

STEM-IV Conference, Yaounde, Cameroon
May 29 – June 2, 2017
“Africa - US Frontiers in Science”

- *Preliminary Conference Program* -

Monday, May 29

7:00-9:00 PM

Meet and Greet Reception

Venue: Mont Fèbé Hotel

Day One: Tuesday, May 30

I. 8:30-10:00 AM

Conference Opening

Venue: Palais de Congrès

Welcome, Official Greetings, Purpose and Keynote Address

- Organizers from the University of Michigan and the University of Yaoundé I
- Dr. Mark Schlissel, President, University of Michigan, USA (*Video greeting*)
- H.E. Philemon Yang, Prime Minister of the Republic of Cameroon, Keynote Address

“International (Africa--US) Frontiers in Science”

10:00-10:15 AM

Break

II. 10:20-12:00 PM “STEM-Africa Round Table: Frontiers in Science”

Many African countries are in the early phases of implementing national development plans, in an effort to build upon their recent economic growth to become emerging nations in the near term (agenda 2035 in the case of Cameroon). The roundtable will discuss the scope, scale and global context of policies and actions that African nations may consider, in order to enable realization of their varied goals of becoming *emergent* nations. It will address exemplary and effective institutional arrangements, government-university-industry collaborations and North-South international partnerships that can enable African nations to develop the necessary STEM workforce for sustainable, competitive industrial and technology-based economies.

Confirmed Participants:

- **Louis Paul Motaze**, Minister of Economic Planning and Regional Development, Cameroon
- **Cosmas Ochieng**, Director, African Science and Technology Policy Institute, Nairobi
- **Shobita Parthasarathy**, Faculty, Gerald R. Ford School of Public Policy; Director, Science, Technology and Public Policy program, University of Michigan, USA
- **Bill Colglazier**, Immediate Past Science and Technology Advisor to US Secretary of State, USA

Moderator: **Anne Petersen**, Research Faculty, University of Michigan; Chairperson, Policy and Global Affairs, US National Academies, USA

12:10-1:15 pm

Working and Networking Lunch

III. 1:30-3:00 PM “Environmental Sciences, Climate and Sustainability”

Environmental Sciences in Africa are moving beyond troubling legacies of imperial expeditions that exploited local knowledge systems to bolster the theoretical and technical power of knowledge economies outside of the continent. Today, scholars acknowledge the contributions of traditional knowledge systems to fields like pharmacology, botany, ecology, and zoology. And, they note that new models for knowledge production and circulation are emerging from African settings to drive trends in science. What are those emerging models, and what is their relevance to addressing the major challenges for human security faced by populations in Africa and beyond? The three segments in this session present cutting edge collaborative work with scientific rigor and social relevance.

Confirmed Participants:

Innovations for Food-Water-Energy in African Economies

- **Amougou Amranthé**, Former Dean, Agronomy Institute of Dschang and Yaoundé I Science Faculty, MINRESI, Cameroon
- **Roy Clarke**, Faculty, Applied Physics, University of Michigan, USA, with
- **Patrick Mickala**, Faculty, Department of Biology and Vice Dean of Sciences, Université des Sciences et Techniques de Masuku, Gabon

Ecological Monitoring and Conservation of Biological Resources

- **Nyeema Harris**, Faculty, Ecology and Evolutionary Biology, University of Michigan, USA
- **Chimere Diaw**, Author IPBES report on African Biodiversity, Ecoagriculture Partners, Director, Model Forests Initiative, Cameroon

Confronting Climate Change through Science Collaboration

- **Brian Arbic**, Faculty, Earth and Environmental Science, University of Michigan, USA
- **Joseph Victor Hell**, Director, Institute of Geological and Mineral Research, Cameroon

Moderator: **Rebecca Hardin**, Faculty, School of Natural Resources and the Environment, University of Michigan, USA

Discussant: **François Xavier Etoa**, Rector, University of Douala, Cameroon

IV. 3:30-5:00 PM “Implementing Biomedical and Clinical Systems to Address Health and Wellness”

Issues that affect health of people and overall physical and mental wellness are challenges faced in every country. This panel focuses on systems approaches in several areas that have been successful in preparing infrastructure and professional or community-level personnel to address some of the most pressing challenges. We will showcase strategies that address specific areas of health and wellness for people in communities and areas that are important for nationwide implementation. The goal of the session is to provide opportunities for dialogue on what can be useful in many countries through adapting and local adjustment of a successfully pioneered approach.

