



Kenya National Academy of Sciences

**PROFILES OF NEW FELLOWS AND
MEMBERS 2021**

TABLE OF CONTENTS

KNAS GOVERNING COUNCIL: 2011 to Date	iii
PREVIOUS OFFICE BEARERS:.....	iv
BRIEF HISTORY OF KNAS	v
FOUNDING FELLOWS.....	vi
FOREWORD	xii
PROF. JOHN DEMESI MANDE.....	1
PROF. DANIEL OCHIENG' OLAGO	2
PROF. SHAUKAT A. ABDULRAZAK	4
PROF. BENSON B. A. ESTAMBALE	6
PROF. JOSEPHINE KHAOMA W. NGAIRA	7
PROF. JOSEPH OWUOR LALAH.....	10
PROF. KIBET NGETICH	11
PROF. PRISCA JEBAIBAI TUITOEK.....	12
PROF. FRANCIS MUTISO MATHOOKO	13
PROF. JONES FAIRFAX AGWATA.....	15
DR. SHEHU SHAGARI AWANDU	16
PROF. DAVID MIRUKA ONYANGO	17
PROF. CECILIA MORAA ONYANGO.....	18
DR. SAMUEL M. OBUCHI.....	19
PROF. FRANCIS NYONGESA WANJALA	21
DR. JOSEPH MWANZIA NGUTA	22
PROF. JUDITH NDOMBI WAUDO	23
PROF. HERICK OTHIENO OTIENO	24
PROF. PAUL OKEMO OWUOR	25
DR. STELLAH MIKALITSA MUKHOVI.....	27
DR. JAMES PATRICK OCHIENG'- ODERO.....	28
DR. MILDRED AWUOR AIRO	30
PROF. BENARD OKELO NYAARE	31
DR. AMOS E. O. OTEDO.....	32
DR. AUSTINE OCHIENG ALUOCH	34
DR. GEOFFREY OTIENO	35
PROF. ROBINSON JUMA MUSEMBI.....	36
DR. CLARE IMBOSA MUHANJI	37
DR. EDITH KHAVWAJIRA AMUHAYA.....	38

KNAS GOVERNING COUNCIL: 2011 to 2021

Prof. Raphael M. Munavu	-	Chairman
Prof. Ratemo Michieka	-	Hon. Secretary
Prof. Josephine K. Ngaira	-	Hon. Treasurer
Prof. Paul Baki	-	Hon. Asst. Treasurer
Prof. Kenneth Mavuti	-	Hon. Asst. Sec. Biological Sciences
Prof. Daniel Rotich	-	Hon. Asst. Sec. Humanities & Social Sciences
Prof. Julius Mwabora	-	Hon. Asst. Sec. Chemical & Physical Sciences
Prof. Benard Aduda	-	Hon. Editor in Chief
Prof. Waceke Wanjohi	-	Asst. Editor in Chief
Prof. Joash Aluoch	-	Member
Prof. Mbaabu Mathiu	-	Member
Prof. Kenneth Kaduki	-	Member
Principal Secretary, MoEST	-	Ex Officio
Director General/C.E.O, NACOSTI	-	Ex Officio
Administrator, KNAS	-	Ex Officio

OFFICE BEARERS:

OFFICE BEARERS: 1983 - 1992

Chairman: Prof. Thomas R. OdhiambO

Honorary Secretary: Prof. Canute P. M. Khamala

Honorary Treasurer: Dr. Benjamin E. Kipkorir

OFFICE BEARERS: 1992 - 2002

Chairman: Prof. Shem Oyoo Wandiga

Honorary Secretary: Prof. Ogana Wandera

Honorary Treasurer: Prof. Jackton Boma Ojwang

OFFICE BEARERS: 2002 – 2011

Chairman: Prof. J Otieno Malo

Honorary Secretary: Prof. Felix M. Luti

Honorary Treasurer: Prof. Dominic W. Makawiti

OFFICE BEARERS: 2011 – 2021

Chairman: Prof. Raphael M. Munavu

Honorary Secretary: Prof. Ratemo Michieka

Honorary Treasurer: Prof. Josephine W. Ngaira

BRIEF HISTORY OF KNAS

The History of the Kenya National Academy of Sciences (KNAS) can be traced back to the East African Academy of Scholars (EAAS) formed in 1962 by the East African Scholars based at the then Makerere University College in Uganda. The East African Academy was composed of three branches each in Kenya, Tanzania, and Uganda. Each branch had its office bearers of Chairman, Secretary, and Treasurer and annually reported to the Governing Council of the main Academy through the Executive Committee.

The Headquarters of the EAAS central office was in Kenya housed by the then East African Common Services Organization (EACSO) which later became the East African Community (EAC) from which the EAAS also derived its funds. This dictated that the Secretary of the EAAS had to be a Kenyan. Thus the late Prof. R. J. Olembo became the first Secretary followed subsequently by the late Prof. T. R. Odhiambo, late Prof. Richard Odingo, late Prof. J. Mungai and the late Prof. Festo A. Mutere.

The East African Community (EAC) was established as a result of a treaty between Kenya, Tanzania and Uganda and was a typical example of a Sub- regional organization whose Members were connected through the history of British Colonialism and had experienced integration solutions in Colonial times. The East African community collapsed in 1977. On the dissolution of the East African Community in July 1977, the Kenya Government through the Office of the President, requested the Kenya Branch of the EAAS which at that time was under the Chairmanship of Prof. C. P. M. Khamala to establish a National Academy which would then receive Government funding and free offices. This has been happening ever since. This request was accepted and on 7th December 1977 the Kenya National Academy for the advancement of Arts and Sciences was created as a Society under the Society's Act. At the same time Prof. T. R. Odhiambo and a few others established the Kenya National Academy of Sciences under the Company's Act.

Because of the small Kenyan Scientific Community, two Academies were found to be rather superfluous and one Academy was found sufficient. In this regard, the National Council for Science and Technology (NCST) took the initiative to discuss with the Country's scientific community to determine the 'Academy we want'. Consequently the NCST formulated a draft constitution for the creation of the Kenya National Academy of Sciences (KNAS). The NCST then approached the Cabinet with a request to have the establishment of KNAS formally approved by the Government. It was the Cabinet's feeling that the Scientific Community itself should take the initiative to create such an Academy. The NCST then invited Curriculum Vitae from across section of scientists who were to be entrusted with the Draft Constitution for the processing to register KNAS under the Auspices of the NCST. At a meeting convened on Thursday, 8th December 1983 by the NCST, 15 Scientists were elected by the Scientific Community charged with the registration of a new Academy to be known as the Kenya National Academy of Sciences. To facilitate this, the NCST submitted to the group a Draft Constitution approved by the NCST's steering committee. The Group of 15 held several meetings that culminated in the ratification of the Draft Constitution. The ratified Constitution was submitted to the registrar of societies by an interim Committee of officers composed of the following officers who became to be known as founding Fellows.

FOUNDING FELLOWS

PROF. MOHAMED HASSAN ABDULAZIZ

KNAS Membership No.002

Prof. Abdulaziz was born in 1932 in Mombasa where he also received his early education. He joined the School of Oriental and African Studies of the University of London and was awarded a B.A. (Hons) degree in Classical and Modern Arabic, and an M.A. degree in Swahili. He then joined the University College, London where he obtained a Ph. D. degree. He was appointed Lecturer and Senior Lecturer in Dar-es-Salaam University College between 1967 and 1970. In 1970 he transferred to the University of Nairobi as a Senior Lecturer becoming full Professor in 1978. Was variously Chairman of the Department of Linguistics and Dean of Faculty of Arts between 1972 and 1983, and on a number of occasions acted as Principal of the College of Humanities and Social Sciences.

Prof. Abdulaziz has many publications in the area of language and linguistics. He was a member of many major international linguistics associations, and serves on the editorial boards of a number of journals. Was appointed visiting professor or scholar in numerous universities in America, the Middle East, Europe and Africa and attended various international conferences in different parts of the world. He was Chairman of the Social Sciences Committee of the National Commission for UNESCO, and Member of the National Culture Council.

PROF. PHILIP MWANGI GITHINJI

KNAS Membership No. 003

Prof. Githinji was born in Kamacharia Location, Murang'a County in 1936. He attended Kagumo High School, Makerere College, Morgan State College, Purdue University (BSME-1960) California Institute of Technology (MS -1961, ME -1963) and did research at the University of Nairobi (Ph.D. – 1975). He is a Professor of mechanical engineering at the University of Nairobi where he has been a member of staff since August 1965. He was nominated for the Governor's Prize for the best second year student at Makerere College (1957 -1958), and African-American Institute Scholar (1958-59); and was admitted to Tau Beta Pi (Engineering Honour Society in the USA) – 1960. He is a registered Engineer in Kenya and a Fellow of the Institution of Engineers of Kenya. Prof. Githinji has done research and published in the fields of boiling heat transfer, drying (heat and mass transfer) of agricultural products, energy resources and environmental impacts and engineering education. He has served extensively in many national and international technological, education and research council/boards including chairmanship of the Industrial Science Advisory Research Committee and the Kenya Industrial Research and Development Institute (KIRDI).

PROF. KHAMALA, P.M. CANUTE

KNAS Membership No. 006

Prof. Khamala was born in Bunyala Location, Kakamega County in 1938. He attended St Peters, Mumias and St. Mary's Yala, before proceeding to Makerere University College for his 'A' level equivalents. He attended the University of Liverpool in the United Kingdom, where he was awarded a B.Sc. Degree in Botany and Zoology in

1965. He joined the Department of Zoology of the Nairobi University College as a Research Assistant in 1966. He graduated with the Ph.D. degree in systematic entomology in 1968 at the University of East Africa. He joined the staff of the Department of Zoology of the Nairobi University College in 1966 where he was successively a Research Assistant, Lecturer, Senior Lecturer, Associate Professor and currently Professor of zoology. Besides his career, he was the Secretary of the Kenya National Academy of Sciences, 1983 - 1986.

He devoted much of his professional career, at first, to the study of Insect Vectors of Diseases including *Culicoides* and mosquitoes and later insect pests of cereal crops, grain legume and vegetables. He has published about 35 scientific articles and books related to pest and vector control, insect taxonomy and pest management.

PROF. MALO, OTIENO JOSEPH

KNAS Membership No. 009

Prof. Otiemo Malo was born in Kano, Kisumu County in 1941. He received his early education at the Friends High School, Kamusinga before being awarded a U.S.S.R. scholarship to study in Moscow. On his return from studies in the USSR in 1968, he joined the Department of Physics, University of Nairobi. He has since risen through the ranks to his current position of Professor of physics. He has been very active in curriculum development within the Department of Physics and has taught most of the undergraduate and postgraduate basic and specialized courses. His research interest, include theoretical studies in plasma, solid state, statistical and mathematical physics, quantum chemistry, energy and transportation. Prof. Malo is a member of the Institute of Physics of the United Kingdom (M.Inst.P.)

He has published a considerable number of scientific papers in journals of international repute and also participated and presented papers in many national and international meetings on science and technology. For approximately two years, he was consultant for UNESCO Regional Office for Science and Technology in Africa (UNESCO-ROSTA) in the basic science. He is currently Coordinator of the Physics Sub-network of Scientific and Technological Institutions (ANSTI). He is the founder member and current Chairman of the Kenya National Association of Physicists (KNAP). He is also a member of the National Commission of Science, Technology and Innovation Committee on Application of Nuclear Science and Technology (CoANST) and immediate past Chairman of the Kenya National Academy of Sciences (KNAS).

