

2023 – Sept, Vol. 2 No. 3



# THE BIOSCIENCE NEWSLETTER

Official Newsletter of the UDS Faculty of Biosciences



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TAMALE, GHANA



## MESSAGE FROM THE DEAN

The Bioscience Discourse has become one of the flagship programmes of the Faculty where Senior Members continue to share their scientific findings. I want to use this medium to thank you all for your support and participation. The Faculty is poised at communicating groundbreaking research findings from pioneer researchers and early career researchers which is pertinent in attaining recognition for collaboration and partnership, academic excellence and fostering innovation. In a growing world centered on research innovations, I kindly urge you to continue to support the Faculty of Biosciences in its core mandates in research communications.



This is the second volume and third issue of the Bioscience Newsletter which showcase a panel discussion on artificial intelligence and two Bioscience Discourse series, Postgraduate and Undergraduate study programmes in Biosciences, Inaugural Lecture, conferences, workshops, grants and international travels by Senior Member and student's activities

**PROF. ELLIOT H. ALHASSAN, DEAN**

**BIOSCIENCE DISCOURSE**

**B**ioscience discourse is a monthly seminar series of the Faculty of Biosciences of the University for Development Studies (UDS), where faculty members and invited guest-scientists present their research work, innovations / ideas, scientific propositions, etc, to peers and students for a constructive discussion (discourse). BD was launched in January 2022 and has since hosted 35 speakers of varied specialties in biosciences. The BD platform is shaping research in the faculty: promoting collaborations, peer review, quality research design, data handling / analysis and communication.



**A Group Photograph of Some Senior Members Present during a Section of the Bioscience Discourse**

*Photo Credit: FoB- RGSU*

## THE EMERGENCE OF AI IN TERTIARY EDUCATION: BENEFITS AND CHALLENGES

### Panel Discussion

In the 19<sup>th</sup> Bioscience Discourse at UDS, experts discussed the impact of AI in tertiary education. The audience included students, educators, and media representatives, highlighting the widespread interest in the topic.

The discussion revealed that AI has the potential to benefit education by enhancing safety in research, providing additional support through AI-embedded learning platforms, and improving research quality. However, it also raised concerns about over-reliance on AI, ethical issues like hacking, and the risk of plagiarism evasion.

UDS emerged as a leader in regulating AI in education, emphasising the importance of establishing strong policies to ensure responsible integration. In essence, the event highlighted the need to strike a balance between leveraging AI's potential and preserving critical thinking, originality, and academic integrity in the educational process.



**Panelist**

Prof. Abdul-Barik  
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**Panelist**

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**Panelist**

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**Panelist**

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**Moderator**

Mr. Abdul-Hayi  
Moomen  
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## PROTECTIVE AND TRANSMISSION-ENHANCING EFFECTS OF HAEMOGLOBINOPATHIES ON MALARIA

Mr. Zakaria Siedu

In the fight against malaria, a recent presentation by Mr. Zakaria Siedu from the Department of Biochemistry in the University for Development Studies has shed new light on the relationship between haemoglobinopathies and this persistent global health concern.

Malaria's virulence and impact on lives in Africa is well-documented. *Plasmodium falciparum*, the deadliest malaria parasite, possesses the ability to hide deep within our bodies and evade our immune systems. Haemoglobinopathies, including HbC, HbS, HbE,  $\alpha$ -thalassemia, and  $\beta$ -thalassaemia, are prevalent in areas historically exposed to malaria and have long been suspected to offer protection against malaria.

To offer hope for potential solutions, this research puts into focus the importance of collaboration between geneticists, immunologists, and malaria experts in devising effective interventions. The implications of his research extend far beyond the laboratory, as it is of interest to local communities in Northern Ghana, where haemoglobinopathies are prevalent, as well as global health organisations and researchers worldwide.

In conclusion, his research takes us one step closer to understanding the balance between haemoglobinopathies and malaria. Whilst these genetic variants offer some protection, they also pose challenges. This knowledge will inform future strategies to combat malaria, ultimately benefiting those most affected by this devastating disease.



### Contact

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## DNA PROFILING FOR UNIQUE IDENTIFICATION OF INDIVIDUALS: HOW UNIQUE IS IT FOR FORENSIC CASEWORK?

