

# The future is STEAM also (and notably!) for Women



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Business & Professional Women  
**CLUB TICINO**



**Museo della Scienza e della Tecnologia,  
Milano 07.09.2015**





## The economic case for gender parity



# \$28 trillion

of additional annual GDP in 2025 in the full-potential scenario of bridging the gender gap...

... equivalent to the **combined US and China economies today.**



# \$12 trillion

could be added in 2025 if all countries matched their best-in-region country in progress toward gender parity.

*Equal to 2x the likely contribution of women to global GDP growth in the business-as-usual scenario*

McKinsey Global Institute's **Gender Parity Score** points to where 95 countries stand on gender parity.



These countries, grouped into 10 regions, are home to **93% of the world's female population.**

Gender inequality (1.00 = gender parity)  
● High ● Extremely high

*We linked economic potential to 15 outcome-based indicators in 4 categories...*

Equality in work

Essential services and enablers of economic opportunity

Legal protection and political voice

Physical security and autonomy

*...and identified the largest concentrations of gender gaps around the world to prioritize for action.*

**10** impact zones, covering **>75%** of women affected by gender inequality globally

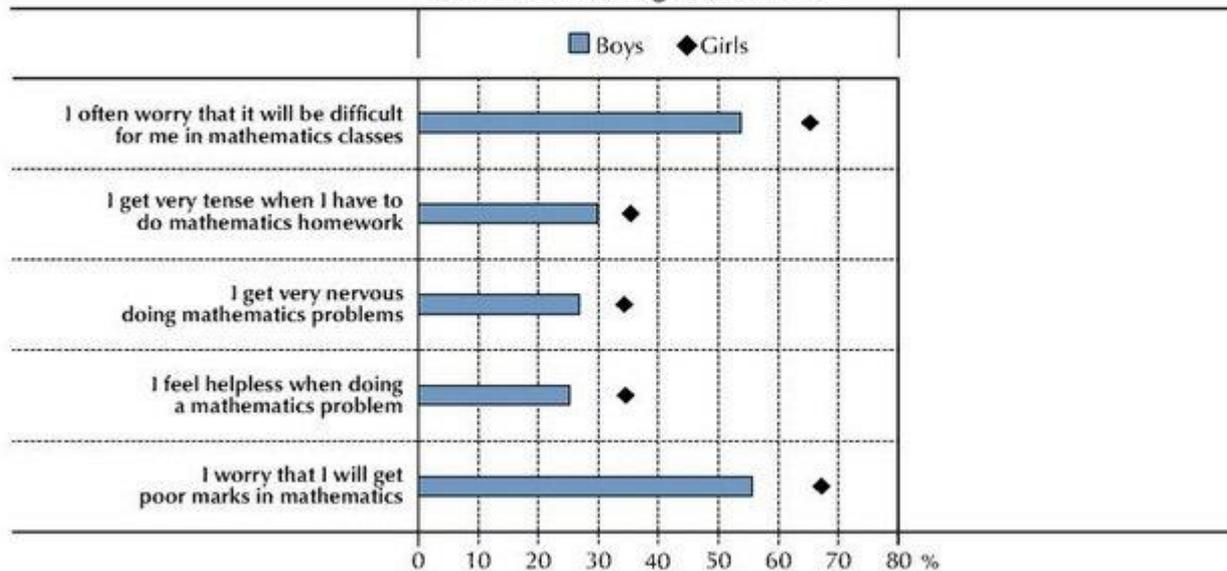
*Our research for the first time links **gender equality in society with gender equality in work.** The latter is not possible without the former.*



■ Figure 3.10 ■

### Gender differences in mathematics anxiety

OECD average percentage of students who agreed or strongly agreed with the following statements:



Note: All differences between boys and girls are statistically significant.

Source: OECD, PISA 2012 Database, Table 3.5a.

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...where *gender equality* culture is *higher*!



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## Speakers:



**Elisabeth Bosshart, *President BPW Switzerland, bosshart consulting gmbh, Bern*** Elisabeth Bosshart is a chemical engineer and an economist. After working in an analytical laboratory and in an engineering office for eight years, she's been self-employed as a consultant in quality, process and risk management for the last 17 years. She was elected President of Business and Professional Women Switzerland in June 2015.



**Vivien Burr, *Reader in Psychology at the University of Huddersfield, UK*** Her research interests include social psychology, personal construct psychology, gender and film & television. She is author of *Social Constructionism* (third edition 2015), *Gender and Social Psychology* (1998) and *The Person in Social Psychology* (2002). She is currently researching the experiences of working carers.

