

Perspectives on International Research on Science in Africa

Perspectives on International Research on Science in Africa

Edited by

Dennis Raphael, Joachim Kapalanga
and Yann Meunier

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FOREWORD

I am delighted to introduce the 4th publication series of the Annual 2019 Society for the Advancement of Science in Africa (SASA) International Conference proceedings. This volume is devoted to “International Research in Africa” which overviews various aspects of research being done across Africa including international, regional and national collaborative research. The aim of the series is to show case the research being done on the African continent and to provide a medium for dissemination of such work especially by students and early career researchers.

Quite a bit has been said and written about the dismal state of science and research in Africa. Africa lags behind all other in terms of indices of scientific activity as measured by the number of academic researchers per 1 million population, the number of masters, doctoral and postdoctoral output, the number of publication output, the number of Africans attending and presenting at major international scientific meetings, the number of African citizens who are scientists or engineers, continents and Africa’s contribution to global research and development (R&D). Despite the gloomy picture, over the past decade Africa has also been a continent with a heightened tempo of scientific activity; increasingly attracting major international funding for science and research projects. In addition Africa has also seen a huge surge in the number of institutions of higher learning, an increase in the number of major funding agencies and absolute money amounts dedicated to supporting science and research programs in Africa. Further, there has been a marked increase in the number of national academies of science and civil society scientific organizations. Not to be left out of the act in progress, African governments have also increased the tempo of national political awareness about the societal good of science, and some have made modest increases in funding science and research programs. Indeed the picture is not all gloomy; a 2014 World Bank report shows signs of improvement in certain aspects of scientific activity, notably an increase in the quantity and quality of research, and a modest increase in the number of scientific publications. While some progress is happening in continent wide science and research activity, Africa is still way back compared to the rest of the world. Even countries favored by major international funding agencies have, as yet, not made the cut to

attain world class status in science, research, innovation and certainly not in invention.

Advancement of Science in Africa is an imperative for economic development on the continent. This volume is a representative sampling of the presentations and discussions by students, early career researchers and eminent academics with direct experience on Science in Africa about the way forward for leveraging science for Africa's economic development. The participants identified and discussed the hurdles and solutions for advancement of science in Africa, and pointed out the things about Science in Africa that stand out. These include;

- i) the challenges of building science capacity either due to lack of funding, faulty funding and corrupt use of funding. Africa attracts major international funding for science and research projects, but this funding is mostly for purely helicopter and expatriate research or misappropriated, and little is used for sustained high quality local research initiatives. Further, they have to do with;
- ii) the challenges of translating African science results into policy due to lack of appropriate and effective mechanisms;
- iii) the challenges of sufficient African scientists attending international conferences,
- iv) the right and relevant science for Africa,
- v) the challenges of holding Pan-African Science conferences in which scientists actually discussed the challenges to them doing their work, and the challenges to their work being (a) relevant, and (b) used....in Africa. And, that the conference is not just another place for scientist A to present a paper on his/her work on science research topic B. That only feeds a resume with conference presentations, that are not worth all that much on the resume. A conference that is not just another research results platform. They also have to do with;
- vi) science publication in Africa. Too much of tenure and promotion across Africa involves publishing in a foreign journal (for the prestige) and being forced to shape research to international questions, not African questions. That is career advancement, but (a) detached from serving African needs, and (b) frequently resulting in the loss of the scientist to Africa, either physically or in terms of research agenda. Then, the journals area is another major mess with quality and fraud swirling around each other in a fog.

In conclusion participants;

- i) acknowledged well-meaning international funding and pointed out effective use of the funding. International supported ground breaking research done in the past in African institutions were pointed out and discussed.
- ii) discussed and advocate for the creation of a pan-African fund similar to the NIH or Wellcome Trust, for rigorously peer reviewed competitive funding of research projects across Africa,
- iii) advocated holding annual pan-African general forum science and discipline specific conferences,
- iii) suggest ed a pan-African Science journal of a quality comparable to Science and Nature journals and vi) advocated for the creation of a Pan-African code of conduct, ethics and academic integrity council to create standards, and oversee quality of science and research practices in Africa.

