

¿Mujer Ingeniera o Ingeniera Mujer?

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Lunes 3 de noviembre 2014

10:30



Ingeniería 2014
Latinoamérica y Caribe
Congreso - Exposición

Organiza



Apoya



Oficina Regional de Ciencia
para América Latina y el Caribe

Jornada Mujeres Ingenieras

Diversidad e
inclusión en la
Ingeniería
de América
Latina y el
Caribe

**Lunes 3
de noviembre
de 2014**

Comisión
Mujeres Ingenieras para
el desarrollo

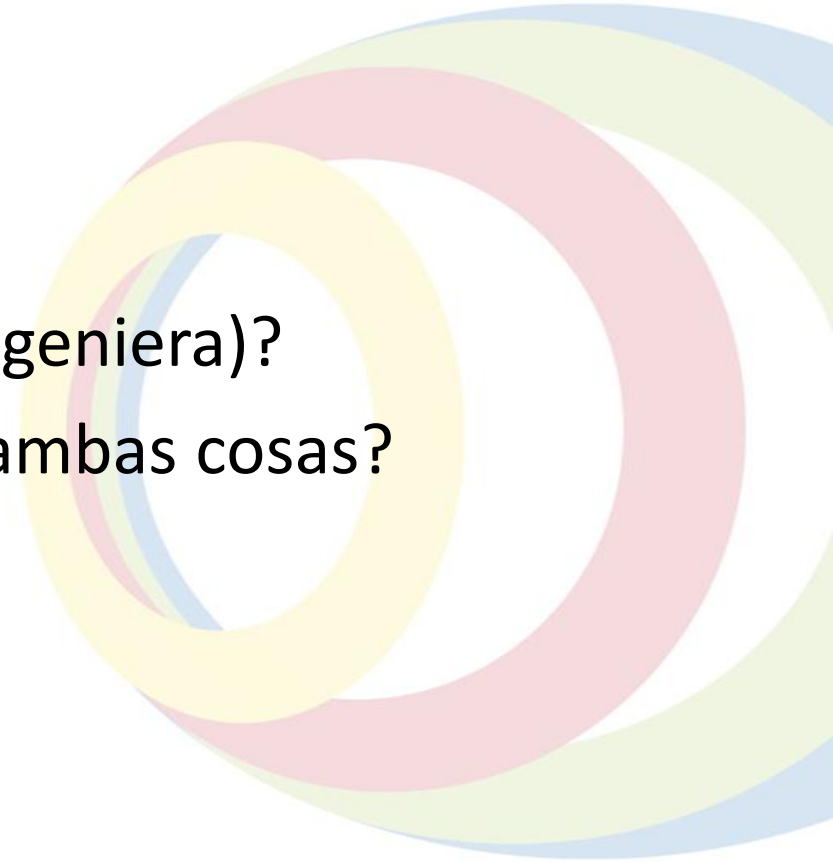
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Cerrito 1250
(C1010AAZ)
CABA, Argentina
www.cai.org.ar

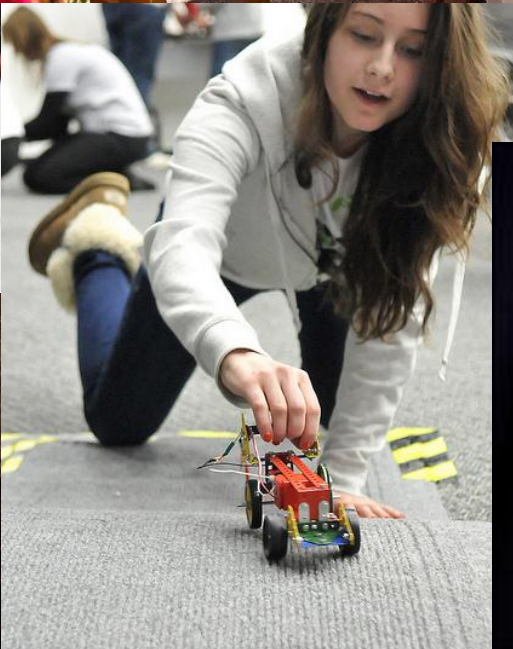
Disclaimer

- I am an engineer and professor
- I am not an expert in gender equity
- I come to share some data, my experiences & thoughts
- Because I am a woman professor I have had to face many challenges in an era when we were just a few around

Agenda

- Algunas definiciones, hechos y estadísticas
- Algunas respuestas
 - ¿Por qué podemos ser ambas cosas (mujer e ingeniera)?
 - ¿Cómo podemos convencer que podemos ser ambas cosas?
- Comentarios finales
- Preguntas





Diversity

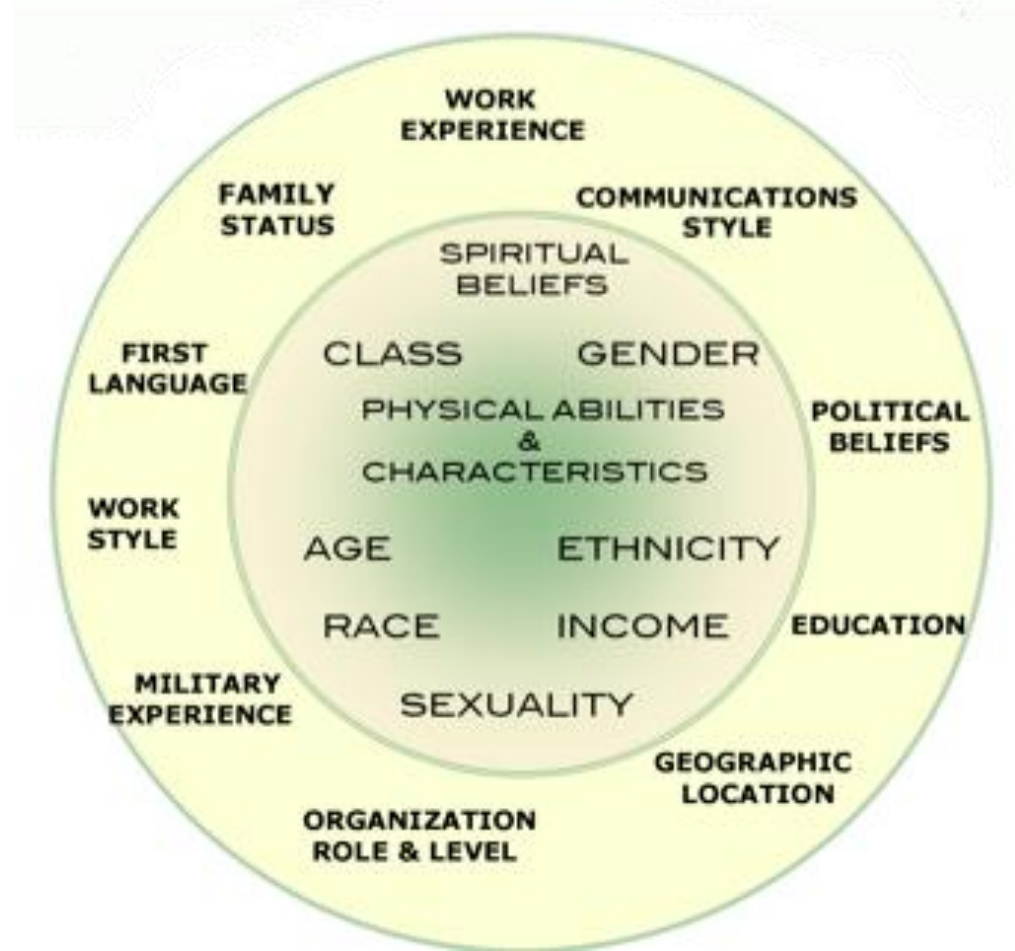
"...all the ways in which we are similar and all the ways in which we differ."

- Dr. R. Roosevelt Thomas, Jr.



