Yusuph Mavura, PhD, MS.

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Areas of expertise: Exome/Genome sequence data analysis, clinical/mendelian genetics, genetic epidemiology and complex disease genetics, population genetics, statistical genetics, RNASeq data analysis, causal inference using observational data, general epidemiology and study design, grant writing, technical writing, communication.
Programming languages: Python, Bash Scripting, R, Stata, Perl.
Languages: English and Kiswahili

EDUCATION:

- Ph.D., Epidemiology and Translational Science — Nov 2024
  University of California, San Francisco
  Advisor: Neil Risch, PhD

- M.S., Bioinformatics — Dec 2018
  Georgia Institute of Technology, Atlanta

- B.S., Biochemistry and Molecular Biology — Jun 2016
  Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya

RESEARCH FUNDING:

- Principal Investigator: NHGRI Predoctoral to Postdoctoral Transition Award for a Diverse Genomics Workforce (F99/K00)
  NIH Grant Title: "Assessing Clinical Utility of Polygenic Risk Scores in Ancestrally Diverse Real-World Cohorts"
  Grant Number: 1F99HG013437-01
  F99 Funding period: 01/01/2024 – 01/01/2026
  K00 Funding period: Up to 3 years after starting postdoctoral research.

RESEARCH EXPERIENCE:

Graduate Research Assistant — Aug 2023 – Present
Department of Epidemiology and Biostatistics,
University of California, San Francisco, CA
Advisor: Dr. Akinyemi Oni-Orisan, PharmD, PhD

- Project lead in investigating the role of environmental and genetic factors in the effectiveness of antihypertensive drug therapy in individuals from ancestrally diverse cohort using AllofUS and Genetic Epidemiology research on Aging (GERA) data

Graduate Research Assistant/ Rotation Student Aug 2020 – Dec 2020

Department of Epidemiology and Biostatistics,
University of California, San Francisco, CA
Advisor: Dr. John Witte, PhD, MS

- Investigated pleiotropy in cancer in a pan-cancer, cross-tissue transcriptome-wide association study (TWAS) using UKBiobank and Genetic Epidemiology research on Aging (GERA) cohort

Graduate Research Assistant Mar 2020 – Present

Department of Epidemiology and Biostatistics,
University of California, San Francisco, CA
Advisor: Dr. Franklin Huang, MD, PhD

- Project lead in a study of the genomic rearrangement landscape of localized prostate cancer samples of Nigerian men of African descent
- Collaborated with researchers from Ahmadu Bello University, Zaria Nigeria

Graduate Research Assistant Sep 2019 – Present

Department of Epidemiology and Biostatistics,
and Institute of Human Genetics,
University of California, San Francisco, CA
Advisor: Dr. Neil Risch, PhD

- Project lead and Junior Principal investigator assessing Diagnostic Yield from Exome Sequencing in ancestrally diverse patients with suspected mendelian disorders in the P^3EGS program, UCSF
- Junior Principal investigator and project lead in assessing Diagnostic Yield from Genome and Exome Sequencing in ancestrally diverse prenatal, neonatal intensive care unit (NICU), pediatric patients suspected mendelian disorders in various healthcare settings in the NHGRI Clinical Sequencing Evidence Generating research (CSER) Phase II program, involving centers and collaborators across the US
- Assessing association between genetic ancestry Diagnostic Yield from Exome Sequencing in ancestrally diverse newborns with suspected metabolic disorders in the Newborn Sequencing (NBSeqNext) program, UCSF
- Principal investigator, assessing Clinical Utility of Polygenic Risk Scores in Ancestrally Diverse Real-World Cohorts.

Intern Jun 2018 – Aug 2018

National Institutes of Health (NIH), Bethesda, MD
Graduate Summer Opportunity to Advance Research (G-SOAR)
Department of Cancer Epidemiology and Genetics (DCEG), National Cancer Institute (NCI)
Advisor: Dr. Laufey Amundadottir, PhD

- Conducted a Genome-Wide Association study (GWAS) which identified multiple new risk loci for pancreatic cancer in East Asian populations

Graduate Research Assistant Aug 2017 – Dec 2018

School of Biological Sciences, Georgia Institute of technology, Atlanta, GA
Advisor: Dr. John McDonald, PhD

- Analysis of mutations in cancer driver genes in matched primary, metastatic and recurrent ovarian cancer whole-exome sequencing samples (WES)

OTHER RESEARCH EXPERIENCE:

Research Assistant Mar 2016 – Jul 2017

International Center of Insect Physiology and Ecology, Nairobi, Kenya
Advisor: Dr. Daniel Masiga, PhD