The present volume, edited by Dennis Raphael, Joachim Kapalanga and Yann Meunier, demonstrates the aims of the publication series perfectly. I express my heartfelt gratitude to the editors for all the time they devoted to preparing all the 15 chapters of this inspiring book. I also sincerely thank all of the authors who contributed excellent manuscripts and have made the compilation and publication of such inspirational volume possible. Finally I thank Professor Njoki Wane and Dean Glenn for facilitating and making it possible for holding the 6th Annual SASA Conference at the Ontario Institute for Studies in Education, University of Toronto. This gesture is highly appreciated.

Professor Dr. Chicgoua Noubactep
Department of Applied Geology
University of Göttingen, Germany

ABOUT THE EDITORS

Dennis Raphael

Dennis Raphael, PhD, is a professor of health policy and management at York University in Toronto, Canada. His scientific publications focus on the health effects of living and working conditions, the quality of life of communities and individuals, and the impact of government decisions on citizens' health and well-being. Dr. Raphael is editor of "Social Determinants of Health: Canadian Perspectives", "Tackling Health Inequalities: Lessons from International Experiences" and "Immigration, Public Policy, and Health: Newcomer Experiences in Developed Nations" all published by Canadian Scholars' Press. Dr. Raphael manages the Social Determinants of Health Listserve at York University. It has over 1200 members from around the world who deal with the social determinants of health. His policy research involves both critical analysis of current trends in social and health policy as well as supporting the building of social and political movements in the service of health.

Dr. Raphael is the author of over 150 publications that speak to topics in public policy, poverty, and social determinants of health. One of CSPI's top-selling authors, Raphael's extensive list of publications includes *Poverty in Canada* (2011) and *Health Promotion and Quality of Life in Canada* (2010). He is the editor of *Tackling Health Inequalities: Lessons from International Experiences* (2012), *Staying Alive: Critical Perspectives on Health, Illness, and Health Care* (co-edited with Toba Bryant and Marcia Rioux, 2010), and *Social Determinants of Health: Canadian Perspectives, Second Edition* (2008). Raphael has received numerous awards for his esteemed work, including a Faculty of Health Research Award in the Established Career Category (2010) and over thirty research grants. In addition to his academic work, Raphael has published over a dozen articles in newspapers and magazines, including the *Ottawa Citizen*, *Toronto Sun*, and *The Hamilton Spectator*. A longtime community activist, Raphael has authored charters and community research manuals; he is also a member of various working groups and advisory committees.

Dr. Raphael manages the Social Determinants of Health Listserve at York University. It has over 1200 members from around the world who deal

with the social determinants of health. He is the 2010 Faculty of Health Research Award -- Established Career Category.

Joachim Kapalanga

Joachim Kapalanga, MD, MSc, PHD, FAAP, FACMG, DABMG, DABP is a physician-scientist and an educator who was educated at Yale University, the State University of New York (SUNY), Queens University, McMaster University and the University of Guelph. He is currently Professor (Adjunct) of Paediatrics at Schulich School of Medicine and Dentistry and South Western Ontario Academic Health Network - Knowledge Translation Group. He is also a faculty member at McMaster University and a Visiting Professor at Gulu University, Uganda. He is also Chief of Paediatrics at the Grey Bruce Health Services, Ontario, and a consultant paediatrician and medical geneticist at the Summer Side Medical Centre (SSMC), Prince Edward Island, (PEI), Canada.

Dr. Kapalanga has held faculty and leadership positions in various institutions and organizations. He was formerly Associate Professor and Head of the Division of Medical Genetics at Upstate Medical University/State University of New York (SUNY), Assistant Professor and Member of the PEI University and Health Research Institute; Clinical Instructor in Genetics at Yale University; Assistant Clinical Instructor in pathology and paediatrics at SUNY; and Lecturer at Dalhousie University. He was also Chairman of the Perinatal Committee of the SSMC / Prince County Hospital, Head of the PEI Newborn Screening Program, and PEI Representative at the Fetal Alcohol Spectrum Disorder Canadian Expertise (FACE) Research Round table. He was also appointed to the PEI Council, College of Physicians and Surgeons.