Confirmed Participants:

- **Rockefeller Oteng**, Faculty, Emergency Medicine, University of Michigan, USA
- **Clement Ndongmo**, Chief, Laboratory and Infrastructure Support Branch, Centers for Disease Control and Prevention, Zambia
- **J. L. Essame Oyono**, Director, Institute of Medical Research and Medicinal Plant Studies, Cameroon
- **Mosoka Fallah**, Deputy Director, National Public Health Institute of Liberia, University of Liberia, Liberia

Moderator: **Oveta Fuller**, Faculty, Microbiology and Immunology, Medical School; Director, African Studies Center, University of Michigan, USA

Discussant: **Theresia Nkuo-Akenji**, Vice Chancellor, University of Bamenda, Cameroon

7:00-9:00 PM Conference Dinner

Speaker: **Madeleine Tchuinte**, Minister of Scientific Research and Innovation, Cameroon

Day Two: Wednesday, May 31

V. 8:30-10:00 AM “Partnering for Research, Innovation and Economic Development”

Keynote Address and Panel Discussion

Speaker: **S. Jack Hu**, Vice President for Research and J. Reid and Polly Anderson Professor of Manufacturing, University of Michigan, USA

Confirmed Participants:

- **S. Jack Hu**, Vice President for Research, University of Michigan
- **Kwasi Adarkwa**, Former Vice-Chancellor, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana
- **Ophelia Weeks**, Vice-President for Academic Affairs, University of Liberia, Liberia
- **Jean Marcel**, Director of Policy, Ministry of Scientific Research and Innovation, Cameroon

Moderator: **Elijah Kannatey-Asibu**, Faculty in Mechanical Engineering, University of Michigan, USA

VI. 10:30--12 noon “African Women Engineers and Scientists”

There is a need to develop strategies to empower women engineers and scientists on the African continent. Due to the lack of critical mass in industry, government and academia, women are often excluded from decision making positions, impacting the entire societal structure. Currently, there is little in terms of role models and professional support for young women in STEM. The panel will showcase strategies and current initiatives that have proven helpful in addressing this challenge. Speakers from a wide range of background will present the efforts they are involved in and how these can be applied to a broad range of situations and countries.

Confirmed Participants:

- **Veronique Nintchom Penlap Beng**, University of Yaoundé I, Cameroon
- **Ophelia Weeks**, Vice-President, University of Liberia, formerly Dean of Sciences, Liberia
- **Chantal Mveh**, Ministry of Economy, Planning and Regional Development (MINEPAT), Cameroon.
- **Judith Torimiro**, Faculty, Medicine and Biological Sciences, University of Yaoundé I, Cameroon.

Moderator: **Aline Cotel**, Faculty, Environmental Engineering, University of Michigan, USA

Discussant: **Mariam El Boakye-Gyasi**, Faculty, Pharmacy, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana

12:05 - 1:20 pm Special Conference Lunch

“The Heritage of Africa and Sustainable Development”

Speaker: **George Abungu**, Okello Abungu Heritage Consultants; Former Director, National Museum of Kenya, Kenya and Mauritius

The diversity and wealth of African heritage is extraordinary, from its large-scale ecosystems to modern architecture; from the memory of slavery and colonial heritage to cultural landscapes and sacred sites. The question of whether heritage can be used sustainably for development seems to be no longer contested. Now we must recognize the centrality and roles of heritage as a driver for development and community benefits including in developments traditionally focused on by STEM disciplines.