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## Speakers:



**Marcella Carollo, Full Professor for Astrophysics in the Physics Department of the Swiss Federal Institute of Technology (ETH), Zurich**

Marcella Carollo was born in Palermo and obtained her PhD in Astrophysics in 1994 at the Ludwig Maximilians Universitaet in Munich, Germany. In 1999 she was appointed Assistant Professor in the Astronomy Department at Columbia University, New York. In 2002 she moved to the ETH Zurich as an Associate Professor in the Department of Physics; she was elected Full Professor in Astrophysics in 2007.



**Lucia Martinelli, Senior scientist, head of Science in Society at MUSE-Science museum, Trento, Board member Italian Association 'Donne e Scienza' and European Platform of Women Scientists (EPWS)**

Lucia Martinelli has a PhD at the Wageningen Agricultural University (The Netherlands), a Laurea in Biological Sciences (Bologna University, Italy) and a Master of Scientific Journalism and Communication (Ferrara University, Italy). During her activity as researcher in Italian and foreign public and industrial research institutes, she developed and coordinated research in the field of biotechnology, focused on gene transfer, GMO traceability and scientific communication. Since June 2011 researcher at MUSE in the interconnections between scientific innovations and society.





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## Speakers:



**Valerie Guertler-Doyle, *Founder and Owner Diversity in Business, former Head of D&I (Diversity and Inclusion) at Novartis Switzerland***

Valerie Guertler-Doyle is a seasoned professional with expertise in the R&D as well as the commercial area. She is recognized as a change agent who dislikes the status quo and has been instrumental in creating business value by leveraging diversity. She was a founding and still is active member of HBA Europe, has served as Steering Committee member of ILO Business Disability Network and as board member of UN Women Switzerland. She is President of the Irish Business Network in Switzerland, which connects Irish and Swiss business. She is an active blogger in the area of D&I and a very engaged mentor both within Novartis and externally.



**Anna Gamba, CFA, *Fund Manager and Senior Analyst at Pairstech Capital Mngmt LLP, Board Member of CFA Society Italy***

Anna Gamba gained an experience of 17 years in the financial sector; she spent 13 years as Fund Manager, mainly on European and International Equity. Thereafter, she spent a period as Consultant and Financial Advisor, mainly for Institutional and Professional Clients. From March 2013 to February 2015 she was Senior Analyst at the Advisory Company FS First Solutions. Since 2015 she is Fund Manager and Senior Analyst at Pairstech Capital Management LLP



# A scientist can look just like me



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“The most important thing I learned is that a scientist can look just like me.”

Mykel Sisk  
NexGeneGirls Intern



# Do you think we need women partners?



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**WOMEN**  
GLOBAL  
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# Women in business is though



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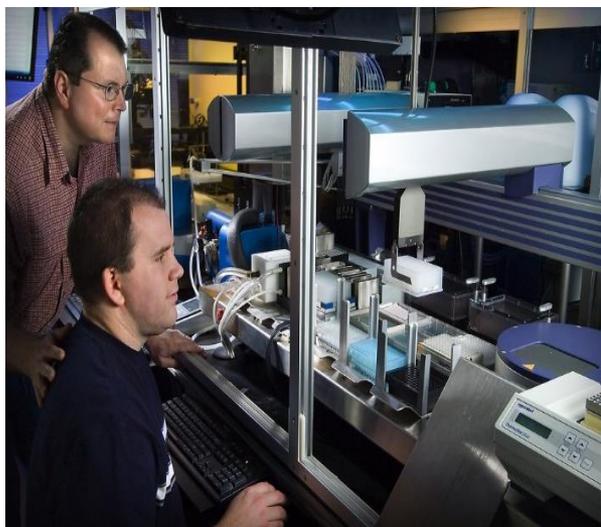
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# Girls and Science Education