Dr. Kapalanga is a Fellow of the American College of Medical Genetics, Fellow of the American Academy of Paediatrics, Diplomate of the American Board of Medical Genetics, Diplomate of the American Board of Paediatrics, and an Associate Fellow of the Canadian College of Medical Genetics. He is a member of the American Medical Association, American Society of Human Genetics, FACE Research Roundtable, Canadian Congenital Anomalies Network Surveillance Network, Canadian Medical Association, the Ontario Medical Association and a founding member of the African Society of Human Genetics.

Dr. Kapalanga's current scholarly and research pursuits are in the epigenetics of neurodevelopmental disorders and in neurobehavioral

genetics and genomics. He espouses multidisciplinary, multicenter and international research.

With interest in Africa, Dr. Kapalanga is the founder, Chairman of the Board and Executive President of the Society for the Advancement of Science in Africa (SASA).

Yann Meunier

Yann Meunier, MD, is an international and multifaceted healthcare professional and a pioneer in academia, healthcare provision at a clinical and public health settings, research and business. He studied medicine at Paris V University, the Federal University of Rio de Janeiro, and The George Washington University. He did postgraduate training in emergency medicine and tropical diseases at Paris XII and VI Universities, respectively.

During his career, in Academia, Dr. Yann was Assistant Professor in Tropical Diseases and Public Health, Paris VI University; Adjunct Assistant Professor of Medicine, George Washington University; Lecturer, George Washington University Center for International Health; Director, Stanford Health Promotion Network; Manager in Health Promotion, Stanford Health Improvement Program; Mentor, Stanford Medscholars Research Fellowship Program and Instructor Stanford Health Improvement Program.

Dr. Yann is widely published in the international medical literature and wrote five books on global health and tropical diseases. He has provided clinical care as General Practitioner in France, Singapore, New Caledonia, and Nigeria, and as an Emergency Medicine Specialist in Paris. He was previously a Tropical Diseases Consultant at the Pitie-Salpetriere hospital in Paris, Chief Medical Officer for Chevron Oil Co. in Papua New Guinea, Cellucam Corporate Physician in Cameroon, Nigeria and China, Gambia, Egypt and Congo-Brazzaville for various International Corporations including Cellucam, Spie-Batignolles and Schlumberger, EDF and Bosch, respectively.

In Public Health, Dr. Yann created a Public Health program for the Southern Highlands province of Papua New Guinea and conducted USAID public health programs and epidemiological surveys in Senegal, China, Papua New Guinea, Haiti, and New Caledonia. As Researcher, he led or participated in clinical trials providing new treatments for HIV/AIDS, tropical (malaria, intestinal nematodosis, amebiasis,

giardiasis), cardiovascular/hematological and respiratory diseases. As Business Executive: he was Director of International Corporate Affairs and Business Development for Stanford Hospital and Clinics, Research Manager for Hoffmann LaRoche drug Company in charge of antibiotics and anti-parasitic drugs and the Paris Export Medical Director for Delagrangre drug Company in charge of Eastern Europe, Africa, the Middle-East, and Asia. He was Co-founder and Business Manager of International Business Proactivity Pte Ltd in Singapore. He created his own healthcare consulting company HealthConnect International LLC, in Silicon Valley and is now Senior Healthcare Consultant based in Foster City, CA.

Dr. Yann is Honorary Member of the Brazilian Academy of Medicine, Associate Member of the Singapore Academy of Medicine, Member of International Academy of Fellows and Associates, Royal College of Physicians and Surgeons of Canada and Fellow of the Australasian College of Tropical Medicine. He is listed as a notable public figure by the US Institute of Medicine, Division of Health Promotion and Disease Prevention.

PREFACE

The Society for the Advancement of Science in Africa (SASA) invited faculty, researchers, practitioners, policy stakeholders, and students to participate in the 6th SASA International Scientific Conference proceedings held at the Ontario Institute for Studies in Education, University of Toronto, Canada, June 6-9. The conference carried forward SASA's vision and mission: The advancement of science in Africa; with the overarching theme; "***International Research in Africa.***" The papers published in this book are a representative collection highlighting the focus of the conference. The focus of the proceedings was on research as it relates to healthcare, academic research, science education, economic development, and funding research in Africa.