PROF. MATI, KIMANZI JAPHETH

KNAS Membership No.010

Prof. Mati was born in Migwani Location, Kitui County in 1938. He attended Alliance High School before proceeding to Makerere University College where he was awarded M.B. and Ch.B. degrees in medicine and surgery in 1965. After his postgraduate professional training in Glasgow and London, he joined the Department of Obstetrics and Gynecology of the University of Nairobi in 1970. He has served as full Professor and Chairman of the Department of Obstetrics and Gynecology since 1975. To date over 50 specialists in obstetrics and gynecology have trained under his tutelage. He is a member of the Kenya Obstetrical and Gynecological Society, editor of the *Journal of Obstetrics and Gynecology of Eastern and Central Africa* and Editor-in-Chief of the *Kenya Journal of Sciences*. He serves on various national and international professional committees.

His main research interest is in aspects of Reproduction; and in 1978 he played a major role in the establishment of the National Centre for Research in Reproduction (NCRR) of which he has remained Chairman since its inception. He has published over 70 papers.

PROF. WANDIGA, OYOO SHEM

KNAS Membership No. 014

Prof. Wandiga was born in Karachuonyo, Homa Bay County in 1939. He received his early education at Kamagambo School and Pine Forge Institute, Pennsylvania. He received his B.Sc., M.Sc and Ph.D degrees at Howard, Maryland and Case universities respectively. He joined the Department of Chemistry at the University of Nairobi in 1972, where he has held various positions, including Chairman and Professor of Chemistry. He is a member of many national and international scientific organizations, including, Chairman, Natural Sciences Committee of the Kenya National Commission of UNESCO, a member of the International Society for Trace Element Research in Humans and Coordinator of the Eastern and Southern Africa Environmental Chemistry Network.

Prof. Wandiga has had a long-standing research interest in coordination chemistry, and environmental and pollution chemistry. He has to date published over 40 scientific papers mainly in the area of coordination and analytical chemistry. His studies of heavy metal content in living specimens have revealed moderate to high concentrations in Kenya Human hair. However, the concentration of these metals in the tissues of fish from the Winam Gulf of Lake Victoria and Indian Ocean are low. Similarly, the metals concentration in the Kenyan lake waters and sediments are low. His recent achievement involves the identification of termites as a major biological source of methane and carbon dioxide emission of the tropics feeding on fungus combs and soil do emit methane and carbon dioxide as do lower termites.

Deceased Founding Fellows:

Prof. Thomas R. Odhiambo

Prof. Festo Abby Mutere

Prof. Simeon Hongo Ominde

Prof. Ambrose Onyango Wasuna

Dr. Benjamin E. Kipkorir.

Prof. Samson Gombe

Prof. Edward George Kasili

Prof. Gerald Munene Mugeru

Prof. John Onyango Kokwaro

FOREWORD

The Kenya National Academy of Sciences (KNAS) is a learned, non-political institution, which was founded on 2nd November 1983. The main function of KNAS is to cooperate and collaborate with the Government of Kenya, other scientific organizations, the scientific community and the general public in promoting the application of scholarly/scientific knowledge and technology for national development.

KNAS promotes all fields of sciences, including humanities and technology. The major objectives and purposes for which the Academy is established are:

To promote the advancement of scientific and technological knowledge, establish and enhance standards of scientific and technological achievements in Kenya and to recognize outstanding contributions to ST&I.

- i. To establish and maintain association and relations between Kenyan scientists and the international scientific community.
- ii. To publish and assist in the dissemination of scientific knowledge.
- iii. To cooperate with the National Commission of Science, Technology and Innovation (NACOSTI) in the formulation of policies and programmes designed to encourage the development and application of science and technology for national development.
- iv. To provide sound scientific advice to Government for effective policy formulation.
- v. To undertake all such other activities as may be consistent with the objectives of the Academy and in alignment with the constitution (2010) and Vision 2030.

The above objectives are realized through a wide range of activities such as publications, scientific meetings, public lecture series, Kenya Science Congress, research projects and consensus studies.

The past three decades have witnessed significant changes in the relationships and interactions between science, society and development. Notwithstanding the achievements, new challenges have emerged, which require innovative solutions by all professions including engineering, health, industrialization, agriculture and ICT.

Membership of the KNAS is open to Kenyans of specified academic standing through application and subsequent election in accordance with the by-laws of the Academy. Election is guided by an evaluation process based on contribution of new knowledge generated through research

Fellowship and Membership is specifically conferred on persons who have made outstanding contribution in the field of science, technology and innovation.

Honorary Fellowship is conferred on persons who would otherwise not qualify for election but who have nevertheless made outstanding contribution in furtherance of

science and technology. Fellowship and membership to the Academy is a mark of scientific distinction and integrity.

KNAS subscribes on behalf of the Kenya scientific community to the following international organizations among others:

- ❖ The International Science Council (ISC)
- ❖ The International Foundation for Science (IFS)
- ❖ The Network of African Science Academies (NASAC)

Through this collaboration, Kenyan researchers have received funding in support of research, travel, meetings, conferences and participation at international fora.

This publication is the second edition of the “Profiles of Fellows and Members” of the KNAS. The publication provides essential background information (training, competencies, experiences, research output) for each fellow and member. The information provided should be of use to all stakeholders who wish to engage with fellows/members of various categories, skills and competencies. This publication has four key messages.

First, Kenya is endowed with a rich and variegated STI knowledge base encompassing all critical sectors of the national economy.

Second, the number of women specialists in critical sectors is relatively low. Consequently, there is need to increase the number of female members and fellows in the Academy.

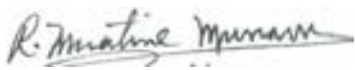
Third, most specialists are based in research and university institutions. Hence, there is need for the private sector to invest more in knowledge development and research.

Fourth, there are relatively fewer fellows from the social disciplines and humanities, yet these sectors play a critical role in socio-economic development. Taking into consideration the above challenges, the KNAS has established the Young Academy to mentor emerging scientists. The Young academy, which was launched on 3rd February 2014, has a membership of 30, under the patronage of selected Fellows of the Academy.

It is expected that this publication will be the platform for dialogue on capacity development in critical sectors of the economy and leadership. In addressing the identified challenges will enable Kenya move forward to a more inclusive nation and promote shared prosperity by all. It is expected to trigger public discourse on the need to invest on research and development in order to generate knowledge for driving socioeconomic development.

The anticipated users of the publication are policy makers, and those in the private sector. It also includes those who wish to seek scientific advice on specific items. It is also useful to Government agencies, development partners at both the national and county government levels.

On behalf of the Governing Council, I wish to extend my sincere gratitude to the Cabinet Secretary, Ministry of Education, Science & Technology (MoEST) and the Principal Secretary, Ministry of Education, Science & Technology (MoEST) for their guidance and funding towards this project. I also wish to thank the Director General, National Commission for Science, Technology and Innovation (NACOSTI) for providing funding, office space and related services for the Academy's Secretariat. I wish to further acknowledge the technical support from **Mr. Kipkoskei S. Buigutt and Mr. Mike Stuma** of Moi University who edited and formatted this booklet for publication.



Prof. Raphael M. Munavu
Chairman
Kenya National Academy of Sciences

ABOUT THE ACADEMY

Science, Technology and Innovation refer to an exponentially evolving phenomenon. Substantial data is being generated whose potential benefits can only be determined by processing it. The Kenya national Academy of sciences KNAS has a mandate to bring benefits of Science, Technology and innovation to humanity. The Academy also assists in providing science-based solutions to the unique challenges in the country by using its diverse disciplines and rich pool of scholars. The Academy requires inspirational leadership, governance and sufficient funding to implement its objectives.

The Academy has a fundamental aim to cooperate and collaborate with the government of Kenya, other scientific organizations and the general public in the mobilization of the scientific community in Kenya for the promotion and use of all aspects of science, technology and innovation for national development.

VISION:

An Independent advisory organization for the promotion of science technology and innovation.

MISSION:

To mobilize the scientific community in the creation, maintenance. Advancement and dissemination of knowledge for the betterment of humanity.

VALUES:

- ❖ Sustainability
- ❖ Professionalism
- ❖ Integrity
- ❖ Creativity
- ❖ Equity.

OBJECTIVES OF THE ACADEMY

The Academy promotes all fields of Sciences, including humanities and technology. The major Objectives and purposes for which the Academy was constituted are:

To promote the Advancement of scientific and technological knowledge, establish and enhance standards of scientific and technological achievements in Kenya and to recognize outstanding contributions to science Technology and innovation.

To establish and maintain association, relations. Linkages and partnerships between Kenyan scientists and the International scientific community.

To publish or assist in the publication and promotion of scientific knowledge.

To cooperate with the National Commission for Science and Technology and Innovation (NACOSTI) in the formulation of policies and programs designed to encourage the development and application of science Technology and Innovation for national development.

To undertake all such activities as may be consistent with the objectives of the Academy and in alignment with the constitution (2010) and vision 2030.

MEMBERSHIP

There are three categories of membership: Fellows. (FKNAS). Honorary Fellows and Members (MKNAS). Membership of the Academy is open to citizens of the Republic of Kenya of certain academic standing through application and subsequent election in accordance with the by-laws of the Academy.

The Governing Council of the Academy confers Fellowship on persons who have made outstanding contribution in the field of Science, Technology and Innovation. Honorary Fellowship is conferred to persons who would otherwise not qualify for election but who have made outstanding contribution in the furtherance of science, Technology and innovation.

Fellows and members of the Kenya National Academy of Sciences are granted the Initials FKNAS and MKNAS after their names to indicate their status in the Academy. The initials are a mark of scientific distinction and Integrity.

SECRETARIAT

Mrs. Noel L. Abuodha	-	Administrator
Mr. Edward Ayienda	-	Finance Officer
Mr. Bernard Mutui	-	Programs Assistant
Mr. James Muia	-	Driver
Ms. Mary Awinja	-	Office Assistant

PHYSICAL LOCATION

Utalii House, Utalii Street, 9th Floor, Room 924

.....
P.O. Box 4618 - 00100

Nairobi

Tel: +254-20-311714 (Direct Line)

+254-2241349 Ext 1135

Fax: +254-20-311715

Cell Phone +254 718 780649

Email: info@knasciences.or.ke

URL: www.knascience.org



PROF. JOHN DEMESI MANDE

KNAS Membership No.095

Prof. John D. Mande is an Associate Professor and Academic Head of Veterinary Surgery and former Chairman of Department of Clinical Studies, Faculty of Veterinary Medicine, University of Nairobi. He holds Bachelor of Veterinary Medicine (1989), Master of Science in Clinical Studies (1993) and PhD in Clinical Studies (2003) degrees from University of Nairobi. He has over 30 years working experience in teaching, research, and clinical practice as Assistant Lecturer (1992), Lecturer (1993), Senior Lecturer (2004) and Associate Professor (2015 to date). He coordinates teaching, research and clinical practice of Veterinary Surgery to undergraduates and postgraduates, and has supervised 5 PhD students to completion (and 2 ongoing) and 11 Masters students to completion (and 4 ongoing). He serves as the Departmental Postgraduate Studies Coordinator, Member, Faculty Postgraduate Studies Committee, Chairman, Faculty Curriculum Development Committee, and is an active Member of the Faculty Board and College Academic Board.

He is a Member of Kenya Veterinary Association, and Kenya Small and Companion Animal Veterinary Association. He is a Gold Life Member (No. 099), and Chairman, Veterinary Medicine Chapter, University of Nairobi Alumni Association. As an Accredited Peer-Reviewer, Commission for University Education, he has served on the Panel of Experts that reviewed BSc in Animal Health/Animal Science curricula for two Public Universities. As an Accredited Principal Investigator for Pest Control Products Board, he conducted clinical field efficacy trials for two antiparasitic drugs (Fipronil - Norbrook Ltd and Advantix -Bayer Animal Health EA Ltd), which are registered for use on dogs in Kenya.

