles some of the LAWNs continued see *Summary 19* and *Athena Case Study 3*.

Summary 16
2000/01 Athena Project Research Programme

(Athena Report 17)
(Athena Occasional Papers 1 & 3)

A research post was funded for two years through the UK higher education funding bodies and the DTI OST to undertake desk research. No original research was undertaken. The focus of the work was exploring the problems, explaining the reasons for them, reviewing the ineffectiveness of the policy initiatives which had addressed them, and identifying what further research was needed to shed light on the experiences of female scientists in SET, and how their experiences might offer new theoretical insights.

A successful research conference, held at the Royal Institution and sponsored by L'Oreal brought together a mix of scientists and researchers on women and science. The presentations give a picture of the situation in 1998 when the Athena Project was established.

Aims and objectives

The literature review was intended to identify the state of knowledge on women's scientific careers in HE, and the gaps and research priorities for the future. This was seen as laying the foundation for an Athena Project research programme and to give direction to the project's work.

Findings - success or failure and contributing factors

By the time the review was completed the Athena Project's HEFCE funding had been cut, and the project was already set on its action learning good practice track.

Lessons on good practice and its transferability

The most relevant of the presentations at the conference was on who applies for research funding, a project undertaken with funding from the Wellcome Trust and the UK Research Councils. This examined gender differences in grant applications. They had found that:

- Women were less likely to be aware of their eligibility and seemed to be less involved in informal networks through which people would find out about funding. So there is a need for, more formal dissemination about funding, so that it does not rely on meeting the right person at the right time
- Their recommendations to the Research Councils included influencing employment practices within universities
- For universities they identified the need for structured and transparent career opportunities, so that people could see what determines promotion.

Outputs outcomes and impact

It is not known how much use was made of the literature review.

Summary 17

(Athena Reports 18-21)

2001/02 Royal Society Athena Good Practice Awards

The award scheme was developed in summer 2001 to recognise the good practice, which was developing. The awards recognised successes and achievements in the 2001/02 academic year. The work submitted was required to be sufficiently established to demonstrate its effectiveness in contributing to the Athena Project's aims.

A workshop in April 2002 provided the opportunity for potential participants to find out more about the awards, and to network with colleagues from other universities which were involved in initiatives which supported the Athena Project's aims. Twenty universities were represented by a mix of scientists and university administrators. Submissions were made in August.

After short listing, the final selection was in November when universities made presentations to the Awards Panel and fellow competitors. There was a lunch which provided a networking opportunity with panel members mingling with competitors. The teams were then interviewed by the panel in closed sessions. Short reports were produced in time for the Awards Ceremony in February 2003.

Aims and objectives

The aim of the award scheme was to encourage, raise the profile of, and disseminate a range of initiatives, creative approaches and good practice in action, from which the university sector as a whole would benefit. With little funding left, the awards provided case studies, at minimal cost to the project (with external funding of prizes and event costs from the RAEng and the Royal Society).

Lessons on good practice and its transferability

Queens University Belfast

(Athena Report 20)

Queen's University Belfast won the first prize for the work of their Women's Forum, set up in 1999 on the request of the Vice Chancellor to address the university's gender imbalance. The forum improved the profile and position of women in the university. It raised awareness, explored the causes of women's under representation, and gave women a voice. The forum went for change, having first prepared (by listening to the women, and not imposing change) and built the confidence of women (with networking, mentoring and activities); so that they would put themselves forward.

A Queen's Gender Office was set up and staffed. Promotion processes were overhauled and criteria made more explicit. Three Pro Vice Chancellors sat on the forum. Queen's culture and environment changed. They defined what had underpinned the success of their initiative in changing the culture:

- The change was supported from the top of the university
- The work had the strong backing of women working in the university
- Champions generated enthusiasm
- The driving group had a clear reporting route
- The driving group was not locked into line management.

They also recognised the importance of making heads of schools and research groups aware of their own responsibilities. By the time of their prize, 41% of senate members were women, more women were receiving honorary degrees and the first portraits of women were hung in the Great Hall.

University of Cambridge

(Athena Report 18)

The University won a joint second prize for the work of WiSETI which was set up in 1999 with funding from the Vice Chancellor, with the goal of raising the expectations of women in SET

and meeting the challenge of those expectations. Much of its work was with graduate students and early career researchers, with an emphasis on mentoring.

Senior male scientists engaged with WiSETI and it was integrated into the university's governance and department structure. Its advisory committee included equal numbers of men and women and reported to the university's general board. All SET departments had a designated WiSETI representative to keep them informed of activities.

Imperial College London

(Athena Report 19)

Imperial College won a joint second prize for the work of their Rector's Committee on Academic Opportunities, set up in 1999. The committee reported directly to the Rector, it included senior male and female academics and academics with current family responsibilities. It was set up to explore and understand the barriers to women's career progression, to take action by removing any barriers that may exist in the appointment or career advancement of highly qualified women and to ensure that the numbers of such qualified women are as high as possible. The committee recognised that there was unlikely to be any single factor or barrier leading to the under representation of women, so commissioned an external survey.

The committee's impact was on going and cumulative. It followed through its baseline research, it identified its key building blocks, mentoring, improving communication and networking, it had clear and unambiguous support from the head of the College, it engaged senior managers and academics, it is an ongoing activity, its presence and activities challenges the traditional culture and it is a structure appropriate for the College.

University of East Anglia

(Athena Report 21)

ResNet, a network for women research contract staff at UEA and on the Norwich Research Park, was awarded a special prize. The network was originally set up with a 1999 Athena Project development grant (*Athena Report 3, Summary 4*). The programme was mainly at lunch times and the sessions related to developing a science career and providing support, encouragement, networking opportunities and knowledge of how to progress in science, information on opportunities, career profiles and role models.

The programme gave women the knowledge and skills to apply successfully for grants and fellowships, the confidence to apply for posts, and attracted distinguished members of the science community as speakers, including the Government Chief Scientist and a research council chief executive.

Findings - success or failure and contributing factors

The award scheme met its original aims. The final selection event (when short listed universities gave presentations to the panel and the other finalists) proved a valuable networking event and brought together early career and senior scientists from a range of universities and forged links which continued for a number of years. The scheme harnessed the competitiveness of universities and the opportunity to win a 'Royal Society' badged award was valued, as was a monetary prize.

Outputs outcomes and impact

The awards recognised the work of four universities with a track record of work to improve the representation of women in STEM. Examples of good practice from all participants were included in the Athena Guide to Good Practice 1999 to 2002 (*Athena Report 22*).

The scheme provided valuable learning for the Athena SWAN award scheme when it started in 2005. The scheme built useful new university contacts for the Athena Project.

Summary 18 **2002/03 Royal Society Athena Awards**

(Athena Reports 23-25)

The 2002/03 awards were similar to the first (*Summary 17*). OST DTI provided funding. Event costs were covered by the Royal Society and RAEng. The prizes were funded by the BCS, ECU and the IOP.

Aims and objectives

The aim was to encourage, raise the profile of, and disseminate a range of initiatives, creative approaches and good practice in action, which would benefit the whole university sector.

Findings - success or failure and contributing factors

The aims were met.

Lessons on good practice and its transferability

London Metropolitan University

(Athena Report 23)

The University won a Royal Society Athena award and the IOP prize for its Scientific Women's Academic Network (SWAN) and the development of a national charter for women and science. SWAN was set up in 2002 as one of the last Athena Project local academic women's networks (LAWNs). It was driven by academics and its aim was the creation of a virtual network for women in SET in the post 1992 universities in London and the south east. The network launched with a conference in autumn 2002. The principles of the charter emerged from the conference. The rationale for the charter was that the sector was losing out through undervaluing and under-employing women in SET and women were disadvantaged in terms of retention and progression.

Loughborough University

(Athena Report 24)

The University won a Royal Society Athena award and an ECU prize for a decade of work embedding equality and diversity. Loughborough set targets to increase the number of female academics. They funded research from 1991 and undertook a gender audit in 1994. They monitored staff progression to identify ways to increase the number of women eligible for senior positions (including targeted training). They reviewed university committees, their membership criteria and the procedures for appointing members, to ensure there was no indirect exclusion/discrimination.

Oxford Brookes University

(Athena Report 25)

The University won a Royal Society Athena award and BC S prize for their European women in mathematics web based mentoring scheme, which matched women undergraduates through to junior academic staff with more experienced mathematicians. In UK maths departments, due to few women lecturers, women PhDs and postdocs felt quite isolated. Initial research with potential participants gauged the demand and identified the main issues. Few web based mentoring schemes existed. The scheme was supported by the EWM (a European network of women academic mathematicians).

The evaluation showed that the scheme benefited around two thirds of mentors and half the mentees felt having a mentor had made a difference to their career plan. Many reported an increase in confidence and that the contacts made provided opportunities for study/work. Mentoring was important for those who did not have the opportunity to attend conferences and make contacts. Organisations considering setting up similar schemes were interested, including the British Council.