Diversity

The full spectrum of human differences and similarities, including immutable and mutable characteristics yielding unique perspectives.



Inclusion

Leveraging the diversity in the workforce to achieve **full participation and optimum performance**; it **empowers differences** rather than suppressing them.



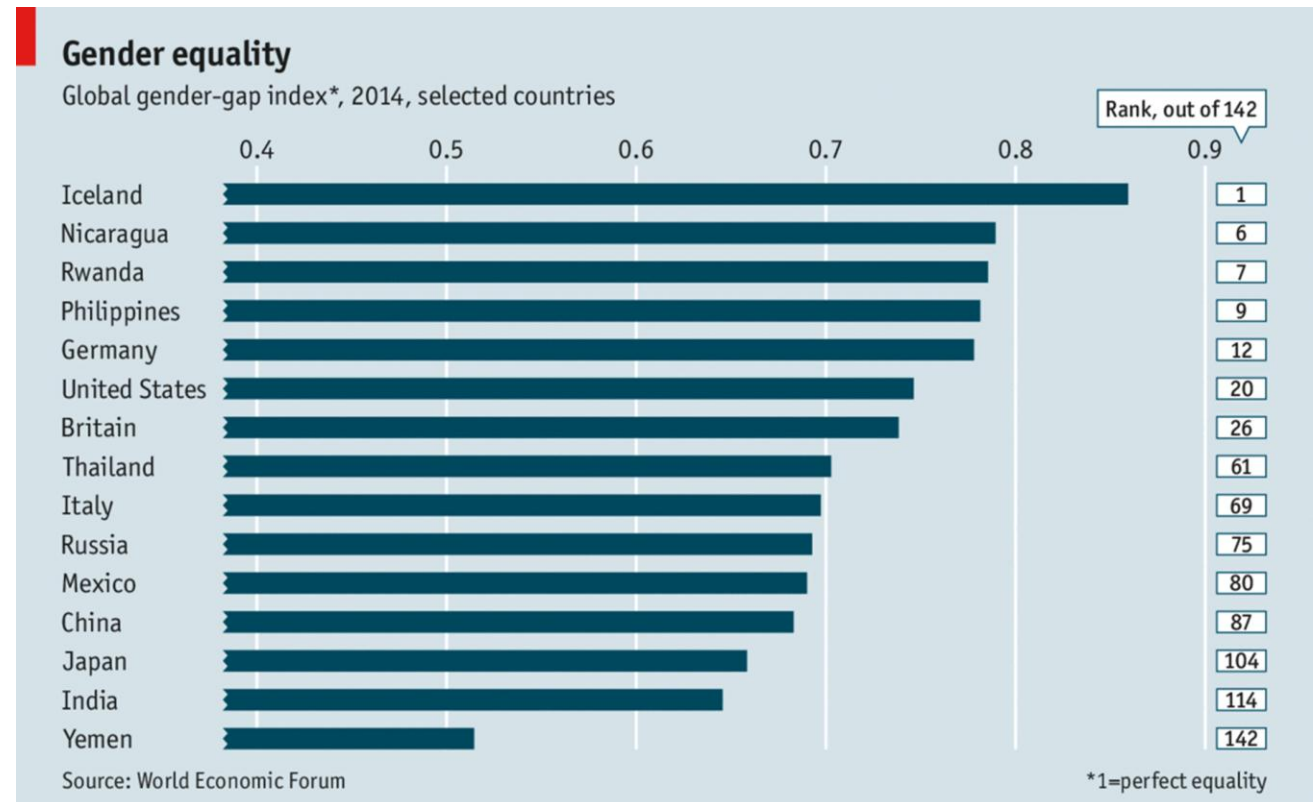
The World's Women



- There are 57 million more men than women
- Social, cultural and economic factors can affect the natural advantage of women compared to men
- Women account for two thirds of the world's 774 million adult illiterates
- Women's participation in the labor market remained steady from 1990 to 2010, hovering around 52 per cent
- Only 7 of 150 elected Heads of State in the world are women, and only 11 of 192 Heads of Government.
- Violence against women is a universal phenomenon and women are subjected to different forms of violence – physical, sexual, psychological and economic – both within and outside their homes
- In some parts of the world, women and girls are often more burdened by the poverty of their household and their environment than men and boys
- More boys participate in technology-related education in all regions except Latin America and the Caribbean

Gender inequality in education, employment & entrepreneurship

Breaking down these barriers would create new sources of economic growth



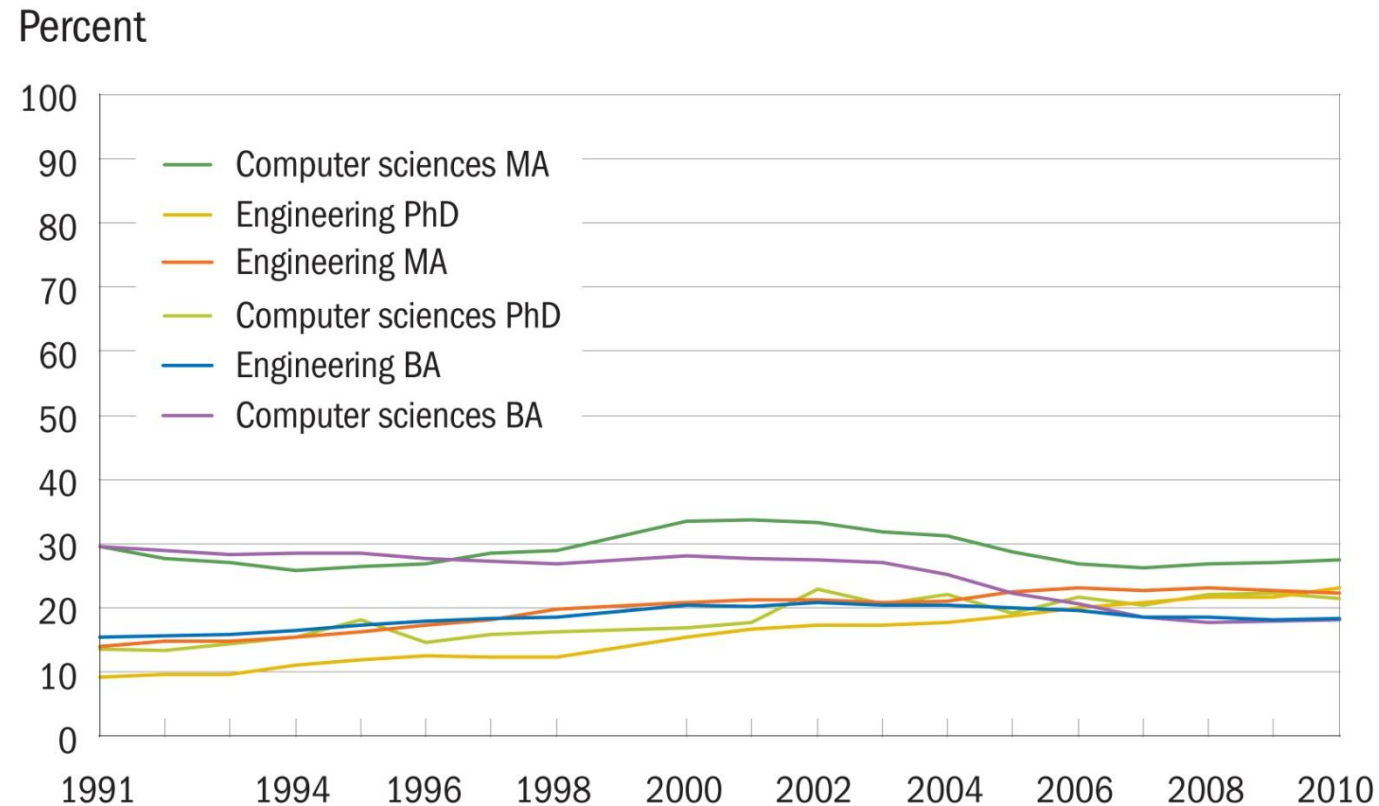
World Economic Forum's gender-gap index examines disparities between men and women in terms of political empowerment, economic opportunity, health and education.