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## The problem

Girls have as much science ability as boys

**BUT**

Girls become less interested in science, especially in secondary school

Girls see science as difficult and uninteresting

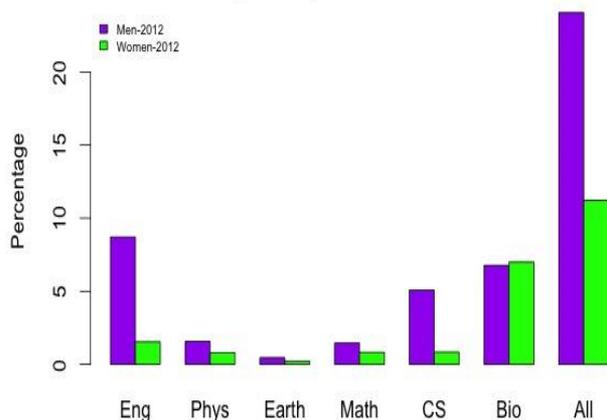
Girls underestimate their science ability

Girls prefer biology to physics or chemistry

Girls are less likely than boys to choose to study science at a higher Level

Girls are less likely than boys to choose a career in science

2012 STEM Degrees as Percentage of Degrees, By Discipline and Gender



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# Girls and Science Education

## Why?

Both girls and boys see science as a boys' subject and scientists as men

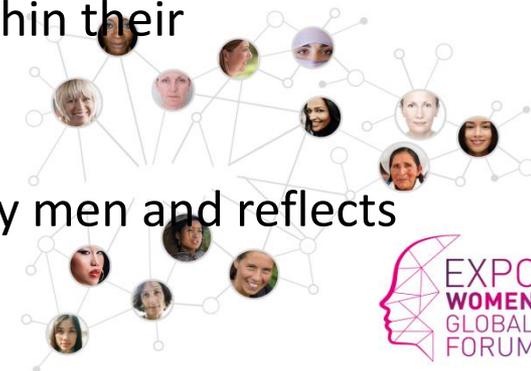
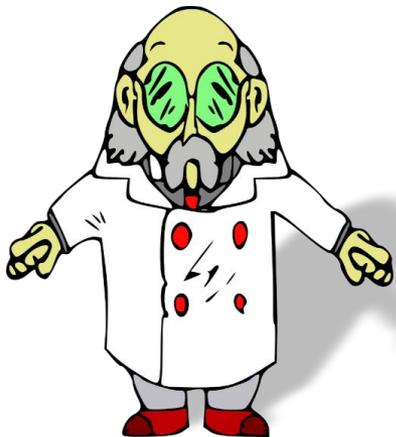
Science teaching does not relate to girls' lives, experience or interests

Science is taught in ways that are not sympathetic to girls' preferred learning styles

Science is seen as 'masculine'- objective, rational and unemotional

Girls struggle to include 'scientist' within their developing gender identities

Our vision of science has been built by men and reflects men's agendas and power



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**What can we do as educators, parents and members of society?**

Educate science teachers to be 'gender-inclusive' in their curriculum and pedagogy

Help girls to recognise their science ability

Help girls to find ways of 'being a scientist' that is consistent with their sense of self