Outputs outcomes and impact

The awards recognised work in three universities. Short reports on their work were published. The Athena Project built a range of new contacts. SWAN was identified as a valuable Athena Project tool.

Summary 19
2002/03 Local Networks and Dissemination Programme
Studies 1-6)

(Athena Report 22)
(Athena Case

In autumn 2002, OST DTI provided six months funding to help the dissemination of the Athena Project's work. The funding allowed the project to:

- Compile a Guide to Good Practice (Athena Report 22), which brought together the learning from the Athena Project's work 1999-2002
- Refresh and expand its networks of Local Academic Networks (LAWNs) (*Summary 15*)
- To prepare and publish reports and case studies on work by finalists in the 2001/02 Royal Society Good Practice Awards, work by some of the LAWNs and updates on work in the two development programmes.

The Athena Project used the funding to contribute to local events, conferences and workshops and LAWNs. This built on existing relationships and expanded the project's geographical spread.

Aims and objectives

The programme focussed on the project's aims to work with universities to encourage, share and disseminate the good practice that was fundamental to increasing the number of women working in SET. The activities and events organised all achieved the objectives of:

- Calling senior staff attention to the issues of women's career progression
- Raising the profile of women within their universities
- Reducing the isolation of women which was in itself a barrier to success and promotion.

Findings - success or failure and contributing factors

The project planned a conference to celebrate its four years at the Royal Society in March 2003. University contacts valued the individual reports and guides and wanted a publication which drew it all together. A workshop at the Royal Society in October 2002 brought together universities who had worked with the project and who had progress to report and good practice to share. When the good practice compendium was published at the conference in March 2003 it came with an endorsement from Lord Sainsbury, Minister for science.

The project saw a UK-wide network of LAWNs as part of its exit strategy each with programmes similar to the networks in the 1999 university development programme. (From 2005 SWAN member universities 'replaced' LAWNs as Athena's UK wide network legacy). Members of the Athena Committee who attended the events used the opportunity to talk to senior university managers and academics. The organisers of Athena Project funded events were expected to produce senior male academics to open or chair the conference and sessions or to be on a panel.

Lessons on good practice and its transferability

The programme provided further good practice to disseminate:

- Case Study 1 Bolton - The North West Universities Mentoring Scheme
- Case Study 2 Edinburgh - Career progression initiatives from 1996 onwards
- Case Study 3 LAWNs - More information on the activities of LAWNs
- Case Study 4 Leeds Biosciences Faculty- A review of progression and promotion of women in biological sciences
- Case Study 5 Lincoln- An innovative women's career development programme
- Case Study 6 Oxford- The University's Career Development Fellowship Scheme 2001-2004.

Outputs outcomes and impact

The programme increased the number of contacts the project had who would participate in future initiatives. The Athena SWAN Charter was a direct outcome of the programme.

Summary 20 **2003 Report to the DTI on University Good Practice**

(Athena Case Study 7)

The Athena Project approached universities with significant SET departments; including those it had previously had little or no contact, to fill in a good practice checklist which covered areas key to career progression: Organisation and culture, appointments and promotion, mentoring, networking.

Aims and objectives

The development of the checklist contributed to the project's 2003-05 work programme. Its development was funded by OST, DTI to increase the number of universities engaged with the project and to ensure that universities and departments did not let the issues of women's career progression slide. The project needed 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 research
- Engaged principal investigators and heads of research groups whose support and understanding or the lack of it, was critical to women's career progression.

Findings - success or failure and contributing factors

28 universities took part. Feedback on the usefulness of the checklist ranged from generally favourable to enthusiastic. The examples of good practice provided in the checklist and the links to Athena reports on the website were welcomed and described as practical and useful. The checklist was used to open up discussion in universities. Checklists were sent to senior managers or university committees for sign off before they were sent in. Participants' comments included:

- It showed us how far we had got, how far we had to go, where the gaps were
- It pointed out the issues on which to focus as we got started
- It will be useful to go back in future years to see what progress we have made.

Lessons on good practice and its transferability

The checklists showed that at the corporate and policy making level, universities were getting it right but, they did not know what happened at department level. The project found:

- Most universities did not have career development mentoring, where it was available it was often not well resourced, and was informal which made it difficult to evaluate
- Centrally little was known about networks and their periods of real activity tended to be short lived - this did not detract from the support they offered their members but did limit their ability to engage with senior management
- The majority of participating universities were content that their criteria and procedures were fair - however, most recognised that the perceptions of their staff would differ
- Generally women's representation at appointment and promotion stages weren't monitored
- Around 50% had undertaken surveys on career progression and around 75% of these had taken action based on their findings
- The majority of respondents confirmed leadership from the top of their universities for changing the organisational culture of SET, but only a minority agreed that the key stakeholders – Heads of Departments and Principal Investigators were involved in change.

Outputs outcomes and impact

This work flagged the importance of working with departments. The culture and organisational structures and processes of departments influence scientists' daily working lives. The checklist was adapted in 2004 and 2006 for the RSC. It has been used by departments for Athena SWAN

submissions. In 2012 it was revised for the LMS Good Practice programme. *Appendix E* is a generic version of the Checklist.

Summary 21

(Athena Report 26 and Statistical Appendix)

2003 First Athena Survey of Science Engineering and Technology (ASSET)

The Athena Project's development programmes had shown there was a need for hard data to engage senior staff and which could be used to measure institutions against the national picture.

UEA had surveyed their postdocs to show the differences in men's and women's career progression and the Athena Project was approached by another university requesting they fund comparative surveys in other universities.

The project had a small sum left from its HEFCE funding, which could only be spent in grants to universities. Bristol University had developed a web based survey for postdocs, which the project used as the basis for its survey of SET academics. The UEA survey provided the basis of the questionnaire and UEA survey office provided the expertise.

The survey ran in 23 universities. Twelve of whom had no previous contact with the project. There were 2,172 respondents, 1520 men (70%) and 652 women (30%). Preliminary findings were published in October 2003 and sent to participating universities. National findings were written up in Athena Report 26. The report was launched at Bristol University in April 2004. The report launch event provided publicity for a second run of the survey in 2004, which was open to any universities who had not participated in the 2003 survey.

Aims and objectives

The survey was part of the 2003-05 work programme, one strand of which was developing tools, approaches and methodologies for use by universities, STEMM departments and professional and learned societies. Another strand was 'reaching out' to universities with significant numbers of SET academics who had not engaged with the project.

Findings - success or failure and contributing factors

ASSET required little effort or expertise by the participants, and no direct costs. Survey results were accessible to nominated individuals in the participant universities, who could also access the national results, enabling universities to benchmark themselves against the national picture.

The universities who took part made a commitment to use the results to work towards achieving the project's aims. A workshop with social science researchers and participating universities helped to identify the focus of the report on survey findings published in 2004.

A number of universities who were initially interested in taking part withdrew, because of problems in identifying staff who were eligible, concerns on survey fatigue, because they wanted to improve their position before taking staff views, or because they did not wish to raise expectations on follow up action which they would not be able to fulfil.

Lessons on good practice and its transferability

Athena Report 26 explored areas which previous work by the project's partners had identified as important to career progression (areas where there were differences between men and women), what underlay those differences and how far they related to the organisation and culture of SET and of universities:

- Activities internally and externally which might influence career progression- respondents perceptions of these activities in relation to a successful SET career
- Perceptions of respondents on the equality of treatment of men and women in their department, and how their contributions were valued by their departments
- Career progression experiences of respondents, their perceptions and career development needs at the three important career transitions- getting into a first lecturer appointment, getting back after a career break and getting on – progressing through to the level which reflected both their abilities and their ambitions.

Outputs outcomes and impact

ASSET 2003 was the first large scale survey of science academics in the UK. The report provided the project with national evidence. None of the previous work by partner universities had produced hard information on the influence on career progression of career breaks and little on departmental organisation and culture

By the time the findings were published it had been agreed to re run the survey in October 2004 a survey which would be open to universities who had not participated in the 2003 survey, to research institutes and to industry

Survey results were used by participating universities and others. The national analysis showed that women were as ambitious and as academically active as their male colleagues, but still did not make it to the top in the numbers that reflect their contribution to science (*see Summary 23*).

Summary 22

(http://www.rsc.org/images/chemdeptsreport_tcm18-16919.pdf)

2003 Report with RSC Good Practice in University Chemistry Departments

The joint work with the RSC started in 2003 and built on previous work by both organisations. The RSC 2000 study *of factors affecting the career choices of chemistry graduates* identified barriers to the promotion and progression of women (Athena Report 8). The 2002 follow up - *Recruitment and Retention of women in Academic Chemistry* identified what it was about the culture in certain departments/universities, which caused women to apply for and accept posts and encouraged them to remain there.

