



Partnership for Women in Science, Technology and Engineering

*by*

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# Women and Science

## ***Brain Size and Intelligence***

- The weight of the average human brain
  - 1.4kg for men and 1.3kg for women
- No correlation between brain size and intelligence as:
  - In both sexes brain makes up a similar proportion of total body weight



## A Chronicle of Famous Women Scientists

<i>Unidentified with reference to place/time</i>	<b>02</b>		
<i>Ancient Greece</i>	<b>08</b>		
<i>Ancient India</i>	<b>03</b>		
<i>2700-634 B.C.E.</i>	<b>06</b>	<i>16<sup>th</sup> century</i>	<b>02</b>
<i>1st millennium</i>	<b>05</b>	<i>17<sup>th</sup> century</i>	<b>07</b>
<i>12<sup>th</sup> century</i>	<b>02</b>	<i>18<sup>th</sup> century</i>	<b>19</b>
<i>13<sup>th</sup> century</i>	<b>01</b>	<i>19<sup>th</sup> century</i>	<b>45</b>
<i>14<sup>th</sup> century</i>	<b>02</b>	<i>20<sup>th</sup> century</i>	<b>37</b>
<i>15<sup>th</sup> century</i>	<b>02</b>		



## Women Scientists: A *Chronicle* of Nobel Laureates

<i>Total Awards</i>	799
<i>Institutions</i>	22
<i>Individual Laureates</i>	777



34



:



1:21.85



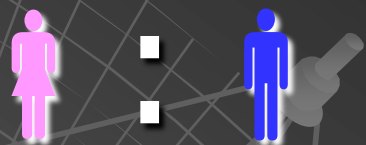
743



# Women Nobel Laureates: A *Chronicle* of Natural Sciences

## Physics

02 101



1 : 50.50

## Chemistry

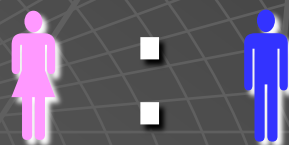
03 100



1 : 33.33

## Medicine

07 97



1 : 13.86

## Altogether

12 298



1 : 24.83



## University Graduates: Gender Profile

*All Disciplines*

*No. of degrees per 100 of the 24-year-old population*



*World\**

28.26

23.4

1.2:1

*Asia*

25.70

24.73

1.03:1

*Europe*

26.59

22.22

1.2:1

*North America*

27.70

23.03

1.2:1

*Oceania*

46.70

30.30

1.54:1




**\* World comprises of 24 sample countries from these regions**



## University Graduates: Gender Profile

### *Science, Technology and Engineering (ST&E)*

*No. of degrees per 100 of the 24-year-old population*

			
<i>World*</i>	3.80	7.67	1:2.01
<i>Asia</i>	3.40	10.63	1:3.13
<i>Europe</i>	3.19	7.17	1:2.25
<i>North America</i>	6.43	5.93	1.08:1
<i>Oceania</i>	5.30	8.10	1:1.52

**\* World comprises of 24 sample countries from these regions**



## ST&E Graduates: Perspectives on Gender Gap

- Social and psychological influences on women's career choice in ST&E:
  - Work-family balance
  - Professional vs. domestic role commitments
  - Traditionalist attitudes and perceptions
  - Practical problems in field work





## Universities in Pakistan

### *All Universities*

Total: 114

Public: 59

Private: 55

### *ST&E Universities*

Total: 30

Public: 17

Private: 13

*N. B.* All universities offer equal opportunity, in each discipline, to male and female candidates both as students and faculty



## Women Universities in Pakistan

### *General Universities*

Total: 06

Public: 04

Private: 02

### *ST&E Universities*

None so far, though there is a recent commitment for an IT university



 :  **Students Enrolled in Universities in Pakistan**



General Universities: 65 : 35

S & T Universities: 60 : 40



## **Bridging : Gap in Higher Education: Lessons from Pakistan**

### **➤ National support:**

- Legislative and infrastructural support
- Women academicians' networks and fora
- Training programs and courses for women
- Mentoring
- Establishment of women universities and colleges
- National Gender Mainstreaming Program

### **➤ International support:**

- **Advocacy at the highest levels with governments**
- **Academic training**
- **Holding seminars and conferences**
- **Preparing information and training materials about awareness raising**



## Supportive Institutional Practices

In order to create a supportive and enabling environment for women and to initiate innovative strategies and practices, to plan and implement new initiatives, related to women, the 1<sup>st</sup> Women University, later named as Fatima Jinnah Women University (FJWU), was created in December 1998 to promote the highest standards of academic excellence in teaching and research among the women of Pakistan.



## Vision of FJWU

**Fatima Jinnah Women University provides an environment which enables female students to develop their academic, moral, physical and professional potential. The cultural, political, social and economic needs of women form a priority in its vision of education. FJWU encourages wider participation of women in higher education by offering opportunities and support to those who are likely to benefit from it. It raises their aspirations to use their capacities for success.**



## FJWU Graduates and Students: ST&E Disciplines

<i>Discipline</i>	<i>Graduates</i>	<i>Students</i> (current enrollment)
Computer Science	318	248
Computer Arts	130	295
Environmental Sciences	228	264
Software Engineering	276	285



## Employment Rate of FJWU Graduates

General: 51%

Computer Science: 65%

Computer Arts: 78%

Environmental Sciences: 55%

Software Engineering: 73%

N.B. Some of the graduates are self-employed





## Employers of FJWU Graduates

- Software houses
- Advertising agencies
- UN bodies
- Research organizations
- Federal and Provincial ministries
- Multinational organizations
- Environmental agencies
- Non-governmental organizations (NGOs)
- Schools
- Colleges
- Universities
- Private IT/emerging technology firms



## Collaborations

The problem of women's participation cannot be addressed adequately by individual institutions and staff units dedicated to the ideal. The support from the broader community and international organizations has given the women of Pakistan wider visibility and has also made available a support system which ensures sustainability. Of particular significance is the collaboration between international agencies and the local institutions which adopt and take forward the policies and projects enunciated for women's advancement. With local support and contextualization of the issues, the international collaborative projects have helped Pakistan achieve optimal targets for women development.



## FJWU Collaborations

The University has collaborative links and partnerships with a number of national and international organizations. It has established academic links with European and American Universities for setting up innovative academic practices and programs. USAID scholarship for FJWU ST&E students is a very valid case in point. Further, Intercultural Communication video-conferencing course being offered to FJWU students for the past three years by Nebraska State University is an example of IT playing a role in collaborative learning. These collaborations are a source of institutional support and also help in faculty development. For example, the collaboration between the World Bank and Higher Education Commission of Pakistan is providing a unique opportunity to FJWU faculty for participating to international dialogue on global issues through video conferencing. All such innovative practices are helping the women of Pakistan to take their rightful place in society and be productive citizens with confidence in their abilities.



*Thank you*

