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Category 2 Centre
of Excellence

IDWGIS FORUM 2023 CELEBRATING THE **INTERNATIONAL DAY OF WOMEN & GIRLS IN SCIENCE**

Bringing everyone forward for sustainable
& equitable development through I.D.E.A.S.
(Innovating, Demonstrating, Elevating, Advancing, and Sustaining).

**10
FEB
2023**

8:30 AM



- University of Ghana, Accra
- KNUST, Kumasi
- UDS, Nyankpala Campus

**HENRY
LUCE
FOUNDATION**



AIMSWIS

African Institute for
Mathematical Sciences
WOMEN IN STEM INITIATIVE



**WiSTEM
Ghana**





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PROGRAM OUTLINE

8:30 – 9:00	Arrival & Registration ----- All Centres
9:00 – 9:10	Welcome & Opening Address-----Dr. Prince Osei, Centre President - AIMS Ghana
9:10 – 9:20	Message from KNUST -----Prof. Rita Akosua Dickson, VC - KNUST
9:20 – 9:30	Message from UDS -----Prof. Seidu Alhassan, VC - UDS
9:30 – 9:40	Message from UN Ghana -----Mr. Abdourahamane Diallo, UNESCO Ghana Head of Office
9:40 – 9:55	Keynote Address -----Hon. Dr. Kwaku Afriyie - Minister of Environment Science, Technology & Innovation
9:55 – 10:05	Speech by Guest Speaker -----Hon. Lariba Zuweira Abudu - Deputy Minister for Gender Children and Social Protection
10:05 – 10:30	Coffee Break & Group Picture--- All Centres
10:30 – 11:00	Talk I -----Dr. Hanifatu Mumuni Napari, Ass. Lecturer - Tamale Technical University
11:00 – 11:20	Questions & Answers-----Coordinators
11:20 – 11:50	Panel Discussion I -----Dr Mariam El Boakye Gyasi, Lecturer - KNUST
11:50 – 12:20	Talk II -----Dr Emelia Guo, Lecturer - UDS
12:20 – 12:40	Questions & Answers ----- Coordinators
12:40 – 13:20	Panel Discussion II -----Dr. Rhoda Hawkins - Academic Director, AIMS Accra Ghana
13:20 – 13:40	Discussion of Communique -----Ms. Adelaide Asante, COO – AIMS Ghana
13:40 – 13:50	Vote of Thanks -----Mrs. Beauty Beatrice Kwawu, Programme Manager – AIMS Ghana
13:50 – 14:00	Lunch & Departure -----All Centres
	MC: Ms. Adelaide Asante, COO – AIMS Ghana

ABOUT AIMS GHANA

AIMS is a non-profit pan-African network of centres to deliver excellent teaching, research, and education in mathematical sciences. AIMS is Africa's first network of centres of excellence for post-graduate scientific training, research, industry and public engagement in mathematics and the allied sciences. Our mission is to enable Africa's brightest students to flourish as independent thinkers, problem solvers and innovators capable of propelling Africa's future scientific, industrial, educational and economic self-sufficiency. Founded in 2003, AIMS currently has five centres across Africa; South Africa, Senegal, Ghana, Cameroon & Rwanda.

After a decade of making impact and contributing to scientific excellence, the African Institute for Mathematical Sciences (AIMS) Ghana, has undergone massive transformation recording many milestones. Laudable among them was our rise to the position of a UNESCO Category II Centre of Excellence in the year 2018.

AIMS Ghana is the third centre of excellence in the AIMS-NEI ecosystem. Founded in 2012 under the able leadership of the late Professor Francis K. A. Allotey. AIMS Ghana has since graduated 500 students from 27 African countries, 33% of them being females. AIMS students are trained to apply mathematical skills to solve problems in finance and banking, health, information and communication technology, food production, climate change forecasting and modelling, natural resources management etc.

About 70% of graduates from AIMS have continued their studies in prestigious universities worldwide in mathematics-related fields as well as in industry.

ABOUT THE IDWGIS FORUM 2023

This year, the International Day of Women and Girls in Science (IDWGIS) celebration established by the United Nations, wishes to bring everyone forward for sustainable and equitable development by Innovating, Demonstrating, Elevating, Advancing, and Sustaining – I.D.E.A.S. in terms of the gains made in science. It focuses on the role of Women and Girls and Science towards the achievement of the SDGs.

