

# Women in STEM

ASSAf briefing to:  
PPC on Higher Education, Science and Technology  
PPC on Women

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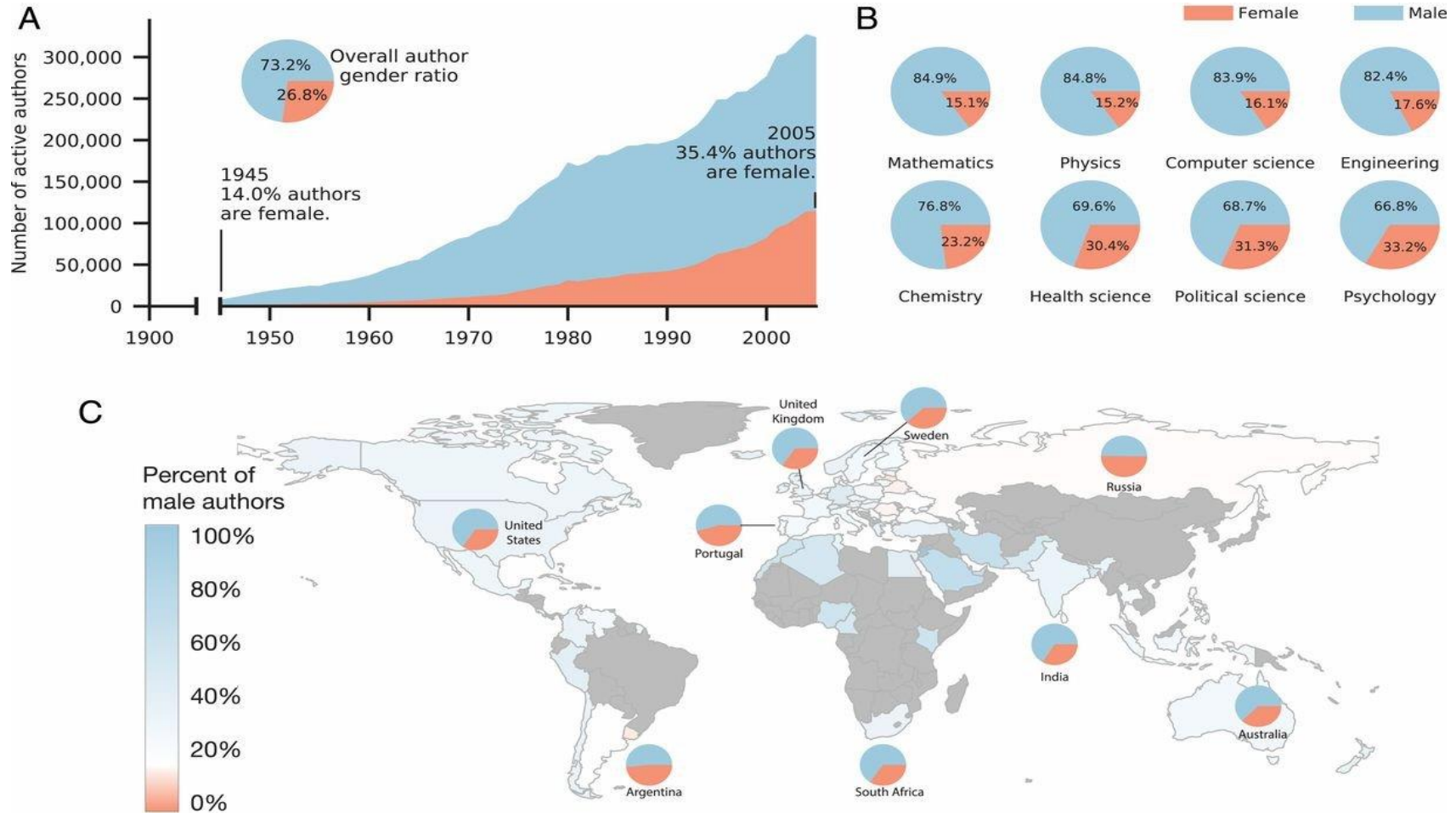
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# Background: Gender Inequality in Science

- Women represent **33,3 %** of researchers globally.
- Less than **4 %** of Nobel Prizes for science have been awarded to women
- Only **11 %** of senior research roles are held by women in Europe. (L'Oréal and UNESCO)
- Women are underrepresented in most scientific disciplines and publish fewer articles, with fewer citations. (Huang *et al.*, 2019)

# Background: Gender Inequality in Science



**Gender imbalance since 1955.** (A) The number of active female (orange) and male (blue) authors over time and the total proportions of authors (Inset). (B and C) The proportion of female authors in several disciplines (B) and countries (C); (Huang *et al.*, 2019).

