



IEP Women's Day Celebrations

EQUALITY FOR WOMEN IS PROGRESS FOR ALL

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Institute of Engineers (IEP), Karachi, Pakistan

Future Recommendations The Way Forward

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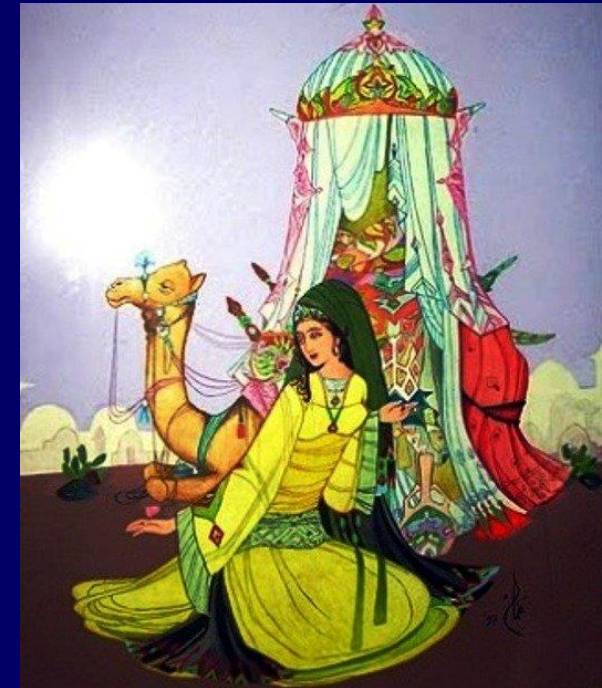
Outline

- Introduction – Women
- Role of Women In Society
- Women in Engineering
- Challenges
- The way Forward
- Conclusion



Women

- Symbol of love and responsibility
- Cultured
- Sophisticated
- Possessive
- Dignified
- Decorous



Without making one inferior to the other, God calls upon both men and women to fulfill the roles and responsibilities specifically designed for them

Excellence of Women

In social Welfare

Bilquis Edhi



In Politics

Margaret Thatcher

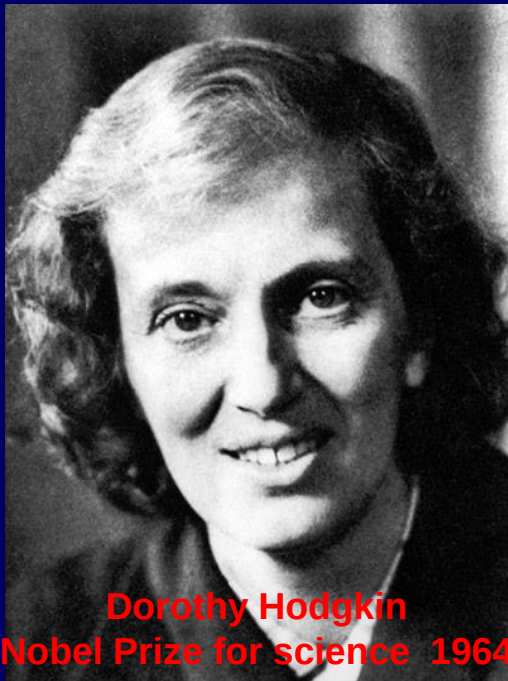


In Showbiz



Excellence of Women

In Science



In Sports





Women in Engineering

Frances Sarnat Hugle (August 13, 1927 – May 24, 1968)

First Electronics Engineer

- Study of semiconductors
- Integrated circuit design
- Electrical principles of microscopic materials
- invented techniques, processes, and equipment for
 - High volume fabrication of microscopic circuitry
 - integrated circuits
 - microprocessors



Women in Engineering

Kate Gleason (Nov. 25, 1865 – Jan. 9, 1933)

First Mechanical Engineer

- Madame Curie of machine tools
- first woman elected to full membership in the American Society of Mechanical Engineers



Women in Engineering

Grace Murray Hopper (December 9, 1906 – January 1, 1992)

First Computer Engineer

- Research fellow at Harvard's Computation Laboratory
- Developed 1st computer compiler
- Invented COBOL programming language,



Women in Engineering

Lillian Evelyn Moller Gilbreth (May 24, 1878 – January 2, 1972)

First Industrial Engineer

- Contributed to the study of
 - Industrial engineering
 - Motion study
 - Human factors