The Athena Project adapted the university good practice checklist (Summary 20) for use by chemistry departments. 25 UK chemistry departments returned checklists, signed off by their Head of Department. Follow up phone calls pursued issues identified in the checklist and obtained more information. The five departments with the most good practice were visited.

Aims and objectives

The work was part of the Athena Project's programme to develop methodologies which challenged the culture and values of SET departments and HE, and disseminate the results of leading edge good practice to use the information as a baseline against which future progress could be measured.

Findings - success or failure and contributing factors

The formula for this initiative (a checklist, follow up phone calls and visits to the departments who had the most good practice) worked well. The checklist was freely accessible on the RSC website. It became problematic; it was adapted by people with little understanding of the issues, who were looking for a tick box tool, or completed by enthusiasts with no support from their departments.

Lessons on good practice and its transferability

This work confirmed that whilst good practice benefits all - staff and students, men and women; bad practice has an incrementally prejudicial effect on women's career progression. What became clear later was that departments who had good practice, did not recognise it. It was how they did things.

Outputs outcomes and impact

The report identified three key performance indicators, based on previous work by the Athena Project, the RSC, and the good practice identified in chemistry departments:

- An appointments process that encourages women and men to apply for academic posts
- Department career progression that encourages women and men to remain in academia
- A department organisation and culture that is open, inclusive, transparent and supportive.

The indicators flagged areas where action was needed if departments wished to become and remain employers of choice and to provide an environment in which men and women could enjoy successful, sustainable and rewarding careers in science. The indicators represented formed the Athena action framework.

The report was widely circulated. A printer's error led to a cover page with the title Good Practice in University Departments which greatly increased the readership. This was corrected to include Chemistry in the title when it 'sold out' and had to be reprinted. The report has been used extensively by departments across a range of disciplines, by departments working towards Athena SWAN and IOP Juno awards. The report was a first in providing examples of good practice at department level. The checklist was re run in 2007 (*Summary 27*).

Summary 23

2004 Second ASSET Survey

(Athena Report 27 and Statistical Appendix)

The survey ran in October/November 2004. It was open to scientists working in 17 universities which had not participated in the 2003 survey. The questions were the same in both surveys. The difference was that postdocs were included in the 2004 survey. The survey was also open to scientists in research institutes funded by BBSRC, MRC, NERC, STFC, and Wellcome Trust, and to scientists in five commercial companies; four of whom withdrew either shortly before or soon after the survey opened. The terminology of the questions was changed as necessary for the research councils and for industry, and extra questions were included for the research councils.

Aims and objectives

The Athena Project wanted to maximise respondent numbers to provide convincing evidence of differences between women's and men's experiences, expectations, their perceptions, their career progression in and enjoyment of their careers and their rewards. Of the 17 universities which participated in the 2004 survey 12 had not had any previous contact with the Athena Project. Engaging research council and industry employers was seen as a building block for the project.

Findings - success or failure and contributing factors

The Athena Project did not have first-hand links to industry. The project used the professional societies to make industry connections but concerns over commercial confidentiality led to all but one company declining to take part in the survey. Communication with the research councils after the survey closed and before the report was delivered was not good.

The project did not have established working relationships at any but the top level of the research councils. There was a delay in producing the research councils findings and statistical tables were sent to them in December 2005. The project's immediate interest/priority was to compare and contrast the findings of the university 2003/04 combined data with the research council data. The Athena Project had accepted government funding for a team of four to launch the findings at the AAAS in Washington in February 2005 with a full half day workshop session and a plenary keynote presentation. The first overseas dissemination of the project's work.

There was a mismatch between the expectations of the HR departments (who had contributed to the survey cost from their budgets) and of the senior managers who had agreed to take part. HR expected a detailed analysis by individual council, laboratory and grade.

Outputs outcomes and impact

Athena Report 27 and supporting statistical tables cover the 2,444 scientists working in research.

The combined findings from the 4,828 scientists in 40 UK universities which contributed to either the 2003 or the 2004 surveys are covered in:

- Athena Occasional Paper 4 UK ASSETS 2003 and 2004 A review of the career progression, experiences and perceptions of 6,500+ scientists working in HE and research
- Athena Occasional Paper 5 Maximising UK ASSETS – Developing an action on agenda to tackle the key issues identifies by ASSET: a report on the Royal Society ECU Athena Conference December 2005. This uses combined data from the 2003 and 2004 surveys
- Anonymised data from the 2003/04 surveys is available on the ESRC data base
- Athena Forum Report 2 (April 2009) ASSET Headline Findings on Women's Career Progression and representation in academic science from the 2003/04 and 2006 surveys.

Summary 24

(Athena Report 23 Athena Case Studies 8-20)

2005 Launch of the Athena SWAN Charter and Recognition Scheme

In 2000, the Athena Project awarded small grants for Local Academic Women's Networks (LAWNs), they were successful but none were in London or the south-east. In 2002, a small grant was made to London Metropolitan University for a network in post 92 universities in these areas (*Summary 18*).

The Scientific Academic Women's Network (SWAN) was launched in October 2002 with a conference. The idea for a Charter and its first draft emerged from the plenary session. The Charter principles reflected learning from the project and its partner universities and the beliefs that:

- The advancement of science is fundamental to the quality of life across the globe
- It is vitally important that women are adequately represented in science
- Science cannot reach its full potential when half the population is excluded from its activities.

In 2003 SWAN won a Royal Society Athena Award and an IOP prize for the development of an innovative, inter disciplinary, cross institutional network and national charter for women and science. The IOP prize provided funding and the Athena SWAN Charter launched in 2005, with ten founder university members, all of whom had worked with the Athena Project. From October 2005 to 2007 Athena SWAN was funded by UKRC with a contribution from the European Social Fund. A joint Athena Project and UKRC committee steered the development of the Charter.

An Athena SWAN committee was set up in summer 2006 to replace the joint committee. The professional societies who supported the Athena Project and SWAN nominated the members: RSC, the Royal Society, RAEng, Opportunity Now, IOP and the Athena Project. UKRC had a member as did ECU who was the other chief funder by this point. The first Athena SWAN awards were made in 2006. In summer 2007 a part time, Athena SWAN Co-ordinator was appointed and Athena SWAN moved from the Royal Society to ECU.

Aims and objectives

The work was an important contributor to the Athena Project's programme; to ensure that universities and departments did not let the issues of women's career progression slide back down their priorities list; to work with universities who were beginning to make a real difference to their organisational culture and processes to push the boundaries forward; and to disseminate and publish the results of leading edge good practice

Findings - success or failure and contributing factors

The Athena SWAN application process demands universities and departments conduct a thorough self assessment process. This was based on the experience of universities who received Royal Society Athena awards; they had found that self assessment had been useful in clarifying key issues and identifying individual initiatives which already existed but were unknown outside their department.

Lessons on good practice and its transferability

The good practice by the first universities to gain Athena SWAN recognition were written up in Case Studied 8 to 20. These proved useful in clarifying what a university needed to have in place and planned for a university Athena SWAN award.

Outputs outcomes and impact

Athena SWAN is now recognised by universities and funders of universities and university research funders as a standard setter for good employment practice.

Summary 25

2006 ASSET SURVEY

The 2006 ASSET survey was launched in September at the BA Festival. It differed from the previous surveys - it was open access, not employer based. The survey was open to all scientists wherever they were working (universities, research institutes, industry, and public services and those on career breaks and NHS clinicians and scientists) (*Summary Report 26*). The majority of the 6,243 respondents were employed in higher education 57%, the next largest group was NHS 15%, followed by research institutes 10%, with just 2% on career breaks.

Aims and objectives

The main drive for the survey came from the UKRC. They wanted a more inclusive survey than the previous ASSET surveys and needed to meet OST DTI expectations, of a survey that would reach scientists working in schools and FE, and to go beyond the research intensive universities who had previously participated in ASSET (only 9 of the 40 universities in 2003/04 surveys were post '92, and had contributed low numbers of respondents).

The Athena Project had the technology to run the survey and analyse the results and was interested to see the results even though it would not be around to disseminate the findings.

Findings - success or failure and contributing factors

The different approach resulted in a reversal of the gender balance in the survey. The respondents for the 2003 and 2004 surveys were ~65% men, 35% women, the 2006 survey 35% men, 65% women. This made it difficult to measure any changes or make any real comparisons.

The Athena Project and the professional societies, who had supported the previous surveys, had good university contacts which they used to achieve a high level of university respondents (3,453) from 70 universities, but did not have the contacts from FE and schools. Unlike the previous surveys it was not possible for individual universities to access their own data. UKRC provided core funding for the survey and their initial priority was to explore career breaks as part of a wider programme, although this didn't happen.

The Athena Project was interested in differences by discipline and spent time on analysing this data. However, at this stage in the life of the project there was neither time nor funding for the project to produce and disseminate a report. It was fully committed to finishing up its other projects.