The sub-themes bulleted below were addressed in keynote presentations and discussed in panel and plenary sessions:

- Developing inter-institution/organization collaborations
- Stimulating interdisciplinary private/public collaborative research
- Assessing external funding impact on research policy and capacity building
- Enhancing the role of research in economic development
- Promoting/fostering research leadership
- Encouraging student and faculty participation in research in Africa
- Re-evaluating brain drain causes and consequences

Participants included science educators and researchers from various academic centers, research institutions, government agencies, private and multinational corporations, NGOs, and other entities who are dedicated to building a cutting edge African research base in the areas mentioned above. Key papers presented during the proceedings are published in this volume. It has been treated at different dispersal levels of collaboration including international, continental, regional and national. The book reflects an interesting compilation of research covering a broad range of areas including medical science, public health, science and research policy, economic implications of science, science education and agriculture,

The specific topics encompassed vaccine manufacture in Africa, preventing oral cancer in Nigeria, decreasing the disparity of childhood cancer globally, preventing HIV/AIDS and cancer in sub-Sahara Africa, detecting obesity as a risk factor for mother and newborn babies at delivery, tertiary care of children and teens with type 1 diabetes in Africa, to early diagnosis of sarcoidosis, and improving sanitation and health practices in villages in Uganda. In the area of science policy, papers submitted included; an international perspective on promoting interdisciplinary private/public collaborative research, the evaluation of political and governance imperatives for reversing the African brain drain, preventing the outflow of African health professionals to more affluent countries and how to tackle health inequality in Africa by building upon international experience. In the area of science education, a study from South Western Nigeria describes the results of an empirical investigation of knowledge management enablers in nursing care. Finally, in agriculture a chapter presents the potential of growing sorghum to drive rural economies in Eastern Africa. An impressive compilation of excellent papers.

Joachim Kapalanga,
Yann Meunier

ACKNOWLEDGEMENTS

We are grateful to all the authors for taking the time to contribute to the chapters that made compiling this volume possible. We would like to thank the Ontario Institute for Studies in Education (OISE), the University of Toronto, the Africa Institute, Western University, and the International Institute of Medicine and Science, Rancho Mirage, California, U.S.A, for their benevolent support in our dedication of time and effort to this project dedicated to international research in Africa and, more generally, to the advancement of science, research and education to improve the health, economic and social conditions across Africa. We would also like to thank Professor Glen Jones, Dean of the Ontario Institute for Studies in Education (OISE) for his warm welcome and hospitality while holding this Conference on their premises. We thank also Professor Njoki Wane and Dr. Francis Akena Adyanga for securing the Conference venue at OISE. Thanks are further due to Professor Wane, Morris Komakech, Dr. Suleiman Demi, Dr. Francis Adyanga Akena and their team for the organization of all international and local arrangements that contributed in no small measure to the success of the Conference. We would be remiss not to mention the critical role of Professor Yann Meunier in his quality as Conference Chair and Events Manager. In his dual role, Dr. Meunier provided outstanding leadership and unpatrolled efficiency in managing various facets of conference organizing. Through his energetic and laser sharp leadership skills, Dr Meunier successfully invited over half a dozen eminent keynote speakers from premier academic institutions in Canada, the US and beyond. He embraced his role enthusiastically and personally carried out critical work that ultimately led to a successful conference.

We would further like to express heartfelt thanks to Professor Nicole Haggerty, Director of the Africa Institute, Director Ubuntu Management Education Initiative and of the Ivey Business School, Western University, Professor Denis Daneman, Emeritus Chair of Paediatrics, Faculty of Medicine, University of Toronto, Associate Professor Cynthia Maxwell of the Maternal Fetal Medicine Program, Department of Obstetrics and Gynaecology, Faculty of Medicine, University of Toronto and Professor Dennis Raphael of the Faculty of Health - School of Health Policy & Management, York University for their support and participation. Special thanks to Dr. Robert Sebbag former Vice-President of Sanofi, France,

Professor Jay Bhattacharya of Stanford University, Associate Professor Eran Bendavid of Stanford University and Professor Emeritus Ronald Laporte, Graduate School of Public Health, University of Pittsburgh U.S.A. for their spirited participation in our deliberations. Special thanks are also due to Professor Emeritus Sam Lanfranco of York University and Professor Emeritus Emilio Ovuga, Department of Psychiatry, Gulu University, Uganda for their unwavering support, enthusiasm for, and contribution to SASA's vision, mission and objectives.

