2001: the year of conferences on women in science

Gerlind Wallon

The under-representation of women in leading positions in the life sciences continues to receive a lot of attention to judge by the number of meetings held on this topic last year. Gerlind Wallon was at several of them. Here, she summarises the root causes of the persistent failure of women to get to the top in science, and outlines what more can be done both by women and for them.

Mary Osborn, chairperson of the ETAN group

It has always been common knowledge that few women rise to the top ranks of the academic world in Europe. But the European Commission (EC)'s European Technology Assessment Network (ETAN) report published in 2000[1] elevated the evidence for this phenomenon from anecdote to hard fact. Mary Osborn, group leader at the Max Planck Institute for Biophysical Chemistry in Göttingen (Germany) was Chair of the ETAN Expert Working Group that compiled the report. She summarised its findings at the meeting *The glass ceiling for women in the life sciences* organized by the European Molecular Biology Organization (EMBO) last June.

On average, women hold only 10% of full professorships or equivalent posts in the life sciences in Europe, even though men and women start out in equal numbers as undergraduates. And this has not changed significantly over the past 10–20 years. If the rate of progress achieved in recent years continues at its current snail's pace – a 0.5–1% increase in the number of women in higher positions per year – gender equality will not be reached before the year 2050. Clearly not a motivating prospect for today's young female scientists!

Consequently, the mostly female life scientists who came to Heidelberg (Germany) from all over Europe for the EMBO meeting spent a long time exploring the complex reasons why women leave science[2]. The many suggestions that emerged from the discussions can roughly be assigned into two categories. First, the apparent need to make a choice between research and family, and second, overt and subtle discrimination against women.

Because childbearing often coincides with the time when young scientists have to be most competitive, women are clearly at a disadvantage. The absence of well-defined career paths with the option of remaining at an intermediate level until children have reached a certain age works against women. Compounding this, a lack of successful role models – women who have managed to have both a good career and a family – reinforces the notion of the incompatibility of high-level research with family life for women.

Women who have overcome these obstacles usually experience discrimination also later on as they try to enter the higher scientific ranks. Men tend to select other men for positions of leadership, whereas women are usually not considered as potential leaders. And if they are selected, they are frequently offered lower salaries, less lab space and lower research budgets (*see,* for example, *A study on the status of women faculty in science at MIT*[3]).

This was the experience of Christiane Nüsslein-Volhard, Nobel Laureate and Director of the Max Planck Institute for Developmental Biology in Tübingen (Germany). "When I was appointed, I got only half or a third of the budget that was normally allocated to a male, and I think that never before or never after has there been a Max Planck Director elected that got so little," she recalls.

Christiane Nüsslein-Volhardt, a woman who made it to the top

Clearly, women often have to work harder to get at least the same recognition as their male colleagues. Daniela Rhodes, group leader at the UK's Medical Research Council Laboratory for Molecular Biology (Cambridge, England), says, "I do not think that women should have to fight harder then men. We have to set up a system that makes it easier for women to stay in science."

There are obvious economic reasons why women who have been educated in science should stay in science. The BMBF (the German ministry for education and research) estimates that it takes about €500,000 of public and private money to educate a scientist to the PhD level – money that is wasted when she leaves the work force.

The social implications of women PhDs leaving science is doubly serious as, according to one study[4], European industry and academia will encounter a shortage of approximately 500,000 scientists in the near future because the number of students enrolling in science subjects is dwindling. Leaving women behind or discouraging them from staying in science will deepen the rift between the increasing demand for trained scientists and the decreasing number of students in the life sciences.

Why isn't a woman more like a man?

Maria Fischer, from SCS Personalberatung GmbH, a headhunting and personnel training company in Düsseldorf (Germany), gave a historical perspective at the *Women in science* meeting that was held in November in Cologne within the framework of the *Year of the life sciences,* an initiative of the BMBF. "If men and women had the same interest in children and their education there would not be a problem," she says.

According to Fischer, it is not surprising that 150 years of the women's movement have not been able to overcome 100,000 years of biological and 6,000 years of cultural conditioning. Until the advent of agriculture, men and women had equal status, she explains. But the surplus production made possible through agriculture made it necessary to organize the defence of one's property. As war requires hierarchy, the loss of freedom for the individual man was compensated by giving him power over the family. Another important factor that should not be overlooked, adds Fischer, is that in former times pregnancy was almost a permanent condition for a woman and this simply

did not allow women to participate in activities that require constant physical availability and fitness.

