

NIH BIOGRAPHICAL SKETCH COMMON FORM

Name: Donkoh, Emmanuel Timmy

Persistent Identifier (PID) of the Senior/Key Person: <https://orcid.org/0000-0002-7476-4578>

Position Title: Head of Department

Organization and Location: Department of Medical Laboratory Science, Sunyani, Not Applicable, N/A, Ghana

PROFESSIONAL PREPARATION

INSTITUTION AND LOCATION	DEGREE	Start Date	Completion Date	FIELD OF STUDY
Karolinska Institutet, Huddinge, Not Applicable, N/A, Sweden	Fellow	06/2026	09/2027	Molecular Diagnostics Development Fellowship
Kwame Nkrumah University of Science and Technology, Kumasi, Not Applicable, N/A, Ghana	Doctor of Philosophy (PHD)	08/2011	06/2016	Laboratory Medicine
Kwame Nkrumah University of Science and Technology, Kumasi, Not Applicable, N/A, Ghana	Bachelor of Science (BS)	08/2006	06/2010	Biochemisty

Appointments and Positions

2026 - present	Head of Department, Department of Medical Laboratory Science, Sunyani, Not Applicable, N/A, Ghana
2026 - present	Research Fellow, Center for Cervical Cancer Elimination, Karolinska Institutet, Huddinge, Not Applicable, N/A, Sweden
2025 - 2026	AREF Leadership Development Fellow, Africa Research Excellence Fund, London, Not Applicable, N/A, United Kingdom
2024 - present	Research Fellow, Cervical Cancer Prevention and Training Centre, Battor, Not Applicable, N/A, Ghana
2023 - present	Country Ambassador, International Papillomavirus Society, Geneva, Not Applicable, N/A, Switzerland
2022 - present	Senior Lecturer, University of Energy and Natural Resources, Sunyani, Not Applicable, N/A, Ghana
2022 - 2025	Head of Centre, Centre for Research in Applied Biology, Sunyani, Not Applicable, N/A, Ghana
2021 - 2022	Ag. Head, Centre for Research in Applied Biology, Sunyani, Not Applicable, N/A, Ghana
2020 - 2021	Ag. Head, Department of Basic and Applied Biology, Sunyani, Not Applicable, N/A, Ghana
2018 - 2022	Lecturer, University of Energy and Natural Resources, Sunyani, Not Applicable, N/A, Ghana

Products**Products Closely Related to the Proposed Project**

1. Donkoh ET, Williams I, Akologo RN, Asiedu AA, Ofori-Atta RJ, Boadu IW, Ryabinina O, Forson AO, Boampong K, Jain N, Dassah ET, Gyasi SF, Arroyo Mühr LS, Akanwariwaik WG. Development of a multiplex quantitative real-time PCR (qPCR) assay for simultaneous detection of Schistosoma haematobium and high-risk human papillomaviruses. PLoS Negl Trop Dis. 2026 Sep;20(9):e0014694. PubMed Central PMCID: [PMC13592694](https://pubmed.ncbi.nlm.nih.gov/PMC13592694/).
2. Effah K, Tekpor E, Afetor M, Amuah JE, Wormenor CM, Dugbazah AE, Danyo S, Kemawor S, Sesenu E, Nyamekye C, Donkoh ET, Kubio C, Adum-Attah K. Cervical leukoplakia in Ghana: Unveiling diagnostic challenges and informing low-resource screening strategies. PLoS One. 2026;21(9):e0345847. PubMed Central PMCID: [PMC13557359](https://pubmed.ncbi.nlm.nih.gov/PMC13557359/).
3. Effah K, Ametefe DL, Amuah JE, Essel NOM, Afetor M, Dugbazah AE, Deho E, Kemawor S, Danyo S, Sesenu E, Tay G, Kitcher YT, Gedzah I, Williams I, Klutsey GB, Donkoh ET. A collaborative cervical precancer screening strategy with concurrent HPV genotyping and visual inspection using alumni of a training centre across Ghana: The Rotary 'Protect Your Pearl' initiative. PLoS One. 2026;21(6):e0350573. PubMed Central PMCID: [PMC13309030](https://pubmed.ncbi.nlm.nih.gov/PMC13309030/).
4. Effah K, Tekpor E, Amuah JE, Goka E, Wormenor CM, Armah R, Kemawor S, Danyo S, Dugbazah AE, Essel NOM, Donkoh ET. Expanding access to HPV screening through community health insurance schemes: lessons from a screening exercise for teachers in Ghana. BMC Health Serv Res. 2025 Dec 12;26(1):75. PubMed Central PMCID: [PMC12817508](https://pubmed.ncbi.nlm.nih.gov/PMC12817508/).
5. Effah K, Tekpor E, Wormenor CM, Amuah JE, Kwawukume V, Matey LA, Kemawor S, Danyo S, Morkli EAC, Essel NOM,