Finally, we would like to thank the publishing team at Cambridge Scholars, particularly Mr. Adam Rummens, Ms. Rebecca Gladders, Ms. Victoria Carruthers, Ms. Amanda Millar and Ms. Courtney Blade for their assistance, support and transforming the manuscript into a published title.

2019 CONFERENCE ORGANIZING COMMITTEE

Conference Chair: Njoki Wane, PhD

Conference Program Chair: Yann A. Meunier, MD, FAMS, FACTM

Director, Scientific Committee: Alain Fymat, PhD, PhD

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Diplomatic Liaison, Charles Male, MA

Student Science Fair Coordinator: Leonard Wandili, MA

Conference Graphics and Awards Plaques, Denis Obita, MA

Conference outreach, Moses Okumu, PhD

Website Assistant, Yedesdes Salem, MSc

CONFERENCE PROGRAM

DAY 1: THURSDAY, JUNE 6, 2019	
ALL DAY LONG: HIGH SCHOOL SCIENCE FAIR	
9:00 – 11:50	SASA Meeting (closed session)
12:00 – 12:30 Lunch Break	Lunch Break
12:50 – 13:00 Welcome Remarks	Glen Jones, PhD Dean, Ontario Institute for Studies in Education, Toronto, Canada
13:00 – 13:15 Welcome Remarks	Joachim Kapalanga MD, PhD SASA Executive President, Professor (Adj.) of Pediatrics, Schulich School of Medicine and South Western Ontario Academic Health Network University of Western Ontario, Canada
13:15 – 13:30 Welcome Remarks	Njoki Wane, PhD Professor and Associate Chair Department of Social Justice Education Ontario Institute for Studies in Education University of Toronto, Canada Carnegie and African Diaspora Scholar Member of Presidents' Teaching Academy
13:30 – 13:45 Welcome Remarks	Yann A. Meunier, MD, FAMS, FACTM International Senior Healthcare Consultant, USA Professor and Director, International Institute of Medicine and Science, USA Former Director, International Business Development and Corporate Affairs, Stanford Hospital and Clinics, USA Former Director, Stanford Health Promotion Network, USA Former Adjunct Assistant Professor, George Washington University, USA Former Assistant Professor, René Descartes University, France

13:45 – 13:55 Multiple Informal Introductions	Multiple Informal Introductions Robert Sebbag, MD Former Vice-President, Access to Drugs Sanofi, Paris, France
14:00 – 14:45 Keynote Address	Characteristics, Demographic Factors and Predictors of Oropharyngeal Cancer Knowledge and Risk Perception among Road Transport Workers in Lagos State, Nigeria Oyapero Afolabi, MPH Lecturer, Lagos State University College of Medicine
14:45 – 14:55 Platform Presentation	Tackling Health Inequalities: Lessons from International Experiences Dennis Raphael, PhD Professor Faculty of Health – School of Health Policy & Management York University, Toronto, Canada
15:00 – 15:45 Keynote Address	Addressing the Global Childhood Cancer Disparity through Innovative Partnership Models: The Role of International Academic Collaborations Helen Dimaras Assistant Professor, Department of Ophthalmology and Vision Sciences, Faculty of Medicine & Division of Clinical Public Health, Dalla Lana School of Public Health, University of Toronto Scientist, Department of Ophthalmology and Vision Sciences, Child Health Evaluative Sciences
15:45 – 15:55 Student Presentation (1)	Sarcoidosis: Review of the Challenges to Manage an Enigmatic Disease in Africa Samuel Offor PhD Student, Pharmacology and Toxicology Department, University of Uyo, Nigeria
16:00 – 16:45 Keynote Address	Can Africa Manufacture its Drugs and Vaccines? Alain L. Fymat, PhD, PhD SASA Vice Chair & Scientific Director President and Professor International Institute of Medicine and Science, USA.
16:45 – 16:55 Platform Presentation	Sanitation and Health Practices: A Positive Deviance Study of Three Community Led Total Sanitation (CLTS) Host Villages in Uganda Jannette Abalo Researcher Department of Health Promotion and Development, University of Bergen, Norway Makerere University, Kampala, Uganda