He has over 12 years of senior administrative and corporate leadership and governance experience, having served as Chairman, Department of Clinical Studies, University of Nairobi (2013-2015), Director, Kenya Dairy Board (2006-2009), and Elected Director, Kenya Veterinary Board (2012-2018). He is a Member, Internship Committee and Adhoc Committee on Development of Guidelines for Televeterinary Medicine, Kenya Veterinary Board. Prof. Mande participated in formulation of the Veterinary Surgeons and Veterinary Paraprofessionals Regulations 2013, Veterinary Surgeons and Veterinary Paraprofessionals (Code of Ethics) Regulations 2015, Veterinary Surgeons and Veterinary Paraprofessionals (Veterinary Medicines Directorate) Regulations 2015, Revised Harmonized Curriculum for Artificial Insemination and accompanying Training Modules, 2014, Minimum Standards and Guidelines for Certificate, Diploma and BSc. in Animal Health and Production and Bachelors degree in Veterinary Medicine, 2013 and Guidelines for Inspection and Accreditation of over 20 Animal Health Training Institutions and 2 Veterinary Schools, and the Veterinary Internship Guidelines. He has over 40 peer-reviewed publications in international scientific journals and is recipient of the International Veterinary Radiology Association (IVRA) Travel Fellowship (2003), Veterinary Academia Award (2009) by Kenya Veterinary Board/Kenya Veterinary Association, and the University of Nairobi Scholarship (1989). He is a former Editor-In-Chief, Kenya Veterinarian.



PROF. DANIEL OCHIENG' OLAGO

KNAS Membership No.110

Prof. Olago was educated at the University of Nairobi where he graduated in 1989 with a BSc. degree (First Class) in Geology/Physics and in 1993 with an M.Sc. in Geology as a DAAD Scholar. He was elected the Rhodes Scholar for Kenya in 1990, and under that programme undertook his D.Phil. studies at the University of Oxford, graduating in 1996. Professor Olago, currently Associate Professor of Geology and Director of the Institute for Climate Change, University of Nairobi, has served as an academic member of staff at the University of Nairobi in the Department of Geology since 1995, and in the Institute for Climate Change and Adaptation as the Coordinator for Natural and Basic Sciences and Head of the thematic area “Environment, Water and Ecosystems” from 2013 to 2020.

Prof. Olago has been involved in multi-disciplinary research projects, training, capacity building activities and consultancies on global environmental change in sub-Saharan Africa for just over 30 years, including supervision of PhD (13 completed) and MSc students (34 completed) as well as postdoctoral fellows (4, two completed). His research interests are in the following areas: Environmental Geology, Water Resources and Hydrogeochemistry, Palaeoclimatology and Palaeoecology, Geolimnology, and Global Environmental & Climate Change – Past, Present and Future. Indeed, his research work revolves around the interface of the lithosphere, biosphere, hydrosphere and atmosphere, and also touches on the social and ecological dimensions that relate to the four spheres. He has published widely in these fields of research, with over 140 publications (90 peer reviewed journal articles, 21 peer reviewed book chapters, 12 edited books, 6 papers in peer reviewed proceedings, 8 white papers, and several technical reports).

Prof. Olago has received several merit and research awards. In 1989, he won a DAAD scholarship to undertake his Masters degree at the University of Nairobi, and in 1990 won the only Rhodes Scholarship for Kenya to undertake his PhD at University of Oxford, UK. In 1998, Prof. Olago won the International START Young Scientist Award for a paper that was published in *Global and Planetary Change* Vol. 26(1-3): 159-171. He was also a Lead Author in the Intergovernmental Panel on Climate Change Fourth Assessment Report that won the Nobel Peace Prize for 2007. He has also been recognised by the African Academy of Sciences (AAS) and the Association of Commonwealth Universities (ACU) for successfully supervising two postdoctoral research fellows between 2015 and 2017. Over the years, Prof. Olago has won several research and development grants. Currently, he is involved in five on-going research projects as a Co-Principal Investigator and directing the research efforts in Kenya. These projects are funded to a cumulative total of over Ksh. 2.6 billion.

Prof. Olago is recognised internationally as a scientist of repute. He is a past member of the IGBP-PAGES Scientific Steering Committee and the CLIVAR-VACS Panel. Presently, he is a Fellow of the African Academy of Sciences (elected 2016), Fellow of the Geological Society of Kenya (elected 2007), and member of the Kenya National Academy of Sciences since 2005. He has also served as Chairman of the Geological Society of Kenya for two terms. Currently, Prof. Olago is Chairman, Network of African Science Academies (NASAC) Water Programme Steering Committee, and a member of the International Lake Environment Committee (ILEC). He also serves as an Editorial Board Member of *Palaeoecology of Africa* (since 2007), *The Holocene* (since 2005) and *Quaternary International* (since 2004) and is the Founding Editor (2013) of the *Africa Journal of Physical Sciences* that is published online by University of Nairobi.



PROF. SHAUKAT A. ABDULRAZAK

KNAS Membership No.149

Prof. Abdulrazak is the Director for Africa, Technical Cooperation Department at IAEA. He is the former Vice-Chancellor UMMA University, Kenya. Served as CEO, Kenya National Commission for Science, Technology, and Innovation (NACOSTI) for 6 years. During his tenure he transformed the institution to vibrant one, addressing areas of Science Technology and Innovation (STI) in Kenya. He served as Deputy Vice-Chancellor (Research and Extension) Egerton University for 5 years. He served as the Chairman of African Technology Policy Studies (ATPS) Board for 4 years. Abdulrazak served as a member of the National Economic Social Council (NESC), Kenya – advising the Government of all matters related to STI, Chairman of Lamu-Port Southern Sudan-Ethiopia Transport Corridor (LAPSSET) Authority, Chair, Kenya Marine and Fisheries Research Institute Board (2005-2007) and Chairman, African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology (AFRA) from 2012 to 2013. Abdulrazak also served in several other boards including; Kenya Meat Commission (KMC), Consortium for National Health Research (CNHR), National Museum of Kenya, Kenya Agriculture Research Institute (KARI), Kenya Medical Research Institute(KEMRI), Member of the Inter-University Council of East Africa (IUCEA), Council member of UMMA University, Kenya, Commissioner of the African Commission on Nuclear Energy (AFCONE), Kenya Representative and Governor of the International Centre for Genetic Engineering and Biotechnology (ICGEB) and Biological and Toxins weapons convention. While on these Boards, Abdulrazak contributed immensely on how institutions should be run effectively and efficiently ensuring that they have smart key performance indicators and be able to deliver on their mandate. He represented Kenya in several institution above and advocated for stronger collaboration and partnership within and outside Africa. He was decorated with the Elder of Burning Spear (EBS) and Moran of the Order of Burning Spear (MBS) by His Excellency the President of Kenya, in 2019 and 2008 respectively. He was included as a subject of biographical record in Marquis Who is Who in the world 2010 Edition due to his exemplary performance in his work. He taught at Egerton University 1997-2007 as a lecturer to full Professor in 2005; Kilifi Institute of Agriculture 1987-1996. He has supervised several postgraduate students both at the PhD and MSc levels. He was also an External Examiner at Makerere University between 2008 and 2010. Abdulrazak is a Fellow of The World Academy of Sciences (FTWAS), the African Academy of Sciences (FAAS), Japan Society for the Promotion of Sciences (FJSPS), Matsumae International Foundation (FMIF), and Been a member of the Chartered Biologists UK (CBiol) and Fellow of Society of Biology(FSB) till 2016. He is also a Fellow of Kenya Institute of Management (FKIM), member of the Kenya National Academy of Sciences (MKNAS) and a member of the Harvard Kennedy School Executive Alumni, USA. He has published over 120 papers in international journals, scientific conferences, and symposia proceedings (see attached list of publication). He has also been presenting the Science and Technology field to stakeholders in a simplified way through a weekly column. He is also an Editorial Board member and

reviewer of four International refereed journals. His completed his Undergraduate studies at Egerton University, Kenya, his MSc and PhD at University of Aberdeen, UK and his Post Doctorate at Shimane University, Japan and Postgraduate Diploma in Innovation and Change from York St John University.



PROF. BENSON B. A. ESTAMBALE

KNAS Membership No.150

Prof. Estambale is a Deputy Vice-Chancellor (Research, Innovation and Outreach) at the Jaramogi Oginga University of Science and Technology. He is a Professor of Medical Microbiology and Infectious Diseases. More importantly, he is a Medical Doctor who has specialized in the management and control of tropical and infectious diseases.

His academic passion in the area of tropical and infectious diseases saw him awarded a Commonwealth Scholarship in 1986 for a Master of Science (MSc) and a Diploma in Tropical and Infectious Diseases (DTM&H) at the University of Liverpool, UK. Similarly, he was granted a Danida Fellowship Award to pursue a doctoral degree through a sandwich programme at the Danish Bilharziasis Laboratory, Denmark in 1990.

Over a span of thirty years, Prof. Estambale has played a very instrumental role in research activities that have focused on various health research activities of public health importance. These include HIV/AIDS, Malaria and other neglected diseases of the poor. He has spearheaded the completion of research work on the relationship between climate change, population health and vector borne diseases including malaria and rift valley fever. Concomitantly, he has served in various capacities either as a principal investigator, project director or programme coordinator as well as committee/board member of various research projects and programmes. Significantly, he was a Principal Investigator in the WHO/TDR/IDRC multi-country project on population health vulnerabilities and resilience to climate sensitive vector borne diseases in Africa as well as Coordinator of the Jaramogi Oginga Odinga University of Science and Technology (JOOUST) component of the CDC funded University HIV Fellowship Training Programme. He has also been involved in the scale-up programmes for antiretroviral therapy (ART) in health facilities within Nairobi County.

A milestone in his career as a doctor-turned-researcher, he was the founder and pioneer Director of the University of Nairobi's Institute of Tropical and Infectious Disease (UNITID) for 9 years where he was instrumental in establishing the Institute and setting up the infrastructure for graduate degree training in health research and fellowship programmes as well as the Level -3 advanced bio-containment Laboratories.

Prof. Estambale is an avid grant writer and an experienced resource mobilizer with grants totalling to several billions in Kenya shillings. At JOOUST, he is currently holding five (5) research grants awarded by the World Health Organization, National Research Fund (NRF) South Africa, NRF-Kenya, USAID and VLIR-UOS Belgium. He has attended several conferences locally, regionally and internationally. He continues to publish immensely in refereed journals at the same time making contribution to book writing and review. As a mentor, he has and continues to supervise both MSc. and Ph.D. students to successful completion. He is a health consultant and a member to several professional bodies aligned to his area of medical expertise.



PROF. JOSEPHINE KHAOMA W. NGAIRA

KNAS Membership No.16

- Prof. Ngaira is a scholar, an educator, a researcher, a mentor, a consultant, and administrator of great repute who was born in Yalusi village, Bungoma County in 1960.