Women have made important contributions to research and innovation



- But their potential remains largely untapped
- While women account for more than half of university graduates in several OECD countries, they receive only 30% of tertiary degrees granted in science and engineering fields, and women account for only 25% to 35% of researchers in most OECD countries.

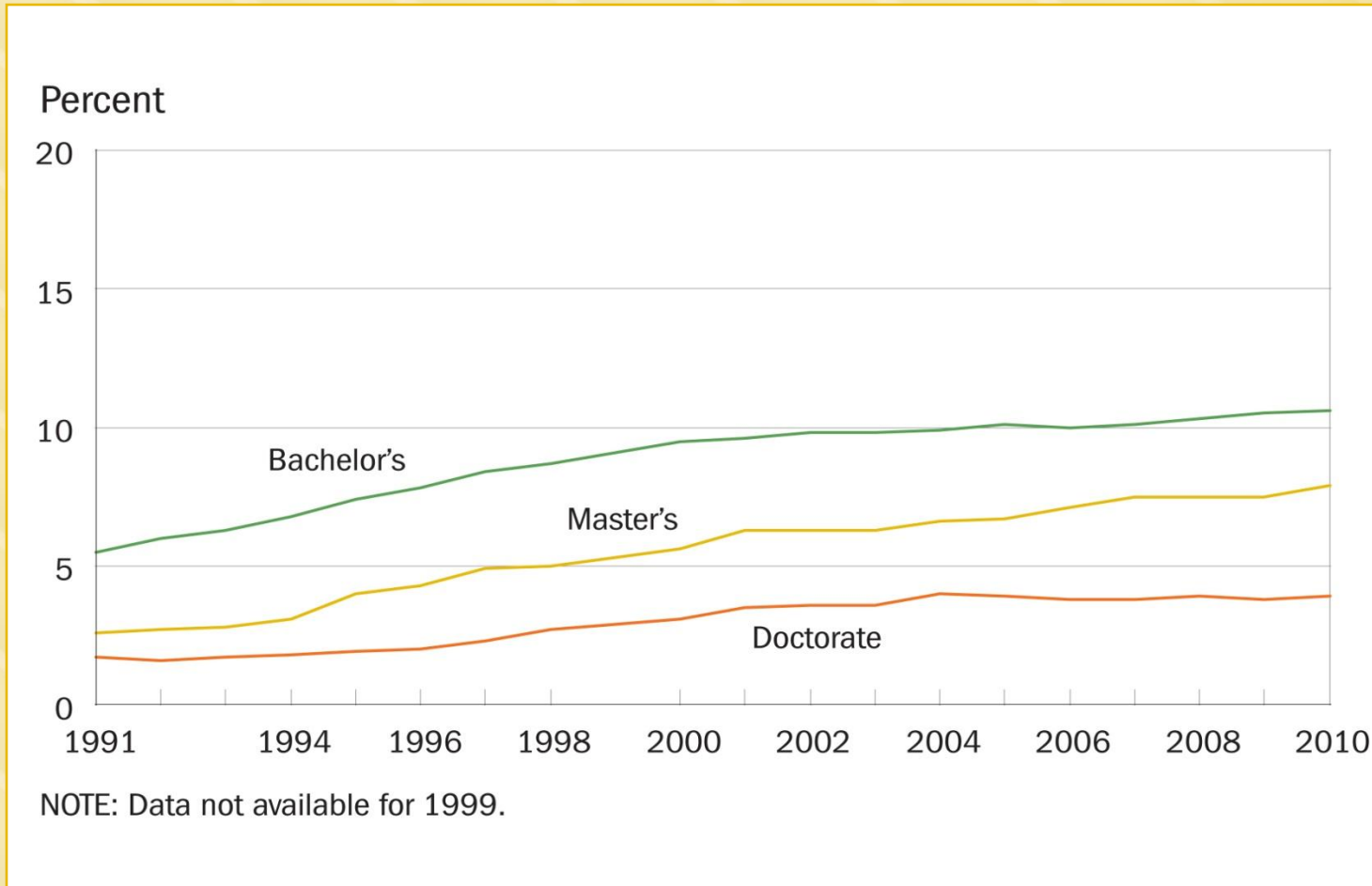
US: Low participation fields for women: Computer sciences and engineering, 1991–2010



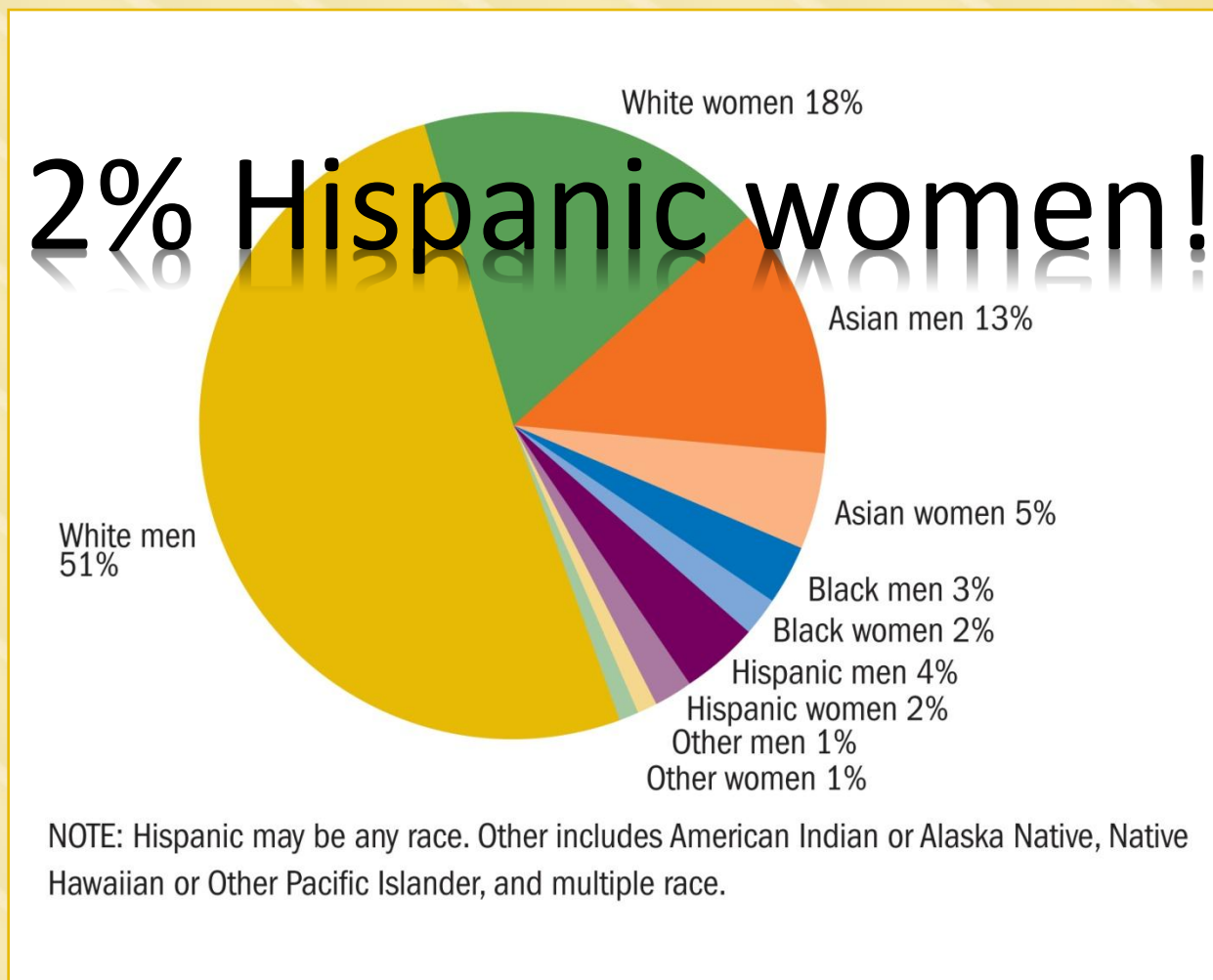
NOTE: Data not available for 1999.



