OFFICE OF THE VICE-CHANCELLOR

VICE-CHANCELLOR'S INTRODUCTORY REMARKS AT THE INAUGURAL LECTURE OF PROF. REGINA APPIAH-OPONG

ADDRESS BY:

PROFESSOR NANA ABA APPIAH AMFO

VICE-CHANCELLOR, UNIVERSITY OF GHANA

THURSDAY, JULY 31, 2025

GREAT HALL

UNIVERSITY OF GHANA

- *Pro Vice-Chancellors,*
- *Registrar,*
- *Provosts,*
- *Deans, Directors, Heads of Department,*
- *Our Distinguished Lecturer, Professor Regina Appiah-Opong*
- *Faculty, Staff and Members of Convocation,*
- *Past and Present Senior Officers of the University,*
- *Alumni and Students,*
- *Family, Friends, and Associates of the Lecturer,*
- *Representatives from the Health Sector,*
- *Esteemed Traditional Rulers,*
- *Eminent Clergy,*
- *Friends from the Media,*
- *Invited Guests,*
- *Distinguished Ladies and Gentlemen.*

I am delighted to preside over this evening's inaugural lecture to be delivered by one of our distinguished female scientists on this special day celebrated globally as Pan-African Women's Day (*a day*

to recognize the vital role of women in achieving political freedom and advancing social and economic status across the continent).

This lecture which is the last in the series of inaugural lectures scheduled for this academic year will be delivered by Professor Regina Appiah-Opong on the topic: "***The Potential Role of Medicinal Plants in Ghana's Healthcare System and Economy***".

Let us begin with a simple truth: nature has always been our first pharmacy. For generations, our grandparents in rural settlements and herbalists have treated ailments long before the advent of modern pharmaceuticals. Ghana is richly endowed with many plant species identified for medicinal use — yet this treasure trove remains underutilized, undervalued, and under-supported.

The focus of this lecture is to envision a new path. A path that integrates our indigenous knowledge with modern science. A path that transforms what has been dismissed as "alternative" into a respected, structured, and thriving pillar of healthcare and economic growth.

The World Health Organization estimates that nearly 80% of the population in developing countries rely on traditional medicine for

primary healthcare. This is not simply a cultural preference — it is often a necessity. In Ghana, limited access to formal healthcare, high costs of pharmaceuticals, and a growing burden of chronic illnesses mean many people turn to herbal remedies as their first, and sometimes only, option.

Despite the progress made in integrating conventional and herbal medicine practices in Ghana, challenges persist with the rational use of herbal medicines. These include standardisation issues, regulatory hurdles, absence of pre-clinical scientific validation and a lack of clinical trials. There is also lack of data on the shelf life of almost all herbal products. Another challenge is the classification of many herbal products as foods or dietary supplements, which is inappropriate.

In this inaugural lecture, Professor Regina Appiah-Opong will discuss the effectiveness and safety of plant medicines and present research conducted at the Noguchi Memorial Institute for Medical Research in collaboration with our partners. Challenges associated with integrating herbal medicines into the Primary Healthcare Delivery System in Ghana will also be highlighted.

Given that the global plant medicine industry is one of the fastest-growing sectors worldwide with a project market size valued at

USD 437 billion by 2032, the lecturer will explore the herbal medicine commerce in Ghana and recommend policy interventions that will enable the country to fully exploit the potential of medicinal plants for improved healthcare and national development.

Before the lecturer mounts the podium, permit me to share her profile.

PROFILE OF PROFESSOR REGINA APPIAH OPPONG

Regina Appiah-Opong (nee Asare Antwi) is a Professor of Toxicology at the Department of Clinical Pathology, Noguchi Memorial Institute for Medical Research (NMIMR), College of Health Sciences (CHS), University of Ghana (UG). She has thirty-three years of working experience in biomedical Sciences. She served as the Head of the Department of Clinical Pathology at NMIMR for 12 years.

Education

Regina began her primary education at the then University Primary School, University of Science and Technology (now Kwame Nkrumah University of Science and Technology (KNUST)), Kumasi. She continued her education at St. Louis Secondary School,

Kumasi, where she sat for her General Certificate of Education Ordinary Level examinations. She then attended Technology Secondary School, Kumasi, for GCE Advanced Level examinations. She holds a Bachelor of Science (Hons) degree in Biochemistry from KNUST and a Master of Philosophy degree in Biochemistry from UG. She later earned a Doctor of Philosophy degree in Molecular Toxicology from Vrije Universiteit, Amsterdam, The Netherlands.