The lessons learnt from this proved valuable for the 2010 survey. Possibly the most important was only to ask and analyse questions where it was clear how the information collected could be used/could influence action at university and/or department level and or by professional societies.

The next was that the analysis to be reported should be agreed in advance with funders.

Outputs outcomes and impact

Top line results were presented at the Royal Society Athena Conference in November 2006 and two digests, one concerned with the employment sector -(HE, Research Institutes, NHS, Industry) and the other looking at HE by grade and discipline were provided to UKRC to put on its website.

HEFCE funding to Imperial College and the Royal Society in 2010 allowed streamlining of the survey and the production of results. This will allow future surveys to be run at low cost using the template that was developed to produce local and national survey results with little delay. A report was produced looking at the headline findings from the 2003/04 and 2006 Surveys (*Athena Forum report 2*).

Summary 26

(www.medicalwomensfederation.org.uk/images/Download_WomenInAcademicMedicine2007.pdf)

2007 Women in Academic Medicine (WAM)

The Athena Project was a partner in this HEFCE funded project led by Imperial College and the BMA. The project used ASSET 2006 to collect data from academics and NHS staff. The Athena Project advised on the analysis of the data, the identification of the key findings and the recommendations on good practice.

Aims and objectives

The aim of the study was to develop good practice to improve recruitment and retention through:

- Testing personal and institutional assumptions on career progression
- Identifying barriers to women's careers
- Identifying differences for women between academic and NHS career pathways and their rewards
- Provision of a baseline for future studies to evaluate improvements.

The intention was that the findings of the study would be used to help raise awareness of the gender disparities that existed in academic medicine (academic medicine was defined as the work undertaken by clinicians with responsibilities to both their university and their NHS Trust).

Findings - success or failure and contributing factors

Previous Athena Project initiatives had not had much impact in medicine. Medicine was the one discipline where participant numbers rose significantly from 491 in the 2003/04 ASSET survey to 910 in 2006. It tested and proved the robustness of ASSET and the Athena framework for action, in a different environments- academic medicine, and NHS.

Lessons on good practice and its transferability

The report included useful examples of good practice identified by the study.

Outputs outcomes and impact

In April 2008 comparative data was provided to WAM on:

- HE - all disciplines
- HE - respondents in medicine and dentistry including non clinical academics
- NHS - all respondents including non clinical scientists.

Summary 27

(http://www.rsc.org/images/GoodPractice_tcm18-127915.pdf)

2007 Second Good Practice in University Departments Initiative with the RSC

This joint review started in 2007. It was a follow up to the 2004 work (*Summary 22*). The report *Planning for Success: Good Practice in University Science Departments* was published in 2008. A checklist, based on the five point Athena Framework was sent to UK chemistry departments. All the (38) contributing departments had some good practice in place, but in many cases the good practice was built on university policies, expectations and requirements. In 2004 there had been pockets of good practice in a small number of departments, now good practice was more widely spread.

Aims and objectives

The aim of this report was to review progress on how things had changed since 2004, to discover what new and useful good practice had been developed, and to provide:

- A good practice checklist which could be used by any university STEM department
- Examples of good practice which could be adapted by university STEM departments
- Markers against which future progress could be measured

The report was intended to be the RSC's first contribution to the Athena Partnership's STEM Good Practice Toolkit (*Summary 28*).

Findings - success or failure and contributing factors

This report drew on the lessons learnt by the Athena Project and the RSC since 1999.

Lessons on good practice and its transferability

What was clear from the first RSC report (and other work e.g. ASSET, Athena SWAN) and this report was that:

- Good practice benefits all, staff and students, men and women. However, bad practice adversely affected women's careers more than men's
- The best departments didn't target measures specifically at women
- Good practice wasn't about how many women were in the department but was about processes that were fair, flexible, accessible and transparent to all
- Good practice departments appeared to be able to attract and retain women better than other departments.

There was no evidence that the introduction of good practices affected the excellence of the science carried out. Good practice equated with good science. Leadership from the top, with the Head of Department acting as champion, was critical to changing culture, making the changes stick and changing behaviour. The age profile of the department, and the diversity of its staff, made a difference. Young men and women with families had different expectations and needs from their older colleagues.

Outputs outcomes and impact

It was intended that the checklist as used for this work would be further developed as part of the Athena SWAN initiative. This did not happen. However, the checklist was most recently been used by the LMS in their good practice initiative. The report *Advancing Women in Mathematics: Good Practice in UK University Departments* was published in February 2013.

Had the Athena Partnership continued, the full value from this work would have been achieved. Some of the lessons have fed across to Athena SWAN. Work started on benchmarking the 38 participating departments but was not completed (*Summary 28*).

Summary 28

72007 The Athena Partnership

The partnership was developed by the Athena Project with the RSC, IOP and UKRC, with support from the RAEng. It was a group of STEM professional institutions and learned societies who were committed to fostering good practice in HE. It was seen as part of the project's legacy alongside ASSET, Athena SWAN, and the Athena Forum. It was seen as a useful way after the project closed to:

- Engage the professional societies
- Support the professional societies with less resources
- Continue the identification, encouragement and dissemination of good practice
- Continue the development of tools and methodologies to measure progress and impact.

Aims and objectives

The aim of the partnership was to leverage the existing work of the founding members, by making the tools they have developed available for use by a wider range of professional and learned societies in their work with university departments to; create a culture in which students and staff, men and women, can achieve their full potential; improve the recruitment, retention and promotion of women; meet the requirements of the Gender Equality Duty; gain Athena SWAN recognition.

Findings - success or failure and contributing factors

The IOP and RSC were active throughout 2008, but the support offered by UKRC did not materialise. The partnership did not survive the departures of four key people from the RSC, the IOP, and the RAEng around the end of 2008.

Lessons on good practice and its transferability

The intention of the partnership was to share approaches and methodologies that had been proven to work and which identified good practice and allowed it to be disseminated providing support for the less well resourced professional societies.

Outputs outcomes and impact

The partnership developed a standard visit and report package which could be resourced by a professional society. IOP's site visits had been successful but were expensive in people and money terms. (Women in University Physics Departments- A Site Visit Scheme 2003- 2005)

The RSC checklist (*Summary 22*) was adapted to gather information in advance of a department visit. Four Joint IOP RSC visits (two chemistry and two physics departments) were held. The purpose of the visits was to: provide an external reference for departments in the context of Athena SWAN, provide feedback to the departments and make suggestions for improvement in working practices. The visits ran well; a standardised format for the visits and a proforma report were developed.

A framework for benchmarking departments was also developed. It was tested using data generated by the RSC for 34 departments using an earlier version of the checklist and interviews with Heads of Departments. The data on each department was less than a visit would have generated, but was at a significantly lower cost. A benchmarked departmental list was produced and it was intended to be used to identify and define specific interventions with departments (visits and workshops). However reorganisation at the RSC intervened and the work stopped.

In 2012 this methodology was used by the LMS to benchmark 30 UK mathematics departments. The London Mathematical Society, *Advancing women in mathematics: good practice in UK university departments*, at <http://www.blitzadv.co.uk/LMS-BTL-17Report.pdf>

Appendix D
Members of the Athena Committee between 1999-2007

Dr Margaret Adams
Professor Dame Jocelyn Bell Burnell FRS
Dr Susan Bullivant
Nicola Dandridge
Nicola Dowds
Caroline Fox
Professor Lynne Frostick
Professor Susan Gibson
Professor Dame Wendy Hall FRS
Erica Halvorsen
Professor Dame Julia Higgins FRS
Professor Joyce Hill
Dr Nancy Lane
Lady Brenda McLaughlin
Rosa Michaelson
Dr Jan Peters
Professor Teresa Rees
Dr Gill Samuels
Annette Williams

Committee Secretary Fiona Maclean

Appendix E

Generic Athena Good Practice Checklist with examples from university and department contributors to Athena's programmes

Introduction

The development of the framework and good practice checklist is described in Section 1. The framework underpins the Athena SWAN Charter, and the IOP Juno Code of Practice, and was used for the analysis of data in the 2010 ASSET survey. The checklist and the Athena framework for action have common principles and a common structure:

There are ten action areas, each with a short statement of principles

Under each action area are three benchmarks each with its own 'statement'

There are three indicators under each benchmark

Athena good practice checklist

The checklist which follows is generic and can be used by a university, research institution, or a department. It is the latest re-formulation of the university good practice checklist first developed by Athena in 2003. Mapped on to the checklist are examples of good practice developed by universities and department who worked with Athena between 1999 and 2007.

Note

Section 3 of this Review *Findings – Good Practice and Culture Change* summarises the Athena Project's findings on the characteristics of the good practice as identified, developed, adopted and encouraged by universities and departments in Athena's programmes. The descriptions are given under the ten principles of the Athena framework for action.

Specific examples of good practice are included in the summaries of individual programmes and initiatives in *Appendix B*. The summaries provide web links to the published reports.