- Primary data collection:
  - Set traps and collected sandflies in Gilgil and Chemolingot, Kenya.
  - Collected whole blood samples from cattle in Kwale, Kenya
- Molecular identification, genotyping, and characterization of Leishmania parasites and their sandfly vectors
- Screened for trypanosome parasite in whole blood samples from cattle
- Investigated the genetic diversity of trypanosome parasites, specifically *T. vivax* in cattle whole blood samples from Kwale, Kenya

Undergraduate Research Assistant May 2015 – Dec 2015

Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya
Advisor: Dr. Daniel Kiboi, PhD

- Investigated structural consequences of mutations in APIAP2 gene in Piperaquine and Lumefantrine resistant *Plasmodium berghei Anka* using 3D homology modeling

Research Intern Mar 2015 – May 2015

Department of Biology, Cell Biology, Konstanz, Germany
Advisor: Dr. Christof Hauck, PhD

- Undertook intensive practical training course involving ligation independent cloning (LIC), bacterial transformation and antimicrobial selection, plasmid preparation, culture of human cell lines, sodium dodecyl sulfate–polyacrylamide gel electrophoresis (SDS-PAGE), western blotting, light microscopy
- Investigated the effect of a SNP in the promoter of Protein Phosphatase (PPM1f) Gene on the binding of transcription factor Nkx2.2 in human cell lines

Research Intern Mar 2014 – May 2014

Government Chemists, Nairobi, Kenya

- Screened for Narcotics and Aflatoxins in consumables using enzyme-linked immunosorbent assay (ELISA) and thin layer chromatography (TLC)

Research Intern Jan 2014 – Feb 2014

Africa Technical Research Center, Arusha, Tanzania
Advisor: Dr. Johnson Ouma, PhD

- Analyzed insecticide contents in treated mosquito nets for quality control using gas chromatography and UV spectrophotometry at the Analytical Chemistry lab

PUBLICATIONS: Refereed Journal Articles

Yusuph Mavura, Nuriye Sahin-Hodoglugil, Ugur Hodoglugil, Mark Kvale, Pierre-Marie Martin, Jessica Van Ziffle, W. Patrick Devine, Sara L. Ackerman, Barbara A Koenig, Pui-Yan Kwok, Mary E. Norton, Anne Slavotinek, Neil Risch. Genetic ancestry and diagnostic yield of exome sequencing in a diverse population. *npj Genom. Med.* **9**, 1 (2024). https://doi.org/10.1038/s41525-023-00385-6

Slavotinek A, Rego S, Sahin-Hodoglugil N, Kvale M, Lianoglou B, Yip T, Hoban H, Outram S, Anguiano B, Chen F, Michelson J, Cilio RM, Curry C, Gallagher RC, Gardner M, Kuperman R, Mendelsohn B, Sherr E, Shieh J, Strober J, Tam A, Tenney J, Weiss W, Whittle A, Chin G, Faubel A, Prasad H, **Mavura Y**, Van Ziffle J, Devine WP, Hodoglugil U, Martin PM, Sparks TN, Koenig B, Ackerman S, Risch N, Kwok PY, Norton ME. Diagnostic yield of pediatric and prenatal exome sequencing in a diverse population. NPJ Genom Med. 2023 May 26;8(1):10. doi: 10.1038/s41525-023-00353-0. PubMed PMID: 37236975; PubMed Central PMCID: PMC10220040.

Mavura Y, Song H, Xie J, Tamayo P, Mohammed A, Lawal AT, Bello A, Ibrahim S, Faruk M, Huang FW. Transcriptomic profiling and genomic rearrangement landscape of Nigerian prostate cancer. Prostate. 2023 Jan 4;. doi: 10.1002/pros.24471. [Epub ahead of print] PubMed PMID: 36598071.

Kamran SC, Xie J, Cheung ATM, **Mavura MY**, Song H, Palapattu EL, Madej J, Gusev A, Van Allen EM, Huang FW. Tumor Mutations Across Racial Groups in a Real-World Data Registry. JCO Precis Oncol. 2021 Nov;5:1654-1658. doi: 10.1200/PO.21.00340. PMID: 34994651.

Oni-Orisan A, **Mavura Y**, Banda Y, Thornton TA, Sebro R. Embracing Genetic Diversity to Improve Black Health. N Engl J Med. 2021 Mar 25;384(12):1163-1167. doi: 10.1056/NEJMms2031080. Epub 2021 Feb 10. PMID: 33567186.