Anthropological arguments aside, the question remains why are women so late in demanding their fair share? The answer seems to be that only recently have economic and social circumstances allowed women to be educated and to earn enough to raise their children on their own: men are no longer an imperative for survival. Women's expectations have risen – especially in the post-war generations of the 20th century – girls are now educated to the same level as boys and they naturally expect the same opportunities as boys when they get into the workplace.

The German philosopher Johann Gottlieb Fichte (1762–1814) described the women of his day as "lacking fighting spirit and the willingness to take risks, without the ambition and will for power, preferring a harmonious family life and good collaborations." Whether biologically hard-wired or culturally inflicted, these feminine characteristics are still invoked today to explain why women fail to progress in traditionally male domains.

Sabine Asgodom, a journalist and author of the book *Erfolg ist sexy!* (*Success is sexy!)* encouraged the largely female audience in Cologne to shatter this passive stereotype. "Be proud, not modest like good girls are taught to be," she exhorts. Understand that a successful career is 10% performance, 30% image and 60% networks, and learn to take on responsibility, she urges.

From *Be a bloody train driver*, by Jacky Fleming, Penguin 1991

To illustrate a common mistake women make in a world that is shaped by men, she recounts an episode from her career. When offered a position as a reporter she said that she wasn't sure that she could do it, expecting further encouragement. The position was then offered to a man who did not require extra encouragement, and she ended up being his assistant! Asgodom emphasised her belief that women have to learn that typically male patterns of behaviour are expected in the workplace and that women have to understand these rules if they want to move forward in their careers.

But rather than requiring women to be just like men, can women scientists perhaps bring skills to science that are different and complementary to those of men? This question was posed by Sandra Harding, Director of the Center for the Study of Women at the University of California at Los Angeles (USA), in her closing remarks at the *Women in science* meeting, held on 8–9 November in Brussels (Belgium). Women's cognitive differences from men provide undervalued resources for the growth of scientific knowledge, she explains, "to the extent that women and men are assigned or choose different kinds of activities within a culture, they will bring different resources to the production of knowledge." The most striking examples of this Harding cited were in evolution and health studies.

At the *Women in the life sciences* meeting in Stockholm in early December, Thomas Ostros, the Swedish Minister of Science, and Rainer Gerold from the Directorate-General for Research at the EC, both emphasised that gender equality is not a topic of concern for women alone, but is an issue for the whole of society.

Christine Wennerås, Professor at Goteborg University (Sweden) and one of the authors of the ETAN report and of a study on Swedish postdoctoral fellowships[5], quoted studies from the USA and various European countries on the career development of men and women that illustrate that men are at least twice as likely to succeed as women.

Other studies have found no difference between the performance of women with or without children, which on one hand is reassuring – at least it shows that having a family is not the main obstacle to career performance – but on the other hand it shows that the problem is much deeper-rooted and cannot be explained simply by the fact that women have children.

Wennerås referred to the book *Why so slow?* by Virginia Valian, describing a vicious cycle of reinforcement of disadvantages for women due to 'gender schemata' – the preconceived notions that both sexes have about how men or women supposedly are and behave.

Get ahead….get a (supportive) husband!

Four senior female researchers at the Stockholm meeting, Maria Masucci, Professor at the Karolinska Institute (Stockholm, Sweden), Irma Thesleff, Professor at the University of Helsinki (Finland), Jeanne Brugère-Picoux, Professor at the Veterinary School of Alfort (France) and the second female member of the French Academy of Medicine, and Eva Syková, Director of the Institute of Experimental Medicine at Charles University in Prague (Czech Republic) – all of whom have children – recounted their careers and gave a number of recommendations for how women can get ahead. All emphasised the importance of having husbands who actively supported their careers and of finding excellent mentors and collaborators.

