Why Science needs Women

With L'Oréal this month announcing the winners of the first For Women In Science UK Fellowships, we look at reasons why women are failing to build successful careers in science.

As Gordon Brown made clear in his last budget, improving and developing the science and research capabilities of the UK is vital to assure future economic growth. If the UK is to compete in a global knowledge economy, it is important to attract more of the best talent into research, in addition to building a broader spectrum of skills and expertise.

Women scientists are crucial to achieving these aims, but are currently significantly under-represented in the sector, making up only 19% of the UK's total science, engineering and technology (SET) workforce.[1] And the dearth of women making it to the top in science isn't simply a problem for the individual women concerned; it represents a serious hurdle to Britain's economic competitiveness in the future.

For many reasons, women are failing to build long-term, successful careers in science. It was in response to this issue, and stemming from a fundamental belief that 'the world needs science, and science needs women', that L'Oréal and UNESCO came together in 1998 to launch the global For Women In Science Programme.

The award programme was designed to promote and highlight the critical importance of ensuring greater participation of women in science, by awarding promising female scientists with fellowships to help them further their research.

Since the programme's launch in 1998, national award schemes have been rolled out in 22 countries. This month the first winners of the L'Oréal UK Fellowships For Women In Science, which were launched in January, are announced.

The UK awards, run in partnership with the UK National Commission for UNESCO and the Royal Institution of Great Britain, will offer three fellowships of £10,000 to assist outstanding young female scientists to further their research. L'Oréal UK is offering a further fellowship of £10,000, in association with the UK Resource Centre for Women in Science, Engineering and Technology (SET), to a woman scientist returning to scientific research following a career break.

Despite the UK's growing reputation as a centre of excellence for science and research, the problem of nurturing and retaining female talent is as acute here as elsewhere internationally. Women make up 37% of those entering science, engineering and research professions after first degree and post-graduate courses.[2] However, they form only 25% of the science workforce qualified at these levels.[3]

Even in those disciplines where women dominate at under-graduate and post-graduate levels, the number of women in more senior positions is low. In the biosciences, where women make up 63% of under-graduates, they constitute only 12% of university professors. Worryingly, across all SET disciplines women hold a measly 6% of professorships.[4]

So what is causing this black hole, in which bright young women scientists enter research careers, only to disappear within ten years?

Annette Williams is Director of the UK Resource Centre for Women in SET, which was established in 2004 to deliver a substantial part of the Government's Strategy for Women in SET. The UKRC works with the Research Councils UK to promote women's access to mainstream research funding and improve career management for researchers across the board.

She explains some of the pitfalls for female scientists:

"The career structure for researchers is problematic. Moving from post-doctoral positions to an established academic or research post is where many women get stuck and end up on a succession of fixed term contracts, unable to access independent grant funding. Taking a career break in your late twenties and early thirties can result in loss of momentum, reduced publication output, and leave women without a research post to return to."

This was certainly the case for Myfanwy Lloyd, an astrophysicist and university lecturer, who was a winner of a L'Oreal/ UKRC bursary, a programme of financial support for female scientists that preceded the UK For Women In Science scheme.

She was close to giving up her career following the birth of her children, finding the difficulty of maintaining a work life balance too stressful.

Myfanwy had returned to work at Manchester University, initially part time, then full time, after her first child. But returning part time after the birth of her second child, she found the burden of lecturing in physics and astronomy, while devoting time to her research into planetary nebulae, and still trying having time for her family, too much.

Close to giving up completely, she took an 18 month career break on the advice of the University and, with the help of the L'Oréal UK/UKRC bursary, was able to buy out half her teaching load this year, effectively buying time and freedom to spend on her research.

"As a woman in this field you feel under pressure to be the best. You can't just be ordinary. Working part time, you can feel under valued."

Another barrier faced by women is the 'boys-club' mentality of some research departments, where being in the minority, female scientists can be excluded and their contributions devalued.

Dr Nancy Lane, a Senior Research Associate at the Zoology Department of Cambridge University and a member of the L'Oréal UK For Women In Science Fellowships jury panel elaborates:

"Women are just as capable of creativity and innovation as men, but it is not expected of them and only

infrequently have they had a chance to shine. Groups in labs tend to publish as a collective, and it is difficult to establish which person is the creative genius behind the research. It is generally assumed to be the PI (principal investigator), who also brings in the grant money, and that person is rarely a woman. A change of culture is needed in order to provide equality of opportunity."

Finally, there is a real need to provide strong role models for women working in science, and also for girls thinking about career options at school.

One such role model is Baroness Susan Greenfield, the first female Director of the Royal Institution of Great Britain and the president of the For Women In Science jury panel.

She feels that from the youngest age possible, children should be introduced to the excitement of science, and its impact on every aspect of modern life.

"At the moment, the demands of the National Curriculum and the teaching of various exam syllabuses might divert young people from pursuing their genuine curiosity and fun of the subject."

According to Susan, we should also be focusing on the positive side of a career in science. "We need to communicate the advantages. A career in science can offer a very cosmopolitan lifestyle and many opportunities to travel. The most important thing to stress is the stimulation and enjoyment of doing work that is creative, often ground-breaking and completely unique to you."

Since the L'Oréal UNESCO For Women In Science programme was launched, over 350 women across the world have been recognised for their careers and received funding to further their research.

In its augural year in the UK, the programme is already proving just how necessary schemes like this are. Sophie Gasperment, L'Oréal's UK MD explains:

"We've seen a fantastic reception to the awards this year. We received an overwhelming number of applications and the calibre was exceptionally high. I'm delighted that, in conjunction with our partners, we are able to help further the careers of some exceptional young female scientists and help raise awareness of this critical issue."

Professor Alec Boksenberg, Chair of the UK National Commission for UNESCO adds: "The UK jury has had the privilege of considering a really very talented pool of highly qualified female researchers in the early stages of their careers spanning a broad range of scientific fields. This year's first UK winners will become part of an impressive For Women In Science community which stretches across every continent."

Phil Willis MP, the Chair of the Commons Science and technology Select Committee, who also sits on the jury panel continues:

"The barriers placed in the way of women are seriously denying UK Science access to some of its most talented researchers. This is an issue UK Science and its traditional institutions cannot ignore.

It's great that L'Oréal and its partners are doing something in response. Let's hope that the young women who receive fellowships this year go on to act as mentors, encouraging the next generation of female scientists in the UK."

REFERENCES

[1] http://www.setwomenresource.org.uk/
[2] First Destinations 2004-5 data from HESA, 2006
[3] Labour Force Survey, Four quarters for 2006
[4] HESA, 2007

L'Oréal UK For Women In Science Fellowship winners Dr Araxi Urrutia Odabachian, Cardiff University (left); Dr Theresa Burt de Perera, University of Oxford (second from left); Dr Anna Git, Cancer Research UK Cambridge Research Institute (second from right); and Dr Seirian Sumner, Zoological Society of London (right), pictured with Baroness Susan Greenfield, President of the For Women In Science Jury Panel (centre).