

Name: Eric M. Ndombi, PhD (Immunology)

Department of Medical Microbiology

School of Health Sciences

Google Scholar: Eric Ndombi:

<https://scholar.google.com/citations?hl=en&user=j4GGl3gAAAAJ>

ORCID ID: <https://orcid.org/0000-0002-7809-4452>

Research Interests:

My research is centered on exploring the intricate relationship between the human immune system, infectious diseases, co-infections and drug resistance. Previously, I have delved into studying the impact of mass praziquantel treatment on anti-schistosome immune responses in school children, as well as the effects of schistosomiasis mansoni infection on vaccine responses. My research endeavors in schistosomiasis control are primarily based at the Kenya Medical Research Institute's Centre for Global Health Research (KEMRI-CGHR) campus, Kisumu, Kenya, where I oversee a well-equipped snail and hamster rearing facility to support field activities in a schistosomiasis-endemic area near Lake Victoria. I am currently leading an NIAID-NIH funded study (awarded through Kenyatta University, in collaboration with Texas Biomedical research Institute, San Antonio, Texas, USA) investigating drug resistance in field-collected schistosomes in western Kenya.

Moving forward, my goal is to establish a proficient research team in the area of infectious diseases, while enhancing my expertise in research ethics, population genetics, genomics, and computational biology. I am deeply dedicated to advancing the field of schistosomiasis control, with a current focus on studying praziquantel resistance in schistosomes. Additionally, I am actively involved in collaborative research on Covid-19 epidemiology, persistence, and immunity with colleagues from Kenyatta University, KEMRI, and Kenyatta National Hospital.

International collaborators I am currently working with include colleagues from Texas Biomedical Research Institute and the University of Texas Health Science Center, both in San Antonio, Texas, USA

GRANTS

2021-2022: MERCK Schistosomiasis Research Grant Initiative

Project Title: **Molecular Surveillance of Praziquantel Resistance**

Role: **Principal Investigator (PI)**

Collaborations: Kenya Medical Research Institute, Texas Biomedical Research Institute

Overall Goal: The objectives of this study will be to (i) screen for TRPM-PZQ sequence variation in field collected schistosome populations in Western Kenya, and (ii) identify potential key mutation(s) in TRPM-PZQ gene which might play a role in PZQ treatment failure in 'persistent hotspots', Kenyan high schistosome transmission area.

Grant Value: **EURO 30,000**

2021-2026: National Institute of Allergy and Infectious Diseases-National Institute of Health (NIAID-NIH)

Award number: 1R01AI160433-01

Project Title: *Characterisation of drug resistance in field-collected schistosomes*

Role: **Principal Investigator (PI)**

Collaborations: Kenya Medical Research Institute, Texas Biomedical Research Institute

Overall goal: The objective of this five-year research study is to investigate praziquantel drug resistance in field collected schistosome parasites in order to understand mode of action of the drugs, and mechanism of resistance. We also hope to establish a novel platform for investigating phenotypic and genotypic variation in schistosome responses to anti-schistosomal compounds under development.

Value of award: **US\$ 785,622**

2021-2022: National Research Fund (NRF) South Africa

Covid-19 Africa Rapid Grant Fund

Project Title: **Uptake of Preventive Measures, Sero-Surveillance and Complementary Management of Covid-19 in Kenya.**

PI: Professor Paul Okemo

Role: Co-Investigator

Value of award: **US\$ 100,000**

2016-2021: Bill and Melinda Gates Foundation Research grant

Timothy Anderson (PI)

Project Title: Genetic basis of praziquantel resistance

Overall goal: The objective of this preliminary study was to establish unique platform that can be used to study genetic basis of drug resistance in schistosome parasites in order to understand mode of action of the drugs, and mechanism of resistance.