Academic Qualification: Prof. Josephine K W. Ngaira is a full Professor of Geography (Climatology) of Masinde Muliro University of Science and Technology. She earned a PhD in Geography (Climatology), in 1999 and MSc in Geography (Climatology) in 1993, both from Moi University, Kenya. She earned a B.Ed Arts, (Geography and Religion) from the University of Nairobi in 1983. Prof Ngaira attended Mukumu Girls High School for both “O” and “A” Level education. She scored *Division 1* in East African Certificate of Education (EACE), *scored 16 out of 19 points (grades B,B,B,4)* in East African Advanced Certificate of Education (EAACE) in 1978. She has four (4) Professional Certificates: i).“*Transforming Our World: Achieving the Sustainable Development Goals*” from Columbia University, USA (2019). (ii) “*Disaster Management*”, from World Bank Institute (2013), (iii) “*Comprehensive Disaster Risk Management*” from Washington DC (2012), (iv)“*Remote Sensing Education for Educators in developing countries*” from Stockholm University, Sweden (2004).

Professional achievements: Prof Ngaira is a Professor of Geography (Climatology). She is globally recognized as an expert and authority in Climatology, Climate Change, and Environmental Sciences. She was a panel speaker at the 22nd session of the UN Commission on science and Technology for Development in Geneva, Switzerland 2019 and was an Expert Reviewer with the 5th IPCC Assessment Report. Prof Ngaira procedurally and systematically rose through ranks from Tutorial Fellow (1993) to Full Professor in 2008. She has given twelve (12) invited keynote lectures on climate change, Water and environmental science in the following Countries: UN Geneva, Switzerland on climate change and community resilience (2019), Darlana university Sweden on teaching Geography using GIS (2010), Ede/Wageningen Netherlands on Climate Smart Agriculture (2011) Durban South Africa on The climatology of Equatorial East Africa (2000), Reduit Mauritius on Water resource Management in Kenya (2012), Bagamoyo, Tanzania on Climate change and biodiversity in a changing climate (2009) Dar Es Salaam on Climate change on Food production (2010), Arusha Tanzania on Impact climate change mitigation: Adopting the green energy option (2007), Entebbe Uganda on climate change and agriculture in Africa by 2030 (2008), African Academy of Science Nairobi on Climate change and water challenges: The road for Africa (2011), AMREF Kenya on climate change and sustainable livelihoods in Eastern Africa (2007 &2008), (2011), Kisumu, Kenya on Droughts and pastoral activities in Northern Kenya(2013 & 2018), Bungoma Kenya (2015), Nakuru Kenya (2009).

Teaching and Supervisions. Prof Ngaira has taught twenty three (23) Science courses in the University, She developed eleven STEM course; six Bachelors, three Masters and two PhD degree courses in Climate Change, Geography, Environmental Science and Disaster Management which are being taught in Kenyan Universities. Prof has supervised over twenty

(20) postgraduate students, examined over forty research theses and projects. Before 1993, Prof Ngaira taught Geography and Religion in various High Schools and Teacher Training colleges in Kenya between 1983 and 1992 including Mang'u National School, Kamiti high and Kaptumo high schools, then taught at Mosoriot TTC, Ereg TTCi and Moi Diploma Teacher Training College.

Research Experience. 2010 -2014: Linneaus-Palme Exchange Programme for staff and student exchange between Maseno University and Dalarna University Sweden “For capacity building in Geography using GIS-technology and ICT Pedagogy in resource mapping and development in Western Kenya”, Awarded kshs 4000,000. **2005-2009:** VicRES Research funds award on “Sustainable Utilization of Biomass Resources for increased Energy products accessibility and improved community welfare in the Lake Victoria Basin”. A VicRes Project for Kenya, Uganda and Tanzania, awarded (kshs 2,000,000). **2019-2021,** Member of IAP Research project on “Climate change and Health in Africa”, Awarded kshs, 500,000

Publications: She has over 63 publications categorized as: Three (3) University level text books, Five (5) Chapters in text books, Forty six (46) Journal papers, Twelve (12) keynote published lectures and eight (8) online commentaries. She has presented over Forty (40) papers in both National and International conferences and attended eighty (80) conferences, workshops and seminars globally and locally.

Professional Affiliations, Prof Ngaira is affiliated to seventeen (17) Professional Bodies. The most outstanding and active ones include: Fellow, Kenya National Academy of Sciences (FNAS), Full Member, The Scientific Research Honor Society (Sigma Xi,) Member and Chairperson- International Geographic Union (IGU) Kenya Chapter, Member, International Center for Climate Change Adaptation and Development (ICCCAD) plus others.

Leadership/ Administration: Prof Ngaira is serving as Hon Treasurer, Kenya National Academy of Science (KNAS) and Chairperson, International Geographical Union (IGU) Kenya Chapter. She has served as Deputy Vice Chancellor, Academics and Student Affairs (MMUST) 2013-2018. Member of Maseno University Council, 2008-2011, Founding Director, School of Environment and Earth Sciences (Maseno University) 2004-2012, Chairperson, Department of Geography, 2001-2003, Chairperson, Board of Governors, Sang'alo Institute of Science and Technology, 2014-2017 Chief Editor, Maseno Journal of Education, Arts and Science (MJEAS), 1996-2006, Chairperson, Maseno University SACCO Society, 2001-2004, Member, Universities Joint Admissions Board (JAB), 2005-2012, Vice Chairperson, appointments and promotions Board Masinde Muliro University, Member, University Senate 2001 to date, Board Member, University Tender Committee, 2005-2011.

Academic policies: Prof Ngaira developed a total of fourteen academic related policies and strategies which have improved management of University Education in Kenya. Some include; Policy on Admitting female students to Kenyan Universities at 2 points lower than the cut-off points, which was implemented in 2010 to increase the number of female students joining universities, The Chaplaincy policy, Talent scholarship policy in force at MMUST, Examination Irregularity policy, Examination Resit and Retake policy, Conference Funding policies. **Awards Received,** Prof Ngaira has received twenty three (23) academic and

professional awards in forms of Certificates, Cups, Plates and Emblems from both the National and International institutions.



PROF. JOSEPH OWUOR LALAH

KNAS Membership No.169

Prof. Lalah was born on 30th December 1957 in Nyabeda Village, Ugunja Sub location, Uholo Location, Siaya District. He attended Ugunja Primary School from 1967 to 1972 and Alliance High School from 1973 to 1978. He joined the University of Nairobi in 1979 and obtained a BSc (honors) degree majoring in Chemistry and Biochemistry, in 1983. In 1984 he was admitted at Leeds University in the United Kingdom on a British Council scholarship, and graduated with a postgraduate Diploma in Fuel and Energy and an MSc in Combustion and Energy in 1986. In 1989, he enrolled for a PhD degree in Chemistry at the University of Nairobi and graduated in 1994.

Prof. Lalah's first employment was with the Ministry of Energy, Nairobi, in 1983 but soon after his return from Leeds he moved to the Kenya Industrial Research and Development Institute (KIRDI) in 1989 where he was later appointed to head the Energy and Environment Division in 1994. He joined Maseno University in 1995 as a lecturer. During his employment as a lecturer at Maseno University, he took leave of absence from time to time for various postdoctoral research positions at the International Atomic Energy Agency - Marine Environment Laboratory in Monaco, the German National Research Centre for Environment and Health in Munich, Germany, and the Centre of Ecology and Hydrology (Windermere) of the Natural Environment Research Council in the United Kingdom, before finally settling at Maseno University as a senior lecturer in environmental and inorganic chemistry. During the postdoctoral research appointments he acquired extensive research experience on environmental chemistry and ecotoxicology as evidenced in his publications.

In 2010 he was appointed Associate Professor in the Kenya Polytechnic University College and Director in charge of Research and Postgraduate Studies. In 2013, he was appointed Director, School of Graduate and Advanced Studies, Technical University of Kenya, in charge of postgraduate, postdoctoral and advanced studies, a position he still currently serves in. In 2014, he was appointed a Full Professor of Chemistry in the Department of Chemical Science and Technology. His main area of lecturing is in inorganic/environmental/analytical chemistry and his research area is mainly in environmental chemistry and ecotoxicology. He has authored numerous publications which include articles in several refereed journals as well as book chapters. He has been a member of the Kenya Chemical Society, the Society of Environmental Toxicology and Chemistry (SETAC), Stop Poisoning Wildlife Taskforce (Wildlife Direct, Kenya), an alternate coordinator for the National Commission for Science Technology and Innovation (IAEA projects) and an affiliate member of the IUPAC (Crop Protection Committee) and the KNAS.

Prof. Lalah has won several research grants and awards, including the National Research Fund (Kenya) and the prestigious Alexander von Humboldt Research Award in 2012 in recognition of his research work and capacity building. He has successfully mentored over 33 undergraduate, 19 Masters' and 7 Doctoral students through his exemplary research project supervision. He is married with four children.



PROF. KIBET NGETICH

KNAS Membership No.208

Prof. Kibet Ngetich was born on 27th December 1966 in Nandi County. He went Olmaroroi Primary School, Lelmokwo High School and Kapsakwony High School. Thereafter, he studied at University of Nairobi where he obtained BA and MA degrees.

Ngetich holds a Doctor of Philosophy degree in Sociology from Kenyatta University (undertaken on DAAD Sandwich programme scholarship with University of Cologne and Ludwig-Maximillian University in Munich, Germany).

Currently, Prof. Ngetich is associate professor of Sociology, department of Peace, Security and Social Studies at Egerton University. He previously worked as a lecturer in the department of Sociology at Kenyatta University. Ngetich has wide experience in university administration and management, having served as Head of Criminology and Security Studies and later as Dean of Faculty of Arts and Social Sciences at Egerton University until 2017. He has served and continues to serve in several University Committees. He was the chairman of Kenya DAAD Scholars Association (Egerton chapter) from 2013 to 2017. Ngetich has taught various undergraduate and postgraduate courses in various universities which include Egerton University, University of Nairobi, Kenyatta University, Moi University and University of Applied Sciences (BOKU) in Austria. He has been awarded various fellowships which include British Council Visiting Fellowship (tenable in Edinburgh University), Volkswagen Foundation Fellowship (University of Bonn and Freie Universität Berlin - Germany), East African Scholars Fellowship (SOAS, University of London, United Kingdom). In addition, he has participated various collaborative research (SMACC, OAT, SOILPOT, CRC etc) that has formed the basis for partnerships, collaboration and benefited many postgraduate students.

He has (co)published widely and presented refereed papers in local and international forums (conferences and seminars). His publications cover fields of medical sociology especially socio-cultural dimensions of health and illness, as well as health systems. He has also published in areas of gender, agricultural aspects, community development, conflict management and criminology. His publications consist of journal articles, book chapter and co-authored books.

He has successfully supervised over forty postgraduate students (MA and PhDs) mainly in sociology, community development and criminology. He has participated in various advanced trainings both as a participant and as resource person. For example, he has been resource person for DAAD sponsored training of PhD students as well as at the Health Institute of the Council for the Development of Social Science Research in Africa (CODESRIA).



PROF. PRISCA JEBAIBAI TUITOEK

KNAS Membership No.209

Prof. Prisca Tuitoek was born and educated to her secondary school level in what is now Baringo County and advanced level secondary education in Kabarak High School, Nakuru County. She obtained her B.Sc. in Biology with a minor in Chemistry, in 1985 from Oral Roberts University, Oklahoma, U.S.A, M.Sc. degree in Human Nutrition and Food Service Management in 1986 from the University of Nebraska-Lincoln, U.S.A. She then took up a position as Lecturer at Egerton University College, 1987 to 1989 in the Department of Home Economics and Agriculture Extension. Since the University College was being upgraded to a University Status, she proceeded to the University of Alberta, Canada to start her Ph.D in Human Nutrition which she completed in 1995 and moved back to Egerton University.