[Mr. Joseph Abugre Ayamdo](#)

Mr. Joseph Abugre Ayamdo from the Department of Biotechnology and Molecular Biology in the University for Development Studies shed light on "DNA profiling for unique identification of individuals." This captivating topic not only delves into the history of individual identification but also explores the profound impact of DNA profiling in solving complex cases.

His presentation shed light on the historical inadequacies of traditional methods of identification, which left room for doubt in criminal justice systems. DNA profiling, however, offers a ray of hope to all, from crime victims to the wrongly accused. This powerful tool can bring closure to grieving families, exonerate the innocent, and ensure the guilty face justice. It empowers law enforcement and the judicial system to make more accurate decisions.

In conclusion, Mr. Ayamdo's presentation clarified that DNA profiling isn't just about solving crimes. It has far-reaching applications, from disaster victim identification to genetic genealogy and medical science, making our world a more just and secure place.



### Contact

Mr. Joseph Abugre Ayamdo, MPhil

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**FACULTY OF BIOSCIENCES – STUDY PROGRAMMES**

The Faculty of Biosciences has 6 Academic Departments that ran undergraduate and postgraduate programmes.

**Department of Biotechnology and Molecular Biology**

- PhD. Biotechnology
- MPhil. Biotechnology
- MSc. Biotechnology
- BSc. Biotechnology and Molecular Biology
- Dip. Biotechnology and Molecular Biology

**Department of Aquaculture and Fisheries Sciences**

- PhD. Fisheries Science
- PhD. Sustainable Aquaculture
- MPhil. Fisheries Science
- BSc. Aquaculture and Fisheries Science
- Dip. Aquaculture technology and Fisheries Science

**Department of Biochemistry**

- *BSc. Biochemistry*

**Department of Microbiology**

- BSc. Microbiology

**Department of Biological Sciences**

- BSc. Biological Science

**Department of Forensic Sciences**

- *BSc. Forensic Science*

The programmes italicized are at advanced stages of accreditation consideration by the Ghana Tertiary Education Council (GTEC). All other programmes are fully accredited by GTEC and are being ran with high enrolment

**15<sup>TH</sup> INAUGURAL LECTURE BY PROFESSOR ELLIOT HARUNA ALHASSAN ON THE TOPIC "LIFE BELOW WATER: DEVELOPMENT AND TRAJECTORY OF GHANA'S INLAND FISHERIES"**

Professor Elliot Haruna Alhassan, the foundation Dean of Faculty of Biosciences on the July 14, 2023, delivered the 15<sup>th</sup> Inaugural Lecture at the Dr. Andani Andan Academic Board Chambers on the UDS Tamale Campus where He explored Ghana's inland fisheries' past, present challenges, and future solutions. The audience actively engaged, and the lecture ended with optimism for the future of these vital aquatic ecosystems. Full lecture can be found here <https://www.graphic.com.gh/news/general-news/uds-lecturer-advocates-increased-investment-in-aquaculture-sector.html>



**Prof. E. H. Alhassan Delivering His Inaugural Lecture**

*Photocredit: Buta Photography*



**Prof. Alhassan (right) exchanging pleasantries with the Vice Chancellor, Prof. S. Al-hassan (left)**

*Photocredit: Buta Photography*



**Prof. E. H. Alhassan (left) exchanging pleasantries with the Pro- Vice Chancellor, Prof. F. K. Abagale (right)**

*Photocredit: Buta Photography*





Prof. E. H. Alhassan (right) receiving a citation from the UDS Alumni Association. Presented by Prof. F. Adzitey (left)

*Photocredit: Buta Photography*



Prof. E. H. Alhassan (right) receiving a citation from the Faculty of Biociences. Presented by the Vice Dean and Faculty Officer, Dr. N. Opoku (1<sup>st</sup> left) and Mrs S. Lotsu (2<sup>nd</sup> left)

*Photocredit: Buta Photography*



An Aerial View of Some the Audience Seated During the Lecture

*Photocredit: Buta Photography*



Section of Some audience during the Inaugural Lecture

*Photocredit: Buta Photography*



Prof. E. H. Alhassan with His Family After delivering His Inaugural Lecture

*Photocredit: Buta Photography*



Section of Chiefs Present during the Inaugural Lecture

*Photocredit: Buta Photography*



Prof. Alhassan (right) exchanging pleasantries with the Catholic ArchBishop of Tamale(left)

*Photocredit: Buta Photography*

### Chapter in a Book

1. **Acheampong, N. A., Okoampah, E.,** Bonso, N. K. and Zarouk, A. I. (2023). Nano-engineered hybrid materials for cationic dye removal. Springer - Nature. Pp. 273 -301.