17:00 – 18:00 Panel Discussion	Challenges and Opportunities for Healthcare and Pharmaceutical Research in Africa Moderator: Yann A. Meunier, MD, FAM, FACTM Panelists: Alain L. Fymat, PhD, PhD; Leon Mutesa, MD; Dennis Raphael, PhD; Jannette Abalo, Researcher
DAY 2: FRIDAY, JUNE 7, 2019	
9:00 – 9:45 Keynote Address	Enhancing the Role of Research in Economic Development Sam Lanfranco, PhD Professor Emeritus and Senior Scholar in Economics, York University, Toronto, Canada
9:45 – 9:55 Platform Presentation	African Problems and Solutions for Reaching Adequate Research Funding Susan McGrath, PhD, MES Professor Emerita Resident Scholar, Centre for Refugee Studies Member of Order of Canada York University, Toronto, Canada
10:00 – 10:45 Keynote Address	Encouraging Student and Faculty Participation in Research in Africa Emilio Ovuga, MD Professor of Psychiatry and Mental Health, Gulu University, Uganda
10:45 - 10:55 Student Presentation (2)	Neonatal Circumcision: a Subject for Collaborative Education and Practice in Sub-Saharan Africa Oyidia Ijioma MD, Resident, Richmond Hill Urology and PI Sentinel Hospital, Lagos, Nigeria
11:00 – 11:10 Platform Presentation	Credit Risk Management and Loan Quality Portfolio in Microfinance Institutions (MFIs) in Rwanda: a Case Study of Copedu Ltd Ndikubwimana Philippe Deputy Dean, Academic Head of Gikondo Campus, College of Business and Economics University of Rwanda
11:10 – 11:45 Break and Networking	Participants Relax and Network with One Another
11:45 – 11:55 Platform Presentation	Unlocking Sorghum Potential to Drive Rural Economies in Eastern Africa Alexander Bombom, PhD Senior Research Scientist National Agricultural Research Organisation (NARO) National Livestock Resources Research Institute (NaLIRRI)

12:00 – 12:45 Panel Discussion	African Problems and Solutions for Reaching Adequate Research Funding Moderator: Sam Lanfranco, PhD Panelists: Emilio Ovuga, MD; Yannick Useni, PhD; David Zakus, BSc, MES, MSc, PhD; Susan McGrath, PhD, MES
13:00 – 13:55 Lunch Break	Lunch Break
14:00 – 14:45 Keynote Address	Stimulating Interdisciplinary Private/Public Collaborative Research: The Example of a Public Health Program for about 10,000 Villagers in the Kutubu Area of PNG Yann A. Meunier, MD, FAM, FACTM Former Chief Medical Officer, Chevron Oil Co, Papua New Guinea (PNG)
14:45 – 14:55 Platform Presentation	Comprehensive Tertiary Care of Children and Teens with Diabetes Denis Daneman, OC, MBBCh, FRCPC, DSc(Med), FFPAED(Hon), RCPI Chair Emeritus Department of Paediatrics, University of Toronto Paediatrician-in-Chief Emeritus, The Hospital for Sick Children
15:00 – 15:45 Keynote Address	Promoting-Fostering Health Research Leadership in Africa Leon Mutesa, MD, PhD Professor of Human Genetics, Center for Human Genetics College of Medicine and Health Sciences, University of Rwanda, Kigali, Rwanda
15:45 – 15:55 Student Presentation (3)	Impact of Maternal Periodontal Diseases on Preterm Birth and Low BirthWeight in Babies: Results of a Scoping Review in Rwanda Peace Uwambaye PhD Student, University of Rwanda College of Medicine and Health Sciences, School of Dentistry
16:00 – 16:45 Keynote Address	Obesity in Pregnancy: International Guidelines and Research Cynthia Maxwell, AB, MD, FRCSC (Ob/Gyn & MFM), RDMS, DABOG Maternal Fetal Medicine Specialist, Obesity Medicine Specialist Division Head, Maternal Fetal Medicine, Mount Sinai Hospital Associate Professor, Department of Obstetrics and Gynaecology University of Toronto