National data from the 2010 survey is analysed under the Action Framework and may provide useful comparators for local surveys and can be found on <http://www.athenasurvey.org.uk/results.htm>

Examples of checklists as used by departments

The checklist used for the 2007 Athena Project RSC report on good practice in university chemistry departments can be found at http://www.rsc.org/images/GoodPractice_tcm18-127915.pdf

The most recent national use of the checklist was for the 2013 London Mathematical Society report *Advancing Women in Mathematics: Good Practice in UK Chemistry Departments*. The report including the checklist used to collect examples of good practice can be downloaded from:

<http://www.blitzadv.co.uk/LMS-BTL-17Report.pdf>

Use of the generic checklist

The generic checklist is adaptable for a variety of usages. Much of the recent use of the checklist has been by universities and departments to collect evidence for an Athena SWAN application and for checking progress over time.

Generic Athena Good Practice Checklist with examples from university and department contributors to Athena's programmes

1 THE ORGANISATION FOR ACTION

Principles

An established organisational structure is key to sustaining cultural change and the structures, policies, practices, and arrangements which support the culture.

1.1 LEADERSHIP AND ENGAGEMENT

Benchmark Statement

The championing, by senior management, the endorsement of senior academics and the awareness and engagement of individuals is critical to the development and sustainability of good practice and culture change.

Indicator 1.1A Senior management support, leadership, and encouragement

Sum	Org/Programme	Notes	Publications
2	1999 Development programme	Vice Chancellors commitment and funding	Athena Report 8
27	2007 RSC and Athena Project	Report includes good practice	RSC Report
17	Queen's University	Work of their Women's Forum	Athena Report 20
17	Imperial College	Work of Rector's committee	Athena Report 19

Indicator 1.1B Senior academics engagement and participation

Sum	Org/Programme	Notes	Publications
2	1999 Development programme	Projects engaged senior academics	Athena Report 8
17	Cambridge University	Work of Women in science engineering and technology initiative (WiSETI)	Athena Report 18

Indicator 1.1C Individual awareness, engagement, participation in and benefit from action

Sum	Org/Programme	Notes	Publications
1	POST	On line debate engaged community & set the Athena's good practice action agenda	POST Report Athena Report 8
2	1999 Development programme	Projects raised awareness of F/M differences	Athena Report 8
17	Queens Belfast	Work of University's women's forum	Athena Report 20

1.2 ACCOUNTABILITY FOR ACTION

Benchmark Statement

There is a lead committee with a membership representative of the F/M staff profile. It oversees action, monitors progress and reports to senior management. Individuals and post holders are held responsible for specific actions. Lead committees work together across the university.

Indicator 1.2A Lead committees

Sum	Org/Programme	Notes	Publications
5	Imperial College	Early established Rector's committee	Athena Report 3
17	Imperial College	Continuing work of Rector's Committee	Athena Report 19
17	Cambridge University	WiSETI committee reported to University General Board	Athena Reports 18

Indicator 1.2B Lead committees work together

Sum	Org/Programme	Notes	Publications
17	Cambridge University	ISET departments had a designated WiSETI reps.	Athena Reports 18

Indicator 1.2C Individuals/post holders responsibilities

Sum	Org/Programme	Notes	Publications
	1999/00 development programmes	<i>Projects in the programmes recognised the importance of this, but no specific examples have been identified.</i>	

1. 3 RESOURCING ACTION

Benchmark Statement

Action programmes which impact the organisation, its culture and its staff are resourced (expertise, people time and money) and supported. Time spent by the individuals responsible for specific action/programmes is recognised and taken into account in determining workload.

Indicator 1.3A Funding is allocated/earmarked

Sum	Org/Programme	Notes	Publications
	1999/00 development programmes	<i>Projects in the programmes recognised the importance of this, but no specific examples have been identified</i>	

Indicator 1.3B Expertise and administrative support is provided

Sum	Org/Programme	Notes	Publications
	1999/00 development programmes	<i>Projects in the programmes recognised the importance of this, but no specific examples have been identified</i>	

Indicator 1.3C Staff time commitment is recognised

Sum	Org/Programme	Notes	Publications
	1999/00 development programmes	<i>Projects in the programmes recognised the importance of this, but no specific examples have been identified</i>	

2 THE EVIDENCE BASE FOR ACTION

Principles

The collection, communication and use of quantitative and qualitative data is the basis for successful action, for planning and for measuring progress.

2.1 STUDENT DATA

Benchmark Statement

Departments are provided with time series gender disaggregated data (UG and PG by course of study offers, acceptances, drop outs and outcomes) which is used to plan action, measure progress and make comparisons and is available on the web.

Indicator 2.1A Student F/M profile

Indicator 2.1B Student F/M progression

Indicator 2.1C Time series F/M student data

Sum	Org/Programme	Notes	Publications
		<i>No examples identified Before developing SWAN Athena's focus was staff</i>	

2.2 STAFF DATA

Benchmark Statement

Departments are provided with time series gender disaggregated data by grade and contract type (which includes F/M turnover and representation in management and committees) which is used to plan action, to monitor and measure progress and make comparisons. Data is accessible by staff and summarised on the web.

Indicator 2.2A F/M Staff profile and turnover

Sum	Org/Programme	Notes	Publications
10	Edinburgh University	Long term monitoring, use and reporting of data	Athena Report 10 Athena Case Study 2
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 2.2B F/M Representation in management and on committees

Sum	Org/Programme	Notes	Publications
12	Luton University	Project on committees, membership and their working.	Athena Report 11

Indicator 2.2C Time series F/M staff data

Sum	Org/Programme	Notes	Publications
10	Edinburgh University	Long term monitoring, use and reporting of data	Athena Report 10 Athena Case Study 2

2.3 QUALITATIVE DATA

Benchmark Statement

Surveys are undertaken. Gender disaggregated data from surveys and focus groups (alongside data from external surveys and reports) is used to raise awareness, for comparisons, to identify areas where action is needed, and to assess the effectiveness and impact of changes made.

Indicator 2.3A Student surveys

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

Indicator 2.3B Staff surveys

Sum	Org/Programme	Notes	Publications
4	University of East Anglia	ECR Network survey - fore runner of ASSET	Athena Report 2
2	1999 development programme	Athena Report 7 - information on surveys by UEA and OU	Athena Reports 2,5, 7
14	Surrey University	Project survey	Athena Report 13
12	Luton University	Questionnaire for female academics.	Athena Report 11

Indicator 2.3C Use of data from external surveys and reports

Sum	Org/Programme	Notes	Publications
9	2000 development programme	Project surveys raised awareness and supported recommendations for change	Athena Report 15,16
5	Imperial College	Previous survey identified areas for action	Athena Report 19

3 APPOINTMENT AND PROMOTION PROCESSES

Principles

University faculty and department appointment and promotion processes, systems and the decisions taken, are open, transparent and fair.

3.1 DECISION MAKING

Benchmark Statement

Appointments and promotion decisions (including postdoctoral) are made by panels with at least one man and one woman. Unconscious bias training is provided for members and is required for chairs. The individuals who participate in decision making processes at department level are representative of the department's F/M staff profile.

Indicator 3.1A Gender of decision makers

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report (Appx. A)

Indicator 3.1B Training for panel chairs and members

Sum	Org/Programme	Notes	Publications
12	Luton University	Training committee chairs	Athena Report 11

Indicator 3.1C Representativeness of staff involved at department level

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

3.2 APPOINTMENT AND PROMOTION INFORMATION AND ITS COMMUNICATION

Benchmark Statement

Appointment and promotion processes and criteria are clear, fair, and appropriate. The information communicated to candidates and panels is timely and effective. The information provided on posts is useful, attractive, inclusive and reflects the department (its members and activities) as a whole.

Indicator 3.2A Processes and criteria clear fair and appropriate

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report (Appx. A)
10	Edinburgh University	Changes to selection and promotion systems and criteria	Athena Report 9 Athena Case Study 2
17	Imperial College	Identified different practices in the operation of department promotion panels and published examples of 'department' best practice	Athena Report 19

Indicator 3.2B Communication of information timely and effectively department level

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

Indicator 3.2C Information is inclusive welcoming and family friendly

Sum	Org/Programme	Notes	Publications
27	2007 RSC and Athena	Report includes good practice	RSC Report

3.3 MONITORING APPOINTMENTS AND PROMOTIONS

Benchmark Statement

Appointment and promotion applications, appointment short lists, the promotions supported by departments/faculties, and outcomes are monitored against the appropriate candidate pool. The analysis is reported and progress on female representation is compared with the national picture, like universities and or cognate departments, as appropriate.