VII. 1:30 – 3:00 PM “STEM for Industrial Transformation in Africa”

Industrial transformation will be a key contributor to Africa’s development. Among the major factors that will fuel such transformation are:

- a strong manufacturing base
- a STEM-focused education program
- a well-educated and well-trained workforce
- policies designed to support industrial transformation
- other issues such as supporting infrastructure; building industry from STEM; intellectual property; relations with industry; start-up companies; science & technology parks; university businesses; marketing and science communication; digital economy.

The panel will discuss these and other issues that they deem appropriate to facilitate the transformation of African economies from commodity-based to industrial economies.

Confirmed Participants:

- **Young-Gil Lee**, Vice Chancellor, Kuma University, Uganda
- **Uphie Chinje Melo**, Director, MIPROMALO, Cameroon
- **Antonio Pedro**, Director, United Nations Economic Commission for East Africa, Rwanda
- **Freda Yawson**, Founder and CEO, Innovate Ghana, Ghana

Moderator: **Cheong-Hee Chang**, Faculty, Microbiology and Immunology, Medical School, University of Michigan, USA

Discussant: **George Abungu**, Former Director, National Museum of Kenya, Kenya and Mauritius

VIII. 3:30--5 PM “Young African Scientists”

The future of cutting edge science research and education depends on faculty who are prepared and accessible as informed teachers, engaged mentors and innovative research leaders. This session features presentations and discussion from young scientists in Cameroon and early career faculty from other African countries who are alumni of the University of Michigan African Presidential Scholars Program (UMAPS). Scholars will present their research in this and other sessions and will provide unique perspectives on the future of research and education to benefit people of their respective countries. All will present posters that are available throughout the

conference.

Confirmed Participants:

- **Dagnachew Adugna**, Ethiopia
- **Ako Ako Andrew**, Cameroon
- **Fitsum Assamew**, Ethiopia
- **Mariam El Boakye-Gyasi**, Ghana
- **Vivian Boamah**, Ghana
- **Lilian Duku**, Ghana
- **Linda Fondjo**, Ghana
- **Zerihun Getaneh**, Ethiopia
- **Dennis Ikpe**, South Africa
- **Priscilla Mante**, Ghana
- **Auxcence Mbia**, Cameroon
- **Guy Ngounou**, Cameroon
- **Arthur Zang**, Cameroon

Moderators: **Maurice Aurelien Sosso**, Rector, University of Yaoundé I, Cameroon

Discussant: **Jacques Tagoudjeu**, UMAPS; Faculty, Mathematics, University of Yaoundé I, Cameroon

Evening: *Open*

Day Three: Thursday, June 1

Resources and Solutions: US-Africa STEM Networks and Infrastructures

IX. 8:30-10:00 AM “Preparing the Next Generation”

We focus on institution-to-institution partnerships and collaborations such as the network of the African Centers of Excellence (ACE Network in general and CETIC in particular), the regional centers of the Central African States (ECCAS) and University-to-University programs. We will emphasize the ways new research centers in Africa, especially those closely allied with existing universities, and parallel centers in Universities and free-standing institutes elsewhere can collaborate in a stable and ongoing way with partners to help achieve critical mass in rapidly developing specialties for both research and teaching.