In addition, this year's IDWGIS aims to connect the International Community to Women and Girls in Science, strengthening the ties between science, policy, and society for strategies oriented towards the future. It is on this background that the African Institute for Mathematical Sciences (AIMS) Ghana, in partnership with the Henry Luce Foundation, the UN in Ghana and AIMS Women in STEM (AIMSWIS), is organising a Forum that will bring together Women and Girls in Science across Ghana.

AIMS Ghana held three series of advocacy and training sessions on the UNESCO Recommendation on Science and Scientific Researchers (RSSR) from September to December 2022, which saw a collaborative interest in many female scientists and researchers across Ghana.

This forum will therefore create a platform for female scientists, researchers and other science professionals to engage with each other and share experiences on how they have been, or are using their careers to make impact, especially in relation to the implementation of the SDGs.



THE INTERNATIONAL DAY OF WOMEN & GIRLS IN SCIENCE - BACKGROUND

A significant gender gap has persisted throughout the years at all levels of science, technology, engineering and mathematics (STEM) disciplines all over the world. Even though women have made tremendous progress towards increasing their participation in higher education, they are still under-represented in these fields.

Gender equality has always been a core issue for the United Nations. Gender equality and the empowerment of women and girls will make a crucial contribution not only to economic development of the world, but to progress across all the goals and targets of the 2030 Agenda for Sustainable Development, as well.

On 14 March 2011, the Commission on the Status of Women adopted a report at its fifty-fifth session, with agreed conclusions on access and participation of women and girls in education, training and science and technology, and for the promotion of women's equal access to full employment and decent work. On 20 December 2013, the General Assembly adopted a resolution on science, technology and innovation for development, in which it recognized that full and equal access to and participation in science, technology and innovation for women and girls of all ages is imperative for achieving gender equality and the empowerment of women and girls.



Source: UNESCO

THE UNITED NATIONS' SUPPORT OF WOMEN & GIRLS IN SCIENCE



"We can all do our part to unleash our world's enormous untapped talent – starting with filling classrooms, laboratories, and boardrooms with women scientists."

~UN Secretary-General António Guterres

Although Science, Technology, Engineering and Mathematics (STEM) fields are widely regarded as critical to national economies, so far most countries, no matter their level of development, have not achieved gender equality in STEM.



FACTS & FIGURES ON WOMEN & GIRLS IN SCIENCE



33.3%

**global average
percentage of female
researchers**

and only 35% of all students in STEM
related fields of study are women



30%

of all countries

with data available on the national share
of women researchers had reached parity
in 2016

Did you know that according to UN reports:

- Women are typically given smaller research grants than their male colleagues and, while they represent 33.3% of all researchers, only 12% of members of national science academies are women.
- In cutting edge fields such as artificial intelligence, only one in five professionals (22%) is a woman.
- Despite a shortage of skills in most of the technological fields driving the Fourth Industrial Revolution, women still account for only 28% of engineering graduates and 40% of graduates in computer science and informatics.
- Female researchers tend to have shorter, less well-paid careers. Their work is underrepresented in high-profile journals and they are often passed over for promotion.

MESSAGE FROM MS. AUDREY AZOULAY,
DIRECTOR-GENERAL OF UNESCO



"On the occasion of the International Day of Women and Girls in Science 11 February 2023 Science is many things: a study of natural, physical and social phenomena; a process to test hypotheses and draw conclusions; a journey of discovery to understand the world's many mysteries. But what science should be is equitable, diverse and inclusive. It should be for all and open to all, especially women. Today, just one in three researchers is a woman, according to the latest UNESCO Science Report. In higher education, women represent just over 35 per cent of graduates in STEM-related fields, according to the UNESCO Institute for Statistics. If these gender inequalities are so significant, it is because they are deeply rooted in our societies. It is because of the persistence of gender stereotypes and prejudices, which sometimes persuade girls that scientific studies are not for them, despite their tremendous potential. At UNESCO, where we work to build peace in the minds of men and women, addressing these stereotypes is a priority – because more women in science means better science. This conviction underpins all our work in this domain, and is enshrined in our Recommendation on Open Science, adopted by all our Member States in 2021. This vigilance is all the more necessary at a time when equal access to education can never be taken for granted – as we saw recently, when women in Afghanistan were brutally deprived of their right to learn and teach, including in higher education. UNESCO condemns this violation of a fundamental right and calls for it to be restored without delay.

