



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY
School of Public Health, Biomedical Science and Technology
DEPARTMENT OF MEDICAL LABORATORY SCIENCES

Name:

Dr. Tom Were

Picture:



Position and Responsibilities:

Position

Senior Lecturer

Department of Medical Laboratory Sciences

School of Public Health, Biomedical Science & Technology

Responsibilities

1. *Academic:* Classroom, laboratory and clinical teaching; academic advising and consultation; curriculum development; course syllabi preparation; and assessment.
2. *Administrative:* Instructional and professional services (coordinator post-graduate programs and research, examinations and curriculum, acting chair, and committees).
3. *Research:* Supervising/mentoring postgraduate & undergraduate students, proposal writing & review, thesis/project examination; and research.
4. *Community service:* Contributing service in education, health and development.

Current Teaching:

Undergraduate courses

- 1) Medical Immunology
- 2) Clinical Laboratory Rotations
- 3) Hematology
- 4) General and Systemic Pathology
- 5) Molecular Biology & Genetics
- 6) Research Methodology

Postgraduate courses

- 1) Clinical Immunology & Immunoprophylaxis
- 2) Reproductive Immunology
- 3) Molecular Immunology & Immunogenetics
- 4) Immunology of Parasitic & Infectious Diseases
- 5) Erythron Pathophysiology
- 6) Clinical Chemistry of Neoplastic & Genetic Disorders

About Me:

I am a Kenyan from western Kenya. I received undergraduate training at Kenyatta University (KU), Kenya; concentrating on Biochemistry and Biomedical Sciences. I started working as a tutorial fellow in the Department of Pathology, School of Medicine, KU in 2003 and registered for doctoral degree while conducting research at UNM/KEMRI. I was promoted to lecturer position in 2009 at KU, and to senior lecturer at the Department of Clinical Medicine, University of Kabianga in 2014. I started working at the Department of Medical Laboratory Sciences, School of Public Health, Biomedical Sciences and Technology at MMUST in Sept., 2015. Apart from teaching, I am in charge of post-graduate (masters; and PhD) training, research; and collaborations.

Qualifications:

1. Post-Graduate Diploma in Medical Laboratory Sciences (2015), "Nutritional, clinical chemistry, hematological, and adiponectin profiles in HIV-1 infected antiretroviral treatment-naive and –experienced injection drug users from Mombasa county, Kenya.", Jomo Kenyatta University, Kenya.
2. Certificate in Teaching Methodology and Clinical Mentorship (2014). University of Maryland; University of Nairobi; and Kenyatta University Partnership for Advanced Clinical Education.
3. Doctor of Philosophy in Immunology (2009), "Natural monocytic acquisition of haemozoin and RANTES polymorphisms: Association with malarial disease outcomes and functional changes in children from western Kenya.", Kenyatta University (execution at KEMRI, Kenya; and Universities of Pittsburgh and New Mexico, Mentor: Prof Douglas Jay Perkins, USA).
4. Master of Science in Immunology (2001), "Natural cellular and humoral responses to FAL VAC-1, a multivalent multistage *P. falciparum* vaccine candidate in children and adults from a holoendemic area of western Kenya.", Kenyatta University (execution at KEMRI/CDC, Mentor: Ya Ping Shi), Kenya.
5. Bachelor of Science (concentration: Biochemistry & Biomedical Sciences), 2.1 Hon. (1996), "Antimalarial activity of *Azadirachta indica* in mice and rats infected with *P. berghei*.", Kenyatta University, Kenya.

Professional Memberships and Activities:

1. Kenya Medical Laboratory Technicians and Technologists Board
2. Federation of Clinical Immunology Societies
3. American Society of Tropical Medicine and Hygiene
4. Kenya Society of Immunology

Expertise:

1. Immunology and Genetics
2. Clinical Laboratory: Clinical testing and investigations; and test development in medical laboratory sciences

Enterprise and Commercial Activities:

Clinical Laboratory services; project management; and consultancy

Research:**Research Interests**

Immunology; Genetics; Infectious Diseases & HIV; Laboratory Medicine and Pathology; and Substance abuse

On-going Research

1. Clinical chemistry profiles of HIV infection in injection drug users
2. HIV envelop diversity in injection drug users
3. HBV and HCV genotypes and resistance in injection drug users
4. Sero- and molecular diagnosis, and genotypes of *G. lamblia* and *E. histolytica* in western Kenya