Challenge our current conception of what 'science' is and should be

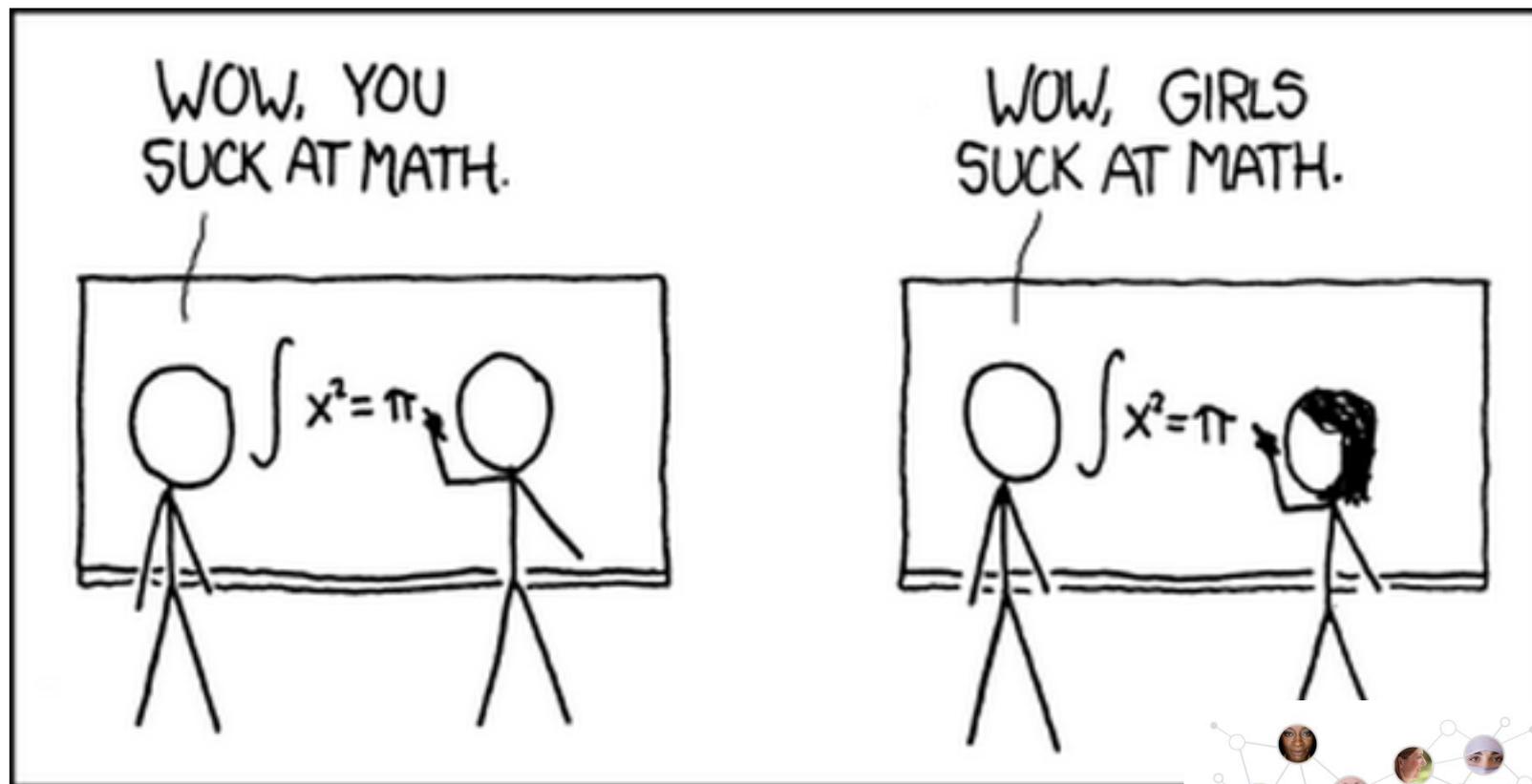
Challenge unhelpful conceptions of masculinity and femininity wherever we find them



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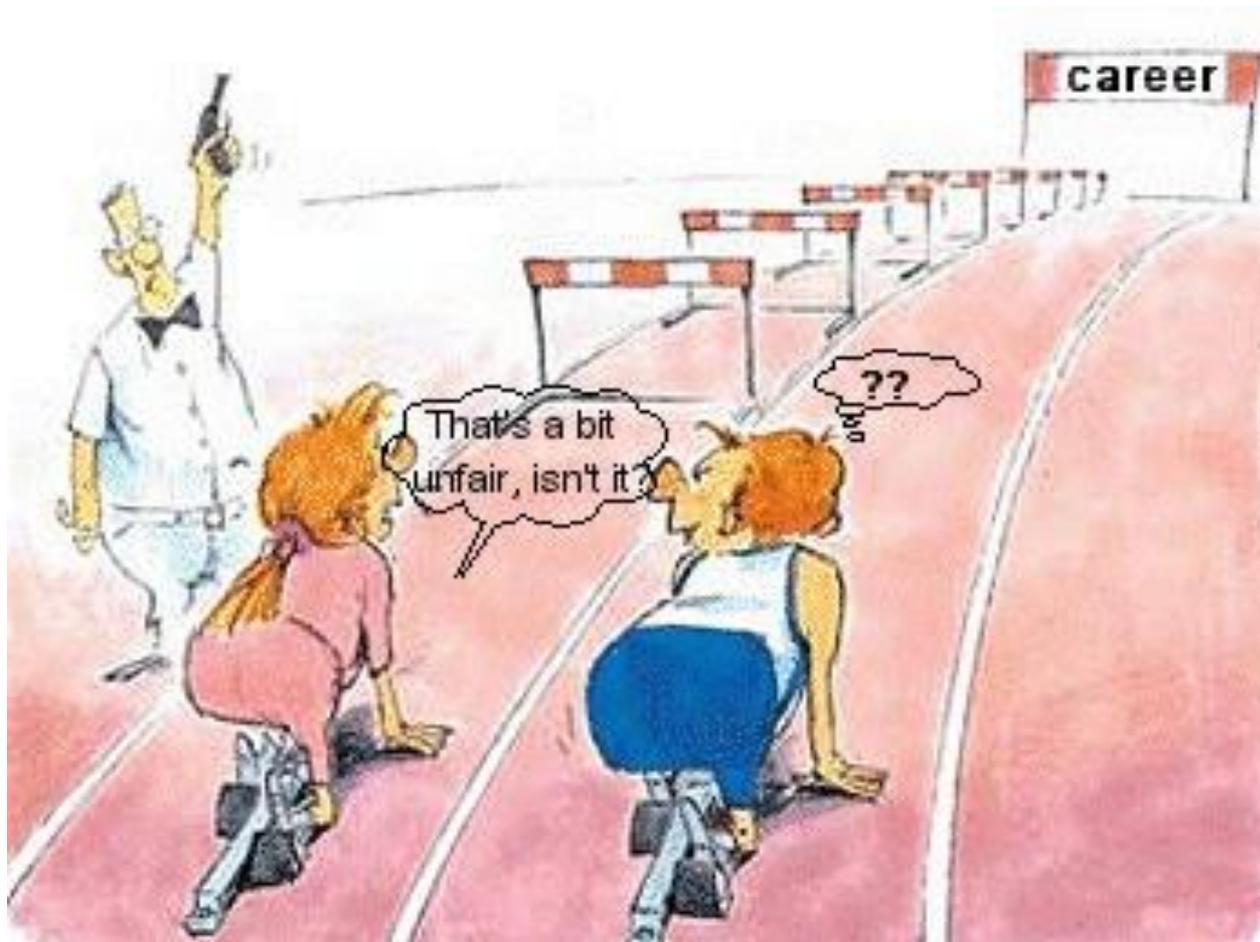
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**Winner**  
**Cartoon of the Year**  
**2012**