Women in Engineering

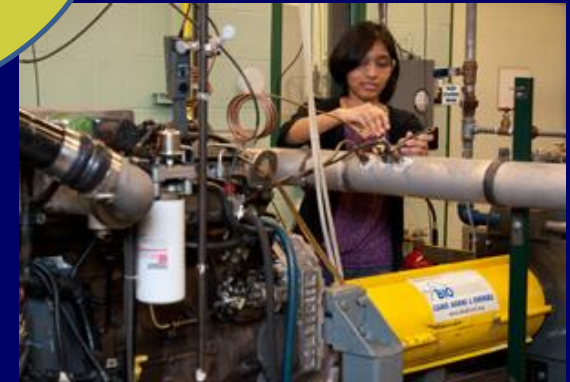
Edith Clarke (February 10, 1883 – October 29, 1959) **First Electrical Engineer**

- First female professor of electrical engineering
- Specialized in electrical power system analysis
- Wrote Circuit Analysis of A-C Power Systems
- She invented the Clarke calculator for solving equations involving electric current, voltage and impedance in power transmission lines.





**Women is serving
the humanity in all
capacities and all
disciplines**



Women vs. Men

- Women make great engineers and great leaders
- Women are better than man in
 - Verbal articulation
 - Executive social skills
- The way a Women gather information she
 - integrate more details faster
 - arrange data into more complex patterns for decision making
 - consider more options
 - see a wider array of possible solutions to a problem