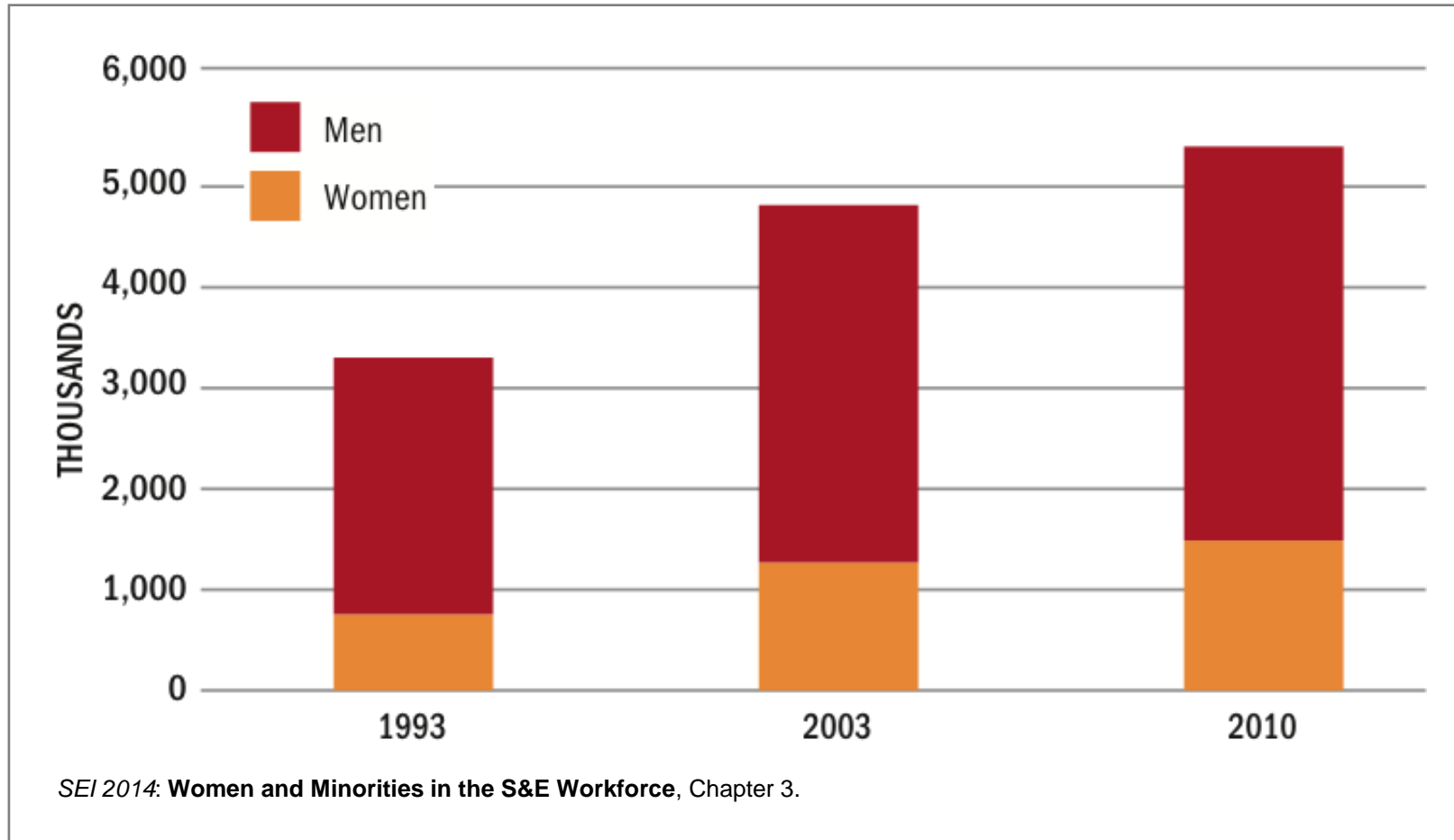
US Science and engineering degrees earned by underrepresented minority women: 1991–2010



US Scientists and engineers working in science and engineering occupations: 2010

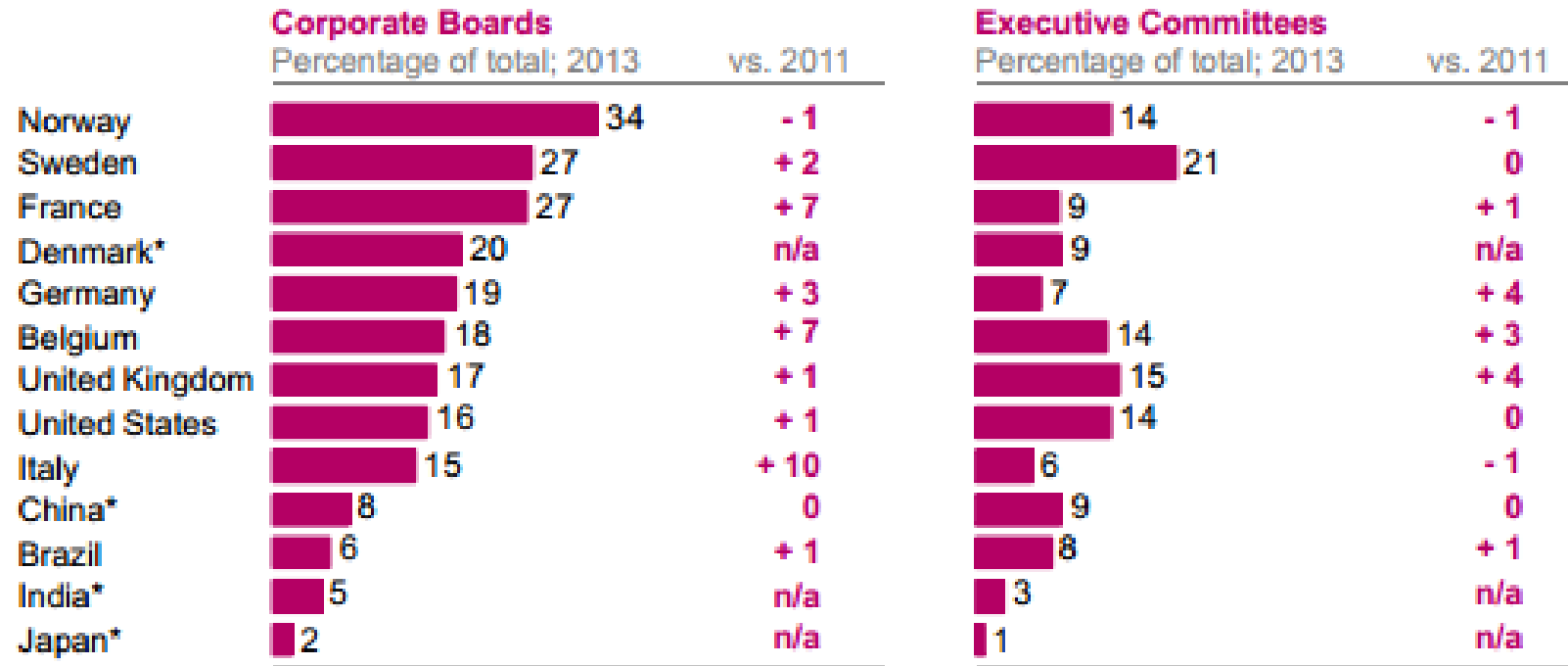


US Men and women in S&E occupations: 1993, 2003, and 2010



Women are still underrepresented at the top of corporations

In 2013, women are still underrepresented at the top of corporations



* The numbers for Denmark, India and Japan reflect the situation in 2011, and for China 2012

SOURCE: Company websites, McKinsey analysis

.. But when they are, companies fare much better



+47%
average return on equity

+55%
average earnings before
interest and tax

Companies with top-quartile representation of women in executive committees perform significantly better than companies with no women at the top³.