"money suits every woman  
who can wear it"



Design Dieter Huthmacher  
@wtwfinance

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# Women in Finance: Numbers & Performance

**Morningstar Report: Fund Managers by Gender**, June 2015:

**9,4% of all U.S. Fund managers are women.**

Women exclusively run 2% of the industry's assets and open-end funds; mixed-gender teams are the 21%.

The **performance** of Funds run exclusively by women is the same as men.

**Best results are provided by mixed gender teams. Value of Diversity.**

**18%** of the 123,000 **CFA Institute members** (Chartered Financial Analyst charterholders) are Women,

**18%** female CFA Charterholders and members of the **CFA Society Italy**

31% of the over 159,000 candidates for the June 2015 exam were women

In Private Equity and Venture Capital much less than 3% are Women

Companies in the MSCI World Index have 12% women in management and on their boards

Credit Suisse report of 2014, **CS Gender 3000: Woman in senior management: Firms with gender-diverse Board have better financial results and excess stock market returns**

**Women on Boards In Italy:** 5,5% in 2010, 17,5% in 2013

New Investment Index created and focused just on Companies that have at least 3 women on Boards, or Women CEOs etc.. (Beta seems to be around 0,85)





## Key Takeaways from the CFA Institute Conference: Women in Investment Management, 2-3 June 2015, Texas, US



Meredith Jones: women are **more risk-averse** than men; Women weight probabilities differently, they are taking risk, but they **are taking calculated risk**

On a 6,5Y period considered, in female-run hedge funds and in private equity, women generated over-performance.

Women **trade less** than male managers and tend to be longer term investors

At a macro level, **behavioral diversification** can mitigate the volatility in the market

Sarah Reid: Greater diversity of thought process, with richer debate/discussion, can often lead to better performance

Addressing the **compensation model and pay gap**.

### Engage Men !

The diversity imperative (gender and other) needs to **come from the top**. It's about focusing in on how to **keep an individual motivated, productive, and happy**

Top industry Executives must demonstrate commitment to increasing the number of women at all levels, including the C-suite and to keep the best people → Responsibility, compensation, flexibility...

Lots of very good female students, Women more than half of the professional and technical workforce ....  
**but** a few in Finance and just 4,8% of the Fortune 500 CEOs are Women...

