

Women in Physics

IUPAP Conference, Paris 2002

- **What were the conference aims?**
- **Who attended?**
- **Problem Areas:**
 - **Attracting Girls into Physics**
 - **Retaining Women Physicists in the Workplace**
 - **More Women into the Physics Leadership Structure**
- **What happens next in Europe?**

Conference Aims

1. Understand the under-representation of women in physics world-wide

-800 questionnaires were collected prior to the conference and the data analysed by statisticians at the AIP

2. Develop strategies to increase the participation of women in physics

-List of recommendations and resolutions were drawn up and approved

Conference Structure

1. Plenary Sessions included:

- “Women Physicists Speak” Report - analysis of data collected by AIP
 - European Union Report on Women in Science
 - “Women Faculty in Science in MIT” Report
- Findings from JPS and JSAP Study of the Status of Women in Physics in Japan

2. Discussion Groups

- Attracting Girls into Physics
- Launching a Successful Physics Career
- Getting Women into the Physics Leadership
- Improving the Climate for Women in the Workplace
 - Balancing Family and Career
 - Learning from Regional Differences

Who Attended?

- Leading Women Physicists from 67 countries**
- Younger women at the start of their careers: post-docs and graduate students**
- 15 % of the delegates were women friendly men**
- very few participants were from industry, I only met one from Australia**
- Essentially all participants had PhDs or were working towards them**