Role: Collaborator and Field-coordinator

2013-2015: National Commission for Science, Technology and Innovation (NACOSTI), Kenya PhD Research Grant

Eric M. Ndombi (PI)

Overall Goal: To understand the effect of treatment of *Schistosoma mansoni* infection with praziquantel on immune correlates of protection against reinfection. This study was conducted in school children at a time of massive roll out of mass praziquantel treatment programs in regions endemic for schistosomiasis for control of morbidity

Awards/Fellowships/Professional affiliations

1. American Society of Tropical Medicine and Hygiene Mid-Career Fellowship (2024-2025)
2. Associate Faculty member, Ariadne Labs, a joint center for health systems innovation at Brigham and Women's Hospital and the Harvard T.H. Chan School of Public Health (2024-)
3. Member, Biochemistry and Biotechnology Professionals society of Kenya (BBPSK) (2024-)
4. American Society of Tropical Medicine and Hygiene: Member (2020-)
5. Africa Research Excellence Fund: Towards Leadership program award recipient (2022-2023)
6. Kenya Medical Research Institute-University of Georgia-Athens collaboration: Post-doctoral fellowship (2015-2017)

Editorial appointments:

- Review Editor on the Editorial Board of Antiparasitic Drugs and Drug Resistance (specialty section of Frontiers in Parasitology) (2024-)

Administrative responsibilities

- Chairman, Department of Medical Microbiology and Parasitology, School of Health Sciences, Kenyatta University (April 2024-)
- Member, Kenyatta University Endowment and Alumni Programmes Board
- Coordinator, Research, Innovation and Product Development Board, department of Medical Microbiology and Parasitology (Jan 2024-April 2024)
- Departmental Examination coordinator, department of Pathology, School of Medicine, Kenyatta University (2014-2019)
- Examination Coordinator, School of medicine, Kenyatta University (2019-2023)
- Better Evidence for Training, UpToDate Champion for Kenyatta University Medical School
- Member, School of Health Sciences Programmes Committee

Community Service:

- Member, Board of Trustees, University of Eastern Africa, Baraton (2020-2025)
- Chairman, Board of Management, Namagara Secondary School (2016-2022)
- Chairman, Board of Management, Tande Secondary School (2016-2019)
- Chairman, Board of Management, Fubuye Primary School (2016-)

LIST OF PUBLICATIONS

1. Claudia M. Rohr, Sang-Kyu Park, Kelsilandia Aguiar-Martins, Timothy J.C. Anderson, Duncan J. Berger, Matthew Berriman, Sarah K. Buddenborg, Amaya L. Bustinduy, Frédéric D. Chevalier, James A. Cotton, Thomas Crellen, Stephen R. Doyle, Aidan M. Emery, Julien Kincaid Smith, Safari Kinung'hi, Poppy H.L. Lamberton, Winka Le Clec'h, **Eric Ndombi**,

Tom Pennance, Candia Rowel, Shannan S. Summers, John Vianney Tushabe, Martin Walker, Bonnie L. Webster, Joanne P. Webster, Shona Wilson, Jonathan S. Marchant. **TRPtracker: a community database for monitoring praziquantel sensitivity at TRPMPZQ variants.** *Int J Parasitol Drugs Drug Resist.* 2026 April. 30. 100639. doi.org/10.1016/j.ijpddr.2026.100639.