## WHY ???

**Similarity:** Leaders tend to be more comfortable with people who are like them.  
Anne-Marie Slaughter: Gender Equality Is “Not about Women. **It’s about Care**”.  
Time for caregiving responsibility to be shared ? Facilitate shared parental leave

“BRAVO” = Respect, pleasant, I want to work with him... 😊



“BRAVA” = NO, NO, NO... 😞

## My personal Considerations & Tips:

**Meritocracy** highly correlated with Gender parity

Working **is NOT University**; do NOT expect from others to say you «Brava»

**Certifications**

**Mentoring**

Write **Goals** (and Dreams)

Learn to **listen**

Networking

Flexibility

**Work Life balance:** Not just work work work; aslo time for Life and to relax (sports, yoga, meditation..)

**Sheryl Sandberg**, (COO of Facebook and author of the book “Lean In”) 3 key thing YOU (and not the society) can do:



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**Sit at the table**, raise your hand, ask for.. negotiate for a better opportunities and salary !  
**Make your partner a real partner.** If both works, both need to take care of house&kids  
**Do not leave before you have to leave** (for a child), do not pre-occupied too early.



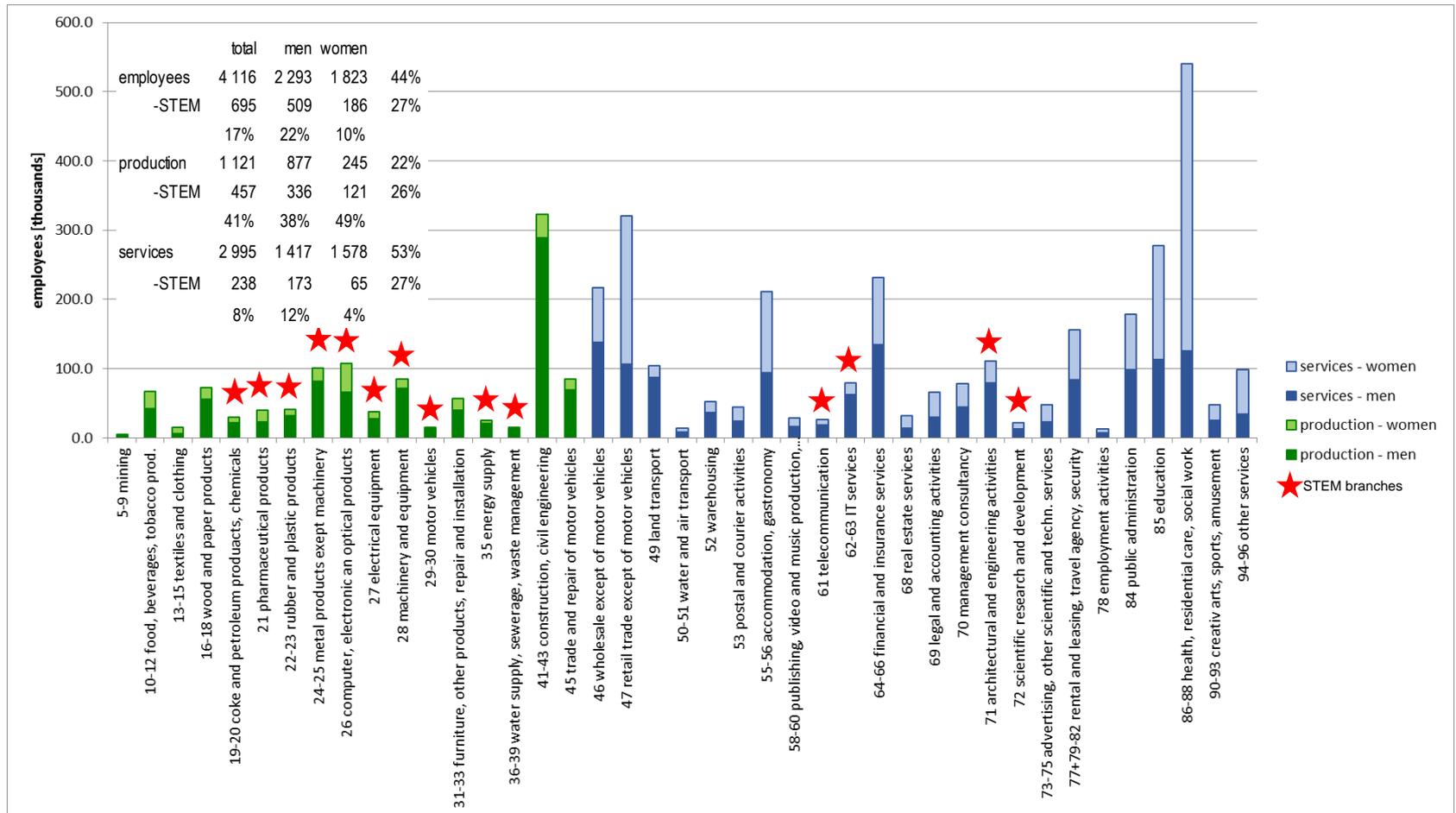
# Horizontal Segregation and Gender Pay Gap