Indicator 3.3A Application process - stages monitored

Sum	Org/Programme	Notes	Publications
13	Oxford University	Recent recruitment monitoring	Athena Report 12 Case study 6

Indicator 3.3B Promotion process – stages monitored

Sum	Org/Programme	Notes	Publications
17	Imperial College	Examples of department best practice published	Athena Report 19

Indicator 3.3C Outcomes monitored, measured and reported

Sum	Org/Programme	Notes	Publications
10	Edinburgh University	Long term monitoring, use and reporting of data	Athena Report 10 Case Study 2

4 LEVELLING APPOINTMENT AND PROMOTION PLAYING FIELDS*Principles*

Universities and departments ensure that men and women are equally likely to apply for appointments and promotion, and are equally likely to be successful.

4.1 ENCOURAGE CANDIDATES FOR APPOINTMENT AND PROMOTION*Benchmark Statement*

Potential candidates, internal and external, are identified, informed of opportunities and encouraged to apply. Departments positively review all staff, for their promotion and career potential, before the promotion 'round' and do not rely on self-nomination.

Indicator 4.1A Widen the candidate pool

Sum	Org/Programme	Notes	Publications
13	Oxford University	University Career Development Fellowship scheme	Case Study 6

Indicator 4.1B Staff encouraged to apply for appointment and promotion

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report (Appx A)
27	2007 RSC and Athena	Report includes good practice	RSC Report (
23	ASSET 2003/04	F/M views	Occasional Paper 4

Indicator 4.1C Positive review of all staff for promotion

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

4.2 SUPPORT FOR PROMOTION CANDIDATES*Benchmark Statement*

Training workshops are available for promotion candidates. Sessions cover promotion systems and criteria and preparing a case for promotion. Departments offer candidates support personal support, advice on gaps and weaknesses in their CVs and opportunities to gain the necessary experience.

Indicator 4.2A Training workshops

Sum	Org/Programme	Notes	Publications
14	Surrey University	Sessions for potential candidates	Athena Report 13
22	2004 RSC and Athena	Report includes good practice	RSC Report
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 4.2B Personal support through the process

Sum	Org/Programme	Notes	Publications
10	Edinburgh University	Explored recent experiences and made changes	Athena Report 9 Case Study 2

Indicator 4.2C Advice on gaps and weaknesses

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

4.3 FEEDBACK AND FOLLOW UP FOR CANDIDATES

Benchmark statement

Training/guidance on giving positive feedback is available. Positive feedback is offered for all candidates for promotion and internal candidates for appointments. Unsuccessful candidates are offered unbiased advice, career guidance and developmental opportunities and activities are made available to them

Indicator 4.3A Positive feedback

Sum	Org/Programme	Notes	Publications
19	Leeds 2002	The Faculty of Biological sciences Guide on giving feedback	Athena Report 22 Case study 4
22	2004 RSC and Athena	Report includes good practice	RSC Report
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 4.3B Unbiased career advice and guidance

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

Indicator 4.3C Developmental activities and opportunities

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

5 CAREER DEVELOPMENT PROVISIONS

Principles

Career development provision, in particular the provisions for early career researchers is effective, its quality is monitored and systems for staff appraisal are appropriate.

5.1 STAFF DEVELOPMENT AND TRAINING

Benchmark statement

Departments provide a comprehensive induction for their staff, which complements university provision. Departments are aware of their staff's development and training needs, of what is available in the university and its quality/usefulness. Staff are encouraged to participate as appropriate.

Indicator 5.1A Induction

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report

Indicator 5.1B Awareness of training needs and provision

Sum	Org/Programme	Notes	Publications
14	Surrey University	Identified women's development needs	Athena Report 13

Indicator 5.1C Participation encouraged

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

5.2 EARLY CAREER RESEARCHERS (ECR) DEVELOPMENT

Benchmark Statement

The transferable skills and professional development training provision is useful and is taken up by ECRs. Departments also ensure that their ECRs can and do access impartial careers advice and guidance and are aware of their personal responsibility for their own careers, and making informed career decisions/choices.

Indicator 5.2A Transferable skills and professional development training

Sum	Org/Programme	Notes	Publications
6	Nottingham & Loughborough	Support programme for ECRs	Athena Report 4,6 7
10	Edinburgh University	Researcher development programme set up in 1997	Athena Report 9 Case Study 2
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 5.2B Access to impartial career advice

Sum	Org/Programme	Notes	Publications
10	Edinburgh University	Review and recommendations	Athena Report 9 Athena Case Study 2
22	2004 RSC and Athena	Report includes good practice	RSC Report
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 5.3C Individual responsibility for career choices

Sum	Org/Programme	Notes	Publications
6	Nottingham and Loughborough universities	Support programme for women post	Athena Report 4
4	UEA	ECR network	Athena Report 2
10	Edinburgh University	Review and recommendations	Athena Report 9 Athena Case Study 2

5.3 APPRAISAL

Benchmark statement

There are effective and appropriate appraisal arrangements for all levels of staff, which are well regarded. There is a high level of take-up. Where training needs are identified they are followed through.

Indicator 5.3A Arrangements

Sum	Org/Programme	Notes	Publications
27	2007 RSC and Athena	Report includes good practice	RSC Report
23	ASSET 2003/04	F/M views	Occasional Paper 4

Indicator 5.3B Take up and satisfaction

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

5 Indicator 5.3C Training follow through

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

6 DEVELOPMENTAL ACTIVITIES

Principles

Systems are in place to ensure that staff engage in activities, internal and external, that contribute to their career progression and professional profile.

6.1 MENTORING

Benchmark Statement

Mentoring for academics, researchers, postdocs and post graduates is supported and participation (as mentors and mentees) is encouraged. The schemes available are publicised, well managed and appropriately resourced and their usefulness is monitored. Training and support for mentors and mentees is offered.

Indicator 6.1A Mentoring supported participation encouraged

Sum	Org/Programme	Notes	Publications
5	Imperial College	Rector's support	Athena Report 3
22	2004 RSC and Athena	Report includes good practice	RSC Report
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 6.1B Schemes - publicised, managed resourced and monitored

Sum	Org/Programme	Notes	Publications
2	1999 University Development programme	Report includes good practice	Athena Report 8
3	Bolton Institute	A well-structured and managed scheme	Athena Report 1 Athena Case Study 1
5	Imperial College	Light touch scheme	Athena Report 3
8	Sheffield Hallam University	Mentoring scheme as a change agent	Athena Report 6
3,5,8	1999 development programme	Report 7 -practical information on mentoring schemes	Athena Report 7
17	Oxford Brookes	Web based mentoring scheme	Athena Report 25

Indicator 6.1C Training and support for mentors and mentees

Sum	Org/Programme	Notes	Publications
27	2007 RSC and Athena	Report includes good practice	RSC Report
22	2004 RSC and Athena	Report includes good practice	RSC Report
3	Bolton Institute	Report includes good practice	Athena Report 1 Case Study 1

6.2 NETWORKS AND ROLE MODELS

Benchmark statement

Networks at university, faculty, and department levels are encouraged. Staff are encouraged to contribute to internal, external, professional, and special interest networks and to use them on behalf of the department. Role model activity is encouraged and supported.

Indicator 6.2A Networks supported and encouraged

Sum	Org/Programme	Notes	Publications
4,17	UEA	A long lived network with an imaginative programme.	Athena Report 2, 14 21
2	1999 development programme	Practical information on mentoring schemes	Athena Report 7 & 8
6	Nottingham & Loughborough	Support programme for ECRs led to regional network	Athena Report 4
15	2000 LAWNs	Describes work of the networks	Athena Report 14
18	UEA 2002	Describes work of the network	Athena Report 21
19	2002/03 LAWNs	Describes work of the networks	Athena Report 22
19	2004 LAWNs	Update on activities	Case Study 3
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 6.2B Departments encourage staff to contribute to networks

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report

Indicator 6.2C Role model activities supported and encouraged

Sum	Org/Programme	Notes	Publications
4	UEA	Network programme showcased role models	Athena Report 2
22	2004 RSC and Athena	Report includes good practice	RSC Report
15	2000 LAWNS	The St Andrews network	Athena Report 14

6.3 INTERNAL AND EXTERNAL ACTIVITIES

Benchmark Statement

Staff are encouraged to engage in activities, internal and external which raise their profile and bring them and their science, to the notice of senior staff. Nominations/recommendations for professional, representative or management roles and for prizes, awards, and marks of esteem are gender monitored.

Indicator 6.3A Internal activities

Sum	Org/Programme	Notes	Publications
10	Edinburgh University	Involvement in department activities impact for progression.	Athena Report 10 Athena Case Study 2
14	Surrey University	Report includes good practice.	Athena Report 13
12	Luton University	Women on university committees	Athena Report 11
22	2004 RSC and Athena	Report includes good practice	RSC Report
27	2007 RSC and Athena	Report includes good practice	RSC Report
21	ASSET 2003	F/M views on activities influenced career progression	Athena Report 22
23	ASSET 2003/04	F/M views	Occasional Paper 4

Indicator 6.3B External professional activities

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

Indicator 6.3C Nominations

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

7 EFFECTIVE MANAGEMENT

Principles

The administrative and academic contributions of staff is effectively, fairly and openly managed and resourced.