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In a room of 25 engineers,
only 3 will be women.

40% of female
engineers in the US
are leaving the
field (or never
enter it at all)!

Due to difficult workplace
conditions...

...but "leaning in" may not be
the answer

In spite of
that...

Hypatia, ~350 ad?



- Greek Alexandrian Neoplatonist philosopher in Egypt. As head of the Platonist school at Alexandria, she taught philosophy and astronomy.
- Credited with the invention of the hydrometer.

The first "computer program" was designed by a famous poet's daughter in 1843

Ada Byron Lovelace, daughter of famous poet Lord Byron, published a paper in 1843 that predicted the development of computer software, artificial intelligence, and computer music.



Emily Roebling (1803-1903)



Supervised construction of the Brooklyn Bridge. When her husband became ill in 1872 Emily took over day-to-day supervision of bridge construction.

Hedy Lamarr

A famous movie actress of the 1930's was also an engineer. Lamarr held a patent on technology which is the foundation for today's advanced wireless networks.



Stephanie Louise Kwolek (born 1923)



While working for DuPont, Stephanie Louise Kwolek discovered liquid crystalline polymers, which resulted in the product Kevlar.

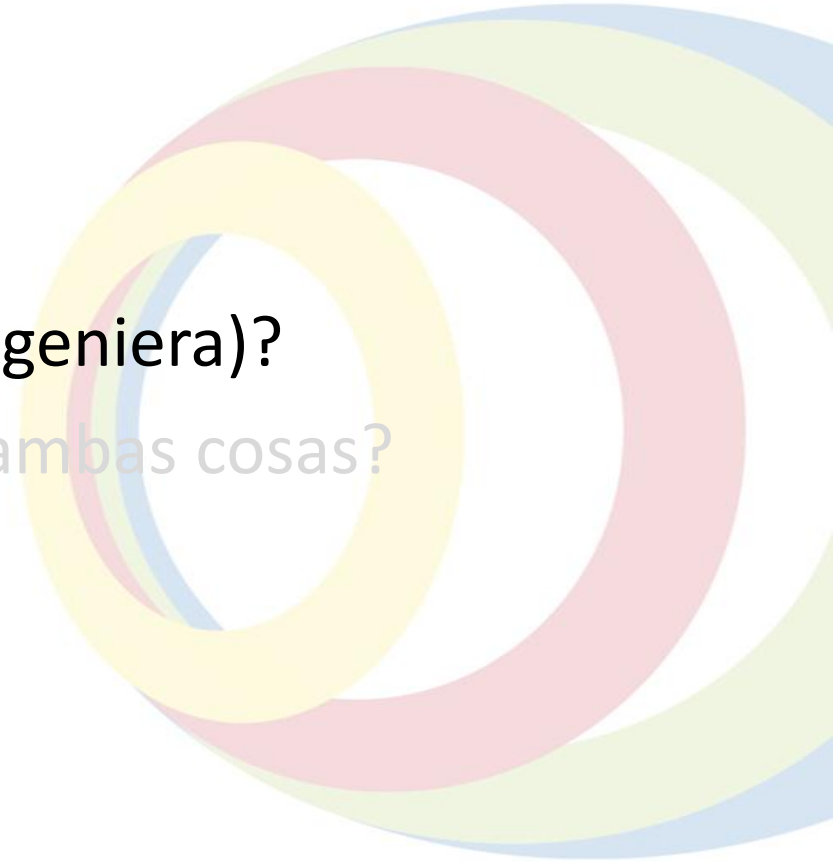
Women make better corporate leaders than men



- They are more likely to **make fair decisions** when competing interests are at stake
- Are **less constrained** than men by rules and more prepared to "rock the boat"
- Are more likely "to use **cooperation, collaboration and consensus-building**"
- Are more **inquisitive** than men
- Tend to see **more than one solution** to a problem. This leads to decisions that are more likely to be in the best interests of a company

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It's in our DNA!



Men &
women ARE
different

But both can contribute to society's well being

Coordination & Movement

Language

Emotions

Pain

Risks & Rewards

Memory

Brain Size & Brain Connections

Sense of Direction

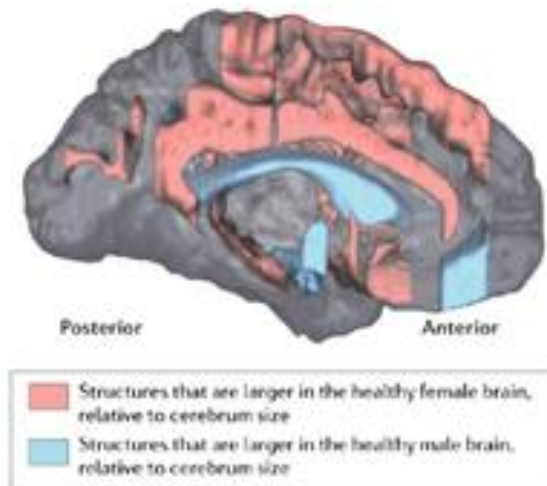
Social Context

Senses & Sex

Math Skills

Multi-tasking

Brains ARE different



MRI studies of healthy people suggest there are sex differences in the size of regions throughout the brain. This image highlights regions that were larger in women (pink) and men (blue) relative to the total volume of the cerebrum.