MESSAGE FROM MS. AUDREY AZOULAY, DIRECTOR-GENERAL OF UNESCO

Today, all around the world, UNESCO is working to foster environments that encourage girls and women to study scientific topics – for example by supporting a scientific mentorship programme in East Africa. To date, it has reached 11 million students, especially girls. UNESCO also seeks to break down stereotypes, by raising awareness of women scientists who are blazing new trails. Through our 25-year partnership with the L'Oréal Foundation, we have honoured over 120 exceptional women scientists from around the world, five of whom have also received the Nobel Prize. As role models, they are examples for young women to follow – underlining that they too can achieve excellence. On this International Day of Women and Girls in Science, let's reiterate this fundamental message: women need science, and science needs women. Only by tapping into all sources of knowledge, all sources of talent, can we unlock the full potential of science, and rise to the challenges of our time."



Audrey Azoulay and Jean-Paul Agon with the 2020 Laureates at "L'Oréal - UNESCO for Women in Science" event at UNESCO in Paris, June 23, 2022

Source: UNESCO

ACHIEVERS CORNER

Recognizing some of the influential women in science who have already made substantial contributions provides inspiration to younger generations to draw in and keep more women in science. Again, women who are leaders in science, particularly those who have "a seat at the table," have the chance to use their influence and position to promote parity and open doors for the coming generation of female scientists.

Carolyn Ruth Bertozzi, American Chemist & 2022 Nobel Laureate



Known for her wide-ranging work spanning both chemistry and biology, she coined the term "bioorthogonal chemistry" for chemical reactions compatible with living systems. Her recent efforts include synthesis of chemical tools to study cell surface sugars called glycans and how they affect diseases such as cancer, inflammation, and viral infections like COVID-19.

She received the MacArthur "genius" award at age 33. In 2010, she was the first woman to receive the prestigious Lemelson-MIT Prize faculty award. She is a member of the National Academy of Sciences (2005), the Institute of Medicine (2011), and the National Academy of Inventors (2013). In 2014, it was announced that Bertozzi would lead ACS Central Science, the American Chemical Society's first peer-reviewed open-access journal, which offers all content free to the public. Since 2021 she has been a member of the Accademia dei Lincei. Bertozzi was awarded the 2022 Nobel Prize in Chemistry, jointly with Morten P. Meldal and Karl Barry Sharpless, "for the development of click chemistry and bioorthogonal chemistry"

Source: Wikipedia

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Winners of the 2022 L'Oréal-UNESCO For Women in Science Sub-Saharan Africa Young Talents Awards



**WINIFRED
AYINOGBILLA ATIAH**
Ghana
Post-doctorate, Life and
Environmental Sciences.
Project title: seasonal
flood forecast in Ghana



MAWULOLO YOMO
Togo
PhD student, Life and
Environmental Sciences.
Project title: Sea water
intrusion dynamics in the
Coastal sedimentary
Basin of Togo



IVEREN ABIEM
Nigeria
Post-doctorate, Life &
Environmental Sciences.
Project title: Carbon
storage in Afromontane
forest



**OLUWATOSI
OGUNDOLIE**
Nigeria
PhD student, Formal
Sciences.
Project title: Flood
prediction in Nigeria



**LOVASOA RINA
RAHARINAIVO**
Madagascar
PhD student, Life and
Environmental Sciences.
Project title: Plastic
pollution and its
alternatives in Madagascar



BEZALEM ESHETU YIRDAW
Ethiopia
PhD student, Formal
Sciences.
Project title: modeling child
morbidity using multilevel
Bayesian network.



OLYVIA GWLADYS FADEYI
- Benin
PhD student, Engineering
and Technology Sciences.
Project title: Edible
mushroom value chain and
rural women's
empowerment in Benin



RUTH MWANGI
Kenya
PhD student, Life and
Environmental Sciences.
Project title: Biopesticides
against degradation of
postharvest tomatoes



JULLIET KIRUI
Kenya
PhD student, Formal
Sciences.
Project title: Water quality
classification using
Ensemble learning and IOT

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Winners of the 2022 L'Oréal-UNESCO For Women in Science Sub-Saharan Africa Young Talents Awards



ASSIA ABOUBAKAR MAHAMAT
Chad
Post-doctorate, Engineering and Technology Sciences.
Project title: Development of eco-friendly construction materials in Sub Saharan Africa



ADJATA KAMARA
Côte d'Ivoire
PhD student, Life and Environmental Sciences.
Project title: Biopesticide against post-harvest rot of yam



AWA BOUSSO DRAME
Senegal
PhD student, Life and Environmental Sciences.
Project title: Coastal modeling and geospatial sciences in Senegal



BEZALEM ESHETU YIRDAW
Ethiopia
PhD student, Formal Sciences.
Project title: modeling child morbidity using multilevel Bayesian network



BRENDA NAMUMBA
Zambia
Post-doctorate, Post-doctorate.
Project title: Using SKA Precursor telescopes to unravel the mysteries of the universe.