# Performance Outcomes

## Gender Inclusivity

1. Independent, authoritative and influential scientific advice
2. Science engagement
3. Mobilising knowledge
4. Facilitating partnerships
5. Scholar support
6. Supporting transformation

# Partnerships

## ASSAf Girls and Women in STI Initiative

Reinforce gender inclusiveness - Outcome 5 (Scholarship Support) and Outcome 6 (Transformation).

### **Activity: ASSAf Women in Leadership series**

- Launch: September 2022 in partnership with SABS and Water Research Commission.
- Showcasing women leadership in STI and business.

### **Activity: ASSAf DDM Project piloting with City of Tshwane**

- Implementation: 2023/24.
- Support school STI initiatives prioritising girl learners.
- Sponsorship support for innovative projects at schools in City of Tshwane.

# Partnerships

## Lindau Nobel Prize Meetings

- 2021/22:
  - 70th Lindau Nobel Laureate Meeting ASSAf young scientists' attendance was 50% female.
- 2022/23:
  - 71st Lindau Nobel Laureate Meeting ASSAf young scientists' delegation was 45% female.
  - 7th Lindau Nobel Laureate Meeting 2022 on Economic Sciences ASSAf young scientists' delegation was 70% female.

# Partnerships

## The Organization for Women in Science for the Developing World

- **Objective:** Strengthening the role of women scientists in the development process and promoting their representation in scientific and technological leadership.
- **5 Regions and 40 National Chapters:** 12 from African Region, SA National Chapter.
- **Membership:** Full members, Affiliate Members and Friends of OWSD.
- **SA National Chapter:** 505 members (temporary/permanent SA residence).



# Closing the gap: Transformation in women science leadership positions



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## Workplace transformation still slow, but many women are excelling

Caroline Pule

THIS country's female workforce has been growing steadily over the past few decades because of legislation and increased access to education.

Many women are finding themselves in an improved economic position because of well-paying jobs.

Better employment opportunities may have empowered women economically but the situation has not resulted in an equitable work environment.

The slow pace of transformation and equity has seen women marginalised and discriminated against on a number of fronts. This holds especially true for women who find themselves in male-dominated careers where they struggle to enjoy success.

Compared to their male counterparts, women push themselves to work harder because of the greater bias that still exists. Women also compete in the same work environment as men while simultaneously running households and having children. To counteract the situation, women also have to contend

with comments of being too risk-averse in the workplace.

In spite of this, women are achieving excellence.

The government has created an enabling environment for women to realise a range of opportunities in all sectors and overseas that women take their rightful place in society and the economy. A sector that supports women's economic empowerment is the Science, Technology, Engineering and Mathematics (STEM) sphere. The annual Women in Science Awards (WISA) hosted by the Department of Science and Technology to celebrate women in STEM has highlighted the plight of women in the workplace this year.

The 2017 installment of WISA, by being held under the theme, "Women's economic empowerment in the changing world of work", is in line with the theme of the 4th session of the UN's Commission on the Status of Women, held earlier this year.

The STEM environment has produced many successes, which include among others, Professor Tshela Nyokong, a South African



CHEMIST: Professor Tshela Nyokong



EPIDEMIOLOGIST: Professor Quarshia Abdul Karim



HIV/AIDS RESEARCHER: Dr Gilda Gray

chemist and professor at Rhodes University and recipient of the Presidency of South Africa's Order of Ikhefiso, and President of the Order of Ikhefiso, and pioneering HIV/AIDS expert, Professor Quarshia Abdul Karim, an epidemiologist who was awarded the Order of Ikhefiso. She is a professor at the University of KwaZulu-Natal.