### Journal Articles

1. **Abarike, E. D,** Atuna, R. A., **Dandi, S. O.,** Agyekum, S., Appenteng, P., **Alhassan, E. H.,** Akongyuure, D. N., Anchirinah, J. and Duodo, K. A. (2023). Preliminary survey on perceived fish health management practices among small-scale cage tilapia farmers on Lake Volta. *Journal of Aquaculture and Fisheries*. 7: 65. DOI: 10.24966/AAF-5523/100065.
2. Raphael, B. H., Gameli, R. B. H., **Alhassan, E. H., Duwiejuah, A. B., Abarike, E. D.** and Bawa, A. (2023). Binary and ternary metals adsorption from greywater using spent green tea as a novel adsorbent. *South African Journal of Science*. 119 (7/8): 1 - 9. <https://doi.org/10.17159/sajs.2023/13352>.
3. Ayisi, C. L., Sienso, G., Mensah, G. D., N'souvi, K., Baidoo, K., **Alhassan, E. H.** and Osei, S. A. (2023). Examining the socio-economic characteristics, fishing patterns and challenges of fishermen at James Town in Ghana. *Social Sciences and Humanities Open*. 8: 100591. <https://doi.org/10.1016/j.ssaho.2023.100591>.
4. **Alhassan, E. H., Akongyuure, D. N., Dandi, S. O.** and Tamakloe, H. (2023). Preservative effect of ginger (*Zingiber officinale*) paste on fresh Nile tilapia, *Oreochromis niloticus* at room temperature. *UDS International Journal of Development*. Special Issue, 10(1): 45 – 51. <https://doi.org/10.47740/773.UDSIJD6i>.
5. **Alhassan, E. H., Osei, S. A., Ampofo-Yeboah, A.** and **Dandi, S. O.** (2023). Prevalence of endoparasites and haematology in redbelly tilapia from a shallow tropical reservoir in Ghana. *Tanzania Journal of Science*. 49(1): 15-25.
6. **Okoampah, E., Davids, J. S.,** and **Payne, J.** (2023). Functionalization of *Parkia biglobosa* mediated-gold nanoparticle for improved drug delivery. *UDS International Journal of Development*. 10(1). 129 -139. <https://doi.org/10.47740/783.UDSIJD6i>
7. Lawal, M., Adzitey, F., Joseph, A. A., **Yahaya, D.,** and Danaa, R. Z. (2023). Food safety knowledge and practices among University students in the Northern Region of Ghana. *Journal of Agriculture and Food Sciences*, 21(2): 70-89

## WORKSHOPS

1. **Francis Addy [Co-Facilitator]**. PhD proposal writing workshop in Tamale. Organised by the German Academic Exchange Services (DAAD). On July 26 – 27 2023
2. **Afua Kobi Ampem Genfi** was the local organization secretary for the 7<sup>th</sup> Society of Medicinal Plant and Economic Development (SOMPED) International conference held in Accra Tomrick Hotel, East Lagon.