But the focus of the Stockholm meeting was on tools for improving women's career development. Catharina Alpkvist, from the administrative board of Östergötland, Sweden, discussed the idea of mentoring as one such tool. She emphasised that mentoring programmes are most useful if they are given a gender perspective, i.e. if the mostly male mentors understand that there is a problem for women to advance, and the women who are being mentored know that the problem is not being a woman, but having to deal with the current conditions (*see Promoting women: mentoring is a helpful tool not only for helping women to climb the career ladder but also to make men more aware of the specific problems women face*[6]).

Catherine Didion, from the Association for Women in Science (Washington, DC, USA), pointed to the importance of developing networking skills. Female executives, when asked what was holding women back from top management, identified male stereotyping of women and exclusion from informal networks of communication as the prime problems. Women should actively develop their own networks, both horizontally and vertically, emphasised Bianka Lichtenberger, Director of the Graduate Business School, Zürich, (Switzerland), who added that there is a high correlation of male attributes with what is currently identified as the ideal manager profile. She referred to a study that showed that male job candidates with allegedly male profiles were selected over women with the same profiles by both male and female evaluators. Stereotyping has a big impact on the selection process.

All speakers recommended that women participate in workshops or courses that teach leadership, networking, and communication and negotiation skills. Sean McCarthy from Hyperion Inc. in Cork (Ireland) pointed out that the ability to communicate one's work is as important as the actual science behind it. He gave an exemplary lecture on how to structure and prepare a presentation (overheads from his lecture are available at the Hyperion web site).

Anne-Marie Pålsson, an economist from the University of Lund (Sweden), suggested tax-breaks for people hiring domestic help would benefit gender equality. She referred to a study that found women spend about 33.5 hours per week doing household work – about 1.7 times longer then men[7]. In other words, the average woman has almost another full-time job at home, which often leads her to choose a less demanding job in the marketplace. In most countries, the costs of employing a household help are prohibitive.


Gerlind Wallon, working for women through EMBO

In the end, women should not wait for the situation to change in their favour but should actively work to overcome the various barriers on their career path. Mary Kavanagh, from the EC, summarised the recommendations given during the meeting as the four Cs: Choice, Confidence, Courage and Communication. A woman should choose a supportive husband, have the confidence to speak out for herself, take the courage to make mistakes and learn from them, to ask for help and to delegate, and develop communication skills for networking and collaborations.

Since the EMBO conference, the organization has published a two-page policy paper that summarises the various reasons for the absence of women from the higher rungs of the natural sciences career ladder, and lists a set of recommendations. The EMBO paper calls for the collection and monitoring of data regarding the participation of women in science, promotion of family friendly policies (child-care facilities and flexible employment arrangements, for example) and the establishment of realistic goals, not quotas, to increase the number of qualified women in senior positions, to name just a few points (*see Working together to achieve equal representation of men and women in the life sciences* [pdf]). Widely implemented, these recommendations would pave the way for equal chances for men and women in the European life sciences.

Links

Women in the life sciences meeting, Stockholm
http://www.ki.se/wistool

Association for Women in Science
http://www.awis.org

Hyperion Inc.
http://www.hyperion.ie

Working together to achieve equal representation of men and women in the life sciences [pdf]

References

1. Promoting excellence through mainstreaming gender equality. A report from the ETAN Expert Working Group on Women in Science (2000)
http://www.cordis.lu/improving/women/documents.htm

2. Loosing them is not an option (2001) *EMBO Reports* 8, 651–655

3. A Study on the Status of Women Faculty in Science at MIT (Massachusetts Institute of Technology, Cambridge, MA, 1999); available at web.mit.edu/fnl/women/women.pdf)

4. Research, technology and employment: towards a society of knowledge. A speech by Commissioner Philippe Busquin, Brussels, 10 February 2000 http://europa.eu.int/comm/commissioners/busquin/speech/sp10022000en.html

5. Nepotism and sexism in peer-review (1997) *Nature,* 387, 341

6. Promoting women: Mentoring is a helpful tool not only for helping women to climb the career ladder but also to make men more aware of the specific problems women face (2002) *EMBO Reports* 3, 5–8

7. Economics of the Family and Family Policies, Research in Gender and Society, Volume 1 (1995). Proceedings from the Arne Ryde Symposium on 'Economics of Gender and the Family' (C Jonung, I Persson, eds.) Routledge, New York

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