7.1 MANAGEMENT SYSTEMS

Benchmark statement

University and department arrangements for accountability, reporting and communication are clear, effective, open, well understood and well regarded by staff generally. The gender profile of department /group management teams/committees reflects the staff profile of the department.

Indicator 7.1A Accountability and reporting arrangements

Sum	Org/Programme	Notes	Publications
27	2007 RSC and Athena	Report includes good practice	RSC Report
21	ASSET 2003	F/M experiences	Athena Report 22

Indicator 7.1B Representative management

Sum	Org/Programme	Notes	Publications
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27	2007 RSC and Athena	Report includes good practice	RSC Report
23	ASSET 2003/04	F/M views	Occasional Paper 5

Indicator 7.1C Communication

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report
27	2007 RSC and Athena	Report includes good practice	RSC Report

7.2 RESOURCE ALLOCATIONS

Benchmark statement

Systems for allocating resources (funding, offices, space, equipment and technical support) are fair, clear, open, well understood and well regarded by staff generally.

Indicator 7.2A Allocation Systems

Sumo	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report

Indicator 7.2B Space, offices equipment and technical support

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

Indicator 7.2C Financial allocations

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

7.3 WORKLOAD ROLES AND RESPONSIBILITIES

Benchmark statement

The systems for allocating and balancing workload (research, teaching and administration) and rotating roles and responsibilities are fair, clear, open, well understood and well regarded by staff generally.

Indicator 7.3A Balancing teaching research and administration

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 7.3B Rotation of management and administrative roles and responsibilities

Sum	Org/Programme	Notes	Publications
14	Surrey University	Review of systems	Athena Report 13
12	Luton University	Learning	Athena Report 11
10	Edinburgh University	Change recommended on basis of review	Athena Report 10 Athena Case Study 2
22	2004 RSC and Athena	Report includes good practice	RSC Report
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 7.3C Workload allocation system

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report
27	2007 RSC and Athena	Report includes good practice	RSC Report

8 WORKPLACE CULTURE

Principles

Working environments are open, inclusive, responsive to and supportive of staff's career ambitions and expectations. Staff and students are treated with respect. Staff's contributions are recognised, and they are able to enjoy the rewards of a career in STEMM.

8.1 WORKPLACE ENVIRONMENT

Benchmark statement

High standards of behaviour (towards staff and students) are set. Staff are aware of and respect these standards. Staff generally would expect timely and effective action on any reported 'breach' and would agree that their working environment was open, friendly and co-operative.

Indicator 8.1A Standards of behaviour

Sum	Org/Programme	Notes	Publications
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 8.1B Open and friendly environment

Sum	Org/Programme	Notes	Publications
		No examples identified	

Indicator 8.1C Co-operative working

Sum	Org/Programme	Notes	Publications
		No examples identified	

8.2 COLLEGIALITY

Benchmark statement

Arrangements ensure that staff are supported and encouraged by colleagues (their juniors peers, seniors) and line managers. Staff generally have a sense of belonging and inclusion in the work and social activities of the department /their group and these arrangements would generally be well regarded by staff.

Indicator 8.2A Colleagues

Sum	Org/Programme	Notes	Publications
23	ASSET 2003/04	F/M views	Occasional Paper 4 & 5

Indicator 8.2B Line Managers

Sum	Org/Programme	Notes	Publications
23	ASSET 2003/04	F/M views	Occasional Paper 5

Indicator 8.2C Belonging and inclusiveness

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report
23	ASSET 2003/04	F/M views	Occasional Paper 4

8.3 INDIVIDUAL CONTRIBUTIONS VALUED

Benchmark Statement

Systems are in place that ensure individuals' contributions (research, management/administrative, teaching and external professional) are recognised and valued. The systems would generally be well regarded by staff.

Indicator 8.3A Research and teaching contributions

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report
22	2004 RSC and Athena	Report includes good practice	RSC Report
21 23	ASSET 2003/4	F/M views	Athena Report 22 Occasional Paper 4 & 5

Indicator 8.3B Administration and management contributions

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report
21	ASSET 2003	F/M views	Athena Report 22

Indicator 8.3C External professional contributions working

Sum	Org/Programme	Notes	Publications
		<i>No examples identified</i>	

9 FLEXIBILITY

Principles

Arrangements are in place to ensure the flexibility that underpins successful careers.

9.1 APPROACHES TO FLEXIBLE WORKING

Benchmark Statement

Flexible working policies are in place and guidance on good practice and managing flexible working is available and accessible. Managers are aware of statutory requirements, and what is good practice. They discourage a long hours culture and encourage flexible working.

Indicator 9.1A The availability of flexibility

Sum	Org/Programme	Notes	Publications
2	1999 university development programme	Information from surveys by UEA, and the Open University on the importance of flexibility	Athena Reports 2, 5, 7
22	2004 RSC and Athena	Report includes good practice	RSC Report
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 9.1B Awareness of individual needs for flexibility

Sum	Org/Programme	Notes	Publications
7	Open University	Project explored OU flexibility	Athena Report 5
22	2004 RSC and Athena	Report includes good practice	RSC Report
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 9.1C Long hours and present-ism

Sum	Org/Programme	Notes	Publications
27	2007 RSC and Athena	Report includes good practice	RSC Report

9.2 TAKE UP OF FLEXIBILITY

Benchmark Statement

Systems ensure that across departments, sections, and groups it is easy for staff to take advantage of the flexibility that exists, and that staff can and do work flexibly. Senior staff lead by example in their own working arrangements.

Indicator 9.2A Senior staff lead by example

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report

Indicator 9.2B Take up is encouraged

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report

Indicator 9.2C Take up is monitored

Sum	Org/Programme	Notes	Publications
		No examples identified	

9.3 FLEXIBILITY BUILT INTO ARRANGEMENTS-GOOD PRACTICE

Benchmark Statement

Meetings and events are time tabled so that as many staff as possible can attend, and timetabling of teaching does/can take into account individuals' needs for flexibility.

Indicator 9.3A Timing of meetings and events

Sum	Org/Programme	Notes	Publications
22	2004 RSC and Athena	Report includes good practice	RSC Report (Appendix A)

Indicator 9.3B Teaching timetabling

Sum	Org/Programme	Notes	Publications
		No examples identified	

Indicator 9.3C Local- group/section/unit arrangements

Sum	Org/Programme	Notes	Publications
		No examples identified	

10.CAREER BREAKS AND INTERRUPTED CAREERS

Principles

The support provisions and arrangements made for career breaks enable individuals to maintain a career trajectory that meets their personal circumstances, abilities and ambitions.

10.1 SUPPORTIVE APPROACHES TO CAREER BREAKS

Benchmark Statement

Practical information and guidance on support is available for departments and individuals. Departments support staff over the practicalities before, during and after a career break/unplanned career interruption and ensure that section/group heads are aware of what can be/ is provided. The support provided is generally well regarded.

Indicator 10.1A Awareness and support

Sum	Org/Programme	Notes	Publications
19	Leeds Bioscience Faculty	Study includes good practice	Case Study 4
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 10.1 Practical advice and information

Sum	Org/Programme	Notes	Publications
		No examples identified	

Indicator 10.1C Role models and case studies

Sum	Org/Programme	Notes	Publications
		No examples identified	

10.2 CAREER BREAKS - BEFORE AND DURING

Benchmark Statement

Departments ensure that individuals receive the support, advice and information they want. They help with, advise on, and/or make the support arrangements (for administration/teaching/research responsibilities) before, during and after a career break. The support provided is well regarded by its recipients.

Indicator 10.2A Individual Choice

Sum	Org/Programme	Notes	Publications
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 10.2B Cover arrangements

Sum	Org/Programme	Notes	Publications
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 10.2C Keeping in touch

Sum	Org/Programme	Notes	Publications
27	2007 RSC and Athena	Report includes good practice	RSC Report

10.3 CAREER BREAKS - ON/AFTER RETURN

Benchmark Statement

University childcare is good quality. Return, retention and progression rates are monitored and reported. Returners' needs (flexibility, personal support, mentoring, training and development to facilitate a smooth return and to get their career back on track) are recognised. Provisions are in place to meet those needs and are well regarded by returners.