## Conferences/Workshops/Seminars Attended

1. **Francis Addy**, Gideon Adu-Bonsu, Comfort Apedaa Akurigo, Iddrisu Abukari, Hamidatu Suleman and Lydia Quaye (2023). Prevalence of gastrointestinal parasites in pigs: A preliminary study in Tolon and Kumbungu Districts, Ghana. 16<sup>th</sup> Interdisciplinary Conference. UDS, Tamale, Ghana [Sept. 13-14, 2023]
2. Abdul-Rahman Abubakari and **Francis Addy** (2023). Health risks of rats in market centres: a case study in the Tamale city. 33<sup>rd</sup> Biennial Conference. Ghana Science Association, Accra, Ghana [Sept. 5-7, 2023].
3. **Francis Addy**, Gideon Adu-Bonsu, Emelia Kpiebaya, Thomas Romig and Marion Wassermann (2023). Prevalence of worm infections in donkeys from Bolgatanga and Zuarungu, Ghana. 33<sup>rd</sup> Biennial Conference. Ghana Science Association, Accra, Ghana [Sept. 5-7, 2023].
4. **Francis Addy**, Gideon Adu-Bonsu, Lydia Quaye, Rebecca Tse and Fati Mustapha (2023). Stray dogs as reservoir of zoonotic parasites; a case study in Nyankpala, Tolon District, Ghana. 1<sup>st</sup> Annual Graduate School Conference. UDS, Tamale, Ghana. 1<sup>st</sup> International Conference on Science, Technology, and Health Innovation for Sustainable Development (STHISD). University of Energy and Natural Resources (UENR), Sunyani, Ghana [August 23-25, 2023].
5. **Francis Addy**, Ebenezer Nartey, Edward Maseko and Osman Dufailu (2023). Prevalence of *Taenia solium* in pigs at slaughter: A preliminary data on the neglected tropical disease. 1<sup>st</sup> Annual Graduate School Conference. UDS, Tamale, Ghana. 1<sup>st</sup> International Conference on Science, Technology, and Health Innovation for Sustainable Development (STHISD). UENR, Sunyani, Ghana [August 23-25, 2023].
6. **Afua Kobi Ampem Genfi (2023)**. Comparative analyses of the antimicrobial, antioxidant, and phytochemical composition of two species of moringa in Ghana, 7<sup>th</sup> SOMPED International Conference, 29<sup>th</sup> - 31<sup>st</sup> August, 2023, Tomrick Hotel, East Legon.
7. **Emmanuel Okoampah, Joseph Payne, and Joan Davids Shine** (2023). Renewable Energy Evolution: Generating Hydrogen (H<sub>2</sub>) Energy From the Splitting of Water in the Presence of Carbon-Dot-Mediated Gold Nanoparticles. 33<sup>rd</sup> Biennial Conference. Ghana Science Association, Accra, Ghana [Sept. 5-7, 2023].

## International Travels and Activities by Senior Members

**Professor Courage Kosi Setsoafia SABA** represented Africa at the FAO/WHO Expert Meeting on virus in foods. Part 1: food attribution, analytical methods and indicators, Rome, 18 - 22 September, 2023. <https://www.fao.org/food-safety/news/news-details/en/c/1650833/>



**Prof. C. K. S. SABA seated with other dignitaries at the meeting.**

*Photo Credit: Prof. C. K. S. SABA*

### DNA Fair and Conference

The DNA Fair and Conference 2023, hosted by the Confident Scientist STEM Network, pioneered a fusion of science and art in Ghana. With a diverse audience, it ignited curiosity and innovation, emphasising the importance of DNA for the nation's future. The event involved scientists, artists, and communicators and highlighted the need for collaborative efforts to address societal challenges. Through a panel discussion, it promoted sustainable development, agricultural progress, anthropology, forensic sciences and many others. The use of artistic expressions, including sustainability, conceptual, liberal and visual art concepts, made complex genetic concepts accessible to all. The event's success left a lasting impact, setting the stage for unbiased science communication whilst championing a DNA revolution in Ghana and beyond.



Photograph of some Senior Members and Participants Present during the DNA FAIR 2023  
*Photo Credit: Detach Photography*

BIOSCIENCE SERIES IN THE NEWS



1. <https://uds.edu.gh/news/faculty-of-bioscience-organises-its-monthly-seminar-series-on-the-theme-the-emergence-of-ai-in-tertiary-education-benefits-and-challenges>

2. <https://thebftonline.com/2023/08/03/experts-want-ai-use-in-academia-regulated/>





**Dr. Lydia Quansah (5<sup>th</sup> from right) with some National Association of Biosciences (NABSS) Executives during their awards and dinner night.**

*Photo Credit: NABSS*



**A Group Photograph of Final Year Students of the Department of Biotechnology and Molecular Biology with some Senior Members after their thesis Defense Presentation.**

*Photocredit: NABSS*



**A Group Photograph of some Final Year Students of the Department of Aquaculture and Fisheries Sciences after their thesis Defense Presentation.**

*Photocredit: NABSS*

## GRANTS IN THE FACULTY

1. Nelson Opoku, PhD. (Senior Lecturer, Vice-Dean) – Principal Investigator (PI) Department of Biotechnology and Molecular Biology