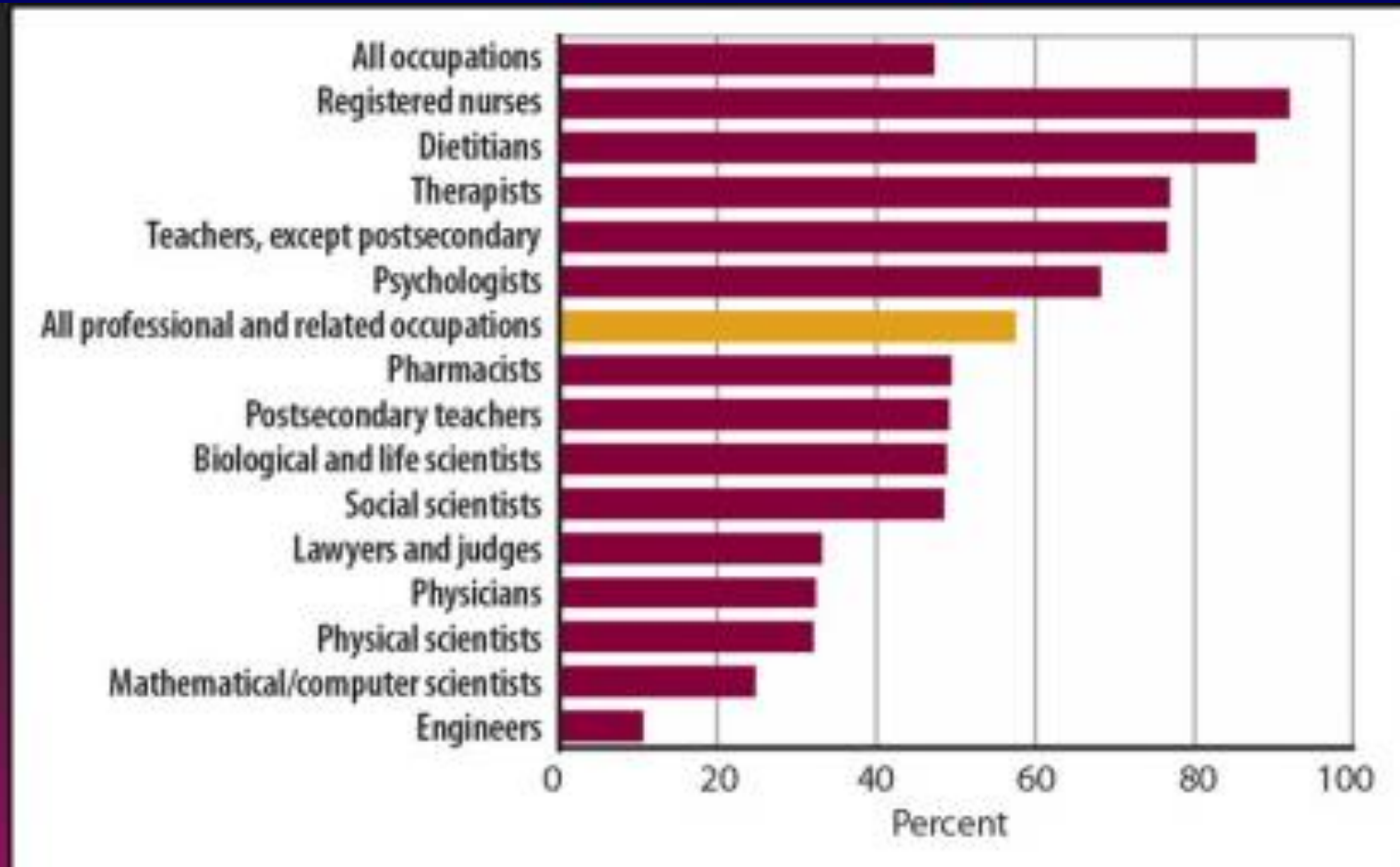
Women vs. Man

- Women's perspective regarding any issue is more
 - generalized
 - synthesized
 - broader
 - holistic
 - Contextual
- Women demonstrate mental flexibility





Women in Engineering education vs. Employed Women Percentage world wide



<http://mwrf.com/content/women-engineering-current-perspective>
<http://icyseas.org/2012/06/07/moira-dunbar-and-women-in-science/>



The Good, the Bad and the Reality

- These percentages have increased over the past several years but still significantly less than the percentage of female population
- At the high school level, girls are taking more math and science credits than boys and earning higher GPAs in those subjects
- 10% women working as professional engineers relative to the overall percentage of women receiving engineering degrees.
- Issues responsible for women not opting for entering / completing / practicing engineering are:
 - Lack of interest
 - Lack of role model
 - Lack of mentors
 - No peer support
- At professional level, women are underrepresented in many Science occupations, most notably in engineering