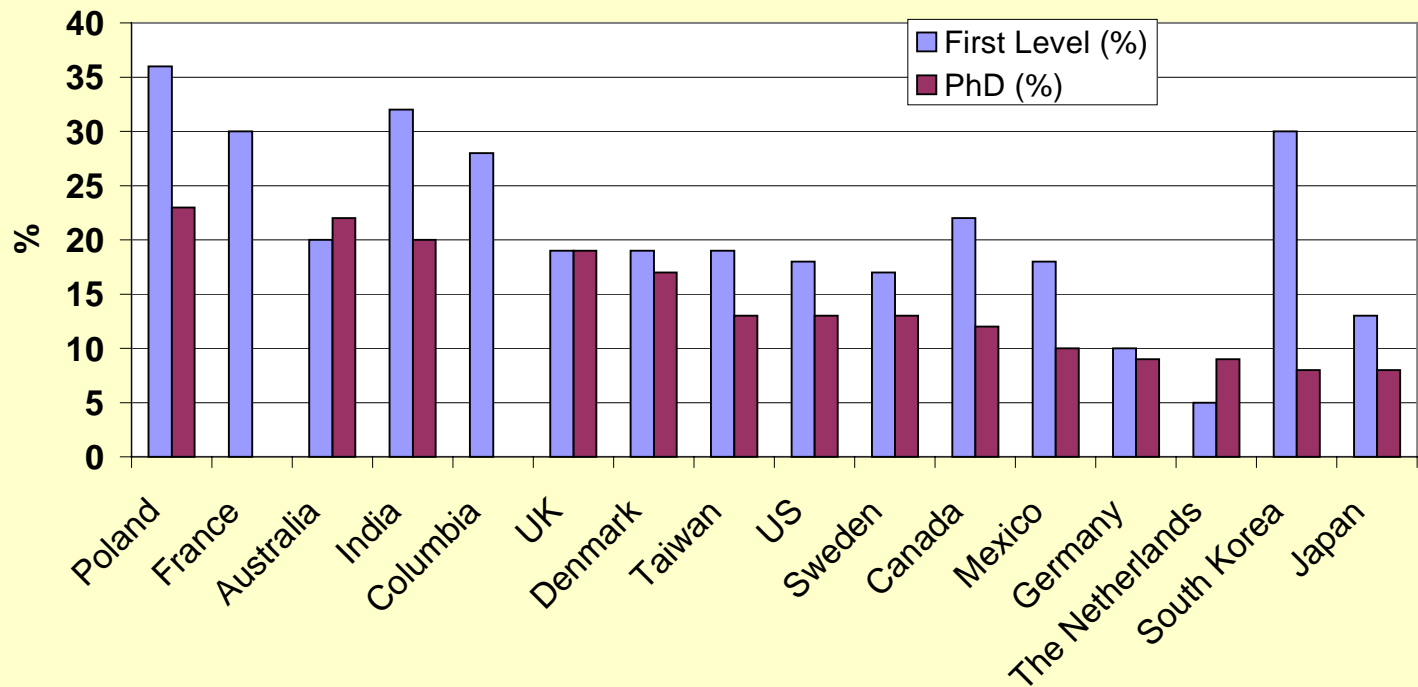
Three Main Problem Areas

- 1. Problems in convincing intelligent women to study physics at the undergraduate level**
- 2. Problems in convincing women to return to physics following a career break - the post-doc phase is when many women physicists are lost**
- 3. Problems for established women scientists to overcome discrimination and have the same opportunities as men to advance their careers**

1. Attracting Girls into Physics

- Getting women to study the sciences is difficult
- Men invariably outnumber women on university science courses
- Data from the 'Women Physicists Speak' report:

Physics Degrees Awarded to Women in Selected Countries
(1997-1998)



Discussion Group: Attracting Girls into Physics

Difficulties:

- **Physics is perceived as a hard and dull subject**
- **Physics has an image problem**
- **Lack of jobs in the field of physics**
- **Lack of positive female role models**
- **Poor teaching at school**

Actions:

- **Female post-docs and scientists should give talks at schools**
- **Bring students to the research labs**
- **Use the media to try to glamorise physics**
- **Make text book examples more relevant to girls**

2. Retaining Women Physicists in the Workplace

Recent article in the Guardian:

'Labs' labour lost as women stay away'