Professor Prisca Tuitoek was a founder Chairperson at the Department of Foods, Nutrition and Dietetics at Egerton University, where she established both the undergraduate and postgraduate programmes. She supervised postgraduate students, researched, published articles and participated in capacity building especially in the areas of nutrition and academic quality assurance. She has also participated in consultancies in organizations such as UNICEF, World Vision and Gain among others. Her research and consultancies has been in Kenya and in the region including Uganda, Tanzania and Sudan. She has organized, participated and/or facilitated in various local and international workshops, seminars and conferences including for Global Nutrition Programme, International Union of Nutritional Societies (IUNS) and Information Technology for the advancement of Nutrition in Africa (ITANA) among others. She was instrumental in founding the Kenya Nutritionist and Dietetics Institute as an elected Council member.

Prof Tuitoek has participated in management in the University set up as Director of Quality Assurance at Egerton University, Deputy Principal at Machakos University College and now Deputy Vice Chancellor, Academic and Student Affairs at Muranga University of Technology. She also sits in the Quality Assurance Committee of the Inter-University Council for East Africa.

Prof. Tuitoek's passion in contributing back to the community has seen her sit in a number of college and school boards. She has been the Chair of her high school Alumni Association which has overseen the sponsorships of bright children coming from economically challenged and marginalized communities. She is also involved in a socio-economic community based organization that is empowering over 100 groups of women in rural Kenya. Prof. Prisca J. Tuitoek is a Professor of Human Nutrition. Currently she is the Deputy Vice-Chancellor Academic and Student's Affairs Murang'a University of Technology. Formerly she worked at Egerton University as Director, Directorate of Quality Assurance and Chair of Department, Department of Foods, Nutrition and Dietetics (Currently Department of Human Nutrition).



PROF. FRANCIS MUTISO MATHOOKO

KNAS Membership No.210

Prof. Francis M. Mathooko is a Kenyan citizen, holder of ID No. 6051293 and Passport No. BK033249. He holds a Bachelor of Science degree in Food Science and Technology (Upper Second Class Honours), University of Nairobi, Kenya; Master of Science degree in Food Science and Technology, University of Nairobi, Kenya; Ph.D. degree in Agriculture (Postharvest Agriculture), Okayama University, Japan and a Master of Business Administration degree, University of Nairobi. He is currently a Professor in the School of Agricultural Sciences at Machakos University.

Prof. Mathooko has taught in various local, regional and universities in Food Science and Technology, Horticulture and Human Nutrition among others. He has undertaken considerable research in the disciplines mentioned above and published in high impact factor journals. He has attracted research funds from various local, regional and international funding bodies to support his research and extension activities. He has attended and presented scholarly and invited papers in many local and international meetings.

Based on his research activities, Prof. Mathooko has won several awards including a two-year Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellowship for Foreign Research in Japan (1997-1999) and was the first Kenyan to win this fellowship, a three-month Association of International Education, Japan Follow-up Research Fellowship, an eight-month JSPS Invitation Fellowship Program for Research in Japan (Long-Term) (April to December 2004) and three weeks Visiting Researcher Fellowships each at University of Zimbabwe, Sokoine University of Agriculture and Makerere University, respectively. He also served as External Examiner in these universities. He has experience in managing research and training programmes funds. He has supervised final year and postgraduate (M.Sc. and Ph.D.) students' research projects in various universities.

Prof. Mathooko has served in university administrative and management positions including, the Founding Principal of Machakos University College, Acting Vice-Chancellor of Machakos University, Deputy Principal (Academic and Student Affairs) at the then South Eastern University College (SEUCO), Acting Deputy Vice-Chancellor (Academic, Research and Student Affairs) at the South Eastern Kenya University (SEKU), Founding Director, Directorate of Academic Quality Assurance, Ag. Dean, Faculty of Agriculture and as Chairman, Department of Food Science and Technology, all at JKUAT. Prof. Mathooko has been involved in mobilizing resources and soliciting financial support for capacity building from various stakeholders through proposal development, culminating in establishment of solid partnerships and linkages.

Prof. Mathooko has undertaken consultancy/collaborative work in food security with organizations including ICRAF, GTZ, FAO, JICA, RELMA, TSBF, Natural Resources

Institute, African Institute for Capacity Development (AICAD) and some food and allied industries. Prof. Mathooko continues to engage in research, student and staff mentorship, training and development of demand-driven academic programmes as well as in technology transfer and community service.

From the aforementioned details, it is evident that Prof. Mathooko experience in research, teaching, academic programmes development, policy preparations, outreach programmes, university management, resource mobilization and community service at local, regional and international arena.

PROF. JONES FAIRFAX AGWATA

KNAS Membership No.211



Prof. Agwata is a career Environmental Scientist and Policy expert with several years' experience as a University Lecturer, Trainer, Researcher and Consultant. He is currently an Associate Professor in the Department of Environmental Sciences at Machakos University, Kenya. Prior to joining Machakos University in January 2019, Prof. Agwata was a Senior Lecturer at the Centre for Advanced Studies in Environmental Law and Policy (CASELAP), University of Nairobi from 2010 to 2018. Between 1993 and 2010, Prof. Agwata was Lecturer and Tutorial Fellow in the Department of Environmental Sciences at Kenyatta University, where he began his academic and professional career. His academic qualifications include a Bachelor of Science degree from the University of Nairobi and Master's and Doctorate degrees in Environmental Science from MOI University and Kenyatta University, respectively. His broad academic and professional interests include environmental science and policy, disaster management, environmental assessment, water resources management, natural resources use conflicts, climate change and waste management. Prof. Agwata serves as lead consultant trainer and facilitator in Environmental Management, Environmental Assessment and Project Management with various national, regional and international organizations. Prof. Agwata is also an external examiner at several Kenyan Universities and the University of Malawi besides being a *Research Fellow* of the American Biographical Institute, USA; *Fellow* of the African Scientific Institute and Life Member of the Kenya Meteorological Society. He also holds membership at the International Society for Development and Sustainability, Japan; the International Association of Hydrological Sciences, UK; the Kenya DAAD Scholars Association; the Environment Institute of Kenya and the Kenya Bureau of Standard's Environmental Management Technical Committee. Prof. Agwata has previously served in the Acoustics and Noise Pollution Abatement and Occupational Health and Safety Technical Committees of the Kenya Bureau of Standards, the National Environment Management Authority's National Steering Committee on Desertification Process and the National Council for Science, Technology and Innovation and the International Year of Planet Earth. He has attended several courses and presented several papers at conferences and workshops locally and internationally. Besides several book chapters and Journal papers to his credit, Prof. Agwata is registered as a Lead Expert with the National Environment Management Authority, Kenya besides being a trained and qualified Quality Management Systems Auditor.

DR. SHEHU SHAGARI AWANDU



KNAS Membership No.212

I am research scientist who has designed, coordinated and conducted studies across diverse transmission settings in Africa to better understand the malaria transmission biology focusing on parasites and vectors. I am a grounded academician with excellent mentorship skills and track record of successful supervision of local and international postgraduate students.

I am applying strong laboratory skills, research experience, technical expertise, Analytical insights and grant writing skills in an academic role at the Jaramogi Oginga Odinga University of Science and Technology. Currently, I am the chair of the Department of Biomedical Sciences, spearheading projects funded by the EDCTP to train epidemiologists and biostatisticians as well as investigating the molecular epidemiology of SARs-CoV-2 transmission dynamics to inform home based care funded by the MRC of South Africa.

Furthermore, I am a visiting scientist at the Kenya Medical Research Institute, Center for Global Health Research (KEMRI-CGHR) where my group is characterizing novel resident *Wolbachia* strains in the *Anopheles* species complex in natural settings in western Kenya highlands. Additionally, I lead the entomology component of an active ongoing surveillance of malaria parasites and vectors in Nandi South District to aid in subnational malaria elimination jointly with Indiana University.

During my postdoctoral stint in the Netherlands with extensive field work in Burkina Faso, I developed a novel male and female gametocyte molecular marker for use in mosquito feeding assays, conducted complexity of infections studies in acute and chronic infections and performed detailed entomological assessments in a cluster randomized trial investigating two diverse experimental approaches of enhanced case management. My PhD build upon the experience acquired from laboratory research in malaria-endemic Kenya with the Internal Center for Insect Physiology and Ecology

(ICIPE) and culminated with field research in pre-elimination settings of South Africa.

Where I investigated the contribution of submicroscopic infections to ongoing residual transmission and recommended use of primaquine, a gametocytocidal drug to help the country accelerate towards malaria elimination. Importantly, my findings informed the South African Department of health policy and key strategy of including migrant farm workers in its malaria elimination agenda. My MSc study informed and influenced policy on the implementation of combined use of insecticide-treated bednets (ITNs) and indoor residual spraying (IRS) for malaria control in Kenya.

I am passionate about communicating research findings to a non-specialist audience and I regularly give radio interviews. My long-term goal is to strengthen African led research where I can contribute not only in offering training and mentorship possibilities to young African scientists but also in conducting impactful research by leveraging on the networks that I have built globally in addressing some of the public health challenges affecting the African continent.



PROF. DAVID MIRUKA ONYANGO

KNAS Membership No.213

Prof. Onyango (PhD) is currently an Associate Professor of Cell, Molecular Microbiology and Biotechnology at Maseno University, Department of Zoology. He has over 13 year research experience in the field of Cell, Molecular Biology and Biotechnology. His research interest are in the areas of Molecular epidemiology and antimicrobial drug resistance in gastroenteritis microbes in human and animals and Molecular mechanisms and regulation of genes in prokaryotes and eukaryotes. He has a Post Doctoral qualification from the University of Kwazulu Natal in the field of Molecular Pharmacology and Drug discovery. He is the immediate Ag. Director of Science Technology and Innovation at Maseno University and also the co-ordinator of Cell and Molecular Biology activities in the department. He has attracted a number of research grants through competitive bids that have enabled him to develop, equip and initiate an operational Molecular Biology laboratory at the institution where he has trained over 5 PhD and 18 MSc students to completion. His expertise has been sort nationally and internationally as a reviewer of the National Research Funds-Kenya (NRF)(Health and Biological disciplines), National Consortium of Science, Technology and Innovation (NACOSTI) (Biological discipline) and as editor of a number of peer reviewed journals as well as adjudicator of science research projects to tertiary institutions. Due to his vast knowledge in his subject area, he has secured appointments by various university senates as external examiner for both undergraduate and postgraduate student's examinations and thesis. Prof. Onyango has published over 40 peer reviewed research articles and one university grade book and laboratory manual, 2 book chapters, and 1 policy brief. In addition, he has 3 published research project reports. He has attended over 15 research conferences and workshops for oral and poster presentations. He has equally organized 11 workshops and conferences nationally and internationally. He has several scholarship awards and nomination to the prestigious Marquis Who's is Who in the World; DAAD- Germany and the South Africa Medical Research Council. He is a member of several professional bodies like the International Brain Research Organization, European Society of Clinical Microbiology and Infectious Diseases, and a Task Force Member of Novartis Non -Typhoid Vaccine Development



PROF. CECILIA MORAA ONYANGO

KNAS Membership No.214

Prof. Onyango is an Associate professor of Horticulture with over 18 years' experience in training, research and community outreach in the areas of crop production systems, postharvest handling of produce, standards and food safety. The main focus of her research work has been on African traditional crops' production physiology, conservation and use; stress physiology and temperature-based modulation of growth and development in crops. She also has a wide experience in participatory farmer and end-user technology evaluation, selection and adoption in addition to systems intensification and market-led development. She has over 30 publications in various refereed journals and has supervised and mentored over 20 graduate students including Ph.Ds. She has been with the University of Nairobi for over 18 years as an academic member of staff in the Department of Plant Science and Crop Protection.