ANGE CYNTIA UMUHIRE
Rwanda
PhD student, Sciences of the Matter.
Project title: space weather prediction and forecast in Rwanda



NORA NGANYEWO
Cameroon
PhD student, Life and Environmental Sciences.
Project title: Genetics and Plasmodium Falciparum invasion in The Gambia



BEAUTY MAKAMURE
Zimbabwe
PhD student, Life and Environmental Sciences.
Project title: Whole genome sequencing for detection of TB-Drug resistance in Zimbabwe



GERALDIN LENGAI
Kenya
Post-doctorate, Life and Environmental Sciences.
Project title: Spices as fungicides for late blight management.



FARIDA BOUBE DOBI
Niger
PhD student, Life and Environmental Sciences.
Project title: Groundwater resources management in Niger

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NORA NGANYEWO
Cameroon
PhD student, Life and Environmental Sciences.
Project title: Genetics and Plasmodium Falciparum invasion in The Gambia



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Source: UNESCO

**FUN
FACT!**

Did you know that the Ghana Academy of Arts & Sciences has had 3 Female Presidents?



Dr. Letitia E. Obeng, FGA
2007 - 2008



Prof. Aba Bentil Andam, FGA
2017 - 2018



Prof. Henrietta J. A. N. Mensa-Bonsu, FGA
2019 - 2020

The Ghana Academy of Arts and Sciences has had 3 great female Presidents in its 52-year history. These include; Dr. Letitia E. Obeng, FGA (2007 -2008), Prof. Aba Bentil Andam, FGA (2017 - 2018) and Prof. Henrietta J. A. N. Mensa-Bonsu, FGA (2019 - 2020). While we hope to have more women reaching this milestone, we celebrate these sterling Ghanaian women who have distinguished themselves in various fields of science, leaving behind a legacy which would outlive them.

Source: UNDP

FORUM SPEAKERS & PANELISTS

Talk 1 - Tamale

Title: The Career of a Woman Scientist/Researcher



Dr Hanifatu Mumuni Napari - AIMS Alumna & Assistant Lecturer, Tamale Technical University, Applied Statistics

Panel 1 - Kumasi

Title: Women in Science mentoring Girls in Science

Ing. Prof. Abena Obiri-Yeboah (KsTU), Civil Engineering, Director of Planning and Quality Assurance



Dr. Mrs Gloria D. Djagbletey - (CSIR-FORIG), Snr. Research Scientist, Forest Ecology & Physiology, Silviculture systems, Agroforestry, Climate Change & Carbon Sequestration

Danzi Maxima Pegyen - AIMS GMSP Beneficiary, 2nd year student (KNUST) Electrical/Electronic Engineering



Moderator



Dr. Mariam El Boakye-Gyasi, Senior Lecturer, Dpt. of Pharmaceutics, Faculty of Pharmacy & Pharmaceutical Sciences (KNUST)
Panel Moderator

FORUM SPEAKERS & PANELISTS

Talk 2 - Tamale

Title: The Challenges and Potentials of Ghanaian Women and Girls in Science



Dr. Emelia Guo - Research Fellow & Lecturer, University for Development Studies, Dpt. of Agricultural Admin. & Marketing. Faculty of Agric.

Panel 2 - Accra

Title: Achieving the SDGs in Ghana: the Role of Ghanaian Women in Science

Dr. Winifred Ayinpogbilla Atiah - Dept of Physics - Senior Lecturer KNUST, Climate Variability and Change, Mesoscale Convective Systems & others



Ing. Sheila Akyea, African Development Bank, Senior Transport (Infrastructure) Engineer

Ms. Doris Edem - Ghana Energy Commission, Energy Analyst on Energy Access, Sustainable Development, Technical energy research, planning, & informing policymaking.



Moderator



Dr. Rhoda Hawkins - Academic Director, AIMS Ghana, Senior Lecturer & Researcher in Mathematical Biophysics, Dpt. of Physics & Astronomy - University of Sheffield, UK.

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