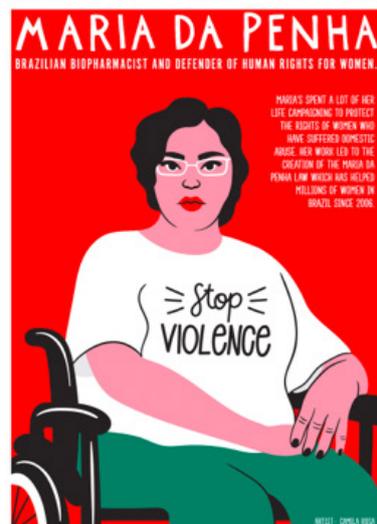
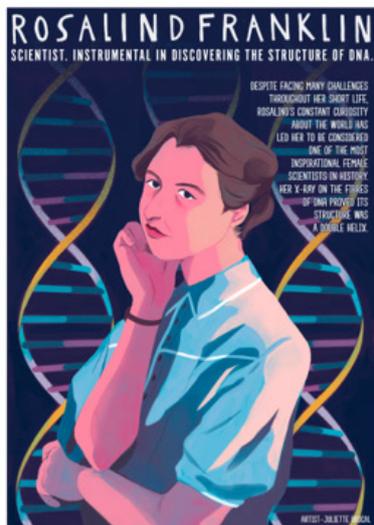


FALL 2019

# It's not rocket science

## Closing the gender gap in STEM

EVENT REPORT



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1. **Trudy Morgan**, Technical Coordinator at United Nations Office for Project Services (UNOPS) in Sierra Leone, Vice-President of the Sierra Leone Institution of Engineers and Co-Founder of Sierra Leone Women Engineers; **Stefaan Hermans**, Director of Policy Strategy and Evaluation in the Directorate-General for Education, Youth, Sport and Culture at the European Commission
2. **Dharmendra Kanani**, Director of Insights, Friends of Europe
3. **Olivier Crouzet**, Head of Pedagogy at Ecole 42



## Linking female empowerment with digital transformation

“By advancing women’s equality, \$12tn could be added to global GDP by 2025,” noted **Dharmendra Kanani**, Director of Insights at Friends of Europe, moderating the debate ‘It’s not rocket science – closing the gender gap in STEM’ in Brussels on 12 November 2019. Given this huge business case alone, based on statistics from a recent McKinsey report, and Europe’s urgent need for IT professionals, he asked four panellists to share their thoughts on bringing more girls and women into STEM subjects (science, technology, engineering and mathematics).

“After all these years, it seems offensive that we still have to talk about the gender gap in Europe and beyond,” said Kanani. Half of the world’s population is still denied access to the same opportunities and life chances as men, due to structural and systemic discrimination. Before introducing the first speaker, he noted that Europe still lacks the skills required for technical development. Tellingly, studies show that girls do better in early life at technical subjects than boys. Yet girls take a step backwards in these subjects around age 15, when they typically find it harder to access STEM studies.

## Attracting more women into IT studies

Ecole 42 is a tuition-free computer programming school for students aged 18 or over. Based in Paris, with campuses in the United States and Europe, it aims to address the gender gap challenge with a thoughtful and innovative approach. The school’s curriculum features traditional IT skills, such as security and databases, as well as emerging technologies like artificial intelligence. Applications to the school are open to anyone, even without university degrees, so they can explore IT as a career choice. Ecole 42 also visits schools to encourage girls to take up IT studies.

“Smartphones and the Internet of Things are used by half of the population, so it makes perfect sense that women should also be involved in computer coding in these fields among others

**Olivier Crouzet**, Head of Pedagogy at Ecole 42

“We strive for gender balance in our ICT education and training,” said **Olivier Crouzet**, Head of Pedagogy, adding that 15% of the school’s students are women (up from 7% six years ago) and the aim is to reach 40% plus. “Smartphones and the Internet of Things are used by half of the population, so it makes perfect sense that women should also be involved in computer coding in these fields among others.” The school’s CEO is a woman, but women only make up 5 of its 35 staff.

