



JUSTICE AMENYO KESSIE


Curriculum Vitae

 jakessie

 justicek@uidaho.edu

 +1 (208) 596-6399

 0000-0003-2865-4375

 github.com/justicekessie

 Moscow, Idaho, US

EDUCATION

- 2024 – Now **PhD, Bioinformatics & Computational Biology** S.L. Nuismer Lab, IBEST, University of Idaho, Moscow, ID, US
Research Area: My research focuses on quantifying spillover from reservoir animals to humans and predicting the impact of a transmissible vaccine on the spread of Lassa virus
- 2017 – 2019 **MSc, Applied Mathematics** University of Energy and Natural Resources, Sunyani, Ghana
Dissertation title: *Global Dynamics of Measles with Interrupted Vaccination*
- 2013 – 2017 **BS Mathematics** University of Energy and Natural Resources, Sunyani, Ghana
Mathematics degree with additional coursework in Statistics

APPOINTMENTS

- 2021 – 2023 **Assistant Lecturer** UENR, Department of Mathematics & Statistics, Sunyani, Ghana
Taught various courses in the Department of Mathematics and Statistics, and also serviced courses in other Departments
- 2023 **Secretary, Committee for Ph.D Accreditation** UENR, Department of Mathematics & Statistics, Sunyani, Ghana
Prepared documentation for the accreditation of the Department of Mathematics and Statistics to run a Ph.D. program in Mathematics
- 2022, 2023 **Member, School of Science Welfare Committee** UENR, School of Sciences, Sunyani, Ghana
Served on a committee responsible for staff welfare within the School, including organizing events and providing support during critical life situations
- 2022, 2023 **Welfare Coordinator,** UENR, Department of Mathematics & Statistics, Sunyani, Ghana
Managed staff welfare within the Department, organizing events and offering support during significant life events

PEER-REVIEWED PUBLICATIONS

- 2024 **Global Stability Analysis and Modelling Onchocerciasis Transmission Dynamics with Control Measures** Infection Ecology & Epidemiology
Konlan, M., Danquah, B. A., Okyere, E., Osman, S., **Kessie, J. A.**, Donkoh, E. K.,
doi:10.1080/20008686.2024.2347941
- 2021 **Estimating the Basic Reproductive Number of COVID-19 Cases in Ghana** European Journal of Pure and Applied Mathematics
Otoo, D., **Kessie, J. A.**, Donkoh, E. K.
doi:10.29020/nybg.ejpam.v14i1.3850
- 2020 **Biting Rates and Relative Abundance of Simulium Flies under Different Climatic Conditions in an Onchocerciasis Endemic Community in Ghana** Parasites & Vectors
Otabil, K. B., Gyasi, S. F., Awuah, E., Obeng-Ofori, D., Tenkorang, S. B., **Kessie, J. A.**, & Schallig, H. D.
doi:10.1186/s13071-020-04102-5
- 2019 **Global Dynamics of an SEIRS Compartmental Measles Model with Interrupted Vaccination** Applied Mathematics
Otoo, D., **Kessie, J. A.**, Donkoh, E. K., Okyere, E., Kumi W.
doi:10.4236/am.2019.107042
- 2019 **Probabilistic Distance, Capacity Clustering Location Model of a Semi-Obnoxious Facility, a Real Case of Tafo, Kumasi, Ghana** American Journal of Operations Research
Otoo, D., Sebil, C., **Kessie, J. A.** & Larbi, E.
doi:10.4236/ajor.2019.93009
- 2018 **Structural Model of Students' Interest and Self-Motivation to Learning Mathematics** Education Research International
Otoo, D., Iddrisu, W. A., **Kessie, J. A.**, & Larbi, E.
doi:10.1155/2018/9417109

PREPRINTS

2020	Effects of Weather and Policy Intervention on COVID-19 Infection in Ghana Iddrisu, W. A., Appiahene, P., & Kessie, J. A.	arXiv doi:10.48550/arXiv.2005.00106
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TEACHING EXPERIENCE

2021 – 2023	Assistant Lecturer Taught the following courses: MATH 101, Calculus: 2022, 2023 COMP 112, Discrete Structures & Computation: 2021, 2022, 2023 MATH 315, Mathematical Economics: 2021, 2022, 2023 MATH 314, Research Methodology and Review of Mathematics: 2021, 2022, 2023	UENR, Department of Mathematics & Statistics, Sunyani, Ghana
2017 – 2019	Teaching Assistant Contributed to the instruction and assessment of courses within the Department of Mathematics and Statistics	UENR, Department of Mathematics & Statistics, Sunyani, Ghana
2014 – 2017	Mathematics Tutor Engaging in part-time mathematics instruction for both Junior and Senior High School students	Private Teaching

SERVICE & LEADERSHIP

2021 – 2023	Academic Counsellor Provided personalized mentoring and career advice to selected students, helping them navigate their educational journey and make informed decisions about their future paths	UENR, Department of Mathematics & Statistics, Sunyani, Ghana
2017 – 2023	Associate Coordinator Lead spiritually, organize events, mentor, engage with the community, provide support, collaborate with campus authorities, and promote fellowship unity	Deeper Life Campus Fellowship, UENR Chapter, Sunyani, Ghana
2013 – 2017	General Secretary Managed records, coordinate communication, liaise with campus fellowship authorities, and foster fellowship unity	Deeper Life Campus Fellowship, UENR Chapter, Sunyani, Ghana

SOCIETIES

2024 – Present	Society for Industrial and Applied Mathematics	SIAM
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INTERESTS

Currently, I am interested in understanding the mechanisms that allow for viral coexistence, especially with the activation of immune cells- NK cells- and how they influence these dynamics. This endeavor will contribute innovative strategies to control persistent viral infections and improve vaccine control.

SKILLS

Software:	\LaTeX , Mathematica, R, SPSS + AMOS, Linux, Python,
Statistics:	Modeling, Analysis
Math:	Mathematical Modelling, Mathematical Biology, Stochastic Processes