Confirmed Participants:

- **Maurice Tchuenta**, Former Minister of Scientific Research and Principal Investigator, CETIC, Yaoundé, Cameroon
- **Joel Tossa**, Director, Institute of Mathematical and Physical Sciences, Benin

- **David Ossene**, Coordinator, University Centers of Excellence in Science and Technology, Economic Community of Central African States, Gabon
- **Claudio Arezzo**, International Center for Theoretical Physics, Trieste, Italy

Moderator: **Daniel Burns**, Faculty, Mathematics, University of Michigan, USA

Discussant: **Bertrand Tchamwa**, Vice President for Manufacturing and Operational Excellence, SealedAir

X. 10:30-12 Noon “Learning from Academic Partnerships”

We will examine the Ghana-Michigan partnership that has led to training and retention of over 140 OBGYN physicians in Ghana. The model with the goal of reducing maternal mortality has been utilized in Malawi, Liberia, Ethiopia and Sierra Leone, among others. Recently, the University of Buea has adopted this model to partner with the University of Arizona to start a new program to train obstetricians/gynecologists. We will discuss the components of the model that are easily replicated, and how to apply this model across STEM disciplines as one effective approach to use systems to address wellness needs.

Confirmed Participants:

- **Michael Brady**, Faculty, Obstetrics and Gynecology, University of Arizona, USA
- **Joel Ogonna**, Director, Centre for Petroleum Research & Training, Centre Leader, World Bank African Centre of Excellence for Oilfield Chemicals Research, IPS, University of Port-Harcourt, Nigeria
- **Gregory Halle-Ekane**, University of Buea, Cameroon

Moderator: **Frank Anderson**, Faculty, Obstetrics and Gynecology, University of Michigan, USA

Discussant: **Elizabeth Tamajong**, Faculty, Medicine and Biomedical Sciences, University of Yaoundé I, Cameroon

12:10-2:00 pm Conference Lunch and Poster Session I

XI. 2:10-3:40 pm “Peer-to-Peer Associations and Networks”

We will address internationalization of research, specifically including: science diplomacy, collaborative projects, dual degree programs, sandwich programs, ACE case study and other Centers for Excellence in higher education in Africa, building cooperation between the Universities and Research Centers in Cameroon and U-M. How can entities work together to expand impacts on science education and research to meet needs at the frontiers of new

discovery.

Confirmed Participants:

- **Thomas Dongmo**, Director of Cooperation, MINRESI, Cameroon
- **Eric Sheppard**, Chairperson, Interdisciplinary Consortium for Research and Education Access in Science Engineering (INCREASE), Dean, Hampton University and ASEE, USA
- **Peggy Oti-Boateng**, Coordinator, African Network of Science and Technology Institutes, UNESCO, Zimbabwe
- **Michael Dignam**, President and CEO, CRDF Global, USA

Moderator: **Brian Arbic**, Faculty, Earth and Environmental Sciences, University of Michigan, USA

Discussant: **Gereme Melessew**, Faculty, Space Studies and Applied Physics, Bahir Dar University, Ethiopia

3:00- 3:45PM Networking Break and Poster Session II

XII. 3:45-5:30 PM Exploring “The Way Forward”

Breakout small group session of conference attendees followed by plenary reports will explore the way forward. What is next—to where will we go from here in Africa-US Partnerships at the Frontiers of Science?

Leads for Closing Conference Plenary Discussions

Oveta Fuller, USA

Nkem Khumbah, USA

Uphie Chinje Melo, Cameroon

Charles Awono Onana, Cameroon

Jacques Tagoudjeu, Cameroon

6:30-9:00 PM Closing Conference Dinner

Speaker: **Jacques Fame Ndongo**, Minister of Higher Education, Cameroon

Friday, June 2

Satellite Events to STEM-IV Conference

Venue: *Mont Fèbé Hotel*

(Times and room locations to be announced.)

- **University of Michigan African Presidential Scholars (UMAPS)**
Scientific Research Forum and UMAPS Alumni Network Meeting.

Information and updates on the UMAPS program for alumni and attendees. We will discuss implementation in progress of launching the UMAPS Alumni Network of the African Studies Center.

- **Next Steps: Africa-US Alliances and Agenda 2035**
The Cameroon Higher Education and STEM leadership participants will convene to review the conference, and develop a “Next Steps: Agenda 2035.”
- **Other satellite events** (*as they arise*)