Crouzet is sure that women appreciate the school’s friendly environment and unique teaching approach – no lecturers and the freedom for students to pursue their own

software development projects. These are based on collaboration, problem-solving, and critical thinking. “We have found that a strong cultural, social or gender diversity among students increases peer learning and collective intelligence,” said Crouzet. He also underlined how Ecole 42 works – through actions and its communication – to tackle two common biases. Firstly, the assumption that girls don’t want to study in STEM, because culture or society say STEM is not for them. The second assumption is that girls who study STEM often underperform, because they feel out of place doing it.

### Women role models in STEM

Crouzet highlighted ‘WI-Filles’, a France-wide group introducing IT skills to female students. Other debate participants hoped that Ursula von der Leyen, the new European Commission President, will champion gender equality in the EU. She will head a Brussels-based Commission in which women make up 42% of staff, thanks to an equality push within the institution by President Jean-Claude Juncker.

Turning to the second speaker, Kanani said the European Commission is often perceived as having “very white and male staff”, despite the Commission’s own small steps and numerous proposals to improve education outcomes for women.

“ In the education field, the Commission is raising awareness, acting together, changing mindsets and building a united front by ensuring everyone uses the same narrative

**Stefaan Hermans**, Director of Policy Strategy and Evaluation at the European Commission’s DG Education and Culture

“The EU is committed to equality and non-discrimination – values that help make us European,” replied **Stefaan Hermans**, Director of Policy Strategy and Evaluation at the European Commission’s DG Education and Culture. Equality is also enshrined in Article 19 of the Treaty on European Union, while the EU’s Charter of Fundamental Rights goes a step further and allows for ‘affirmative action’.

Hermans recalled that the Juncker Commission worked hard to get more women into middle and high-level positions. Today around 40% of Commission staff in Brussels is female. The Commission’s DG for Education and Culture also has an Equality Commissioner to push equality.

Equality will be a key theme in the new Commission and in all EU areas and policies. According to Hermans, “In the education field, the Commission is raising awareness, acting together, changing mindsets and building a united front by ensuring everyone uses the same narrative.” Newly adopted EU legislation should also ensure a better work-life balance for parents and carers, bringing more women into paid employment.

Hermans said that experience shows how women in the Commission often say they “are not ready for promotion to head of unit”. However, he acknowledged the Commission could do more to ensure gender equality in education.

Kanani noted with disappointment that he had heard very little discussion of gender balance and discrimination, during the lead-up to the 2019 European Parliament elections. He also criticised the European media for poor coverage of gender inequalities.

### Game-changing tech

In Europe, females only account for 35% of STEM students and just 15% of ICT jobs, while just one in seven ICT specialists are women. Yet the UN has declared the 21st century will be the century for girls and women.

“To achieve gender equality in STEM, we need empowerment of girls and women plus digital transformation of our societies and economies

**Lindsey Nefesh-Clarke**, Founder and President of Women's WorldWide Web

“To achieve gender equality in STEM, we need empowerment of girls and women plus digital transformation of our societies and economies,” said **Lindsey Nefesh-Clarke**, Founder and President of Women's WorldWide Web. With her experience of using IT for development, she knows tech can be a game-changer for females, “IT offers opportunities for bridging the gender divide. Many digital apps already improve or save their lives, whilst driving socio-economic progress.” However, Nefesh-Clarke said that it would take another 200 years to achieve gender equality at the current rate of progress. Women worldwide are also chronically under-represented in IT and technology, especially in technical and decision-making positions.

She also warned of an increasing digital gender divide. Most of the world's 3.4 billion people not online are female. Despite growing opportunities in ICT and the digital economy, the number of women choosing to work in these areas is decreasing. “Females are chronically under-represented in tech, just when Europe has 800,000 unfilled IT jobs. Yet getting more girls and women into this field would boost annual European GDP by €90mn by 2025,” she said.

A worrying trend is that new technology and apps may be amplifying gender bias, such as Amazon's AI-powered recruitment tool, which downgrades CVs that mention ‘woman’ or Google's speech recognition software generally being more accurate with male voices than female voices.

On the other hand, there is reason for optimism, added Nefesh-Clarke. She noted the decades of research on gender equality and plenty of good roadmaps, action plans

and solutions galore on the topic. “We need cross-sector collaboration but we don’t need a big change, because there are solutions,” she said. Like those in UNESCO’s ‘Cracking the Code’ report from 2017, which assessed the factors that hinder or facilitate girls’ and women’s participation, achievement and continuation in STEM education. The report advocated intervening in education at all levels and possibly making this mandatory in higher education.