OTHER PUBLICATIONS: Non-Refereed Journal Articles and Book Chapters

Mavura MY, Huang FW. How Cancer Risk SNPs May Contribute to Prostate Cancer Disparities. Cancer Res. 2021 Jul 15;81(14):3764-3765. doi: 10.1158/0008-5472.CAN-21-1146. PMID: 34266915.

OTHER PUBLICATIONS: Manuscripts In Press, Under Review, or in progress

Yusuph Mavura, David Crosslin, Kathleen DM Ferar, John Greally, Lucia Hindorff, Gail P Jarvik, Sara Kalla, Barbara A Koenig, Mark Kvale, Pui-Yan Kwok, Mary Norton, Sharon E. Plon, Bradford C. Powell, Anne Slavotinek, Michelle L Thompson, Alice B Popejoy, Eimear E. Kenny, Neil Risch. *Association study of diagnostic yield of prenatal, neonatal and pediatric genome and exome sequencing with genetic ancestry in the ancestrally diverse CSER II cohort*. In preparation.

ABSTRACTS:

Poster Presentations:

Yusuph Mavura, David Crosslin, Kathleen DM Ferar, John Greally, Lucia Hindorff, Gail P Jarvik, Sara Kalla, Barbara A Koenig, Mark Kvale, Pui-Yan Kwok, Mary Norton, Sharon E. Plon, Bradford C. Powell, Anne Slavotinek, Michelle L Thompson, Alice B Popejoy, Eimear E. Kenny, Neil Risch. *Diagnostic yield of genome and exome sequencing in the ancestrally diverse CSER Phase II consortium is not associated with genetic ancestry in a variety of clinical settings*. American Society of Human Genetics, Los Angeles, CA. October 2023.

Yusuph Mavura, Nuriye Sahin-Hodoglugil, Mark Kvale, Jessica Van Ziffle, W. Patrick Devine, Ugur Hodoglugil, Pierre-Marie Martin, Barbara A Koenig, Sara Ackerman, Anne Slavotinek, Pui-Yan

Kwok, Mary E. Norton, Neil Risch. *No reduction in diagnostic yield of exome sequencing in prenatal and pediatric patients with non-European ancestries*. American Society of Human Genetics, Los Angeles, CA. October 2022.

PROFESSIONAL MEMBERSHIP:

American Society of Human Genetics. 2020- Present

PROFESSIONAL SERVICE:

American Society of Human Genetics career development committee. Incoming Jan 2025

Manuscript Reviewer
American Journal of Epidemiology
BMC Musculoskeletal Disorders

TEACHING EXPERIENCE:

Teaching Assistant Spring 2022
Course: Advanced Approaches to the Analysis of Observational Data *(Biostats 215)*
Department of Epidemiology and Biostatistics, University of California San Francisco
Course director: Tom Newman, MD, MPH
- Graded weekly assignments and tests for 14 MS and PhD students.
- Graded final exams for 14 MS and PhD students
- Led the review of previous week's assignments at the beginning of lectures
- Involved in formulating and editing the weekly and final exams questions
- Answered any questions or concerns from students

Teaching Assistant Winter 2021
Course: Molecular and Genetic Epidemiology *(Epi 217)*
Department of Epidemiology and Biostatistics, University of California San Francisco
Course director: John Witte, PhD, MS
- Graded weekly assignments and tests for 15 MS and PhD students
- Led the review of previous week's assignments at the beginning of lectures
- Guided students in their final project assignments
- Answered any questions or concerns from students

LEADERSHIP ROLES:

International Association for the Exchange of Students for Technical Experience (IAESTE) committee member.
Treasurer 2014-2015

Jomo Kenyatta University Students Governing Council
Biochemistry Department Representative 2013-2014

REFERENCES:

Neil Risch, PhD
Lamond Family Foundation Distinguished Professorship in Human Genetics
Professor, Department of Epidemiology and Biostatistics
University of California San Francisco
Email: Neil.Risch[at]ucsf.edu

Maria Glymour, ScD
Professor and Chair, Department of Epidemiology
Boston University
Former Director of Epidemiology and Translational Science PhD Program at UCSF
Email: mglymour[at]bu.edu

Akinyemi Oni-Orisan, PharmD, PhD
Associate Professor, Department of Clinical Pharmacy
University of California San Francisco
Email: Akinyemi.oni-orisan[at]ucsf.edu

Franklin Huang, MD, PhD
Associate Professor, Department of Medicine
University of California San Francisco
Email: Franklin.Huang[at]ucsf.edu