2. Olilah P, Oguso J, Okinyo A, Le Clec'h W, Chevalier FD, Musembi S, Anderson T, **Ndombi EM. Long-term persistence of Schistosoma mansoni hotspots in western Kenya despite ongoing mass drug administration.** *Curr Res Parasitol Vector Borne Dis.* 2026 Jan 5;9:100349. doi: 10.1016/j.crpvbd.2026.100349. PMID: 41568358;
3. Osman R, **Ndombi E**, Gitahi M, Njuguna A, Phiri M, Mekasha A, Cunliffe N, Msefula C, Jere KC, Asrat D, Kamwethya S, Wasilwa M, Jepchirchir J, Nyirenda D, Ongadi B, Otieno P, Mwendera C, Kering K, Mbae C, Kariuki S; GHRG-GI Consortium. **Caregiver dynamics and factors affecting health-seeking behaviors for childhood diarrhea in Mukuru informal settlements in Nairobi, Kenya.** *Front Public Health.* 2025 Nov 21;13:1670985. doi: 10.3389/fpubh.2025.1670985. PMID: 41358228; PMCID: PMC12679879.
4. Otindo AM., **Ndombi E.M.**, Theuri M., Muturi M., Thamaini P., Ogutu J.O., Onsongo L., Madete J., Ofula V., Gitau S., Mwangi G. & Okemo P. (2024). **Seroprevalence of anti-SARS-CoV-2 IgM, and IgG and COVID-19 vaccine uptake in healthy volunteers in Nairobi, Kenya: A cross-sectional study.** *Front. Virol. Sec. Virus and Host Immunity.* Volume 4 - 2024 doi: 10.3389/fviro.2024.1479645
5. Theuri M, **Ndombi EM**, Thamaini P, Ogutu JO, Onsongo L, Madete JK, Ofula V, Gitau S, Mwangi G, Okemo P. 2024. **Clinical characteristics, anti-SARS-CoV-2 IgG titers, and inflammatory markers in individuals with post-COVID-19 condition in Kenya: a cross-sectional study.** *PeerJ* 12:e17723 DOI 10.7717/peerj.17723
6. Lugonzo, G.O., Njeru, E., Songock, W., Okumu, A.A., **Ndombi, E.M.** **Epidemiology of multi-drug resistant Tuberculosis in the western region of Kenya**]]. *AIMS Microbiology*, 2024, 10(2): 273-287. doi: 10.3934/microbiol.2024014
7. Mulakoli, F., Gachara, G., **Ndombi, E.**, & Khamadi. S. (2024). **Prevalence of Dengue virus among healthy blood donors in Mombasa County, Kenya.** *PAMJ-OH.* 13:6. 10.11604/pamj-oh.2024.13.6.42602
8. Ombeni, A., Kanoi, B.N., Kamath, S., Shiluli, C., Ndombi, E.M., Odiere, M., Nyanjom, S.G., Misinzo, G., Raju, S.L., Ochola, L., Gitaka, J. (2024). **Development of a Rapid and Highly Sensitive Nucleic Acid-Based Diagnostic Test for Schistosomes, leveraging on Identical Multi-Repeat Sequences (IMRS).** *Front. Parasitol. Sec. Parasite Diagnostics.* 3 - 2024 | doi: 10.3389/fpara.2024.1361493
9. Wambua, R. T., Onsongo, L. N., & **Ndombi, E. M.** (2023). **Determinants of male involvement in partner's cervical cancer screening in Makueni County, Kenya.** *Int J Community Med Public Health*, 10(10), 3421–3429. https://doi.org/10.18203/2394-6040.ijcmph20232838
10. Okinyo AO, Okeyo I, Oguya F, Olila P, Mbata M, **Ndombi E**, Muok EO. (2023). **Prevalence and Intensity of Schistosomiasis in Endemic Parts of Siaya County after**

Mass Deworming With Praziquantel; Understanding Community Perception on the Associated Factors. Int J Biomed Res Prac. 3(1); 1-5.