Elisabeth Bosshart

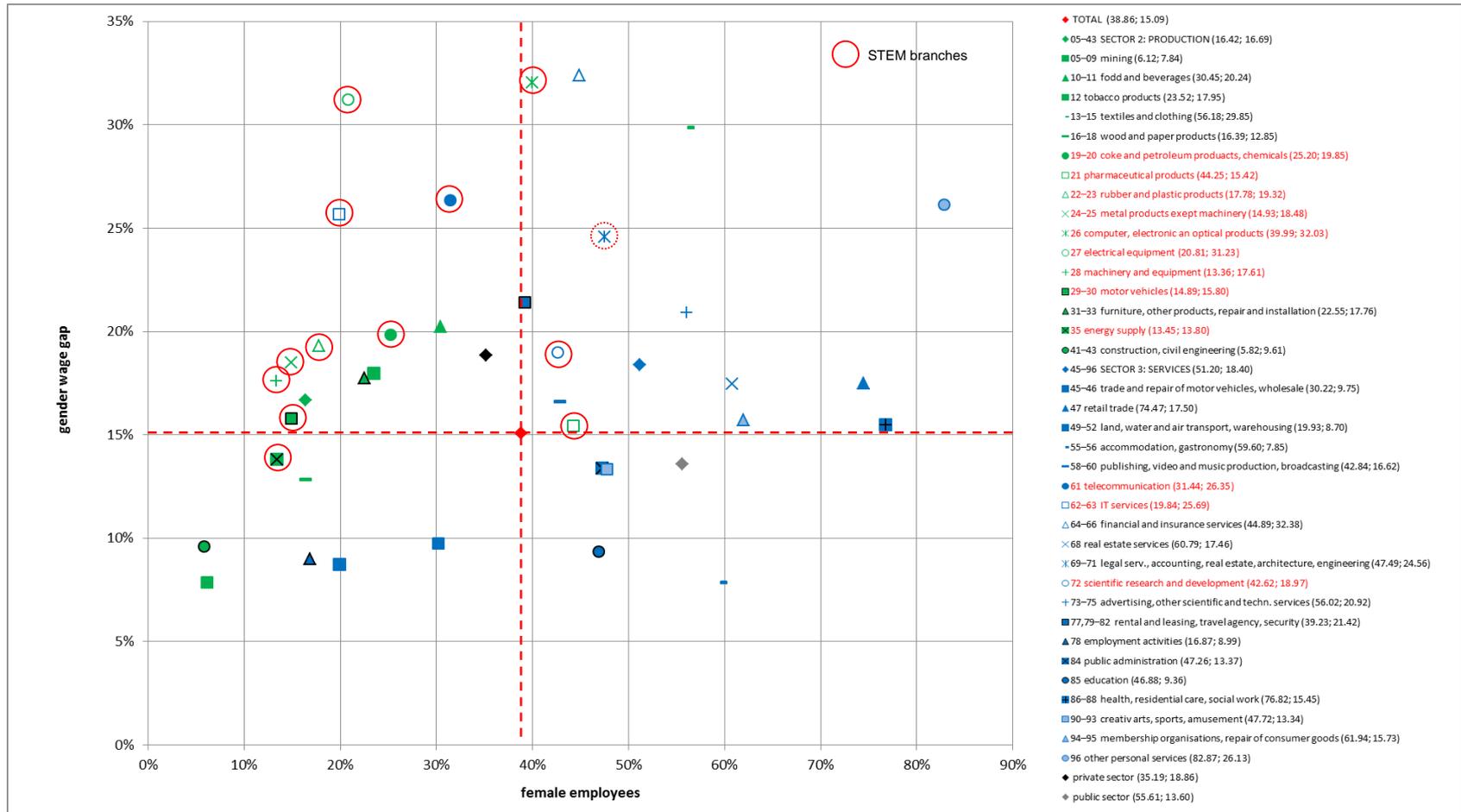
President Business & Professional Women Switzerland

[elisabeth.bosshart@bpw.ch](mailto:elisabeth.bosshart@bpw.ch)