Rather this year Dr Gilda Gray

the pioneering medical researcher, who specialises in finding a vaccine for HIV/AIDS, was awarded as one of Time magazine's 100 most influential people in 2011. The list of South African women scientists doing amazing work is endless, and their work makes a difference in South Africa and the world.

Specifically looking at the medical sciences research area, women

researchers are excelling, and through their hard work, resilience and determination to improve public health, have had a big impact on the South African economy.

Probing pressing scientific questions, they are conducting pioneering research in areas such as TB, HIV/AIDS, diabetes mellitus and many more, in sub-Saharan Africa that's aiming to make the continent

and the world a better place.

Working as a PhD candidate and junior medical scientist, I am inspired by the women who have come before me and appreciate the enabling environment that has been created to allow women to take leading research positions and head research studies.

The DST and the National Research Foundation (NRF) have made grants available to assist women scientists to establish research groups and help run laboratories worldwide such as WISA, the UK's Royal Society Women in Science Fellowship, and the South African Research Chair Initiative (SACRI) support women in the medical sciences research environment and encourage basic and PhD candidates to continue to excel in their work.

With this in mind, we should focus on educating and equipping young women who have a passion for science, mathematics and biology to follow careers in STEM. We should put ourselves out there as role models and share our knowledge on mainstream platforms to

an accessible manner.

We need to encourage young female students to look beyond just obtaining their degrees but have a vision to do relevant research that contributes to public health and improves the quality of life.

Choosing careers in the medical sciences research field is not easy. It can be highly competitive and comes with its own challenges.

The work involves several stages: writing grant applications, research articles for publication (as part of sharing knowledge), innovative researches, rendering scientific presentations and networking, nationally and internationally.

While it may be an extremely challenging environment, I can say that it is rewarding, and with determination, hard work and the right attitude, one can succeed and be excited among the list of women who have succeeded.

Dr Pule is a previous WISA winner, a PhD Candidate/Junior Medical Scientist and Reader and chief executive of Caroline Pule Science and Literary Foundation.



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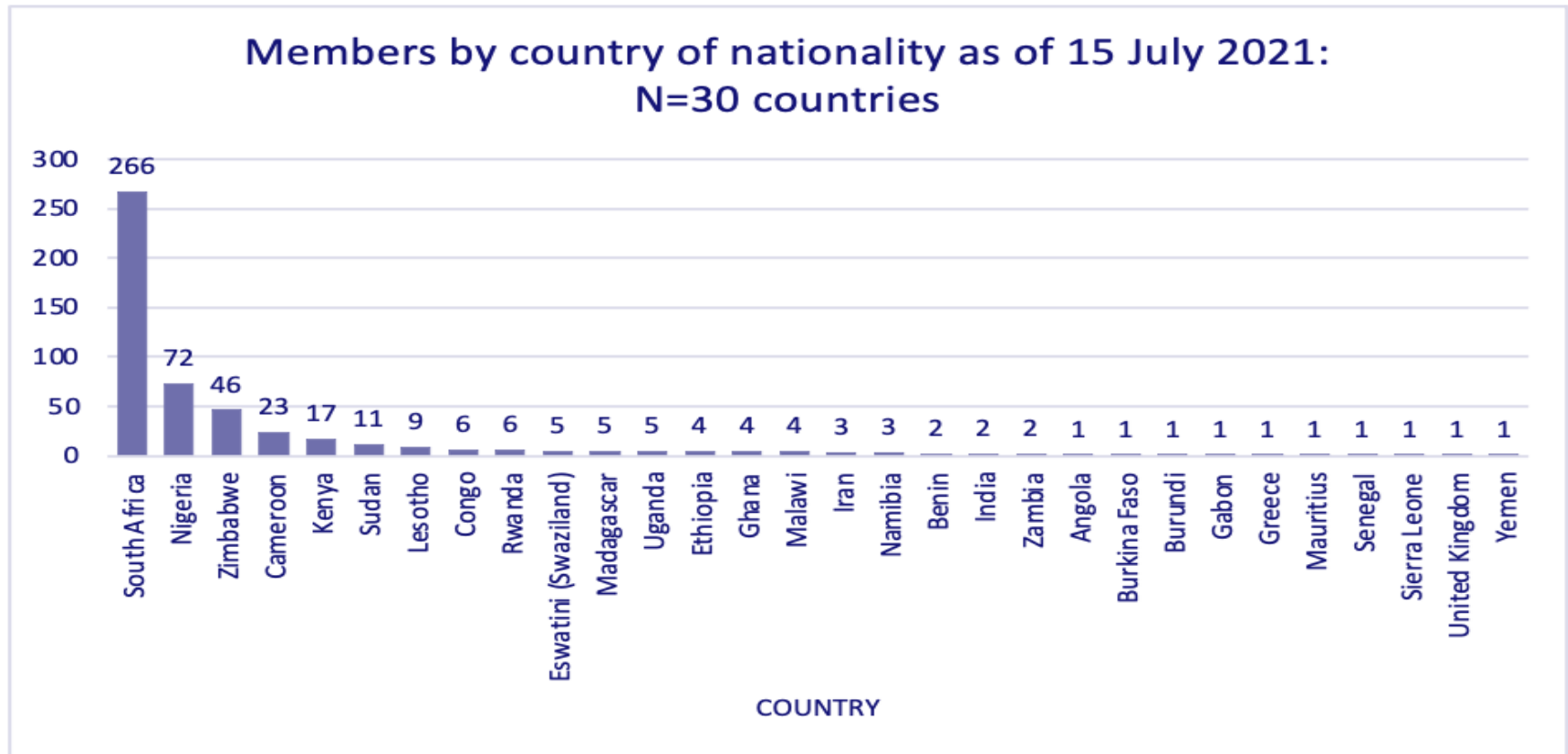