Donkoh ET, Akakpo PK. Cross-sectional evaluation of a peer educator-led empowerment initiative for improving participation in cervical precancer screening among female sex workers in Ghana. *Ecancermedicalscience*. 2025;19:1869. PubMed Central PMCID: [PMC12146576](#).

Other Significant Products Highlighting Contributions to Science

1. Donkoh ET, Abdul IW, Ahiakpa AK, Williams I, Akologo RN, Danyo S, Kubio C, Effah K, Amuah JE. Protocol for a systematic review and meta-analysis of the impact of cervical cancer prevention initiatives in Ghana. *PLoS One*. 2025;20(11):e0337011. PubMed Central PMCID: [PMC12633947](#).
2. Donkoh ET, Asmah RH, Agyemang-Yeboah F, Dabo EO, Wiredu EK. Prevalence and Distribution of Vaccine-Preventable Genital Human Papillomavirus(HPV) Genotypes in Ghanaian Women Presenting for Screening. *Cancer Control*. 2022 Jan-Dec;29:10732748221094721. PubMed Central PMCID: [PMC9096183](#).
3. Donkoh ET, Agyemang-Yeboah F, Asmah RH, Wiredu EK. Prevalence of cervical cancer and pre-cancerous lesions among unscreened Women in Kumasi, Ghana. *Medicine (Baltimore)*. 2019 Mar;98(13):e14600. PubMed Central PMCID: [PMC6456016](#).
4. Debrah O, Agyemang-Yeboah F, Asmah RH, Timmy-Donkoh E, Seini MM, Fondjo LA, Sight N, Owusu-Dabo E. SERO-prevalence of herpes simplex virus type 1 and type 2 among women attending routine Cervicare clinics in Ghana. *BMC Infect Dis*. 2018 Aug 7;18(1):378. PubMed Central PMCID: [PMC6081947](#).
5. Donkoh ET, Dassah ET, Owusu-Dabo E. Optimization of a protocol for the evaluation of antibody responses to human papillomavirus (HPV) vaccination in low-resource settings. *BMC Womens Health*. 2022 Jun 16;22(1):234. PubMed Central PMCID: [PMC9204889](#).

Certification:

I certify that the information provided is current, accurate, and complete. This includes, but is not limited to, information related to current, pending, and other support (both foreign and domestic) as defined in 42 U.S.C. § 6605.

In accordance with Section 10632 of the CHIPS and Science Act of 2022 (42 U.S.C. § 19232), each individual identified as a senior/key person must certify that they are not a party to a malign foreign talent recruitment program.

Research Security Training Requirement for Federal Award Personnel: In accordance with Section 10634 of the CHIPS and Science Act of 2022 (42 U.S.C. § 19234), each individual identified as a senior/key person must certify that they have completed the requisite research security training that meets the requirements specified in Item 2 of Important Notice No. 149 within 12 months prior to proposal submission.

Misrepresentations and/or omissions may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§287, 1001, 1031 and 31 U.S.C. §§3729-3733 and 3802.

Certified by Donkoh, Emmanuel Timmy in SciENcv on 2026-09-23 10:32:03

NIH BIOGRAPHICAL SKETCH SUPPLEMENT

Name: Donkoh, Emmanuel Timmy

Persistent Identifier (PID) of the Senior/Key Person: <https://orcid.org/0000-0002-7476-4578>

Position Title: Head of Department

Organization and Location: Department of Medical Laboratory Science, Sunyani, Not Applicable, N/A, Ghana

Personal Statement

I am a Senior Lecturer in Laboratory Medicine (Molecular Diagnostics and Chemical Pathology) and Head of the Department of Medical Laboratory Science at the University of Energy and Natural Resources, Ghana. I am also an AREF Fellow at the Centre for Cervical Cancer Elimination, International HPV Reference Centre, Karolinska Institutet, Sweden; Adjunct Senior Research Fellow at the Cervical Cancer Prevention and Training Centre; lead the Screen-and-Treat Research Group, at the Centre for Research in Applied Biology, Ghana; and serve as International Papillomavirus Society (IPVS) Ambassador to Ghana.