Tale of Two Brains

MAN LOGIC



Wears this 500 more times

WOMAN LOGIC



Never wears this again

Approach to problem solving

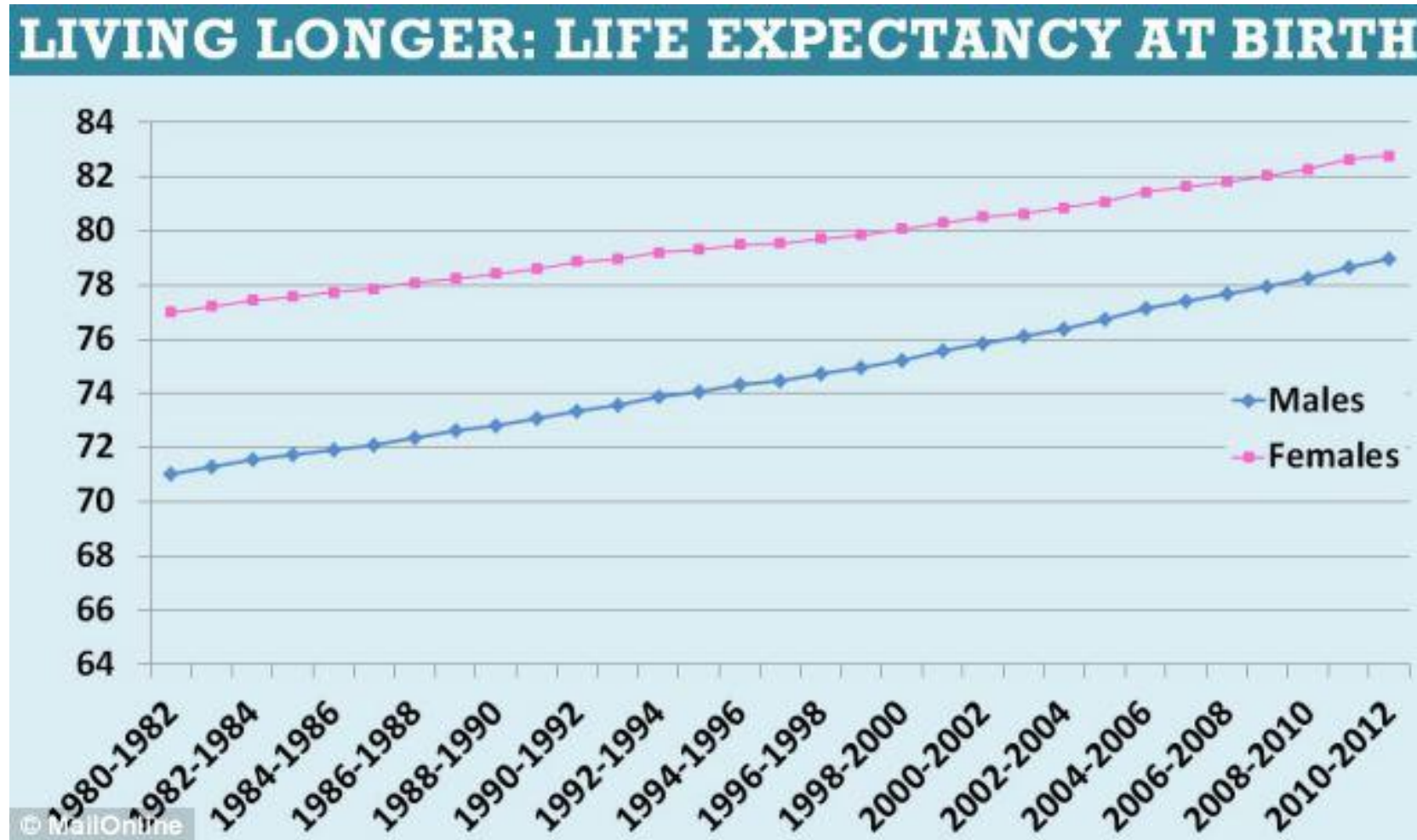
- When women try to solve a problem, they **often rely on the help of those close to them.**
- On the other hand, **men approach problem solving with much less communication.**



Women are better than men at multitasking (at least in certain cases)

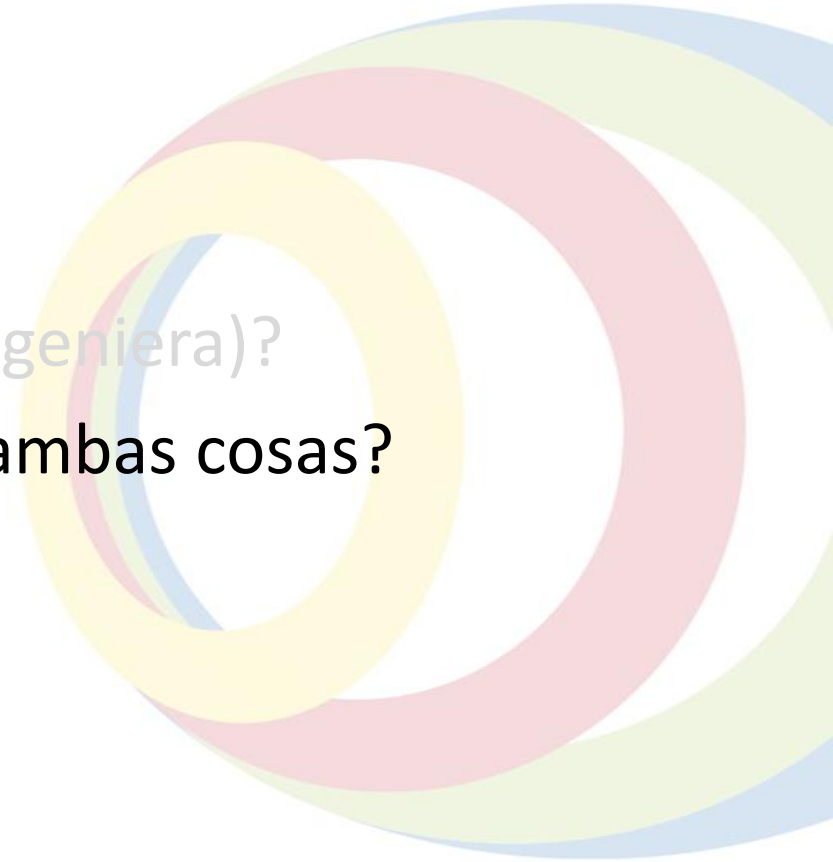


Women live longer than men



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The world needs a big cultural shift for the inclusion paradigm

education is key!

NEGATIVE

Cultural Destructiveness

forced assimilation, subjugation, rights and privileges for dominant groups only

Cultural Incapacity:

racism, maintains stereotypes, unfair hiring practices

Cultural Blindness

differences ignored, treats everyone the same, only responds to needs of dominant group

Cultural Pre-competence

explores cultural issues, are committed, assess needs of organization and individuals

Cultural Competence

recognize individual and cultural differences, seeks advice from diverse groups, hires unbiased staff

Cultural Proficiency

implements change to respond to cultural needs, do research and teach

POSITIVE

Fire him!

New Microsoft CEO Satya Nadella has apologized for his controversial comments this week about women in the workforce where he said women don't need to ask for a raise, but should instead place their faith in the system to pay them well