What people think of a Women Engineer

What my Parents think I am Doing



What Men at work think I am Doing



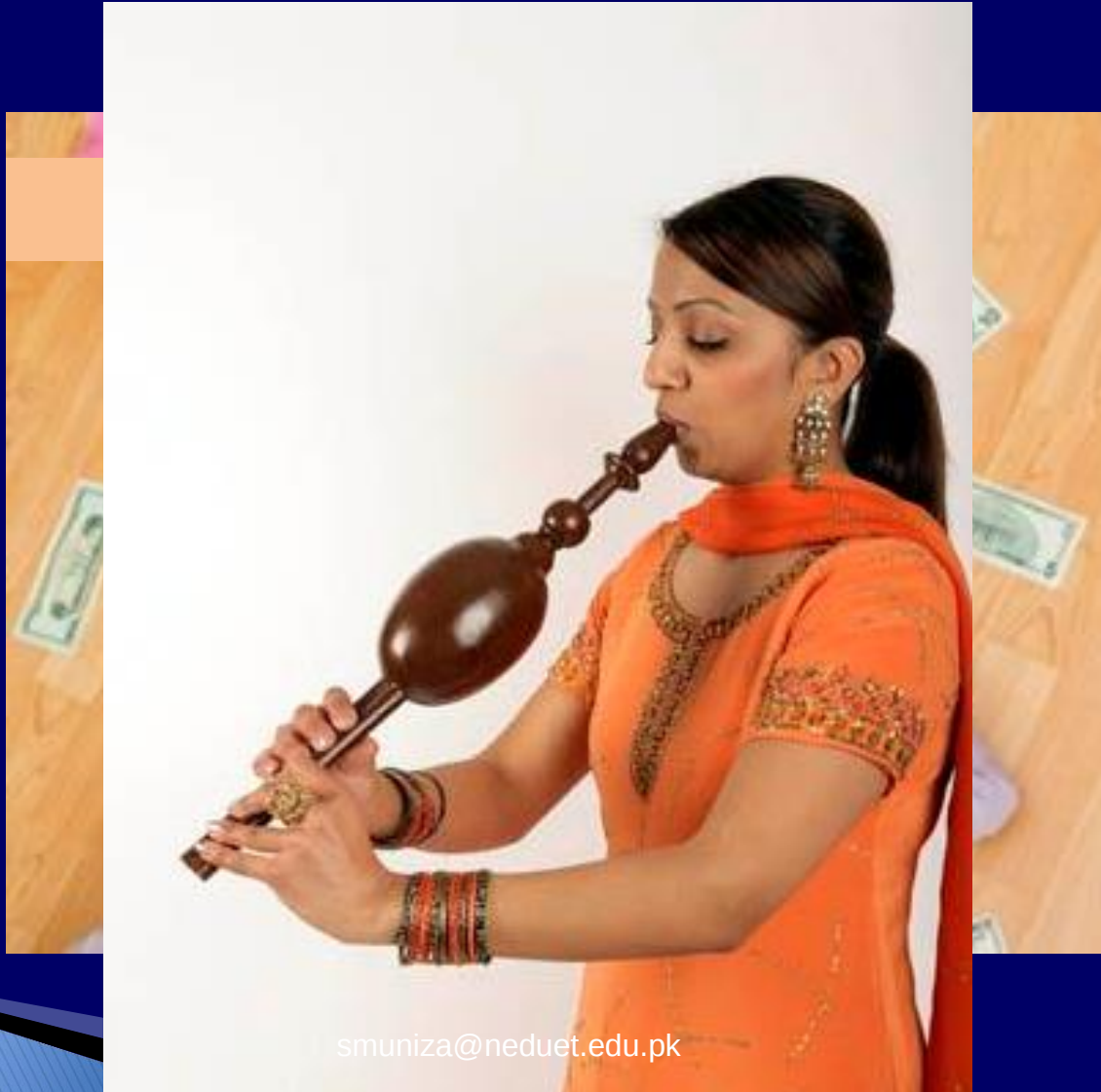
What my In Laws think I am doing



What my Children think I am Doing



What My Friends Think I am doing



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What I am Actually Doing



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Problems and Challenges

- The reasons of women leaving Engineering profession
 - They have to face gender bias
 - The hostility of the workplace culture drives them out
 - Sometimes woman is the only female on her team
 - “Extreme jobs,” with their long workweeks and punishing travel schedules



Problems and Challenges

- Under-represented in Science and Engineering
- Earn less than their male colleagues on the same employment positions
- Promoted less frequently
- Publish less frequently
- Lack of training opportunities



Problems and Challenges

- women in two-income families still bear the brunt
 - household management
 - Pressures of husbands
 - Pressures of in laws
 - Family issues
 - No compromise in house hold responsibilities
 - Family time



Recommendations

- Gender balance in Engineering and technology
- What we need to do
 - Build confidence in our scientific abilities
 - Role models for young engineers
 - Examples of success despite the odds
- Facilitate communication and sharing of information
- With excellent collaboration skill women will prove to be very successful in coming collaborative society
- Senior women engineers-to be recognized as a respected and valuable source of advice and guidance

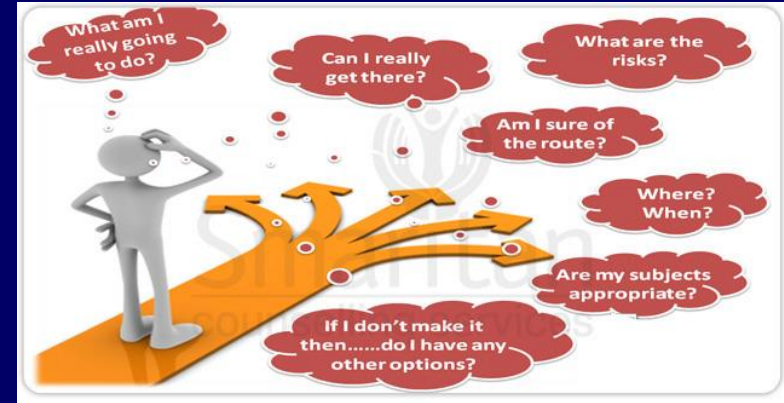


A Way Forward with IEP

➤ Under the Umbrella of IEP following issues can be addressed

➤ **Career Counseling**

- Can help fresh graduate engineers in search of opportunities
- Can help women engineers find their specialization relevant jobs
- Can help solve unemployment problem of women engineers



A Way Forward with IEP

➤ **Job Fair** - for employers, recruiters, and schools to meet with prospective job seekers

➤ **Demography collection cell**

- Female Engineers Countrywide
- Age brackets and specialization



A Way Forward with IEP

- Internships in Industry
- Trainings
- Lectures
- Short courses
 - Technical Writing
 - Communication skills
 - Leadership
- Institution of Engineers Pakistan (IEP) can prove to be a platform for Pakistani women Engineer to get her recognition





Conclusion

- For economical growth - a vibrant, creative and diverse engineering and science workforce is required.
- With a weak economy - We cannot afford to lose anyone with the technical skills to
 - create a sustainable future
 - build our cyber and physical infrastructure
 - enhance personal and societal security
- The lack of women in science and technology fields - the gap between women and men in these fields constitutes an obstacle to nations' progress.



