EQUALITY

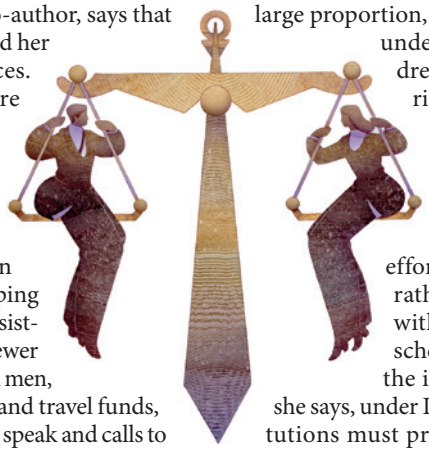
Gender divide in physics spans globe

Report reveals disparity in opportunities and expectations.

BY VIRGINIA GEWIN

An international survey comparing the career experiences of 15,000 physicists from 130 developed and developing nations finds that women around the world experience a tilted playing field. Across the board, the study finds, men have greater access than women to opportunities and resources, and their careers suffer less when they have children.

The survey is the third global poll in a decade to address the experiences of female physicists, but is the first to include men. *Global Survey of Physicists: A Collaborative Effort Illuminates the Situation of Women in Physics* was produced by the American Institute of Physics (AIP) in College Park, Maryland, with funding from the Henry Luce Foundation in New York. Rachel Ivie, assistant director of the AIP's Statistical Research Center and a report co-author, says that the data on men allowed her to compare experiences. "We knew things were unequal, but not this unequal," she says.



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The survey reveals few differences in the degree of gender inequality between developed and developing countries. Women consistently describe getting fewer international offers than men, less access to lab space and travel funds, and fewer invitations to speak and calls to serve on important committees. They also report that having children slows their careers to a greater degree.

Ivie says that two factors contribute to these problems. First, physics remains a male-dominated field, operating through an old boy network. "It's not that senior people actively exclude women; they just don't think of recommending them for key posts or inviting them to speak at conferences," says Ivie.

Elizabeth Freeland, a physics postdoctoral researcher at the University of Illinois at Urbana-Champaign, agrees. "This is an unconscious bias — which makes it harder but not impossible to get past," she says.

The other subtle but sinister factor is that women and men face different cultural expectations. The survey suggests that women are universally considered responsible for childcare and childcare decisions. "The overarching barrier [to women's ascension in the field] is the deeply entrenched perception of both men and women that men are expected to be solely breadwinners, while women are expected to be solely caregivers," says Prajval Shastri, an astrophysicist at the Indian Institute of Astrophysics in Bangalore.

Balancing motherhood and work continues to be the biggest career challenge for women. Carola Meyer, an investigator at the Peter Grünberg Institute in Jülich, Germany, and vice speaker of the German Physical Society's gender-equality working group, says that although institutes and funding bodies provide career breaks for people who wish to have children, such schemes don't necessarily ease the balancing act. Women hold 17% of the 42 positions at her institute — a relatively large proportion, says Meyer. Yet all are under 40 and have no children. Those who want to rise within the scientific community can't consider having children until they are established, she says.

Shastri notes that efforts to provide women, rather than both parents, with childcare or flexible schedules can even add to the inequity. For example, she says, under Indian labour law, institutions must provide childcare if the number of female employees exceeds certain limits. "Laws with no mention of male employees with children effectively imply that women have primary responsibility for children," says Shastri.

Women's perceived roles may also extend to career assignments. Female participation in managerial, editorial or supervisory roles was up to 15% lower than male participation, but in one area women were far more active: advising undergraduates, a 'nurturing' task that typically garners little professional credit.

Meyer is pleased that, for the first time, a study has provided enough statistics to show that the career differences between male and female physicists are universal and deep-rooted. "With such a large survey, the gender differences can't be dismissed," she says. ■

US IMMIGRATION

Student visas extended

More foreign science students are now eligible to stay in the United States for up to 29 months after graduation to gain additional practical training, under a decision announced by the US Department of Homeland Security (DHS) on 12 May. The move adds 50 eligible disciplines, including agriscience, neuroscience and drug design, to the existing list. The DHS — which handles employment visas — says that the change is part of the government's efforts to address shortages of skilled scientists, and the agency expects more applications for extensions as the economy improves. The US visa process has long been criticized for cumbersome delays that have kept many foreign scientists out of the country.

UNITED KINGDOM

Recruits lack skills

Forty-three per cent of UK employers are having trouble recruiting workers with graduate-level skills in science, technology, engineering and maths (STEM), says a report released on 9 May. *Building for Growth: Business Priorities for Education and Skills*, prepared by the Confederation of British Industry (CBI) in London and Education Development International in Coventry, found that employers expect future recruitment problems as numbers of STEM graduates fall. More than one-quarter of science and high-tech employers pay for internships or sponsor higher education to promote STEM to potential recruits, and 60% are increasing investments in training and development. "Employers are taking on a greater role in skills development — offering apprenticeships, training and more links to university programmes," says Simon Nathan, senior policy adviser at the CBI.

EUROPEAN UNION

Boost for networks

A group that backs research collaborations through conferences, exchanges and training has received €30 million (US$43 million) in extra European Commission funding. COST (European Cooperation in Science and Technology) now has a €240-million budget until 2013. Its 250 networks help their 30,000 researcher members across the European Union to get funding from governments and agencies, says Monica Dietl, COST office director. COST also keeps researchers in the region by fostering networking opportunities.