My work addresses a practical problem: many Ghanaian women are never screened because services depend on clinic visits, speculum exams, and laboratory platforms that rural and marginalized communities cannot reliably reach. I have built epidemiologic, diagnostic, and implementation evidence to change that. Early studies documented high-risk HPV genotype patterns among previously unscreened women and showed why primary HPV screening and multivalent prevention matter in Ghana. Later work tested whether screening can leave the hospital. Community-based collection and self-sampling improved participation compared with hospital referral; peer-supported self-sampling was acceptable to female sex workers; and decentralized HPV testing with visual assessment was delivered across facilities nationwide. In the last three years this program has become explicitly multipurpose. Through CERVIVAL, we implemented self-sampling to expand cervical cancer and female genital schistosomiasis screening in rural Ghana. In 2026 we reported a multiplex qPCR assay that detects high-risk HPV and *Schistosoma haematobium* from one cervical swab, using International HPV Reference Centre plasmids and archived swabs from high-risk Ghanaian women. That work tests the same idea as this R01: one community contact, more than one women's-health result. I am also an Africa Research Excellence Fund fellow validating a point-of-care isothermal HPV assay at the International HPV Reference Centre, Karolinska Institutet, so screening need not depend on centralized PCR.

I bring current hybrid type 2 trial experience as a Ghana investigator on NHLBI R01HL175642 (ADHINCRA), which uses a stepped-wedge design and PRISM to improve hypertension control while measuring reach, adoption, and maintenance. I will apply that same discipline here: facility readiness, workflow, fidelity of self-collection and result return, and the contextual factors that determine whether a new technology is used after the study team leaves. My contributions will include grounding the intervention in Ghanaian screening practice; leading community and facility implementation with CeRAB, CCPTC, and Push Aid Africa; advising on specimen handling, assay quality, and multipurpose testing pathways; supporting PRISM-informed process evaluation; and mentoring local staff. ADHINCRA does not overlap scientifically with this HPV technology; the shared skill is hybrid implementation in Ghanaian public-sector care. UCSF contributes trial design and implementation leadership; our Centre contributes community access, diagnostic development, and a trained screening network.

Honors

2026	AREF Research Development Fellowship, Africa Research Excellence Fund
2025 - 2026	AREF Towards Leadership Fellowship, Africa Research Excellence Fund
2025 - 2026	IPVS 2025 Scholar, International Papillomavirus Society/ Gates Foundation
2024 - 2025	IPVS 2024 Scholar, International Papillomavirus Society/ BMGF
2023 - 2024	IPVS 2023 Scholar, International Papillomavirus Society/ BMGF
2023 - 2024	Early Career Research Award, USAID/ NIHR
2023 - 2024	ASTMH Travel Grant, American Society for Tropical Medicine and Hygiene
2022 - 2023	Seed Grant, Royal Society for Tropical Medicine and Hygiene

Contributions to Science

1. Contribution 1. Molecular epidemiology of HPV and cervical disease in previously unscreened Ghanaian women: Ghana still lacks organized primary HPV screening, and most women who develop cervical cancer present late. My early independent

work established local genotype and disease data needed to justify HPV-based screening and vaccination policy. In clinic and community samples from Accra and Kumasi, we measured the prevalence of vaccine and non-vaccine HPV types among women presenting for care and among previously unscreened women, and we documented the burden of cytologic and precancerous abnormalities. These studies showed a substantial high-risk HPV reservoir, a modest contribution of HPV 16/18 alone, and a much larger potential impact from multivalent coverage, particularly types 52 and 58. They also made clear that waiting for clinic-based cytology will not reach elimination targets. This body of work is the epidemiologic rationale for the present R01: primary HPV testing must be taken into community primary care, and any multipurpose technology deployed in Ghana should be interpreted against local genotype patterns rather than imported 16/18-centric assumptions. I use these data when advising partners on assay design, triage expectations, and communication with women and providers.