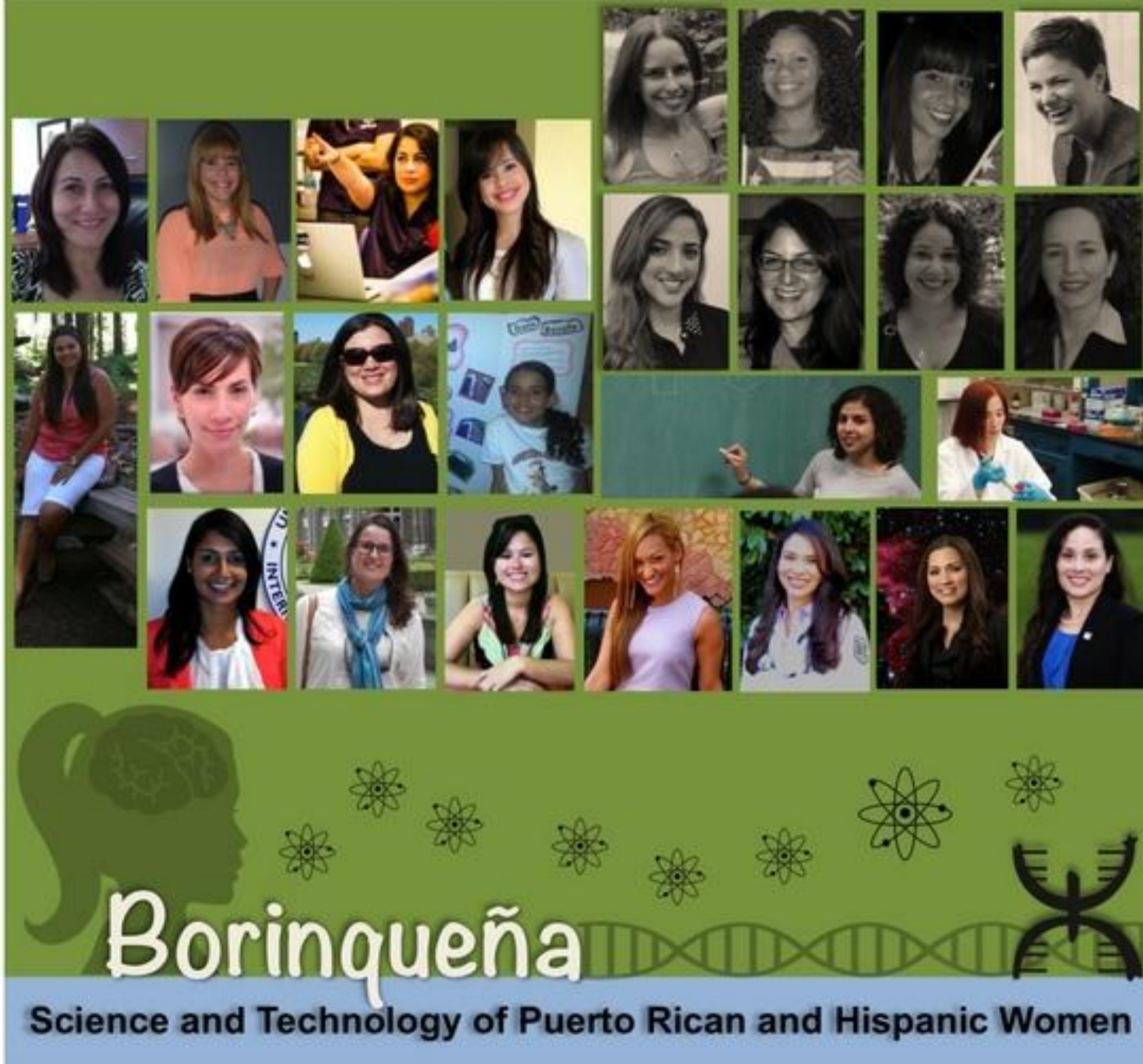


Satya Nadella, Microsoft CEO

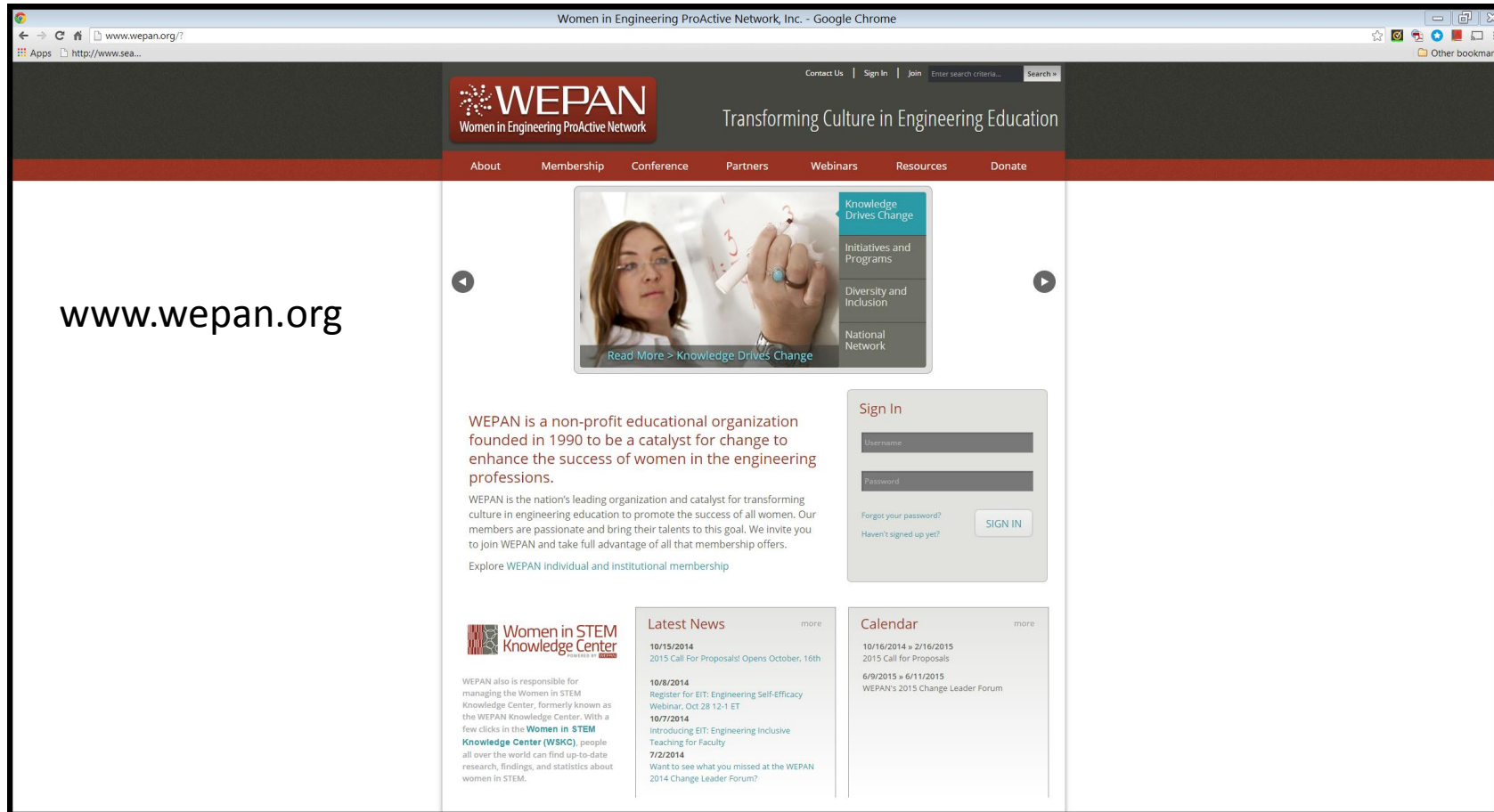
Motivate others

www.ciencia.pr

<http://ireport.cnn.com/docs/DOC-1179619?ref=email>



Educate



Share successes

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CELEBRATION OF WOMEN IN COMPUTING

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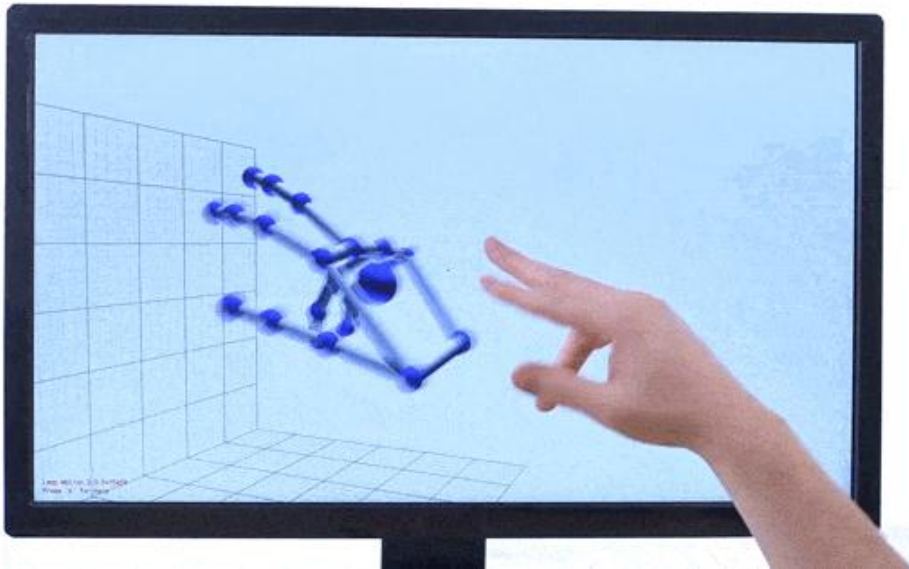
The Grace Hopper Celebration of Women in Computing is the World's Largest Gathering of Women Technologists. It is produced by the Anita Borg Institute and presented in partnership with ACM.