Project: Feed the future innovation lab for peanut research USAID  
 Funding: 7200A18CA0003  
 Grant No: USD 222,146  
 Grant Value: 60 months [2018 – 2023]  
 Duration: University for Development Studies, Faculty of Biosciences  
 Host: University of Georgia, USA  
 Collaboration:

2. Emmanuel Delwin Abarike, PhD. (Senior Lecturer) – Principal Investigator (PI) Department of Aquaculture and Fisheries Sciences



**a.**

Project: Capacity building in aquaculture and environmental health in West Africa  
 Funding: Norwegian Programme for Capacity Development in Higher Education and Research for Development (Norhed II)  
 Grant No: QZA-21/0182  
 Grant Value: Nok 19,956,214 [GHC 2,030,449 for Activities in Ghana]  
 Duration: 60 months [2022 – 2027]  
 Host: University for Development Studies, Faculty of Biosciences

**b.**

Project: Contribution of a mixture of extracts of guava, bitter and pawpaw leaves in improving growth, hematology, immunity and resistance to *Streptococcus agalactiae* outbreaks in Nile tilapia, *Oreochromis niloticus*  
 Funding: International Foundation for Science (IFS)  
 Grant No: 12-A-6542-1  
 Grant Value: USD 13,400  
 Duration: 36 months [2021 – 2023]  
 Host: University for Development Studies, Faculty of Biosciences

3. Francis Addy, PhD. (Senior Lecturer) – Principal Investigator (PI) Department of Biotechnology and Molecular Biology



a.

Project: Transmission ecology and risk factors for cystic echinococcosis in sub-Saharan Africa

Funding: German Research Foundation (DFG)

Grant No: DFG680650 | KE282/12-1 | RO3753/9-1

Grant Value: Euro 1,500,000 [Euro 100,700 For Activities in Ghana]

Duration: 36 months [2021 – 2024]

Host: University for Development Studies, Faculty of Biosciences

b.

Project: Efficacy of albendazole and triclabendazole against Fasciola infections in cattle in northern Ghana

Funding: International Foundation for Research (IFS)

Grant No: I1-B-6713-1

Value: USD 14,755

Duration: 24 months

Host: University for Development Studies, Faculty of Biosciences, Department of Biotechnology and Molecular Biology

**UNIVERSITY FOR DEVELOPMENT STUDIES**  
Faculty of Biosciences



*presents*

# **BIOSCIENCE DISCOURSE 22**

(Monthly Seminar Series)



*Presenter:* **Dr. (supt.) Lawrence Kofi Acheampong**

Forensic Physician/ Researcher

Ghana Prisons Service/ Member - African Society of Forensic Medicine (ASFM) and Faculty of Forensic and Legal Medicine (MFFLM)

*Topic:*

**The use of forensic hair analysis as a toxicological tool for detection of the psychoactive substance of abuse.**



**FRIDAY  
OCT. 20, 2023  
10 A.M Prompt**



**UDS Library,  
Nyankpala Campus,  
24/6 Reading Room**

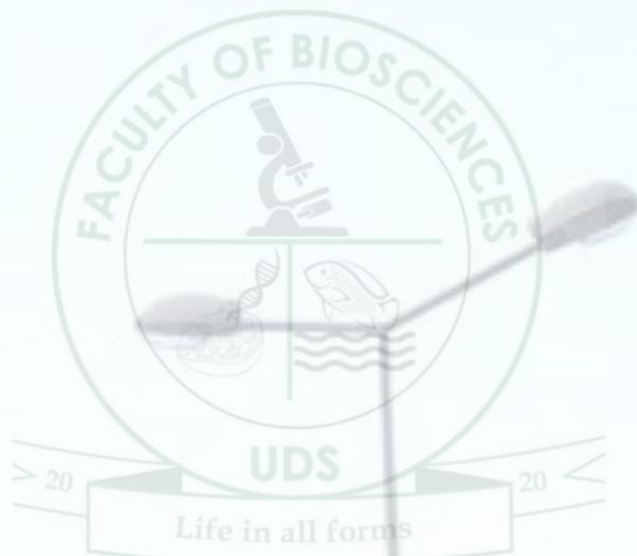


**Meeting ID: 622 3104 3218**

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