Indicator 10.3A Support facilitating smooth return

Sum	Org/Programme	Notes	Publications
27	2007 RSC and Athena	Report includes good practice	RSC Report
21	ASSET 2003	F/M views	Athena Report 22
23	ASSET 2003/04	F/M views	Athena Occasional Paper 4

Indicator 10.3B Flexibility after return

Sum	Org/Programme	Notes	Publications
27	2007 RSC and Athena	Report includes good practice	RSC Report

Indicator 10.3C Career progression

Sum	Org/Programme	Notes	Publications
7	Open University	OU provisions and opportunities	Athena Report 5, 7
17	Imperial College	Fellowships for women returners gives a 'sabbatical' from teaching and administration	Athena Report 19

Appendix F Athena Project reports, occasional publications and case studies

Publication	Date	Organisation	Title	Brief description
Report 1	2001	Bolton University	Mentoring women in SET	Short report on their 1999/2000 pilot mentoring scheme for undergraduates, post graduates and staff, all female external mentors. The forerunner of a North West Universities Mentoring Scheme.
Report 2	2001	University of East Anglia	ResNet	Short report on network for contract research staff at UEA and on the Norwich Research Park set up in 2000 with findings from their career perceptions survey (the forerunner of ASSET). The network continues to be active.
Report 3	2001	Imperial College	Might mentoring help	Short report on a range of mentoring strategies piloted in 2000.
Report 4	2001	Nottingham & Loughborough Universities	Skill acquisition and mentoring during early career stages	Short report on their 2000 support programme for post docs which aimed to provide the skills and confidence needed for along term career in SET.
Report 5	2001	Open University	Beating barriers and constraints in HE careers	Short report-findings from their 2000 survey of their Associate Lecturers, exploring why the OU was their employer of choice.
Report 6	2001	Sheffield Hallam University	Developing a mentoring training programme	Short report on the development of mentoring training programme in 2000 based on the results of a survey.
Occ. Paper 1	2001	Athena Project	Women scientists in higher education a literature review	34 page review published June 2001.
Report 7	2002	Athena Project	Report on the 1999 Development Programme	14 page report on Athena's 1999 development programme focused on early career researchers.
Report 8	2002	Athena Project	Athena Development Programme 1999 Good Practice Guide	10 page report draws together good practice from the programme and key reports published in 1999/00- ETAN, Wellcome Trust, RSC, POST.
Report 9	2002	Edinburgh University	Bridging the gap	Short report on under representation of women at lecturer level and over representation at post doc level – women's attitudes to and experience of applying for lecturer posts.
Report 10	2002	Heriot Watt University	The development and retention of academic women	Short report on why women leave academic SET- examines career barriers and promotion processes.
Report 11	2002	Luton University	Inclusive committees	Short report on the representation and participation of women on university committees and resultant changes.

Report 12	2002	University of Oxford	Encouraging applications from women scientists	Short report on the barriers to women applying for lecturer appointments and resultant changes and positive action.
Report 13	2002	Surrey University	Moving up	Short report on career progression and promotion and resultant organisational-university and department changes.
Report 14	2002	Athena Project	Local Academic Women's Networks(LAWNs)	Short report on the aims and activities of five networks set up in 2000.
Report 15	2002	Athena Project	The Athena 2000 Development Programme	14 page report on Athena 2000 development programme - focus on career progression organisational and SET culture and processes.
Report 16	2002	Athena Project	Athena development programme 2000 good practice guide	12 page report explores the precursors to success, the action plans and how their success would be measured by the five participating universities.
Report 17	2002	Athena Project	New research on women, science and higher education	Short report of key themes from the Athena Research Conference September 2001.
Occ. Paper 2	2002	Athena Project	Gender Equity in academia; Lessons from the MIT experience	Text of first Imperial Athena Lecture May 2001 by Professor Lotte Bailyn, Faculty chair at the time the committee of women faculty in the school of science at MIT submitted its report a study of women faculty in science at MIT.
Occ. Paper 3	2002	Athena Project	New research on women, science and higher education	76 page report on the proceedings of the Athena Research Conference September 2001.
Report 18	2003	University of Cambridge	Women in SET initiative (WiSETI)	Short report on work by Cambridge on women's career progression.
Report 19	2003	Imperial College	Challenging culture the Rector's committee on academic opportunities	Short report on College committees work on women's career progression and changing the college culture.
Report 20	2003	Queens University Belfast	Addressing the gender imbalance	Short report on the university wide senior management led approach (listen, implement, embed) to tackle gender imbalance in all areas.
Report 21	2003	University of East Anglia	ResNet 2002 the maturing network a powerful tool	Short report on the continuing success of the network for post- docs set up in 2000.
Report 22	2003	Athena Project	Athena Guide to good practice 1999 to 2002	34 page report which draws together the good practice developed by universities taking part in Athena's programmes between 1999 and 2002.
Report 23	2004	London Metropolitan university	SWAN- Scientific women's academic network	Short report on work of the network from which the Athena Swan Charter recognition scheme developed.

Report 24	2004	Loughborough University	Embedding gender equality and diversity	Short report on a decade of work in embedding gender equality throughout the university.
Report 25	2004	Oxford Brookes University	European women in mathematics web based mentoring scheme	Short report on the development of and learning from a web based mentoring scheme for early career mathematicians.
Report 26	2004	Athena Project	ASSET 2003 The Athena survey of science engineering and technology in higher education	30 page report on findings of a survey in 2003 of 2172 male and female scientists in 23 UK universities covering links between activities which influence career progression, career aspirations and perceptions and experience of practices which can act as barrier to career progression.
RSC published	2004	Athena Project & Royal Society of Chemistry	Good practice in academic chemistry departments	32 page joint report based on 25 departments to identify, validate and disseminate the good practice which characterises a supportive department.
Case Study 1	2004	Bolton University	Mentoring a regional scheme for women academics in SET	Study of the key features of scheme developed out of the pilot run in Athena first development programme 1999/00.
Case study 2	2004	Edinburgh university	Career progression a range of complimentary initiatives from 1996 onwards	Study of ten years of university activities designed to support and promote equality of opportunity for women.
Case study 3	2004	Athena Project	Update on Athena's Local Academic Women's Networks (LAWNs) 2004	Study on the activities of four local networks in 2004.
Case study 4	2004	Leeds university	Career progression- a review of the progression and promotion of women in the biosciences	Study on work in 2001/02 to identify why so few women bio-scientists made the transition from post docs to lecturer and on into senior appointments and the changes needed.
Case study 5	2004	Lincoln university	Career progression of women in HE management initiative	Study of Lincoln's 2002/04 initiative to equip women for senior management positions.
Case study 6	2004	Oxford university	Career progression the university's career development fellowship scheme	Study on the university's positive action programme 2002 to 2004 to develop promising staff at an early career stage and create a more diverse 'pool' of candidates for academic posts.
Case Study 7	2004	Athena Project	SET good practice in higher education	6 page review of good practice in 28 UK universities based on a good practice checklist. Measures activity on mentoring, networks, appointment and promotion processes, organisation and culture progression.
Occ. Paper 4	2005	Athena Project	Getting There: The Athena surveys of over 6,500 scientists in UK university and research institutions	14 page paper presented in September 2005 at the fourth European conference on gender equality in higher education.

Report 27	2005	Athena Project	Report to UK Research Councils and Wellcome Trust Sanger Institute on ASSET 2004	Report on differences between the research council & HE sector & substantial differences between women's and men's experiences and perceptions of career progression.
Occ. Paper 5	2006	Athena Project	Maximising UK ASSETs	Report of 2005 Royal Society & Equality Challenge Unit Athena Conference on developing an action agenda to tackle key issues identified by the 2003/04 Athena Surveys.
RSC Published	2008	Athena Project with RSC	Planning for Success: Good Practice in University Science Departments	Report reviews progress since 2004 based on work of 38 university chemistry departments.

APPENDIX G

Glossary of Terminology

ASSET	Athena Survey of Science Engineering and Technology
AWISE	Association for Women in Science and Engineering
BBSRC	Biotechnology and Biological Sciences Research Council
BMA	British Medical Association
BCS	British Computer Society
CUCO	Commission on University Career Opportunity
CVCP	Committee of Vice Chancellors and Principals
DTI	Department of Trade and Industry
ECU	Equality Challenge Unit
E&D	Equality and Diversity
EO	Equal Opportunities
EWM	European Women in Mathematics
HE	Higher Education
HEFCE	Higher Education Funding Council for England
HEIs	Higher Education Institutions
IOP	Institute of Physics
LAWNs	Local Academic Women's Networks
LMS	London Mathematical Society
MRC	Medical Research Council
NERC	Natural Environment Research Council
OST	Office of Science and Technology
OU	Open University
POST	Parliamentary Office for Science and Technology
RAEng	Royal Academy of Engineering
RS	The Royal Society
RSC	Royal Society of Chemistry
SET	Science Engineering and Technology
SEMTA	Sector Skills Council for Science, Engineering and Manufacturing
SHEFC	Scottish Higher Education Funding Council
STFC	Science and Technology Facilities Council
STEM	Science, Technology, Engineering, Maths
STEMM	Science, Technology, Engineering, Maths and Medicine
SWAN	Scientific Women's Academic Network
UKRC	United Kingdom Resource Centre for Women in Science
WAM	Women in Academic Medicine
WiSETI	Women in Science Engineering and Technology Initiative