Publications:

First Author

1. **Were T**, Wesongah JO, Munde E, Ouma C, Kahiga TM, Ongecha-Owuor F, Kiarie JN, Ahmed AA, Makokha EP and Budambula V (2014). Clinical chemistry profiles in injection heroin users from Coastal Region, Kenya. *BMC Clinical Pathology*. 14:32. doi: [10.1186/1472-6890-14-32](https://doi.org/10.1186/1472-6890-14-32). ISSN: 1472-6890.
2. **Were T**, Davenport GC, Hittner JB, Ouma C, Vulule JM, Ong'echa JM, and Perkins DJ (2011). Bacteremia in Kenyan children presenting with malaria. *Journal of Clinical Microbiology*. 49(2):671-76. doi: [10.1128/JCM.01864-10](https://doi.org/10.1128/JCM.01864-10). ISSN: 0095-1137.
3. **Were T**, Davenport GC, Yamo EO, Hittner JB, Awandare GA, Otieno MF, Ouma C, Orago AS, Vulule JM, Ong'echa JM, and Perkins DJ (2009). Naturally acquired haemozoin by monocytes promotes suppression of RANTES in children with malarial anaemia through an IL-10-dependent mechanism. *Microbes and Infection*. 11(8-9):811-9. doi: [10.1016/j.micinf.2009.04.021](https://doi.org/10.1016/j.micinf.2009.04.021). ISSN: 1286-4579.
4. **Were T**, Hittner JB, Ouma C, Otieno RO, Orago AS, Ong'echa JM, Vulule JM, Keller CC, and Perkins DJ (2006). Suppression of RANTES in children with *P. falciparum* malaria. *Haematologica/the Hematology Journal*. 91(10):1396-9. ISSN: 0390-6078.

Principal Author

5. Shaviya N, Budambula V, Webale MK, and **Were T** (2016). Circulating interferon-gamma levels are associated with low body weight in newly diagnosed Kenyan non-substance using Tuberculosis individuals. *Interdisciplinary Perspectives on Infectious Diseases*. 2016: 9415364. doi:10.1155/2016/9415364.
6. Budambula V, Musumba FO, Kilongosi MW, Kahiga TM, Ongecha-Owuor F, Kiarie JN, Sowayi GA, Ahmed AA, Ouma CO, and **Were T** (2015). HIV-1 protease inhibitor drug resistance in Kenyan antiretroviral treatment-naive and -experienced injection drug users and non-drug users. *AIDS Research and Therapy*. 12:27. doi: [10.1186/s12981-015-0070-y](https://doi.org/10.1186/s12981-015-0070-y).
7. Kilongosi MW, Budambula V, Lihana R, Musumba FO, Nyamache AK, Budambula NLM, Ahmed AA, Ouma C, and **Were T** (2015). Hepatitis B virus sero-profiles and genotypes in HIV-1 infected and uninfected injection and non-injection drug users from coastal Kenya. *BMC Infectious Diseases*. 15:299. doi: [10.1186/s12879-015-1060-3](https://doi.org/10.1186/s12879-015-1060-3). ISSN: 1471-2334.
8. Ndombi EM, Budambula V, Kilongosi MW, Musumba FO, Wesongah JO, Mibei E, Ahmed AA, Lihana R, and **Were T** (2015). Serum adiponectin in Kenyan hepatitis-C and HIV-1 mono- and co-infected injection drug users. *Endocrine Connections*. 4(4):223-32. doi: [10.1530/EC-15-0071](https://doi.org/10.1530/EC-15-0071).