11. Schlosser-Brandenburg J, Midha A, Mugo RM, **Ndombi EM**, Gachara G, Njomo D, Rausch S and Hartmann S (2023) **Infection with soil-transmitted helminths and their impact on coinfections.** *Front. Parasitol.* 2:1197956. doi: 10.3389/fpara.2023.1197956
12. Mulakoli, F., Gachara, G., **Ndombi, E.**, & Khamadi, S. (2023). **Dengue Virus Surveillance and Blood Safety: A One Health Perspective.** IntechOpen. doi: 10.5772/intechopen.109413
13. Festus Mulakoli, George Gachara, Eric Ndombi & Samoel Khamadi. (2022). **Dengue Virus and Blood Safety: A Mini-Review of Research Publications.** The East African Science. DOI: 10.24248/easci.v5i1.69
14. Fidelis Toloyi Ndombera, Juliet Elusah, **Eric Ndombi.** (2020) **Revisiting Cheminformatics and Mechanisms of Action of Chloroquine and Hydroxychloroquine in Targeting Covid-19.** J Bioinfo Comp Genom 3:1-11.
15. Abudho BO, Guyah B, Ondigo BN, **Ndombi EM**, Ileri E, Carter JM, Riner DK, Kittur N, Karanja DMS, Colley DG. **Evaluation of morbidity in Schistosoma mansoni-positive primary and secondary school children after four years of mass drug administration of praziquantel in western Kenya.** Infect Dis Poverty. 2020 Jun 15;9(1):67. doi: 10.1186/s40249-020-00690-7. PubMed PMID: 32539826
16. Harrison K. Korir, Diana K. Riner, Emmy Kavere, Amos Omondi, Jasmine Landry, Nupur Kittur, **Eric M. Ndombi**, Bartholomew N. Ondigo, W. Evan Secor, Diana M. S. Karanja and Daniel G. Colley. **Young Adults in Endemic Areas: An Untreated Group in Need of School-Based Preventive Chemotherapy for Schistosomiasis Control and Elimination.** Trop. Med. Infect. Dis. 2018, 3, 100; doi:10.3390/tropicalmed3030100
17. Bartholomew N. Ondigo, Erick M. O. Muok1, John K. Oguso, Sammy M. Njenga, Henry M. Kanyi, **Eric M. Ndombi**, Jeffrey W. Priest, Nupur Kittur, William Evan Secor, Diana M. S. Karanja and Daniel G. Colley. **Impact of Mothers' Schistosomiasis Status During Gestation on Children's IgG Antibody Responses to Routine Vaccines 2 Years Later and Anti-Schistosome and Anti-Malarial Responses by Neonates in Western Kenya.** Front. Immunol., 18 June 2018. <https://doi.org/10.3389/fimmu.2018.01402>
18. Bernard O. Abudho, **Eric M. Ndombi**, Bernard Guya, Jennifer M. Carter, Diana K. Riner, Nupur Kittur, Diana M. S. Karanja, W. Evan Secor and Daniel G. Colley. **Impact of Four Years of Annual Mass Drug Administration on Prevalence and Intensity of Schistosomiasis among Primary and High School Children in Western Kenya: A Repeated Cross-sectional Study.** Am J Trop Med Hyg. 2018.17-0908. Doi:10.4269/ajtmh
19. **Eric M. Ndombi**, Bernard Abudho, Nupur Kittur, Harrison Korir, Diana K. Riner, W. Evan Secor, Diana Karanja and Daniel G. Colley; **Effect of Four Rounds of Annual School-Wide Mass Praziquantel Treatment for Schistosoma Mansoni Control on Schistosome-Specific Immune Responses.** Parasite Immunol. 31 March 2018. <https://doi.org/10.1111/pim.12530>
20. Bartholomew N. Ondigo, **Eric M. Ndombi**, Sarah C. Nicholson, John K. Oguso, Jennifer M. Carter, Nupur Kittur, W. Evan Secor, Diana M.S. Karanja and Daniel G. Colley. **Functional studies of T regulatory lymphocytes in human schistosomiasis in western**

Kenya. Am J Trop Med Hyg. [98:6](#), Jun 2018, 1770 – 1781.

DOI: <https://doi.org/10.4269/ajtmh.17-0966>

21. Diana K. Riner, **Eric M. Ndongi**, Jennifer M. Carter, Amos Omondi, Nupur Kittur, Emmy Kavere, Harrison K. Korir, Briana Flaherty, Diana Karanja, Daniel G. Colley; ***Schistosoma mansoni* infection can jeopardize the duration of protective levels of antibody responses to immunizations against hepatitis B and tetanus toxoid.** PLOS NTDs 2016. <https://doi.org/10.1371/journal.pntd.0005180>
22. **Eric M. Ndongi**, Budambula Valentine, Mark W. Kilongosi, Francis O. Musumba, Joseph Karanja, Jesca O. Wesongah, Samwel A. Bonuke, Aabid A Ahmed, Raphael Lihana, and Tom Were **Plasma Adiponectin Levels in Hepatitis C and HIV-1 Mono- and Co-Infected Antiretroviral Treatment Naive and Exposed Injection Drug Users from Coastal Kenya.** Endocrine connections journal 2015. doi: [10.1530/EC-15-0071](https://doi.org/10.1530/EC-15-0071)

