



1st ASSAf Annual STEMI Lecture 2025

Women in STEMI

Achievements and Challenges, the African Perspective

by

Prof Catherine Ngila

Date: 27 March 2025

Time: 15:00

Venue: Virtual

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(a link will be sent to you)

ABSTRACT

Science, technology, engineering, mathematics and innovation (STEMI) play a fundamental role in driving social progressive mobility and economic growth towards the achievement of the sustainable development goals (SDGs). Despite considerable advancements, the gender gap in science remains a harsh reality, particularly for African women. This inequality directly impedes their invaluable perspectives and contributions to scientific advancements and innovations. Bridging the gender gap in science and development is not just an issue of fairness; it is imperative for unleashing the full potential of African women. Investing in quality education, dismantling biases, providing equal opportunities, and fostering inclusive and supportive environments is critical to achieving both the United Nations (UN) Agenda 2030 and the African Union (AU) Agenda 2063. To achieve these agendas, skills in science, technology and innovation (STI) fields are required.

The 1995 Beijing Declaration and Platform for Action (DPfA) identified twelve priority areas as a blueprint for achieving gender equality and women's empowerment. In addition, SDG #5 focuses on gender equality with nine targets aimed at ending all forms of discrimination against women and girls. The *UNESCO Call to Action—Closing the Gender Gap in Science* project has identified three key action areas, namely dismantling gender stereotypes, opening educational pathways for girls in science and creating safe workplace environments to attract, retain and advance women scientists. Africa's development requires significant investment in STEMI fields and sound leadership.

This presentation looks at the challenges women and girls in Africa experience and the immense potential that women possess with advancement in STEMI fields. Discussions on efforts to bridge this gap in Africa will be presented. A case study of South Africa's Women in Science Programmes and Awards schemes (e.g. SAWiSA) that aim to inspire future generations of female scientists will be discussed.

ABOUT PROF CATHERINE NGILA

Prof Catherine Ngila is the Executive Director of the African Foundation for Women and Youth in Education, Science, Technology and Innovation (ESTI), focusing on providing mentorship to women and youth in education and STI/STEM. She is a member of the Women in STEM Group in partnership with the Kenya National Commission for UNESCO, the Organisation for Women in Science for the Developing World (OWSD), and African Women in Science and Engineering (AWISE). Prof Ngila is also a member of the UN 10-Member Group for the technology facilitation mechanism on STI for SDGs, UNESCO International Consultative Group of Experts for Women in Science and a Council Member of the United Nations University, as well as the Vice President of the International Organisation for Chemical Sciences in Development (IOCD). Prof Ngila is a Fellow of TWAS, AAS and ASSAf.

Catherine Ngila has previously held the following teaching and management positions: Ag. Executive Director of The African Academy of Sciences; Deputy Vice Chancellor of Riara University for Academic Affairs; Deputy Director of the Institute of Oil and Gas, Kenya Pipeline Company; Professor and Head of Applied Chemistry at the University of Johannesburg; Senior/Lecturer at the following institutions: University of KwaZulu Natal, University of Botswana, and Kenyatta University. Prof Ngila is a visiting professor at the University of Johannesburg. Her research is in the field of Analytical-Environmental Chemistry, focusing on water quality/pollution monitoring, modelling methods of water treatment based on nanotechnology and the development of analytical methodologies for detecting chemical substances in water. She has also mentored over 130 postgraduate students in chemistry and related fields and has over 600 publications.

ANNUAL ASSAf STEMI LECTURE

ASSAf will host its inaugural annual Science, Technology, Engineering, Mathematics, and Innovation (STEMI) lecture on March 27, 2025. This event underscores the critical role STEMI plays in South Africa's economic development, innovation landscape, and social progress. Enhancing STEMI education and promoting STEMI-related career trajectories will cultivate a proficient workforce for engineering, information technology, and biotechnology sectors. The lecture aims to disseminate knowledge on STEMI topics, raise awareness of technological advancements, and explore the societal impacts of these disciplines. It will also serve as a platform to inspire deeper understanding and foster innovation. This annual event will provide an opportunity to examine and advance STEMI and associated fields while highlighting role models in STEMI and advocating for diversity and inclusion. The lecture series will foster a culture of knowledge sharing, intellectual engagement and multidisciplinary cooperation and serve as a platform for conversations and discussions on STEMI and its advancements. It is crucial to advocate for STEMI and to emphasise the significance of STEMI in addressing global concerns while promoting diversity and inclusion within STEMI disciplines.

STEMI is more than a career. It holds the key to South Africa's progress. An investment in STEMI education, research, and innovation is the road to tackling unemployment, economic growth, and sustainable development in South Africa as well as the African continent.

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