Co-Author

9. Onchonga J, **Were T** and Osero J (2016). Knowledge, Perception and Level of Male Partner Involvement in Choice of Delivery Site among Couples at Coast Level Five Hospital, Mombasa County, Kenya. *African Journal of Reproductive Health*. 20(1):71-78. ISSN: 1118-4841.
10. Rivas AL, Jankowski MD, Piccinini R, Leitner G, Schwarz D, Anderson KL, Fair JM, Hoogesteijn AL, Wolter W, Chaffer M, Blum S, **Were T**, Konah SN, Kempaiah P, Ong'echa JM, Diesterbeck US, Pilla R, Czerny CP, Hittner JB, Hyman JM and Perkins DJ (2013). Feedback-based, system-level properties of vertebrate-microbial interactions. *PLoS One*. 8(2):e53984. doi: [10.1371/journal.pone.0053984](https://doi.org/10.1371/journal.pone.0053984). ISSN: 1932-6203.
11. Onyango EO, Ayodo G, Watsierah CA, **Were T**, Okumu W, Anyona SB, Raballah E, Okoth JM, Gumo S, Orinda GO and Ouma C (2012). Factors associated with non-adherence to Artemisinin-based Combination Therapy (ACT) to malaria in a rural population from holoendemic region of western Kenya. *BMC Infectious Diseases*. 12(1):143. doi: [10.1186/1471-2334-12-143](https://doi.org/10.1186/1471-2334-12-143). ISSN: 1471-2334.
12. Anyona SB, Kempaiah P, Raballah E, Davenport GC, **Were T**, Konah SN, Vulule JM, Hittner JB, Gichuki CW, Ong'echa JM and Perkins DJ (2012). Reduced systemic bicyclo-prostaglandin-E2 and Cyclooxygenase-2 gene expression are associated with inefficient erythropoiesis and enhanced uptake of monocytic hemozoin in children with severe malarial anemia. *American Journal of Hematology*. 87(8):782-789. doi: [10.1002/ajh.23253](https://doi.org/10.1002/ajh.23253). ISSN: 1096-8652.