Cecilia received her PhD. in Horticulture from Wageningen University, the Netherlands. Her research interest was to develop sustainable production systems for African traditional vegetables to maintain their quality and improve yields to provide healthy diets and income to rural communities especially those of women in Kenya without compromising the environment.

Cecilia has wide expertise in Partnership Building and Resource Mobilization. She has participated in implementing research grants as either a principal investigator (PI) or a Co-PI in several grants and the most recent ones include; Food safety in produce from informal settlements in Kenya supported by the United States Aid for International Development (2020- 2022); Earth observation and environmental sensing for climate-smart sustainable agro-pastoral ecosystem transformation in East Africa (ESSA) supported by the European Union (2020-2024) and Capacity development for conservation and utilization of plant genetic resources for agricultural productivity, resilience and sustainable livelihoods in East and Central Africa supported by the World Bank/SIDA (2014/2018); Developing a secure food system based on well-adapted pearl millet genotypes in appropriate crop mixtures in Kenya supported by Kenya government through the National Commission for Science, Technology and Innovation (2013-2015) among other.

Cecilia distinguishes herself as a scholar who embraces a systems thinking approach to create sustainable food systems as a means of achieving food security and nutrition through the application of a multifaceted and a multi-sector effort to achieve the highest quality of life for all leaving no one behind. She is a Co-chair of the Phytosanitary Standards, Food Safety and Consumption sub-Committee of the Horticulture Technical Working Group; a member of the Multi-Agency Food Safety Technical Working Group of the Ministry of Agriculture, Livestock and Fisheries and A board member of Organic Consumers Alliance.



DR. SAMUEL M. OBUCHI

KNAS Membership No.215

Dr. S. M. Obuchi is a linguist and an educator whose research areas focus on language use in surreptitious Discourse Texts, Linguistics and Language Education, Language and Interdisciplinary Studies. He sets out to flourish and disseminate the understanding of Discourses in the context of a worldwide linguistic audience while interrogating fundamental Discourse issues against current discursive postulations.

Dr. Obuchi holds a B. Ed degree (1992, Hons), MA (Swahili Studies, 1996). In 1997, he was employed as an Assistant Lecturer at the University of Eastern Africa, Baraton. He held this position till 2000 when he was promoted to the position of Lecturer. In 2008 he graduated with a PhD Degree in Linguistics and in 2009, he was elevated to the position of Senior Lecturer. Thereafter, he has served as Senior Lecturer at University of Kabianga (2011-2013) and Moi University (2014 to date). Apart from establishing an Electronic Library, he helped design Curriculum for BA/ B. Ed (Baraton), MA (Kiswahili & Literature-Kabianga University) and curriculum for campus HIV prevention (Baraton). Between 2013 -2015, he was engaged by KICD as a Committee Member in reviewing and harmonizing curriculum for Kiswahili and English by formulating minimum standards for High school in Kenya.

Dr Obuchi has served both as Internal and External Examiner (2011-2016). He served as Internal Examiner: Moi University, Baraton University, and External Examiner: MMUST, Chuka, Rongo. He continues to serve as a member of BoM in Four schools (Njenga Karume Secondary, Sitoito Secondary, Greatlink High School and Tenwek High School). He has been awarded several research and Travel Grants: In 2011, he received UEAB Faculty Grant to attend an International Conference in Botswana; In 2016 I received a grant to travel for conferences from The Yale Council on African Studies.

Since July 2014, he has continued to serve in Moi University- Eldoret as Senior Lecturer where he is involved in Curriculum design and implementation, Planning, and conducting workshops and seminars for MA and PhD students; Developing teaching Modules for Open and Distance Learning, supervision of Undergraduate and postgraduate students; Chairing, Seminars, Conferences and Publication committee. He has mentored many Undergraduate and postgraduate students through co-authorship of journal articles, book chapters and books. He has attended many local and International workshops and conferences.

Between January 2011 and July 2014, he served at the University of Kabianga where he participated in overseeing Design and implementation of degree programmes for undergraduate and postgraduate students; engaged in establishing the University Research agenda geared towards advancing community Development and integration as an outreach programmes; he served in the University Editing and publication committee and Chaired the Research & Extension Monitoring committee. He worked as a Consultant with -CfBT Education Trust (2012 January to December) in developing the capacity of education Managers and secondary school heads in the country to develop strategic plans. He Delivered Decentralized Education Management Authority (DEMA's) approach to district education

sector. He trained secondary school heads on SPs and Performance Based Management in Kisii County.



PROF. FRANCIS NYONGESA WANJALA

KNAS Membership No.216

Prof. Francis Nyongesa Wanjala holds a PhD in Physics and he is currently serving as the academic Chair of the Department of Physics of the University of Nairobi. He obtained his PhD in Physics (UoN) in 2000. Prof. Francis Nyongesa is an accomplished scholar with proven track record in research and training as demonstrated by his publications in peer review journals and supervision and mentorship of postgraduate student. He has over 22 research publications in Material Science and Renewable Energy in refereed journals and over 15 oral presentations in international conferences in the following countries: United States of America (USA), Japan, Germany, Italy, China, South Africa, Ghana, Ethiopia, Uganda and Tanzania. He has supervision and mentorship many postgraduate students. His research interest include: Functional Materials for Energy Efficient Systems, Solar Energy Materials (Perovskite Solar Cells, Dye Sensitized Solar Cells (DSSCs), and applications of Nanotechnology for Water Purification Systems.

He is a recipient of the Third World Academy of Science (TWAS) Award for Young Scientist in 2007 for his contribution in scientific publications in Physics and several fellowships and research grants including: The PASET-RSIF Research Grants Award for PhD Program in 2020, the PASET-RSIF Capacity Building Grants Award in 2020, the National Science, Technology & Innovation (ST&I) Research grant (NACOSTI) in 2012, the U.S-Africa Materials Institute (USAMI) visiting fellowship at Princeton University (USA) in 2008 and the Abdus Salam Young Student Fellowship (Trieste, Italy) in 1999. He is among the founder members of the Global Young Scientists Academy (GYSA). He is a member of African Materials Research Society (AMRS) and the Ultrasonic Nondestructive Testing (NDT) Society of Kenya among others. He has served on the editorial board of the African Journal of Physical Sciences (AJPS) and the Tanzania Journal of Science.



DR. JOSEPH MWANZIA NGUTA

KNAS Membership No.217

Dr. Nguta is a Veterinary surgeon by training and Pharmacologist and Toxicologist by specialization, I am a Senior Lecturer at the Department of Public Health, Pharmacology and Toxicology (PHPT), University of Nairobi with nine (9) years' experience in undergraduate and postgraduate teaching and supervision. I hold MSc and PhD qualifications in natural product Pharmacology and toxicology from the University of Nairobi. In addition, I hold Postdoctoral qualifications from Noguchi Memorial Institute for Medical Research (NMIMR), College of Health Sciences, University of Ghana, where I pursued drug discovery against zoonotic tuberculosis from natural products of plant biodiversity; specifically using whole cell assay and subcellular targets for lead compound identification and structural characterization of lead antimycobacterial compounds with rapid kill kinetics against latent, intracellular and active tuberculosis. My studies culminated in characterization of a new source steroidal sapogenin of spirostane type, solagenin (25S)-6 α hydroxy-5 α -spirostan-3-one), with selective activity (SI index: 65) against the pathogenic *Mycobacterium bovis* (ATCC® 35720™) strain. Prior to the postdoctoral award by Bill and Melinda Gates Foundation (BMGF) through Noguchi Memorial Institute for Medical Research (NMIMR), I was a doctoral and later a postdoctoral fellow at the Department of Public Health, Joseph Nguta CV 2 Pharmacology and Toxicology (PHPT), University of Nairobi, under support from Carnegie supported Regional Initiative in Science and Education, African Natural Products Network (RISEAFNNET) University of Nairobi Node, investigating medicinal plants for antiprotozoal activity. I have supervised three (3) doctoral students and ten (10) Master of Science students to completion. I have published thirty six (36) articles in leading peer reviewed journals and I have thirteen (13) PubMed appearances. I have attended forty two (42) workshops/symposia and presented thirty one (31) papers in both local and international scientific conferences. I have a cumulative citation of 476, h-index of 10 and i10-index of 10. I have been awarded a total of nine (9) travel grants and three (3) research grants since my last promotion by both local and international institutions. I was ranked position ninety seven (97) among the top one hundred (100) Kenyan Scientist by Webometrics in March 2015. I am the American Society for Microbiology (ASM) Young Ambassador for Science to Kenya, 2017-todate (<http://www.asm.org/index.php/this-week-international>) . Since 2017, I was appointed as an Early Career Reviewer (ECR), by the Centre for Scientific Research (CSR), National Institute of Health (NIH), Bethesda, USA. I have special interest in bioassay guided isolation and structural characterization of selective bioactive compounds against zoonotic tuberculosis from natural products.



PROF. JUDITH NDOMBI WAUDO

KNAS Membership No.218

Prof. Judith Waudo Holds a PhD degree in Nutrition Education and is a full professor in the Department of Food, Nutrition and Dietetics at Kenyatta University. Has 36 years of teaching experience at Kenyatta University. Has 25 years of experience in Administration, having served as a Director of Catering and Accommodation Service Board, Director, Linkages, Chairperson, Hospitality and Tourism Management and Dean, Graduate School. Has served as chair of Curriculum committee at the Department of Food, Nutrition and Dietetics and as a member of Research Committee at the School of Public Health and Applied Human Sciences. Currently, serving Director, Centre for Gender Equity and Empowerment, at Kenyatta University and as Hub Leader, Kenyatta University Women's Economic Empowerment Hub, Technical committee chair person for the African Center for Transformative and Inclusive Leadership (ACTIL), Chair, Steering Committee for the UNESCO's Chairperson at Kenyatta University, Chair Technical Committee for Academic Mobility at Kenyatta University and Chair, Kenyatta University School and Departmental Research Ranking Committee. A researcher in the area of nutrition, health and education with wide experience at national, regional and international levels.



PROF. HERICK OTHIENO OTIENO

KNAS Membership No.219

Prof. Herick Othieno was born in 1949 in South Nyanza and attended Koderobara Primary School in Rongo Division before proceeding to Alliance High School, Kikuyu in 1965. He attended Kharkov State University in the Ukraine and the University of Strathclyde in UK where he respectively obtained MSc and PhD degrees in Physics. He joined Kenyatta University in 1977 where he taught various physics courses. He was instrumental in the Development of the Appropriate Technology Centre and became its Founder Director from 1983. This Centre eventually evolved into the School of Engineering and Technology at Kenyatta University. In 1984, Professor Othieno was awarded a Fulbright Fellowship to conduct research at the Department of Mechanical and Space Engineering at North Carolina State University, USA.

He became a member of the Institute of Physics (1987) and of the Institute of Energy (1991). In 1998, he was appointed a regular associate of the International Centre for Theoretical Physics in Trieste, Italy and later (2003) became a Senior Associate of the Centre. This appointment gave him the opportunity to visit the Centre every year to not only conduct research but also to enable his graduate students to also conduct part of their research at the Centre. In 2005, he spent a year at the University of Technology of Papua New Guinea as a visiting Professor and was able to complete the publications of two books: “Fundamentals of University Physics” and “Energy Resources in East Africa”. In 2014 he won a Commonwealth Fellowship as a visiting Professor at the University of Ibadan, Nigeria. A year later in 2015, the Institute for Geoscience Research (TIGeR) gave him financial support to spend part of 2015 at Curtin University in Australia where he completed another book on “Energy Resources in Africa”.