SEMINARS/CONFERENCES/Courses

Nov 2025	Malawi Liverpool-Wellcome Schistosomiasis workshop, Quen Elizabeth Hospital, Blantyre, Malawi. Presented paper titled: Molecular and phenotypic characterization of drug resistance in schistosomes: studies in Western Kenya
Nov 2025	American Society of Tropical Medicine and Hygiene annual meeting, Toronto, Canada. Oral presentation titled: Are mutations encoding Praziquantel Resistance in TRPM-PZQ enriched in schistosomiasis hotspots in Western Kenya?
Nov 2024	Rwanda Biomedical Center and URU Research and Development Group; International Training in Gene Editing Technologies course held at Center of Excellence in Biomedical Engineering and E-health, Kigali, Rwanda
Nov 2024	American Society of Tropical Medicine and Hygiene annual meeting, New Orleans, Louisiana, USA. Poster presentation, title: Prevalence and Infection Intensity of <i>Schistosoma mansoni</i> in Persistent hotspot and non-hotspot Villages in Siaya County, Western Kenya
Oct 2024	Tanzania Health Summit (TSH), Fumba Town, Zanzibar: Oral presentation titled: Prevalence and Clinical Characterization of Long Covid in Participants in Kenya: A Cross-Sectional Study
July-Oct 2024	BIO Ventures for Global Health (BVGH) Basics of Clinical Trial Management Digital Course
Aug 2024	WHO-TDR Massive open online course (MOOC): Incorporating an Intersectional Gender Perspective in Implementation Research

June-Aug 2024	WHO-TDR Massive open online course (MOOC) on implementation research
14 th March 2024	Illumina Genomics Workshop (Human Health genomics), International Livestock Research Institute (ILRI), Nairobi
14 th -16 th Feb 2024	14 th Kenya medical Research Institute Annual Scientific and Health (KASH) Conference, Safari Park Hotel, Nairobi Poster and Oral presentation
26-29 Oct 2023	Africa Research Excellence Fund-Medical Research Council (AREF-MRC) Towards Leadership Programme workshop 3 Johannesburg, South Africa
16-20 Oct 2023	17 th Congress of The Association for Health Information and Libraries in Africa (AHILA) Conference and workshops Gaborone, Botswana
6-10 March 2023	Rice360 Institute for Global Health Technologies: Faculty Development Workshop for Kenyatta University Hotel, Nairobi, Kenya
2-4 Nov 2022	Africa Research Excellence Fund-Medical Research Council (AREF-MRC) Towards Leadership Programme workshop Nairobi, Kenya.
Oct-Dec 2021	Southern African Research and Innovation Management Association (SARIMA)- University of Witwatersrand, South Africa, Digital Campus SARIMA Programme Evaluation Course
Aug-Oct 2021	Southern African Research and Innovation Management Association (SARIMA)- University of Witwatersrand, South Africa, Digital Campus SARIMA Intellectual Property, Technology Transfer & Commercialisation course
June- August 2021	Southern African Research and Innovation Management Association (SARIMA)- University of Witwatersrand, South Africa, Digital Campus Research Grants and Contracts Management online course

8-9 June 2021	Global Schistosomiasis Alliance: Schistosomiasis Research 2021 Virtual Meeting
21-24 May 2021	International Network Of Research Management Societies (INORMS) Conference, South Korea 2021. Virtual Attendee
April 2021	International Day of Immunology Webinar: Immunology in the time of Covid-19: Achievements, Challenges and Opportunities
April-May 2021	Southern African Research and Innovation Management Association (SARIMA)- University of Witwatersrand, South Africa, Digital Campus. Fundamentals of Research Management online course
July/October 2020	Southern African Research and Innovation Management Association (SARIMA)- University of Witwatersrand, South Africa, Digital Campus Research Ethics online course
June/July 2020	SARIMA Virtual Grants Management course; Southern African Research Innovation Management Association. Gender in Science, Technology and Innovation Course
Feb/March 2019	Texas Biomedical Research Institute, Training in laboratory methods on hamster handling, euthanasia, infection with schistosomes, and perfusion and lactate assay, San Antonio, Texas, USA
March 2018	14 th Spring School on Immunology in Ettal, Bavaria, Germany (Travel award)
January 2018	10th Center For AIDS Research (CFAR) East Africa Collaborative Scientific Symposium, Infectious Diseases Institute, Makerere University, Kampala. Oral Presentation titled: Effect of four rounds of annual praziquantel mass drug administration on anti-schistosome immune responses in school children in Western Kenya