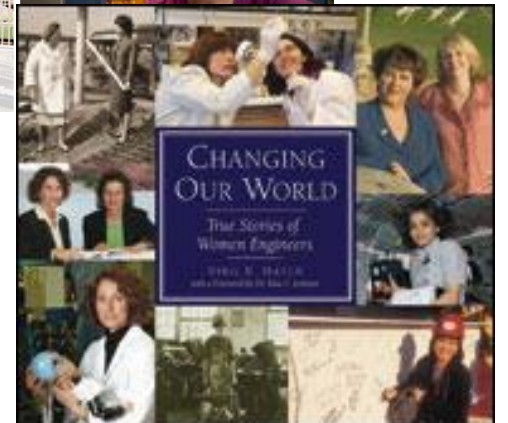
“I am having a great time.
Seriously.”

- Marissa Mayer, on how she feels
about Yahoo, October 22 2014

Celebrate engineering and what engineers can do for mankind!

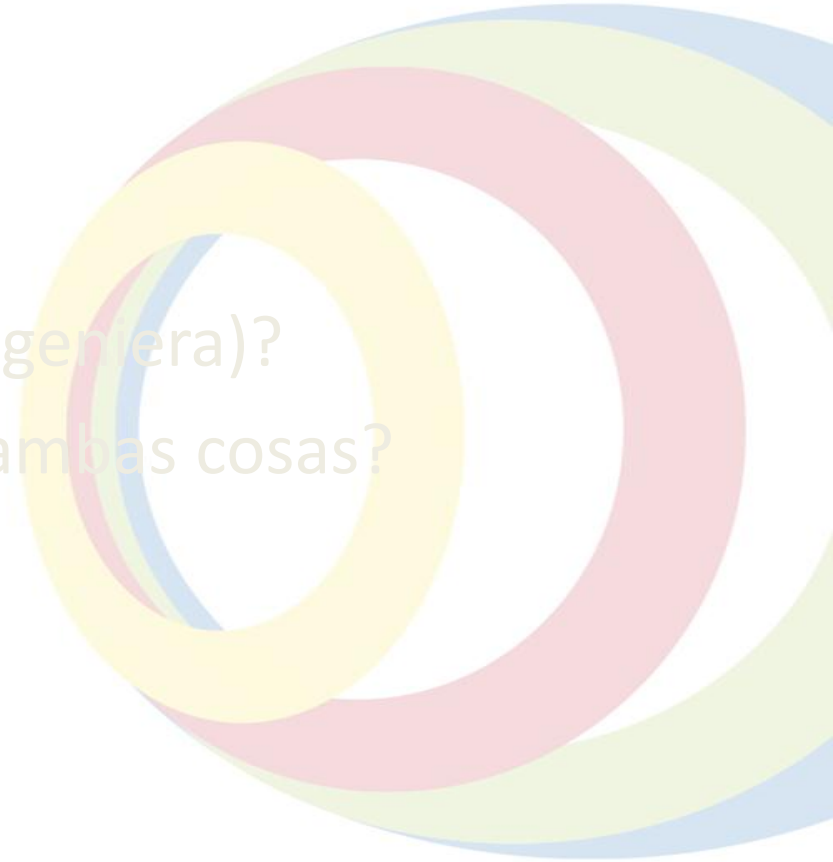


I Change the World. I am an Engineer.



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“I'm not so sure we serve ourselves well, women or men, by asking what makes us different. I suggest we can do better by focusing on what our communities and institutions need from each of us, what strengths we each bring to the table and how we work collectively to lead towards the future.

Men and women are different; that's part of the joy of being alive. **Women and men are also much the same, we each need a purpose and spend our lives seeking out ways to contribute and make this world a better place.**

- Michele Nealon-Woods, National President, The Chicago School of Professional Psychology

“No creo que nos ayude, a hombres y mujeres, preguntarnos qué nos hace diferentes. Sugiero que mejor nos enfoquemos en qué nuestras comunidades e instituciones necesitan de nosotros, qué fortalezas traemos y cómo podemos colectivamente caminar hacia el futuro.

Los hombres y las mujeres somos diferentes; es parte del júbilo de estar vivos. **Mujeres y hombres también somos muy parecidos...ambos tenemos la necesidad de tener un propósito y de pasar nuestras vidas buscando maneras de cómo contribuir y hacer de este mundo uno mejor.**

- Michele Nealon-Woods, National President, The Chicago School of Professional Psychology

Women in
Engineering –

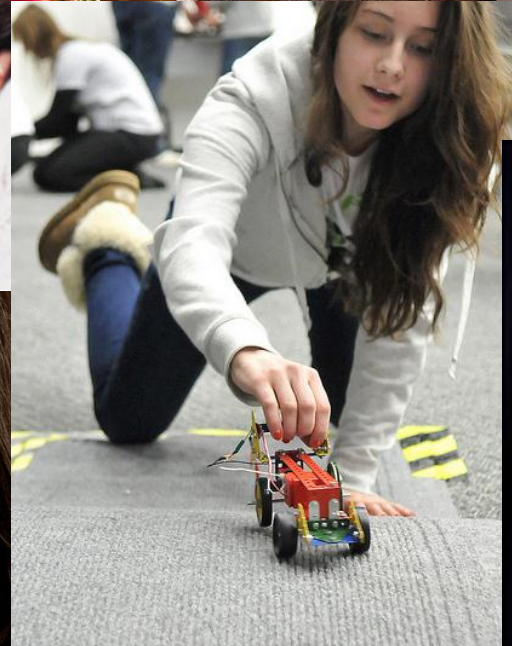
the best kept secret
for changing the
world!



“Extremists have
shown what
frights them most:
a girl with a
book.”

- Malala Yousafzai





¡GRACIAS!

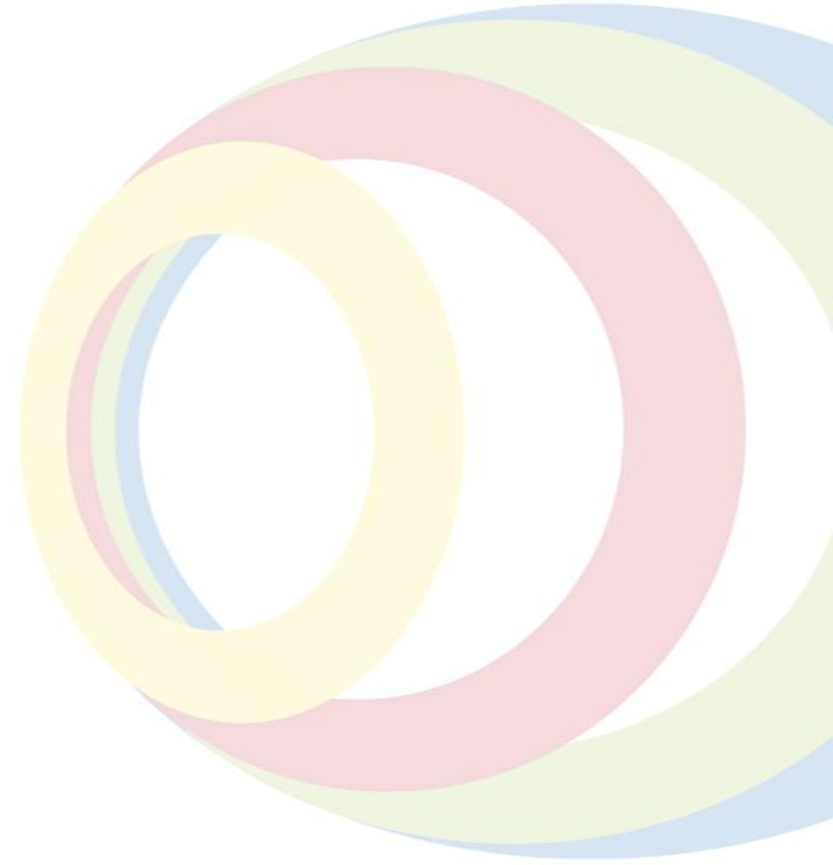
Preguntas



¡Gracias!

Preguntas

www.luenymorell.com



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