Employment

Regina was posted to El-Alzaria Islamic School, Tafo, Kumasi, for her post-Advanced Level National Service, where she served as an English teacher for all classes. After her first-degree programme, she was posted to the NMIMR, UG, for National Service (1991), where she worked as a Senior Research Assistant at the Department of Electron Microscopy. In April 1993, she was employed as a Senior Research Assistant at the Department of Clinical Pathology. She rose through the ranks by dint of hard work to become Chief Research Assistant. In 2009, she was employed as a Research Fellow in the same department. Subsequently, she was promoted to the rank of Senior Research

Fellow in 2012, Associate Professor in 2015 and Professor in 2020. During her one-year Sabbatical leave (2023-2024), she served as an Adjunct Professor at the Department of Biomedical Sciences, School of Basic and Biomedical Sciences, University of Health and Allied Sciences (UHAS), Ho. After her Sabbatical leave, she was appointed as an Adjunct Professor (May 2025) in the same department and school.

Other Training

Professor Appiah-Opong participated in a six-month training programme (from August 2001) at the National Institute for Infectious Diseases (NIID) in Tokyo, Japan, with the support of the Japanese International Cooperation Agency (JICA). During this period, she gained advanced skills in Molecular Biology.

Between 2009 and 2011, she underwent postdoctoral training at the Department of Pharmacology, Yale Medical School, Connecticut, USA, spending two months each year at the institution. At Yale University, she acquired expertise in the biological and chemical fingerprinting of medicinal plants, which she later applied to the studies on selected Ghanaian medicinal

plants. This work led to the filing of a provisional patent. In August 2016, she participated in the Senior Academic Leadership Training (SALT Phase II) programme for heads of departments, organised by the National Council for Tertiary Education (now Ghana Tertiary Education Council). She has also attended numerous workshops, seminars and conferences, which have served as important platforms for professional development and capacity building.

Expertise and Highlights of Research Works

Professor Appiah-Opong possesses extensive expertise in various areas of Toxicology and Pharmacology. Her research work has primarily focused on cytochrome P450-mediated drug interactions, the safety and efficacy of medicinal plants (particularly in the context of drug discovery), the impact of environmental toxins such as aflatoxins and heavy metals and cytochrome P450 pharmacogenetics. Her work on drug interactions has identified cytochrome P450-mediated herb-drug interaction potentials of some Ghanaian medicinal plant-based therapies on the market. In drug discovery, her research has centered on anticancer and antimalarial agents. These studies have established the anticancer and antimalarial properties of

numerous medicinal plants, used by Traditional Medicine Practitioners to treat cancer and malaria. She has also been involved in drug discovery studies targeting anti-trypanosomal, anti-leishmanial and antituberculosis agents. While at NIID in Japan (and later in Ghana), she contributed to the construction of a DNA cassette vector used in drug susceptibility testing for anti-HIV therapies. This work had important implications for the use of protease inhibitors during the rollout of highly active antiretroviral therapy (HAART) in Ghana. Additionally, she was part of a research team that adapted the tetrazolium-based colorimetric selective assay (MTT-based CSA) for high-throughput screening of antimalarial agents. She has served as Principal Investigator and Co-Investigator on numerous research projects.

Professor Appiah-Opong has co-authored over 100 peer-reviewed journal articles and five book chapters. She is also a co-inventor on a United States or PCT international Patent (Novel compounds having a tetracyclic iridoid skeleton – Ghana/Japan collaboration) and a Provisional patent filed in partnership with Yale University and UG.

Funding

Professor Appiah-Opong's research has received funding support from a range of institutions both within Ghana and abroad. She served as the Principal Investigator (PI) on a project funded by the Third World Academy of Sciences (TWAS), which focused on Cytochrome P450-mediated drug interactions (2011). She was a Co-investigator on two cancer discovery projects supported by the UG Research Fund (UGRF- 5th and 8th calls), PI on a study to investigate environmental exposure to heavy metals (UGRF 7th call), Co-investigator in the same year, for another UGRF-funded project that examined consumer perception, knowledge, and usage of functional foods and a Coinvestigator on a study on pharmacokinetics of antiretroviral agents in HIV-infected pregnant women funded by the Lifespan/Tufts/Brown Centre for AIDS Research (2014). In 2015, she was awarded a Conference Grant from the Technology Development and Transfer Centre/ORID, UG, to attend the UN Global Compact Conference in New York, USA. She collaborated with local and Japanese researchers on a project funded by the Japanese Ministry of Education, Science and Technology, to investigate anti-viral and anti-parasitic compounds derived from Ghanaian medicinal plants (2010-2015). She was

also a Co-investigator on a project funded by the Worldwide Universities Network, which aimed to develop African-led solutions to African health challenges (2017). Currently, she is a Co-investigator on the HIV Co-morbidities research training and mentorship in Ghana, funded by the National Institute of Health/Fogarty, USA (2020-2025).