October 2015	American Society of Tropical Medicine and Hygiene (ASTMH) annual meeting 2015, The Marriott Philadelphia downtown, Philadelphia, Pennsylvania, USA. Oral Presentation titled: Effect of Mass Drug Administration with Praziquantel on Anti-Schistosome Immune Responses in School Children from Western Kenya.
June 2015	Federation of Clinical Immunological Societies (FOCIS) Annual Meeting, San Diego, California, USA. Oral Presentation titled: Effect of one round of mass drug administration on immune correlates of protection against schistosomiasis in school children from western Kenya.
June 2015	Basics of Clinical Immunology Course , Federation of Clinical Immunological Societies (FOCIS), Hilton Bayfront, San Diego, California, USA. (Travel award)
June 2015	Federation of Clinical Immunological Societies Annual meeting (FOCIS 2015) Oral presentation:
Dec 2014	Ruggero Ceppellini Advanced School of Immunology; Maternal immune system in pregnancy course ; Castellammare di Stabia (Naples), Italy. (Travel award).

Graduate Student Supervision

1. Joan Kaburia Ntinyari: Master of Science in Environmental Health.
Thesis: PREVALENCE AND ANTIBIOTIC SENSITIVITY OF *SALMONELLA* AND *CAMPYLOBACTER* SPECIES IN CHICKEN WASTE, BUNGOMA COUNTY, KENYA.
Status: Graduated in 2020
2. George Odongo: Master of Science (Microbiology)-Kenyatta University
Thesis: MOLECULAR EPIDEMIOLOGY OF DRUG-RESISTANT TUBERCULOSIS IN WESTERN KENYA
Status: Graduated in 2022
3. Ruth Taabu Wambua: Master of Science (Nursing) – Kenyatta University
Thesis:

DETERMINANTS OF THE LEVEL OF MALE INVOLVEMENT IN PARTNER'S
CERVICAL CANCER SCREENING IN MAKUENI COUNTY, KENYA

Status: Graduated in 2024

4. Austin Okinyo: Master of Public Health, Technical University of Kenya
Thesis: COMMUNITY PERCEPTION ON FACTORS ASSOCIATED WITH
SCHISTOSOMA MANSONI PREVALENCE AND INTENSITY IN THE ENDEMIC
PARTS OF SIAYA COUNTY, KENYA
Status: Graduated in 2025
5. Rahma Osman: Master of Public Health-Kenyatta University
Thesis: DETERMINANTS OF CAREGIVERS' HEALTHCARE-SEEKING
PRACTICES FOR ACUTE DIARRHOEA AMONG UNDER-FIVE CHILDREN IN
MUKURU INFORMAL SETTLEMENT IN NAIROBI CITY COUNTY, KENYA.
Status: Completed.
6. Joseph Ajwang: PhD (Parasitology)-Maseno University
Status: Ongoing
7. David M. Muthama: Master of Science in Chemistry-Egerton University
Status: Ongoing
8. Festus Mulakoli: PhD (Immunology)- Kenyatta University
Thesis: SEROPREVALENCE OF DENGUE VIRUS AND ASSOCIATED RISK
FACTORS AMONG BLOOD DONORS IN MOMBASA AND NAIROBI CITY
COUNTIES, KENYA
Status: Completed
9. Peter Olila: Master of Science (Medical Biochemistry)- Kenyatta University
Status: Ongoing
10. Agnes Muhonja: Master of Science (Medical Laboratory Science), Kenyatta University
Thesis: VACCINATION STATUS, ANTI-SARS-COV-2 IGM AND IGG
SEROPREVALENCE, AND FACTORS INFLUENCING VACCINATION
INTENTIONS OF PARTICIPANTS FROM KENYATTA UNIVERSITY
COMMUNITY IN NAIROBI CITY COUNTY, KENYA
Status: Graduated 2025
11. Martin Theuri: Master of Science (Medical Laboratory Science), Kenyatta University
Thesis: CLINICAL, INFLAMMATORY, AND SEROLOGICAL MARKERS AMONG
INDIVIDUALS WITH AND WITHOUT POST-COVID-19 CONDITION IN
KENYATTA UNIVERSITY COMMUNITY SETTING, NAIROBI CITY COUNTY,
KENYA
Status: Graduated 2025
12. Getrude Mwambui: Master of Science (Nursing)-Kenyatta University
Status: Ongoing
13. Djounfoune Arnaud Guillaume: Ph.D. Public Health-Epidemiology and Disease Control-
Kenyatta University
Status: Ongoing
14. Nguyo Bokayo Molu: Master of Public Health-Kenyatta University

Status: Ongoing