“If ever the world sees a time
when women shall come together
purely and simply for
the benefit and good of mankind,
it will be a power such as
the world has never known.”

Matthew Arnold (19th century poet)

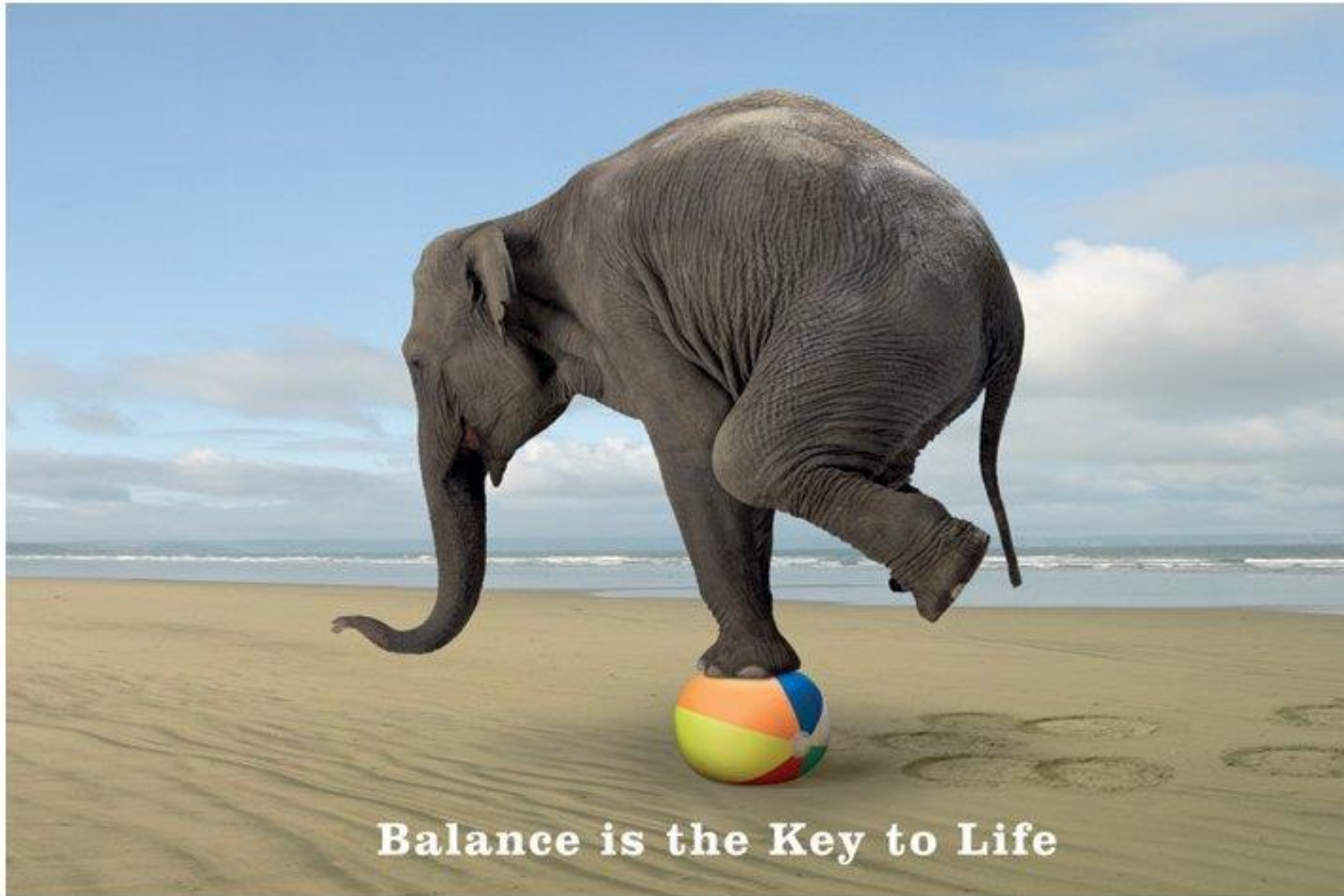
A Perfect Women Engineer

- “Self-aware and continually growing into her true self.”
- “Cultivates her own interests.”
- “Understand and appreciate her own strengths, then use those strengths to achieve her own success.”
- “Confident in her abilities, but willing to learn more.”



<http://swsg.org/what-is-a-strong-woman/>





Balance is the Key to Life

Thank You