16:45 – 16:55 Platform Presentation	Evidence, Ethos and Experiments: Anthropology and History of Medical Research in Africa Onek Adyanga, PhD Associate Professor, History Millersville University, Millersville, Pennsylvania
17:00 -17:45 Presentation of Awards	Presentation of Awards, Recognitions, and Certificates of Apprecia
17:50 - 18:35 Panel Discussion	The Link Between Research and its Funding: Challenges and Opportunities Moderator: Joachim Kapalanga MD, PhD Panelists: Leon Mutesa, MD, PhD; Eran Bendavid, MD, MS; Yann A. Meunier, MD, FAM, FACTM; Cynthia Maxwell, AB, MD, FRCSC (Ob/Gyn & MFM), RDMS, DABOG; Denis Daneman, OC, MBBCh, FRCPC, DSc(Med), FFPAED(Hon), RCPI
18:35 Session Adjourns	Session Adjourns
19:00 – 21:00 For Keynote Speakers	Dinner

DAY 3: SATURDAY, JUNE 8, 2019	
9:00 – 9:45 Keynote Address	Public Health in Africa: Evaluating What Works in Large-Scale Public and Private Initiatives Eran Bendavid, MD, MS Associate Professor of Medicine, Stanford University
9:45 – 9:55 Platform Presentation	The African Brain Drain: Evaluating the Political and Governance Imperatives for Reversing the Drain Victor Eno, PhD Associate Professor of Political Science Florida Agricultural and Mechanical University Department of History and Political Science Tallahassee
10:00 – 10:45 Keynote Address	Brain Drain in the Health Sector in Africa: Trends, Problems, and Solutions David Zakus, BSc, MES, MSc, PhD Adjunct Professor, Clinical Public Health Division Office of Global Public Health Education & Training, University of Toronto, Canada, Dalla Lana School of Public Health
10:45 – 10:55 Student Presentation (4)	Timely Access to Maternal, Newborn, and Child Healthcare for Rural Communities in Rwanda: Role Performance of Female Community Health Workers Jean Bosco Bigirimana Masters Student Western University
11:00 – 11:45 Keynote Address	An Evaluation of Feed the Future on Under-5 Nutrition in Sub-Saharan Africa Jayanta Bhattacharya, MD, PhD Professor of Medicine Stanford University
11:45 – 11:55 Platform Presentation	Impact of External Funding on Human Capital Development and University Rating in Akwa Ibom State University, Nigeria Offor, Offiong, PhD Lecturer Akwa Ibom State University, Nigeria

12:00 – 12:45 Panel Discussion	Quality of Healthcare in Africa. How to Assess Intervention/Measure Outcomes Moderator: Jay Bhattacharya, MD. PhD Panelists: Eran Bendavid, MD, MS; David Zakus, BSc, MES, MSc, PhD, TBD; Yann Meunier, MD, FAM, FACTM; Offor Offiong, PhD
13:00 – 13:55 Lunch Break	Lunch Break
14:00 – 14:45 Keynote Address	Developing Inter-Institution/Organization Collaboration for Case-based Education in Africa Nicole Haggerty, PhD Associate Professor at the Richard Ivey School of Business at Western University
14:45 – 14:55 Platform Presentation	Women in Science, Democracy and Development in Uganda. A Case Study: the Briquette Project Robinah K. Nanyunja President and CEO, Pilot International First Vice-President, African Greens Federation, Ouagadougou, Burkina Faso
15:00 – 15:45 Keynote Address	Conflict and Health: Meeting Challenges to African Health Security Ibrahim Bani, PhD Professor Global Health Dept, Rollins School of Public Health Emory University, Atlanta, GA, USA
15:45 – 15:55 Student Presentation (5)	Health Implications of Agrochemical Use Among Smallholder Farmers in Ghana Suleyman Demi, PhD PhD Candidate University of Toronto
16:00 – 16:45 Keynote Address	Achieving Scientific Equity in Africa, Tearing down Scientific Barriers Ronald LaPorte, PhD Professor Emeritus, former WHO Collaborating Centre Department of Epidemiology Graduate School of Public Health University of Pittsburgh