Professor Othieno received international recognition as a result of his research activities mainly in the area of Renewable Energy Technologies from which he has published several articles and books. Some of his professional activities involved provision of services to the community both locally and internationally. He has stood out as an energy expert in Africa and has been instrumental in the formulation of African Energy scenario for the International Council of Science Unions, Regional Office for Africa (ICSU, ROA) and was one of the lead experts for the establishment of Pan African University’s Institute of Water and Energy (PAUWES) in Tlemcen, Algeria. He has been a Renewable Energy Consultant for many international development Agencies and has travelled to/visited all the continents (Africa, Asia, Europe, South and North America) to participate in energy technologies and related issues. Nationally, he has facilitated the establishment of several small scale facilities for communities. An example of these is the establishment of small scale solar energy generating hubs for communities living along the shores and islands of Lake Victoria particularly in Mageta and Kiwa islands in collaboration with Renewable World of UK. Professor Othieno is currently a professor of Physics in the Department of Physics and Materials Science at Maseno University, Kenya.



PROF. PAUL OKEMO OWUOR

KNAS Membership No.220

Prof. Paul Okemo is a full professor of Microbiology at Kenyatta University since 2010, where he has been lecturing on various aspects of Microbiology for the last 32 years. During that period, he has specifically addressed areas in Medical Microbiology, Pathogenic, Environmental, Food microbiology, Microbial physiology, Medical Virology, and microbial genetics among others. He has also lectured at other Universities in Kenya such as Jomo Kenyatta where he taught medical Microbiology, and medical Mycology, Masinde Muliro and Maseno Universities where he taught general Microbiology. He has won several research grants and authored 87 Articles in refereed Journals, three book chapters, 31 Conference papers, and given talks at various fora in the area of Microbiology. Recently he won as a PI a Research grant to do some work on the Corona virus, particularly the local strains, their prevalence and relationship to other exotic strains. He is leading a team of researchers that include 2 Doctors from Kenyatta Hospital, 2 Doctors from KU Referral Hospital, 4 Doctors from KU Medical School, one Pharmacist and one research Scientist from KEMRI. However Prof. Okemo's area of Research interest is in Microbial resistance to drugs and the search for novel antimicrobial agents. In this regard he has been a World Bank Consultant in looking for novel compounds from Natural products to fight microbial resistance. He was given a grant by World Bank to train Herbal practitioners in order to prepare them for acceptance to be allowed to treat patients in Hospitals alongside conventional medical Doctors. He has therefore trained most herbal practitioners around the Republic of Kenya. Prof. Okemo was a lead researcher with the Interuniversity Council of East Africa where he led a team of researchers from Kenyatta University, Makerere and Muhimbili University in Tanzania. His team was able to isolate and semi-purify compounds from Medicinal plants that inhibited the proliferation of Multi-drug resistant tuberculosis. Prof. Okemo has worked extensively with marginalized communities, especially the Samburu, Turkana, and Masai on indigenous knowledge of their Natural product's curative properties and practices. He was a lead Researcher with the Earthwatch Institute in this regard for 9 years. Prof. Okemo was Dean of Graduate School at Kenyatta University for 8 years from 2011 to 2019, has acted as DVC (F & D), DVC (Admin.) and is currently the Acting DVC (Academic) at Kenyatta University a position he has been holding on and off severally but this time since the substantive holder has finished his term Prof. Okemo has been in that position for the last 7 months. He was the CEO of African Biological Safety Association (AfBSA) for 7 years and the African representative on the International Biological Safety Association (IfBA) where he led the African delegation to the UN Tatugena protocol 1540 negotiation. He has recently been appointed to the Biological Safety Appeals Committee by the Education Cabinet Secretary in Kenya. He previously worked as the Secretary of the Kenya Society of Microbiology (KSM) and is an active member of the American Society of Microbiology. He was the Deputy Director, Quality Assurance of Sterling Withrop (an International Pharmaceutical Company in Kenya), a Senior Analyst at the Kenya Bureau of Standards, and Production Manager of

Delmonte corporation, Thika, Kenya. He got his PhD from Kenyatta University in Kenya, and did a post-doc for one year at Colorado State University as a Fulbright Scholar. He has an Msc and Bsc in Microbiology from the University of Wyoming in USA where he was on the Deans Honor roll. Prof. Okemo has done collaborative research with and visited various Universities, including the University of Essen in Germany where he did part of his PhD research, Berlin Technical University, Michigan State University in USA, Makerere University and the University of Darsalaam. He is a member of the East African Inter-University Council Research team.



DR. STELLAH MIKALITSA MUKHOVI

KNAS Membership No.221

Dr. Stellah M. Mukhovi is a human geographer specializing in interface between natural environment and agricultural activities. She is a Senior Lecturer at the Department of Geography and Environmental Studies at the University of Nairobi, Kenya. She holds a Bachelor of Education degree (Hons), Master of Arts degree in agricultural geography and a PhD all from the University of Nairobi. Dr. Mukhovi's research interests are in Food systems social-ecological resilience, household food security, gender issues in agriculture, rural development, rural livelihoods, agricultural policy analysis, sustainable land management and climate change and agriculture. She has been involved in a wide range of multi-disciplinary research assignments and has widely published in peer reviewed Journals.



DR. JAMES PATRICK OCHIENG'- ODERO

KNAS Membership No.222

Dr. J. P. Ochieng'-Odero is a scientist with keen interest in the place of science, technology and innovation (ST&I) in economic development, and the role of learning, knowledge sharing and mentoring in capacity strengthening, especially in the Global South.

He graduated with a BSc. (Zoology) in 1982 from the University of Pune and was awarded the Indian National Merit Scholarship for Science in April 1982 and earned a PhD in Zoology (specializing in Entomology) from the University of Auckland, New Zealand in 1989.

JPR works as the Project Team Leader of the East Africa Research Fund (EARF eastaficaresearchfund.org). EARF is a funding facility managed by PwC on behalf of the Foreign, Commonwealth & Development Office (FCDO) of the UK.

Prior to the above, JPR was Deputy Director & Head of Scientific Programmes of the Consortium for National Health Research (CNHR www.cnhrkenya.org). Earlier he worked as a Senior Research Scientist, Head of capacity strengthening programme of the International Centre of Insect Physiology and Ecology (ICIPE www.icipe.org) and Network Coordinator of the African Regional Postgraduate Programme in Insect Science (ARPPIS: http://www.icipe.org/capacity_building/grad).

He had a stint working with the late Prof. Thomas R. Odhiambo at the R&D Forum for Science-led Development in Africa (RANDFORUM) which organized regional S&T Roundtables and policy-oriented Summits.

Dr. Ochieng'-Odero undertaken consultancy work exploring opportunities for commercialization of research outputs through science parks. In 1995/6 he was a team member of the resource persons to the first and second Copenhagen Series of Seminars on Conditions for Social Progress.

In addition, Dr. Ochieng'-Odero is/has been Appointed (2015-Current) member of the Board of Trustees of the National Research Fund (NRF www.researchfund.go.ke), (2013-2017) to the Commission of University Education (CUE (www.cue.or.ke), (2021-current) as a member of the Advisory Committee of the Kenya National Innovation Agency (KeNIA), Member of the African Scientific Advisory Board (ASAB) of The African Academy of Sciences (AAS) (March-Current, 2019), Appointed (2021-current) as resource expert mentor under the African Academy of Sciences (AAS) mentorship scheme, Elected (2014-Current) member of the Executive Committee of Society for the Advancement of Science in Africa (SASA <http://sasascience.org>), Member of the Regional Advisory Group of the DFID-funded Knowledge Systems Innovation Project by the African Centre for Technology Studies (ACTS), Consultant to the the World Bank to develop a research strategy for the Regional Scholarship and Innovation Fund for Applied Sciences, Engineering and Technology (PASET-RSIF), Member of the Programme Monitoring Committee of the Regional Integration Research Network of the Common Market for Eastern and Southern Africa (COMESA), Member of the Scientific Advisory Board of the Training Health Researchers

into Vocational Excellence in East Africa (Thrive www.thrive.or.ug), Consultant to the Centre for Agriculture and Biosciences International (CABI) to develop a national Desert Locust Management Strategy for Kenya and a Member of the Governing Council of the Mater Misericordiae Hospital (February 2018-Current).

Dr. Ochieng'-Odero has published several articles on scientific research, capacity building and technology policy. For his various contributions to national development, he was awarded a Head of State Commendation (HSC), Kenya in 2013.



DR. MILDRED AWUOR AIRO

KNAS Membership No.223

Dr. Airo is a female chemist from Kisumu, Kenya. She was born from parents who are originally from Alego Siaya. She obtained her basic education from Maseno Mixed Pri. School and later proceeded to St. Barnabas Girls High school in Kombewa, Kisumu. She later obtained her B.S.c from Egerton University, Njoro (in 2011) after which she joined University of the Witwatersrand for M.S.c and Ph.D in Chemistry (2017). She has been a postdoctoral fellow at the schools of Chemistry both in University of the Witwatersrand (2017-2020) and Vaal university of Technology (2020-2021). She is currently undertaking postdoctoral fellowship at the Institute of Nanotechnology and Water and Sustainability at the University of South Africa under the South Africa National Research Fund for Scarce Skills Postdoctoral Fellowship.

Her research interests include: **[1]** Synthesis, functionalization and characterization of metal and lanthanide doped metal chalcogenide nanomaterials (Material science); **[2]** Fabrication and characterization of solar cell devices (Renewable energy) including; (a) enhancing the conversion efficiency via spectral modification on the anode using the lanthanide doped metal chalcogenides, (b) replacement of the rare and expensive platinum with cheap and abundant metal chalcogenide semiconductor nanomaterials as counter electrode in dye sensitized solar cells, and (c) interfacial engineering of the hole transport layer in bulk heterojunction organic solar cells with the aim of replacing the conventional PEDOT:PSS with metal chalcogenide nanomaterials; **[3]** Fabrication and characterization of chemical sensors for environmental monitoring of different pollutants including those found in water. These research projects have resulted in about 22 publications from peer reviewed international journals with about 148 citations.

Dr. Airo has been a visiting researcher at Fredrick Alexander University, Erlangen, Germany, through TWAS-DFG visiting researcher fellowship grant: Visiting Prof. Peter Wasserscheid's lab in chemical engineering department. The research conducted involved hydrogen storage in ionic liquid and use of ionic liquid in carbon dioxide capture. Similarly, she was a visiting researcher at the Federal University of Parana, Brazil through the OWSD research visit/conference support fund: Visiting Prof. Ivo A. Hümmelgen's lab and conducted research on chemical sensor application of colloidal semiconductor nanocrystals.

She is currently a member of the South African chemical institute, an alumnus for the Lindau Nobel Laureate meeting (2017), a member of the Organization for Women in Science in developing world, a fellow for the fellow of the Bert L. and N. Kuggie Vallee foundation, Royal Society of Chemistry member and now a member of Kenya National Academy of Science.



PROF. BENARD OKELO NYAARE

KNAS Membership No.224

I'm a pure mathematician by profession and prolific researcher in mathematical sciences and applications to other fields. My research interest is in functional analysis, particularly, operator theory.

My research and professional career has been centered on mathematics and applications to other fields like business, economics, education, agriculture and food security among others. My main interest is in pure mathematics especially in functional analysis. Operator theory as a sub-branch of mathematics is very interesting with applications in quantum mechanics, chemistry and optimization. Currently, my research is on Hilbert space operators and their applications to petroleum technology and utilization of solar energy. I have produced more than 30 publications in internationally refereed journals and this put me to the rank of the young scientist 2013 offered by AU-TWAS.