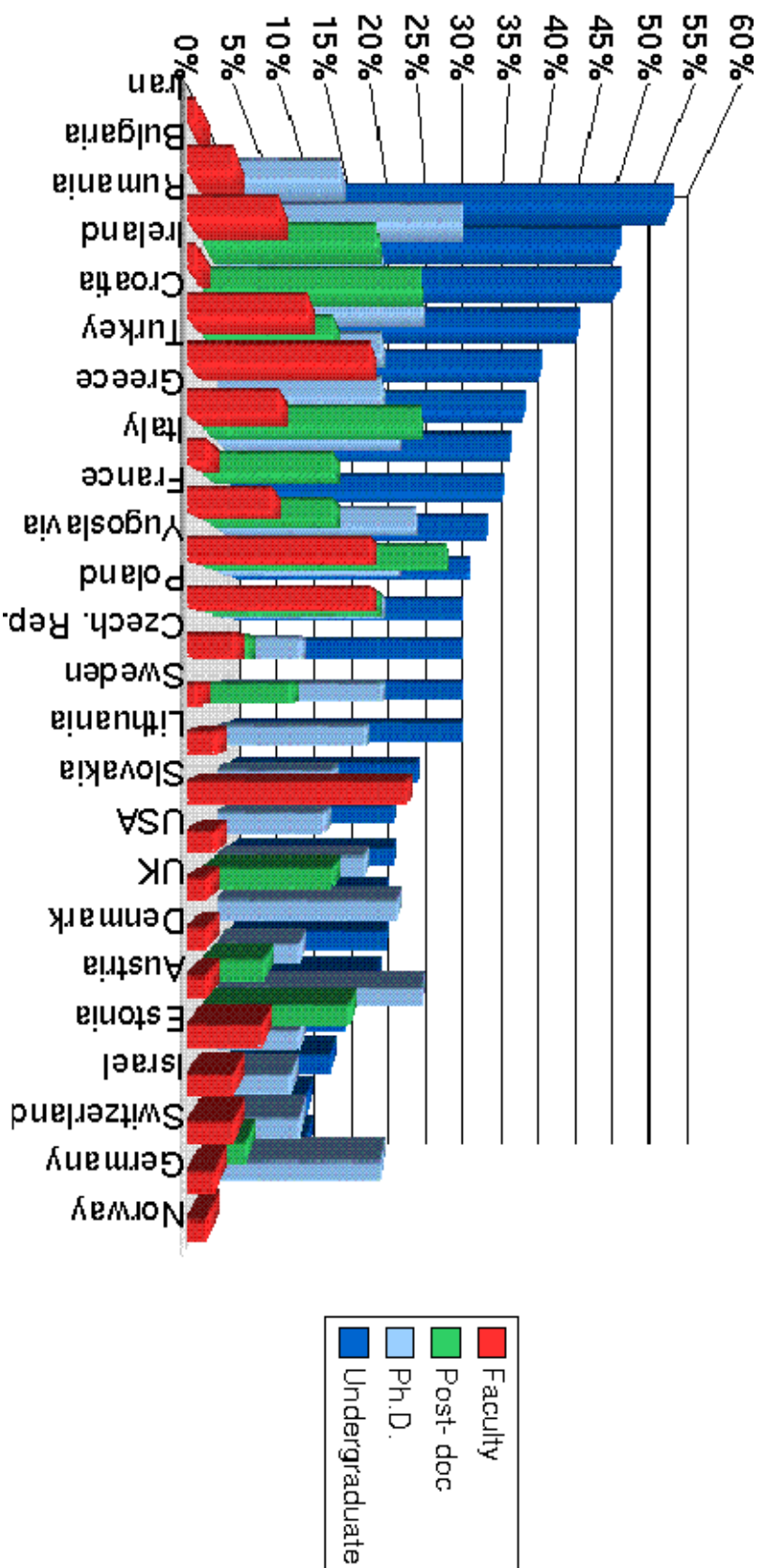
Wendy Smith, Saturday 23 March, 2002

According to the Department of Trade and Industry report,

'Maximising Returns':

- 50 000 women science, engineering and technology (SET) graduates in the UK are not working in their respective industries at any one time**
- Of those who return, only 8000 will go back to a job which makes use of their original university education**

Percentage Women in Physics, Europe/USA



Some problems specific to women returning to SET work:

- **Fear of missing out on knowledge whilst they have been away**
 - **Inflexible working conditions**
 - **Shortage of possibilities to retrain**
 - **Shortage of part-time work**
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- **Long publication list necessary for permanent position**
 - **50% of married female physicists are married to male physicists \Rightarrow dual career couple**
 - **Long hours associated with a successful physics career**
 - **International travel associated with a physics career**
 - **Series of short-term contracts until age 35 - 40**
- all incompatible with raising a young family**

Discussion Group: Balancing Family and Career

Recommendations:

- Hiring of couples as a package**
- Flexible working conditions and leaves of absence**
- Child-care close to work-place and at conferences**
- Use of academic age schemes in hiring and promotion**

These key points were incorporated into resolutions directed at:

- Universities**
- Research Institutes and Industry**

3. More Women into the Physics Leadership Structure

- proportion of women physicists decreases with progress up the professional ladder**
- existence of a glass ceiling**
- existence of old boys network**
- cumulative disadvantage**
- according to the report 'Women Faculty in Science at MIT' women were excluded from the power structure and seriously disadvantaged in space, research funds and access to information**
- the Swedish study published in Nature reports that women suffered substantial discrimination in the award of research grants**

Discussion Group: Getting Women into the Physics Leadership Structure

Recommendations include:

- setting up 'Preparing for Leadership' courses**
- carefully examine the selection processes for positions at institutions**
- make the hiring process more transparent**
- institutions must ensure that women are on the panels, committees and in positions of leadership**
- women must seek out opportunities of leadership**

It is important for women to be in positions of leadership for:

- for the health of the field of physics**
- diversity of views in decision making**

What happens next in Europe?

- An EPS women's group is being established
 - the current contacts for each country are the team leaders for the IUPAP WIP conference
 - forum for networking, establish e-mail and web links
 - set-up a list of possible seminar and conference speakers
 - inclusion of women on committees
 - share information of successful initiatives
 - lobby the EU to promote more women friendly initiatives
 - men who are sympathetic to the aims of the group are very valuable in suggesting and implementing new policies

Web-Page with links:

<http://w3.jet.uk/~yand/>