13. Kempaiah P, Anyona SB, Raballah E, Davenport GC, **Were T**, Hittner JB, Ong'echa JM, and Perkins DJ (2012). Reduced interferon (IFN)- α conditioned by IFNA2 (-173) and IFNA8 (-884) haplotypes is associated with enhanced susceptibility to severe malarial anemia and longitudinal all-cause mortality. *Human Genetics*. 131(8):1375-1391. doi: [10.1007/s00439-012-1175-1](https://doi.org/10.1007/s00439-012-1175-1). ISSN: 0340-6717.
14. Davenport GC, Hittner JB, **Were T**, Ong'echa JM, and Perkins DJ (2012). Relationship between inflammatory mediator patterns and anemia in HIV-1 positive and exposed children with *P. falciparum* malaria. *American Journal of Hematology*. 87(7):652-658. doi: [10.1002/ajh.23200](https://doi.org/10.1002/ajh.23200). ISSN: 1096-8652.
15. Ouma C, Davenport GC, Garcia S, Kempaiah P, Chaudhary A, **Were T**, Anyona SB, Raballah E, Konah SN, Hittner JB, Vulule JM, Ong'echa JM, and Perkins DJ (2012). Functional haplotypes of Fc-gamma (Fc γ) receptor (Fc γ RIIA and Fc γ RIIIB) predict risk to repeated episodes of severe malarial anemia and mortality in Kenyan children. *Human Genetics*. 131(2):289-99. doi: [10.1007/s00439-011-1076-8](https://doi.org/10.1007/s00439-011-1076-8). ISSN: 0340-6717.
16. Anyona S, Kempaiah P, Raballah E, Ouma C, **Were T**, Davenport G, Konah S, Vulule J, Hittner J, Gichuki C, Ong'echa J and Perkins D (2011). Functional promoter haplotypes of interleukin-18 condition susceptibility to severe malarial anemia and childhood mortality. *Infection and Immunity*. 79(12):4923-32. doi: [10.1128/IAI.05601-11](https://doi.org/10.1128/IAI.05601-11). ISSN: 0019-9567.
17. Ong'echa JM, Raballah EO, Kempaiah PM, Anyona SB, **Were T**, Davenport GC, Konah S, Vulule JM, Ouma C, Hittner JB, and Perkins DJ (2011). Polymorphic variability in the 3' untranslated region (UTR) of IL12B is associated with susceptibility to severe anaemia in Kenyan children with acute *P. falciparum* malaria. *BMC Genetics*. 12:69. doi: [10.1186/1471-2156-12-69](https://doi.org/10.1186/1471-2156-12-69). ISSN: 1471-2156.
18. Ouma C, Roca AL, **Were T**, Raballah OE, Oguge NO, Jura WGZO, Ochieng JW, Hanotte O, and Georgiadis N (2011). Genetic structure of Hartebeest populations straddling a transition zone between morphotypes. *Journal of Basic and Applied Scientific Research*. 1(3):131-149. doi: <http://hdl.handle.net/10568/4775>. ISSN: 2090-424x.
19. Novelli EM, Hittner JB, Davenport GC, Ouma C, **Were T**, Obaro S, Kaplan S, Ong'echa JM, and Perkins DJ (2010). Clinical predictors of severe malarial anaemia in a holoendemic *P. falciparum* transmission area. *British Journal of Haematology*. 149(5):711-21. doi: [10.1111/j.1365-2141.2010.08147.x](https://doi.org/10.1111/j.1365-2141.2010.08147.x). ISSN: 1365-2141.
20. Phawong C, Ouma C, Tangteerawatana P, Thongshoob J, **Were T**, Mahakunkijcharoen Y, Wattanasirichaigoon D, Perkins DJ, and Khusmith S (2010). Haplotypes of IL12B promoter polymorphisms condition susceptibility to severe malaria and functional changes in cytokine levels in Thai adults. *Immunogenetics*. 62(6):345-56. doi: [10.1007/s00251-010-0439-y](https://doi.org/10.1007/s00251-010-0439-y). ISSN: 0093-7711.
21. Davenport GC, Ouma C, Hittner JB, **Were T**, Ouma Y, Ong'echa JM, and Perkins DJ. (2010). Hematological predictors of increased severe anemia in Kenyan children co-infected with *P. falciparum* and HIV-1. *American Journal of Hematology*. 85(4):227-33. doi: [10.1002/ajh.21653](https://doi.org/10.1002/ajh.21653). ISSN: 1096-8652.
22. Ouma C, Keller CC, Davenport GC, **Were T**, Konah S, Otieno MF, Hittner JB, Vulule JM, Martinson J, Ong'echa JM, Ferrell RE, and Perkins DJ (2010). A novel functional variant in the stem cell growth factor promoter (-539C/T) protects against severe malarial anaemia. *Infection and Immunity*. 78(1):453-60. doi: [10.1128/IAI.00895-09](https://doi.org/10.1128/IAI.00895-09). ISSN: 0019-9567.
23. Awandare GA, Martinson JJ, **Were T**, Ouma C, Davenport GC, Ong'echa JM, Wang WK, Leng L, Ferrell RE, Bucala R, and Perkins, DJ (2009). Macrophage migration inhibitory factor promoter polymorphisms and susceptibility to severe malarial anaemia. *Journal of Infectious Diseases*. 200(4):629-37. doi: [10.1086/600894](https://doi.org/10.1086/600894). ISSN 0022-1899.
24. Keller CC, Ouma C, Ouma Y, Awandare GA, Davenport GC, **Were T**, Hittner JB, Vulule JM, Ong'echa JM, and Perkins DJ (2009). Suppression of a novel hematopoietic mediator in children with severe malarial anaemia. *Infection and Immunity*. 77(9):3864-71. doi: [10.1128/IAI.00342-09](https://doi.org/10.1128/IAI.00342-09). ISSN: 0019-9567.
25. Ouma C, Davenport GC, **Were T**, Otieno MF, Hittner JB, Vulule JM, Martinson J, Ong'echa JM, Ferrell RE, and Perkins DJ (2008). Haplotypes of Interleukine (IL)-10 promoter variants are associated with susceptibility to severe malarial anaemia and functional changes in IL-10 production. *Human Genetics*. 124(5):515-24. doi: [10.1007/s00439-008-0578-5](https://doi.org/10.1007/s00439-008-0578-5). ISSN: 0340-6717.