Teaching and Mentorship

In addition to her research, Professor Appiah-Opong has served as a part-time lecturer at the Department of Biochemistry, Cell and Molecular Biology, UG since 2012. Over the years, she has supervised several research projects at the BSc, MPhil and PhD levels for students from UG, KNUST, University for Development Studies (UDS), University of Cape Coast (UCC), UHAS and other international institutions. Professor Appiah-Opong has also supervised research work of four international postdoctoral fellows on the Bill and Melinda Gates scholarship at the NMIMR (2014-2018). She continues to serve as a mentor to several students and some faculty members.

Professional Associations

Professor Appiah-Opong is a member of several professional associations, including the University Teachers Association of Ghana, the West African Network of Natural Products Research Scientists and the Ghana Science Association (GSA). Within the GSA, she served as Secretary of the Accra Branch (2013–2017) and as National Treasurer (2017–2021). Professor Appiah-Opong was inducted into the fellowship of the Ghana Academy of Arts and Sciences in 2021. She has also held membership in international professional bodies, including the British Toxicology Society (2007-2010), the Leiden-Amsterdam Centre for Drug Research and the Royal Dutch Chemical Association (2004–2009).

Boards, Committees and Extension Services

Professor Appiah-Opong served on numerous boards and committees within and outside UG. At UG, she has served as a member of the University Academic Board since 2010 and the Scientific and Technical Committee of the NMIMR (2010-2022). Her other university services include membership on the Legon Hall Tutorial Board (2011-2021), Legon Hall Council (2018- 2023), Academic Board of the CHS (2011-present), NMIMR Faculty Board (2011-2014), NMIMR Management Board (2015-2022) and the UG

Business and Executive Committee (2018-2023). She also chaired the NMIMR Newsletter Committee (2018-2023). Professor Appiah-Opong currently serves as Associate Editor-in-Chief of the Health Sciences Investigations Journal of the CHS, UG, a position she has held since 2019. She has served on several ad hoc UG committees, including search panels for senior administrative positions. Beyond UG, she is a Board Member of the Research Academy for Women, Ghana (2014–present), Programme Reviewer for the Ghana National Accreditation Board (2017–present) and a member of the Technical Working Group, Traditional and Alternative Medicine Directorate, Ministry of Health. She also served on the Appointments and School Boards of the School of Basic and Biomedical Sciences, UHAS. Professor Appiah-Opong has served as Internal Examiner for PhD and MPhil theses at UG and as an External Examiner for PhD theses for KNUST and UCC. As Head of Department, she also supervised the Institute's Clinical Laboratory and the National Newborn Screening for Sickle Cell Disease Laboratory at the Department of Clinical Pathology, NMIMR (2011-2022).

Research Collaborations

Professor Appiah-Opong has maintained active research collaborations locally and internationally. Within the UG, she has partnered with several academic units, including the School of Pharmacy, School of Public Health, Departments of Biochemistry Cell and Molecular Biology, Chemistry, Medical Pharmacology (UG Medical School), Animal Biology and Conservation Sciences, Food Science and Nutrition, Institute for Environment and Sanitation Studies, Marine and Fisheries Sciences and Chemical Pathology. Beyond UG, her collaborations extend to institutions such as the Centre for Plant Medicine Research, Mampong-Akuapim, KNUST, UDS, UCC, and UHAS. Internationally, Professor Appiah-Opong collaborates with researchers from Yale University, the University of Washington (Seattle, USA), the Mayo Clinic, Nagasaki International University, Tokyo Dental and Medical University and Tianjin University for Traditional Chinese Medicine.

Church

Professor Appiah-Opong was born into the Presbyterian Church. She committed her life to Jesus Christ at St. Louis Secondary School. She was an Assistant leader of Tech Youth for Christ and a member of the Evangelism wing of the Inter-Hall Christian

Fellowship, KNUST. She served as the Chairperson for Evangelism at the PIWC, Amsterdam. She worships at the Legon Interdenominational Church, Legon, where she currently serves as the Presiding Elder. She loves evangelism and discipling others into Christlikeness.

Family

Professor Appiah-Opong was born to the Late Baffour Nyampong Antwi Boasiako, Nkosuohene of Begoro-Fanteakwa, Eastern Region (nee Mr. John Asare Antwi), a former Teacher and Sports Coach at KNUST. Her mother, Mrs. Faustina Comfort Antwi, is a retired Teacher who hails from Asamama, Eastern Region. She is married to Kenneth Appiah-Opong, a retired Geodetic Engineer, and they are blessed with 2 daughters, Dorcas and Lois, and 2 grandsons, Allan-Kenneth and Gaisey-Gad. In her free time, she enjoys reading and swimming. Her team won bronze medals for Ghana by swimming in a West African Swimming relay competition held at KNUST in the early 1980s.

Professor Regina Appiah-Oppong you are invited to present the lecture on the topic: "***The Potential Role of Medicinal Plants in Ghana's Healthcare System and Economy***".

Prof. Nana Aba Appiah Amfo

Vice Chancellor

31st July 2025