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South Africa National Chapter





# The role of OWSD SA National Chapter in closing the gap



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# The role of OWSD SA

## OWSD SA supports the six (6) strategic objectives of OWSD as follows:

- Increase the participation of women scientists
- Promote the recognition of women scientists in developing countries.
- Promote collaboration and communication among women scientists.
- Increase access of women in developing countries to the socio-economic benefits of science and technology.
- Promote participation of women scientists in the development of their country.
- Increase understanding of the role of science and technology in supporting women's development activities.

# OWSD SA: Closing the gap

- **Research training, networking opportunities and career development**
- **Activities at the science-policy interface, working in partnership with ASSAf:**
  - Policymakers' booklet: Inquiry-Based Science Education: Increasing Participation of Girls in Science in sub-Saharan Africa
  - Science Forum South Africa and selected Gender Summits (Africa) convenings.

# OWSD SA: Challenges and breakthroughs

- **Membership engagement and transformation:** The underrepresentation of Historically Disadvantaged Institutions (HDIs).
- **Underrepresentation of women scientists:** In high leadership positions in sciences and academia.
- **Lack of more funding opportunities:** For capacity building within the organisation.

# The way forward: OWSD SA

- **Increase participation** of women scientists in scientific and technological research, teaching and leadership.
- Through ASSAf, continue close **working relationship** with the DSI.
- **Maintain relationships** with other National Chapters in Mozambique, Namibia, Zimbabwe, Zambia, Botswana, Tanzania, Lesotho, and Malawi.

# Partnerships

## International multi-lateral partnerships 2022/23

- Working groups and panels - gender equity lens: NASAC Science Education WG (Prof Renuka Rethal – UFH), Women in Science WG (Prof Jennifer Thomson – UCT).
- ASSAf nominated Prof Stephanie Burton to the IAP Governing Board.
- ASSAf delegation at the IAP Triennial Conference and General Assembly 2022 was 100% female.
- ASSAf membership delegation at the AMASA 2022 in Kenya was 50% female.
- ASSAf nomination to the national UNESCO Natural Sciences Committee was 50% female.



# Women in Science Advice

## Standing Committees

- Standing Committee on Health is 58% female.
- Standing Committee on BioSafety and Biosecurity is 50% female.
- Invitations for the Humanities and STEMI SCs have been sent, similarly the nominations were gender balanced.

## Review Panels

- ASSAf Council appoints study review panels that are gender inclusive. Exceptional cases must be strongly justified.

## Study Panels

- Only gender inclusive study panels are endorsed by ASSAf.



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*Thank you*



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