26. Ouma C, Davenport GC, Awandare GA, Keller CC, **Were T**, Otieno MF, Vulule JM, Martinson J, Ong'echa JM, Ferrell RE and Perkins DJ (2008). Polymorphic variability in the interleukin (IL)-1 β promoter conditions susceptibility to severe malarial anaemia and functional changes in IL-1 β production. *Journal of Infectious Diseases*. 198(8):1219-26. doi: [10.1086/592055](https://doi.org/10.1086/592055). ISSN 0022-1899.
27. Ong'echa JM, Remo AM, Kristoff J, Hittner JB, **Were T**, Ouma C, Otieno RO, Vulule JM, Keller CC, Awandare GA, and Perkins DJ (2008). Increased circulating interleukin (IL)-23 in children with malarial anaemia: *in vivo* and *in vitro* relationship with co-regulatory cytokines IL-12 and IL-10. *Clinical Immunology*. 126(2):211-21. doi: [10.1016/j.clim.2007.08.007](https://doi.org/10.1016/j.clim.2007.08.007). ISSN: 1521-6616.
28. Awandare GA, Ouma Y, Ouma C, **Were T**, Otieno R, Keller CC, Davenport GC, Hittner JB, Vulule J, Ferrell R, Ong'echa JM and Perkins DJ (2007). Role of monocyte-acquired haemozoin in suppression of macrophage migration inhibitory factor in children with severe malarial anaemia. *Infection and Immunity*. 75(1):201-10. doi: [10.1128/IAI.01327-06](https://doi.org/10.1128/IAI.01327-06). ISSN: 0019-9567.
29. Awandare GA, Ouma C, Keller CC, **Were T**, Otieno R, Ouma Y, Davenport GC, Hittner JB, Ong'echa JM, Ferrell R, and Perkins DJ (2006). A macrophage migration inhibitory factor promoter polymorphism is associated with high-density parasitaemia in children with malaria. *Genes and Immunity*. 7(7):568-75. doi:[10.1038/sj.gene.6364332](https://doi.org/10.1038/sj.gene.6364332). ISSN: 1466-4879.
30. Ouma C, Keller CC, Opondo DA, **Were T**, Otieno RO, Otieno MF, Orago AS, Ong'echa JM, Vulule JM, Ferrell RE, and Perkins DJ (2006). Association of Fc γ R IIA (CD32) polymorphism with malarial anaemia and high-density parasitaemia in infants and young children. *American Journal Tropical Medicine & Hygiene*. 74(4):573-7. PMID: [16606986](https://pubmed.ncbi.nlm.nih.gov/16606986/). ISSN: 0002-9637.
31. Ong'echa JM, Keller CC, **Were T**, Ouma C, Otieno RO, Landis-Lewis Z, Ochiel D, Slingluff JL, Mogere S, Ogonji GA, Orago AS, Vulule JM, Kaplan SS, Day RD, and Perkins DJ (2006). Parasitaemia, anaemia, and malarial anaemia in infants and young children in a rural holoendemic *P. falciparum* transmission area. *American Journal of Tropical Medicine & Hygiene*. 74(3):376-85. PMID: [16525094](https://pubmed.ncbi.nlm.nih.gov/16525094/). ISSN: 0002-9637.
32. Otieno RO, Ouma C, Ong'echa JM, Keller CC, **Were T**, Waindi EN, Michaels MG, Day RD, Vulule JM, and Perkins DJ (2006). Increased severe anaemia in HIV-1-exposed and HIV-1-positive infants and children during acute malaria. *AIDS*. 20(2):275-80. doi: [10.1097/01.aids.0000200533.56490.b7](https://doi.org/10.1097/01.aids.0000200533.56490.b7). ISSN: 0269-9370.
33. Maina N, Ngotho JM, **Were T**, Thuita JK, Mwangangi DM, Kagira JM, Ndung'u JM, and Sternberg J (2004). Pro-inflammatory cytokine expression in the early phase of *Trypanosoma brucei rhodesiense* infection in vervet monkeys (*Cercopithecus aethiops*). *Infection and Immunity*. 72(5):3063-5. doi: [10.1128/IAI.72.5.3063-3065.2004](https://doi.org/10.1128/IAI.72.5.3063-3065.2004). ISSN: 0019-9567.

Reviews and Book Chapters

34. Perkins DJ, **Were T**, Anyona S, Hittner JB, Kempaiah P, Davenport GC, and Ong'echa JM (2013). Dynamic Models of Infectious Diseases. Rao VS, Durvasula R, editors. New York: Springer. Chapter 8, The global burden of severe falciparum malaria: An immunological and genetic perspective on pathogenesis; p.231-283. doi: [10.1007/978-1-4614-3961-5-8](https://doi.org/10.1007/978-1-4614-3961-5-8). ISBN: 978-1-4614-3960-8.
35. Perkins DJ, **Were T**, Davenport GC, Kempaiah P, Hittner JB, and Ong'echa JM (2011). Severe malarial anemia: innate immunity and pathogenesis. *International Journal of Biological Sciences*. 7(9):1427-42. doi:[10.7150/ijbs.7.1427](https://doi.org/10.7150/ijbs.7.1427). ISSN: 1449-2288.

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