16:45 – 16:55 Platform Presentation	Leveraging South Africa's Brain Drain Gain for National and Regional Development: Policy Implications Akwasi Arko-Achemfuor Associate Professor College of Education University of South Africa
17:00 – 17:55 Panel Discussion	The Future of Scientific International Collaboration Moderator: Nicole Haggerty, PhD Panelists: Ibrahim Bani, PhD; Robinah K. Nanyunja, CEO; Joachim Kapalanga MD, PhD; Yann A. Meunier, MD, FAM, FACTM
19:00 – 21:00 For Keynote Speakers, LOC, and Volunteers	Dinner
DAY 4: SUNDAY, JUNE 9, 2019	
<ul style="list-style-type: none"> • High School Student Science Presentations (Continued) • Annual General Meeting • Ancillary Events 	

CHAPTER ONE

CHARACTERISTICS, DEMOGRAPHIC FACTORS AND PREDICTORS OF ORAL CANCER KNOWLEDGE AND RISK PERCEPTION AMONG ROAD TRANSPORT WORKERS IN NIGERIA

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Abstract: Road transport workers are a heterogeneous group of workers that have been known to be exposed to certain occupational hazards. They use substances such as alcohol, cigarette, kola nut, marijuana, and amphetamines to improve their performance and alertness, and they also engage in casual sex. The aim of this study was to characterize their exposure to certain risk factors, and to determine the predictors of oral cancer knowledge among a group of road transport workers in the Ojota and Berger bus terminals in Lagos State.

Methods: This study involved a representative sample of 100 drivers and bus conductors recruited by probability sampling from the garage list of registered transporters in two bus terminals (Ojota and Berger) in Lagos State. The study employed a structured, interviewer-administered, close-ended, questionnaire in the English language, adapted from a previous study. Covariates examined included age, gender, marital status, educational status, income level, and tobacco and alcohol use. Oral cancer

knowledge was derived from combining questionnaire items to obtain a knowledge score, and risk levels were estimated based on smoking, drinking, and other risk factors.

Results: All the respondents were male, while the majority were Yoruba (64; 64%), Christian (51; 51%), married (68; 68%), and with less than 12 years of formal education (64; 64%). Only 26 (26%) of the road transport workers had heard about oral cancer, and none of the 100 respondents had heard about an oral cancer examination, nor had undergone one. 78 (78%) had a history of previous or current tobacco use, while 89 (89%) consumed alcohol occasionally or regularly. The daily smoking rate (5 cigarettes or more) was 38% (38 respondents) while the prevalence of daily alcohol use (2 pints or more) was 43% (43 respondents). 69 (69%) had a history of previous or current kola nut chewing, while 56 (56%) ate at least 2 kola nuts daily. 91 (91%) had low oral cavity and oropharyngeal cancer knowledge. The mean knowledge score was 3.41 ± 2.64 out of 15. 22 (22%) participants who identified cigarette smoking, and 20 (20%) heavy alcohol consumption, as risk factors for oral cancer, and only 1 (1%) knew about two other risk factors; oral sex and HPV infection). None of them associated kola nut chewing as a risk factor for oral cancer. Logistic regression modelling showed that education levels, and alcohol and tobacco use were significantly associated with knowledge levels ($p = 0.021, 0.001$ and 0.045 , respectively).

Conclusions: Being a truck or bus driver in this part of Lagos State in Nigeria seems to induce workers to drink more than in other sectors of society, irrespective of religious affiliation. The knowledge and risk perception about oropharyngeal cancer was low among 100 drivers and bus conductors surveyed in the Ojota and Berger bus terminals in Lagos State, while their prevalence of exposure to potential carcinogens and other environmental hazards was high. Thus, they are an important target group in controlling tobacco and alcohol use in Nigeria, and they should receive adequate attention for oral health promotions and other preventive initiatives.

Keywords: oral cancer, risk, factors, awareness, alcohol, tobacco, road, transport, workers

1.1 Introduction

Cancer of the mouth and oropharynx is the tenth most common malignancy worldwide, but it is the seventh most prevalent cause of cancer-induced mortality, afflicting about 354,864 people worldwide and causing 177 384