The EU has also done rather well in digital gender equality, according to Nefesh-Clarke. She mentioned the European Commission’s Women in Digital (WID) Scoreboard, and its 13 indicators to monitor women’s participation in the digital economy. All EU countries have signed up to this. Moreover 46% of participants in the 7th edition of EU Code Week, held last October, were girls.

“What we need is a broad European communication effort to address women in STEM, working at all levels, from local to national,” said Nefesh-Clarke, noting that more women are needed in STEM to meet the UN Sustainable Development Goals 4 and 5 (respectively quality education and gender equality), as well as the EU’s 2030 Agenda for Sustainable Development. She recommended that anyone interested in gender digital inequalities should read a recent report by the EQUALS Research Group Report. ‘Taking Stock: Data and Evidence on Gender Equality in Digital Access, Skills, and Leadership’ highlights persistent digital gaps and the complexity of gender equality in ICT.

### Addressing Sierra Leone’s gender gap

**Trudy Morgan**, Technical Coordinator at United Nations Office for Project Services (UNOPS) in Sierra Leone, and Vice-President of the Sierra Leone Institution of Engineers. She criticised the patriarchal nature of Sierra Leone, where most teachers are male, few girls attend secondary school and even fewer graduate from university. Women engineers who do find a job tend to get passed over for promotion.

## “A country’s progress requires developing all its citizens

**Trudy Morgan**, Technical Coordinator at United Nations Office for Project Services (UNOPS) in Sierra Leone, and Vice-President of the Sierra Leone Institution of Engineers

“A country’s progress requires developing all its citizens. So I co-founded the Sierra Leone Women Engineers and set up ‘Saturday Club’ to help secondary school girls interested in science and technology,” she said.

“The EU has worked hard to introduce gender equality in its Sierra Leone projects, but the country has a serious gender gap,” added Morgan. She called for “affirmative action” to get more women into education and employment, especially STEM. This would boost the economy of the nation and make it less reliant on EU aid. “You’ve summed up how investing in women results in social and economic leapfrogging,” concluded Kanani, adding that he hoped women should see their gender as an opportunity and not a barrier.

“Affirmative action in Sierra Leone could definitely help women and other groups. For instance I believe all EU projects should first check to see whether women, girls, the disabled and marginalised can benefit from projects’ work,” said Morgan. She also highlighted how UN Women carries out gender mainstreaming throughout its projects, in line with the UN gender equality and women’s empowerment mandate.

This is a great idea, added Kanani. He reckoned gender equality should play a larger role in EU development policies and focus especially on women, for example, because they suffer most from the impacts of climate change. Lindsey Nefesh-Clarke agreed that girls/women tend to bear the brunt of the impacts of global warming, but added that they are also best placed to turn situations around. This assertion was backed up by Trudy Morgan, who said she was working on development projects with hundreds of Sierra Leone women who are most vulnerable to flooding caused by climate change.

During question time, one audience member wondered if it would help to introduce quotas for women studying STEM subjects. As far as Ecole 42 is concerned, replied Olivier Crouzet, this idea was dismissed because quotas were widely viewed as discrimination. Kanani agreed, noting that organisations in the UK often prefer to use the term ‘positive action’, which strives for a 50/50 gender balance in education or work. A representative of Huawei said that China typically favours gender balance. Around half of Huawei’s communication department is made up of women. The company also recently organised bus tours in Bangladesh to encourage women to learn IT skills.

The event ended with a short speech from **Ludmila Silva**, Managing Director for Europe at the Institute for Scientific Advancement of the South, a Brazilian think tank. Her mother, now 80, emigrated from Syria to Brazil and struggled for years to become a scientist. After becoming the first woman to graduate with a science degree from her university in Rio de Janeiro, she overcame prejudice against woman biochemists by opening her own mobile pathology laboratory. Silva said she found this Friends of Europe event fascinating, but felt sad that having women in STEM is still controversial in 2019. She concluded by inviting all females interested in or working in STEM to join the new Women in STEM Network in Brussels.



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