

Benefits of Women in Science

Recent comments from Harvard President Lawrence Summers have sparked heated discussion in the United States and abroad about possible inherent (that is, genetic) differences between women and men. The debate concerns whether these differences might explain the paucity of women in elite science, engineering, and technology (SET) careers. The issue really amounts to possible differences at the high extremes of ability distributions, but the available evidence is that any inherent differences are swamped by social and cultural factors. It is the failure to encourage more women to pursue SET careers, and to maintain their presence in these positions, that requires serious attention. As John Brock, the chief operating officer of Cadbury Schweppes, points out “A diverse workforce . . . is the best way to expand into new markets and stimulate new business ideas . . . that’s a significant competitive advantage.”

In the United Kingdom, we have a pressing need to encourage more women to enter SET careers. The UK government’s agenda for economic growth includes a commitment to increase the proportion of gross domestic product spent by both government and industry on R&D. Yet the Institute of Employment Studies predicts that by 2011, only 20% of the workforce will be white, male, able-bodied, and under 45. Eighty percent of future employment growth will be attributable to women.

Industry has recognized the value of an experienced female staff. In 2002, Lord Browne, chief executive of British Petroleum (BP), remarked that “because the management of the industry has been predominantly white and male and Anglo-Saxon, those people have recruited and promoted in their own image.” Among other initiatives, BP has appointed a Vice President for Diversity, and Shell Oil holds recruiting events for female engineers at UK universities. Support for female employees during career breaks is becoming more common in UK-based companies, as industry recognizes that diversity is a strategic business issue. Industry has also responded to research showing that diverse teams are harder to manage than homogeneous groups: Absenteeism and staff turnover are higher; communication and social integration take more effort; common values and rules must be established; and the different needs, behaviors, and characteristics of team members must be supported. Team leaders must learn to manage differences of opinion—the very source of the diversity advantage. But the results are worth having: Diverse teams outperform on innovation, problem-solving, flexibility, and decision-making.

The UK’s Athena program was established in 1999 to address the shortage of women in SET academic careers and to deliver a significant increase in the number of women recruited to top academic jobs. The Athena Survey of SET (ASSET) report (just released) compares career pathways of more than 6500 men and women in academia and research institutes in the United Kingdom.* The survey reveals that differences between women’s and men’s experiences are more marked in academia than in other kinds of research organizations. Men in academic positions are more likely to report that they were encouraged to apply for promotion, as compared with their female colleagues. In academia, women rank annual performance reviews and personal development more highly than men in supporting career progression; in research institutes, the ranking by both sexes is almost identical. Nearly 50% of women in universities feel disadvantaged in terms of salary and promotion, whereas only 15% of male staff recognize this as a problem for their female colleagues.

This is not to say that things haven’t improved. When I went up to Cambridge University in the 1970s as an undergraduate, only 16% of all undergraduates were female, with a mere 2% studying physical sciences, and there were no female academic staff in the departments of physics, chemistry, materials science, engineering, or mathematics. Now, Cambridge University has about 49% women undergraduates, of which 10 to 25% study the physical sciences, and 24% of the academic staff in the materials science department are women. At Imperial College (London), our fastest growing engineering course is bioengineering, with an undergraduate intake of 50% women.

Academic research and initiatives such as Athena have been effective in highlighting the benefits of diversity and the management challenges of maintaining a diverse workforce. Industry sees the competitive and financial advantages and has responded. Despite showing the way, academia is being left behind. We must embed in our universities the best practices that we preach.

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*See www.athenaproject.org.uk.