2. Contribution 2. Community implementation of self-sampling and decentralized cervical screening: Clinic-based speculum collection is a structural barrier for rural women, female sex workers, and other groups with low screening uptake. I have led and co-led implementation studies that move specimen collection and, where possible, testing into communities and primary-care touchpoints. In rural Ghana we compared hospital referral with a within-community collection strategy and showed that aligning screening with women's daily routines raised participation. Among female sex workers, peer educators and "safe-space" instruction made home or drop-in self-sampling acceptable, with most participants willing to repeat the process and recommend it. Through CERVIVAL (USAID/ARNTD), we implemented self-sampling to expand concurrent cervical and female genital schistosomiasis screening. Complementary work with the Cervical Cancer Prevention and Training Centre network evaluated alumni-delivered HPV testing plus visual assessment across facilities in all 16 regions, and pilots in hard-to-reach communities tested whether only HPV-positive women need to travel for triage. Collectively these studies supply the formative and operational evidence this hybrid type 2 trial requires: who will self-collect, where collection can sit in the health system, what counseling and peer support look like, and which follow-up steps fail. My role on this R01 is to translate that Ghanaian implementation experience into site readiness, workflow, fidelity monitoring, and community partnership through Push Aid Africa, CeRAB, and CCPTC.
3. Contribution 3. Multipurpose molecular diagnostics for women's health in low-resource laboratories: A single community contact should yield more than one actionable result when co-endemic infections share a specimen and a missed visit is costly. I develop and validate assays that make that possible in Ghanaian laboratories. In 2026 we reported a multiplex qPCR that simultaneously detects *Schistosoma haematobium* and high-risk HPV from one cervical swab. Analytical performance used International HPV Reference Centre plasmids and biobanked parasite DNA at CeRAB; clinical performance used 217 archived swabs from high-risk women in CERVIVAL. The assay is designed for standard real-time platforms already present in regional labs, reducing cost and visit burden. I am now an Africa Research Excellence Fund fellow at the International HPV Reference Centre, Karolinska Institutet, validating a qualitative point-of-care isothermal HPV assay against internationally accepted performance frameworks so that screening need not depend on centralized PCR. This contribution matches the R01's multipurpose prevention technology: I can advise on specimen quality, laboratory workflow, concordance with self-collection, and what "ready for community primary care" means for an assay used outside tertiary hospitals.
4. Contribution 4. Accessible diagnostics and hybrid implementation for chronic conditions in Ghanaian primary care: Cervical screening will only be sustained if it fits the same constrained primary-care system that already struggles with hypertension, diabetes, and anemia. I therefore study how diagnostics and task-sharing behave in real Ghanaian facilities and communities, not only in HPV clinics. This includes mixed-methods work on diabetes medication noncompliance in a rapidly urbanizing region, and current service as a Ghana investigator on NHLBI R01HL175642 (ADHINCRA). ADHINCRA is a hybrid type 2 stepped-wedge trial of a hypertension program in hospitals across three Ghanaian regions and Ondo State, Nigeria. It uses PRISM to evaluate reach, adoption, and maintenance and uses readiness tools to explain site variation. That trial is scientifically distinct from HPV screening, but it is directly relevant to this application: I already practice hybrid effectiveness-implementation methods, stakeholder engagement with health-system leaders, and measurement of contextual determinants in Ghanaian public facilities. I will apply the same discipline to community HPV/women's-health implementation, facility readiness, fidelity, and maintenance, rather than treating the technology as self-implementing.
5. Contribution 5. Methods, training capacity, and national HPV control infrastructure: Sustainable screening depends on local methods, trained people, and trusted networks, not only on a device. I optimized a protocol for measuring antibody responses to HPV vaccination in low-resource laboratories so Ghana can evaluate vaccine programs without exporting all immunology work. I founded and lead the Department of Medical Laboratory Science at UENR, established the Centre for Research in Applied Biology (CeRAB), and lead the Screen-and-Treat Research Group, which links laboratory science with community screening. I am an adjunct senior research fellow at CCPTC, a national trainer, and International Papillomavirus Society (IPVS) Country Ambassador for Ghana, roles I use to align research with vaccination, screening, and laboratory quality agendas. Grant support from USAID/COR-NTD/ARNTD, RSTMH, AACC, and IPVS has underwritten the self-sampling and diagnostic line that now feeds this collaboration. On this R01 these roles matter for implementation: I can convene laboratory and clinical partners, mentor Ghanaian research staff, and help UCSF investigators land the study in institutions that already

train screeners and handle HPV specimens.

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