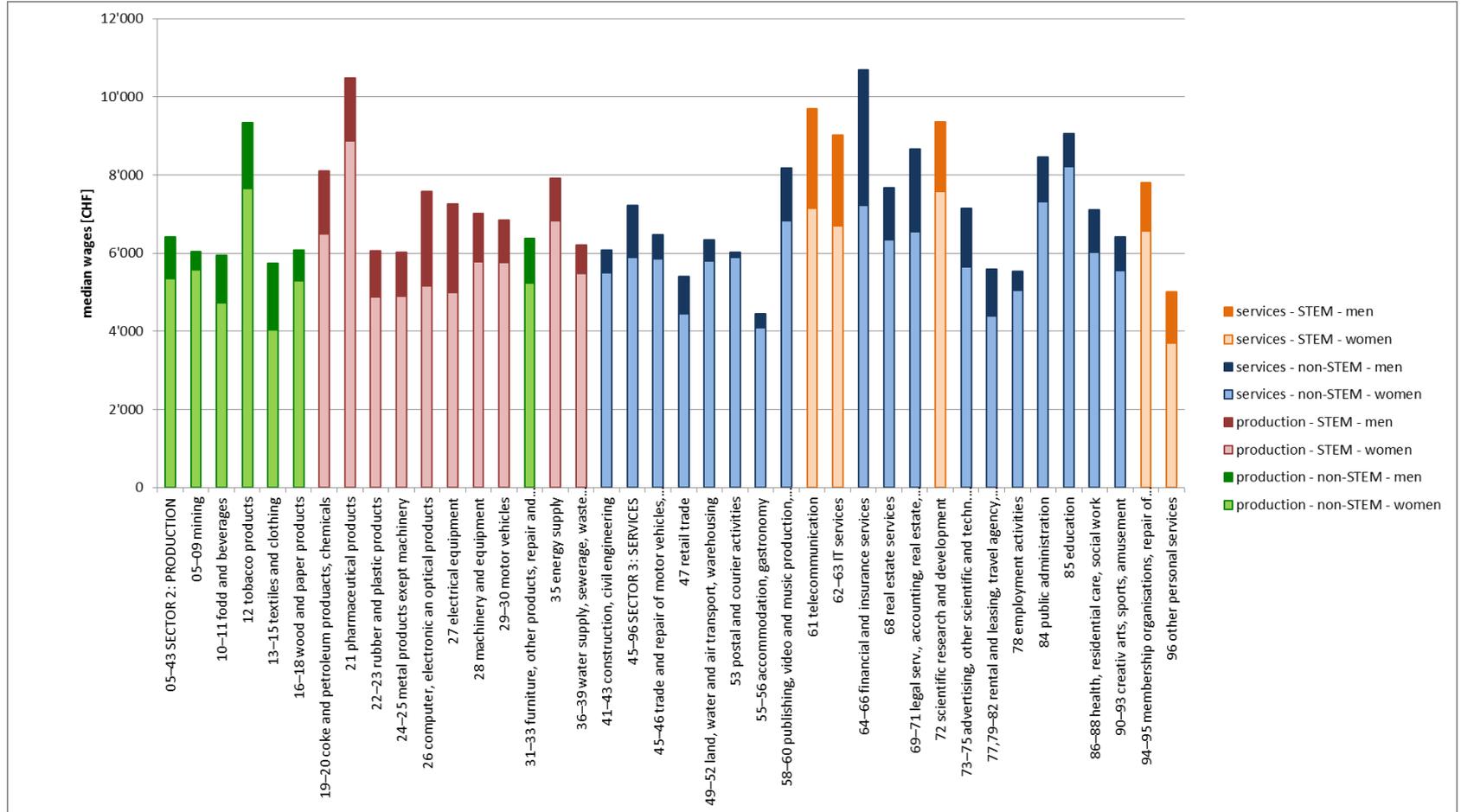
# Economic Activities and Horizontal Segregation



# Gender Wage Gap against Percentage of Women Employed by Economic Activities



# Wages by Economic Activities



# Questions

- Why are STEM professions not attractive for women?
- How can we motivate young girls to chose a STEM profession?
- How can the gender wage gap be closed?

# References

- sources
  - data: Swiss Federal Statistical Office
    - Beschäftigte nach Wirtschaftsabteilungen
    - Schweizerische Lohnstrukturerhebung 2012
  - analysis and charts: E. Bosshart
- all data refer to Switzerland year 2012
  - persons employed: full time and part time
  - wages: median values, standardized to full time employment