The goal of my research is to become a professor of mathematics and come up with results that can contribute to the growth of the Kenyan economy, improvement of science and technology and fulfill the Kenyan Vision 2030. Moreover, I endeavour to mentor young scholars who aspire to become researchers. By joining KNAS I will have the opportunity of interacting with prominent and well established scholars, share knowledge and their experiences in terms of career and professionalism to help me forge ahead as growing scholar and researcher. I endeavour to do research that has applications to other areas like Quantum Mechanics, Mathematical Modelling and Analysis, Contemporary Issues in Special Needs Education, Business and Economics, Computing and Information Technology. The output of my research is for solving real life problems of socio-economic nature in Kenya (and other developing countries), Africa and Globally.



DR. AMOS E. O. OTEDO

KNAS Membership No.225

Dr. Otedo is a medical doctor born in Siaya County on 18th August 1964. I went to Nyabondo primary school, and Usenge and Maranda high schools for “O” and “A” levels respectively and proceeded to the University of Nairobi in 1986 for a course in medicine. I hold a Ph. D (public health), Master of medicine (Internal Medicine), Gastroenterology/hepatology, Bachelor of medicine and Bachelor of surgery (MD), Fellow Royal College of Physicians (Edin), as well as leadership and strategic management in health and Health Systems Strengthening (HSS). I am the immediate former CEO/medical superintendent Kisumu County and referral hospital. Currently, I am the chief of department of internal medicine, gastroenterology and hepatology and supervises medical officer interns, and runs the following special clinics in the hospital-medical, liver and diabetes respectively.

On the technical arm, I effectively supervise both public and curative health in the hospital and the county. I have carried out research in Malaria, HIV, hepatitis and liver cancer and also engaged as a local Medical Monitor in malaria vaccine and drug trials by Glaxo-SmithKline and Kenya Medical research Institute (KEMRI) Kenya. I am a W.H.O. appointed Consultant on viral hepatitis.

On the administrative arm, I led the team that developed the strategic plans for Kisumu County and Referral Hospital [2014-2018] and Chianda Community hospital (2018-2022), I improved financial management in the hospital, and I managed an annual hospital budget of US \$ 800,000. I chaired and coordinated vital committees in the hospital which include: Health Management Team, Health Management Committee, Executive Expenditure (budgeting) Committee, Medicines and Therapeutics Committee and Universal Healthcare Committee for health insurance. I strengthened health systems (HSS) in the hospital by coordinating emergency and ambulance services, initiated computerization of the departments and was involved in resource mobilization and fundraising for infrastructure upgrade and improved services at the facility. This resulted in improved revenue generation to facilitate implementation of public health programmes. I am affiliated to the following institutions:- Kenya association of Physicians, Gastroenterological Society of Kenya, Kenya Medical Association (KMA), American Gastroenterological Association (AGA), international liver cancer association (ILCA) and American Public health association (APHA).

I therefore possess the following skills and competencies: Technical (in public and curative health), strategy and forward planning, Administrative and financial skills, critical thinking and positive interpersonal skills. I have published 24 research papers and developed 2 guidelines on Hepatitis Management.

KEY INTEREST AREAS

Public health, Health Systems Strengthening and Leadership Development and Mentorship
Research in Internal Medicine, Gastroenterology / Hepatology, and liver cancer
Non Communicable Disease management.



DR. AUSTINE OCHIENG ALUOCH

KNAS Membership No.226

Dr. A. Ochieng Aluoch was born in Nairobi in 1971. He joined Catholic Parochial Primary School in 1978 and proceeded to Nairobi School for his secondary school education in 1986. He then joined the University of Nairobi where he obtained his Bachelor of Science degree (First Class Honors) in 1995 and his Master of Science in 2000. He then proceeded to the USA for his PhD studies at the State University of New York at Binghamton (Binghamton University) where he obtained a Doctorate in Analytical Chemistry. Thereafter, he returned to Kenya where he was employed at the University of Nairobi, Department of Chemistry as a Lecturer in 2007. In 2011 he moved to the Technical University of Kenya (TU-K) to become the Chairman of the Department of Chemical Science and Technology (DCST). He is currently a Senior Lecturer of Chemistry in the School of Chemistry and Material Science (SCMS) formerly DCST. Dr. Aluoch's research interests are in analytical chemistry, biosensor development, electrochemistry and chemical security. He has attracted several research/ training grants through which CCTV and biometric access control were installed at SCMS to improve chemical security. He is the author of several peer-reviewed publications in the fields of biosensors, analytical chemistry, chemical security, biosecurity and has mentored over 10 postgraduate students at both Master and PhD level.

As a chemical security expert, Dr. Aluoch has implemented several chemical security projects and Chemical Biological Radiological and Nuclear (CBRN) in the framework of the Chemical Security Program and the European Union CBRN Risk Mitigation Centers of Excellence (EU CBRN CoE) respectively. He is an Associate of the Organization for the Prohibition of Chemical Weapons (OPCW), a member of the OPCW's Advisory Board on Education and Outreach (ABEO), an International Union of Pure and Applied Chemistry (IUPAC) Associate, an IUPAC STP Fellow and the current National Secretary of the Kenya Chemical Society (KCS). He is a former Chairman of the National Biological Weapons and Toxins Committee (NBTWC) which is Kenya's focal point at the United Nation's Biological Weapons Committee (BWC) and has been part of the Kenyan delegation to the UN BWC Intercessional Process in Geneva,



DR. GEOFFREY OTIENO

KNAS Membership No.227

Dr. Geoffrey Otieno was born in Siaya District currently Siaya County in 1981. He attended Lenana School, Nairobi for his secondary school education, thereafter, Dr. Otieno proceeded to Kenyatta University for his BSc Degree in Chemistry and Mathematics.

He then joined Kangwon National University (South Korea) in 2005 for a Master of Engineering Degree in Advanced Materials, and finally to University of Oxford in the UK in 2007 for a Doctor of Philosophy in Materials Science. He joined the Technical University of Kenya after a post doc position at Oxford in 2013 where he has been teaching and carrying out research on Nanomaterials, Nanochemistry and Nanotechnology.

He has been a member of the Governing Council of Kenya Chemical Society (KCS) since 2015 where he also serves as the Treasurer. In 2017, he became an associate of the Organization of the Prohibition of Chemical Weapons (OPCW) which implements the Chemical Weapons Convention based at the Hague, Netherlands. He is part of the leading team spearheading Chemical Safety and Security efforts in Kenya and Africa. He is a point of contact for the US Department of State, Chemical Security Program in Kenya. Specifically, he is an expert in Chemical Management Systems (CMS). He has been involved in training industry, academia and the general public in Kenya, Somalia, Nigeria, Libya, Egypt, Malaysia, Indonesia etc. on Chemical Security and dual-use chemicals.

Dr. Otieno is currently the Director of the School of Chemistry and Material Science at the Technical University of Kenya where he previously served as Chairman of Department since 2018.

Dr. Otieno has a world patent, a book chapter and 8 peer reviewed scientific papers. His interest is in the application of nanomaterials in water treatment, disease treatment and electronics. He has also been involved in policies such as the domestication of Minamata Convention, and the Chemical management draft bill.



PROF. ROBINSON JUMA MUSEMBI

KNAS Membership No.228

Prof. Robinson Musembi is an associate professor of condensed matter physics at the Department of Physics, University of Nairobi, his research interest is in thin films and thin film devices (solar cells, solar thermal absorbers, gas sensors and optical thin films application), computational method and proficient in programming techniques using C++, Python and Microsoft Excel VBA. Prof Musembi graduated with a PhD at the University of Nairobi in 2009, he has been a postdoc at Angstrom Laboratory, Uppsala University, Sweden and Roorkee, Uttarakhand, India. He has published widely and has several articles in both refereed journals and conference proceedings. He has also been to many scientific meetings where his work been presented as well as participated in organising scientific events. He has also contributed as a reviewer for several scientific journals.

Prof Musembi is a member of several professional associations which includes: Kenya Physical Society (KPS), Materials Science and Solar Energy Network for Eastern and Southern Africa (MSSEESA), European Physical Society (EPS), ANSOLE, Kenya National Young Academy of Science, African Material Research Society (AMRS)-Kenya



DR. CLARE IMBOSA MUHANJI

KNAS Membership No.229

Dr Clare Muhanji was born in Kakamega County and educated in Nakuru County. After completing secondary education, she joined the University of Nairobi and obtained a BSc degree. Thereafter she joined the University of Botswana in Botswana to pursue an MSc degree in Natural Products Chemistry. Her Masters studies was sponsored by the German Academic Exchange Services (DAAD). In 2002, she successfully acquired the Third World Organisation for Women in Science (TWOWS) Postgraduate Fellowship and enrolled at the University of Cape Town to study a PhD degree in Organic Synthesis. She joined the synthetic research group headed by Professor Roger Hunter. She graduated with a PhD in Chemistry in 2006. She joined Moi University in 2007 where she taught Organic Chemistry courses for 6 years. She successfully supervised and graduated six masters' students from Moi University. In 2013, she joined the Department of Chemical Science and Technology at the Technical University of Kenya as senior lecturer. She is currently the Academic Team Leader and Head of the Department of Pharmaceutical and Medicinal Chemistry. Dr Clare Muhanji has won a number of local and international grants. She is a member of the Kenya Chemical Society (KCS), the Organization for Women in Science (OWSD and the Kenya National Academy of Science (MKNAS).

Dr Clare Muhanji has published her work in peer reviewed journals. Her research area involves the design, synthesis and biological activity of novel bifunctional compounds that target HIV reverse-transcriptase enzyme. She is also involved in the design and synthesis of compounds that target the nucleocapsid protein of HIV, a novel drug target.



DR. EDITH KHAVWAJIRA AMUHAYA

KNAS Membership No.230

Dr. Amuhaya was born in Nairobi in 1980. Her parents are from Kaimosi, Vihiga County. After her high school education at Pangani Girls School, Dr. Amuhaya proceeded to the University of Nairobi, and finally to Louisiana State University where she obtained her BSc. Chemistry (First class Honors) and PhD in organic synthesis, respectively. She joined Maseno University as a Lecturer in 2011 where she taught organic chemistry for 2 years before proceeding for a one year Post-doctoral fellowship at Rhodes University, in South Africa, under the mentorship of Prof. Tebello Nyokong. Upon her return to Kenya, Dr. Amuhaya joined the Technical University of Kenya as a Lecturer where she taught organic chemistry courses for 2 years. She later joined United States International University – Africa as a Senior Lecturer in the School of Pharmacy and Health Sciences, where she currently is. Dr. Amuhaya is a member of the Kenya Chemical Society. Dr. Amuhaya's research focuses on synthesis of porphyrins and related macrocycles, with applications ranging from Photodynamic Therapy (PDT) in cancer therapy, to Photodynamic Antimicrobial Chemotherapy (PACT), to potential use in Non-linear optical limiting devices. To facilitate her research activities, Dr. Amuhaya has attracted research grants from major funding agencies, including National Research Fund (NRF), International Development Research Center (IDRC) and Kenya Education Network (KENET). She also has established strong research ties with researchers in South Africa, Canada, the United Kingdom and the United States of America.

Other than research, Dr. Amuhaya has been involved in program review and development at the universities she's worked. She has also been involved in chemical safety and security training and awareness campaign in the country. To date, Dr. Amuhaya has published 20 scientific papers and one book chapter. She continues to actively carry out research activities and supervision of both post graduate and undergraduate students.



KENYA NATIONAL ACADEMY OF SCIENCES

P. O. Box 4618 – 00100

Nairobi, Kenya.

Tel: +254-20-311714

Email: info@knasciences.or.ke

URL: www.knasciences.or.ke

© The Kenya National Academy of Sciences
0250 – 8265 ISSN CODEN KSTSDG