
Makyba Charles-Ayinde

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Profile Statement

A motivated, energetic, and diligent professional with progressive experience across a broad range of stakeholder engagement initiatives through research. Focused on bottom-line, well-organized and action-orientated problem solver who thrives on innovative challenges. Proven ability to combine visions and strong relationship building acumen with well-developed leadership qualities in a variety of working environments. *Relevant areas of expertise include:*

- Policy Analysis and Development
- Partnership Building and Maintenance
- Strategic Planning and Program Development
- Research and Evidence-based Assessment
- Sustainability Transformations
- Environmental Health Surveillance
- Science Communication and Outreach
- Program Evaluation and Measurement

Education

- Ph.D. Public Health (Environmental and Global Health), 2016, University of Florida
C.PH One Health, 2016, University of Florida
GradCert. Diversity, Equity, Inclusion, and Belonging Leadership, in progress, Harvard University
M.S. Biological Sciences, 2010, Purdue University
B.S. Cell & Molecular Biology (Honors), 2007, Florida Agricultural & Mechanical University

National and International Science Leadership

- 2022 - 2023 *Member, Access to COVID-19 Tools-Accelerator Task Force* – comprised of US government representatives to outline policies related to the acceleration of the development, production, and equitable access to COVID-19 tests, treatments, and vaccines.
- 2021 - 2022 *Member, National Institutes of Health-Wide (NIH) Strategic Plan for Diversity, Equity, Inclusion, and Accessibility (DEIA) Working Group* – a working group to define a Strategic Plan that describes how NIH will advance DEIA across its operations, workforce, and the research it supports in a transparent and accountable manner.
- 2018 – 2022 *Co-Chair Executive Advisory Board, Global Sustainability Scholars Program* – a training program for rising undergraduates and young professionals from diverse disciplines creating a network of diverse scholars in sustainability research initiatives
- 2019 – 2021 *Representative, Executive Committee Sustainability Research and Innovation Conference*
- 2019 – 2021 *U.S. Representative, Theme Program Office and Group of Program Coordinators* – Belmont Forum Pathways to Sustainability, Climate Environment and Health and Disaster Risk Reduction and Resilience Collaborative Research Actions

2019 – 2020	<i>Co-Chair, Program Committee Sustainability Research and Innovation Conference</i> – world’s first transdisciplinary gathering in sustainability uniting global leaders, experts, industry, and innovators to inspire action and transformation.
2019 – 2020	<i>Representative, US Global Change Research Coasts Working Group</i> - comprised of 13 federal agencies focusing on the coordination of coastal climate change research in the US
2018 – 2020	<i>U.S. Representative Secretariat, Belmont Forum</i> - consortium of 29 national funding agencies representing 50 countries focused on funding opportunities for public health and global environmental change research and sustainability
2018 – 2021	<i>U.S. Representative Secretariat, Future Earth</i> - a global research program that is focused on systems-based approaches to understand complex Earth systems and human dynamics to underpin evidence-based policies and strategies for sustainable development
2018 – 2020	<i>Representative, US Global Change Research Program International Activities Inter-Agency Working Group</i> - comprised of 13 federal agencies focusing on the coordination of climate change research in the US
2018 – 2020	<i>Representative, Inter-American Institute for Global Change Research (IAI)</i> - intergovernmental treaty organization supported by 19 countries from the Americas and Caribbean
2016 – 2020	<i>Representative, Incident Response Task Force</i> – interagency unit focusing on the coordination of disaster response related to water events; hurricanes, flooding
2016 – 2020	Representative, Health Equity Priority Area Workgroup – designing long-range programs to address health access and inequities across the State of Florida

Description of Professional Activities

Future Earth –*Strategic Partnerships for the Global South Director, Future Earth US NGO and Latin America and Caribbean Lead, Future Earth* – 02/2023 to Present

Leading the expansion, reinforcement, and deepening of strategic relationships among sustainability, informed decision support, and transformative action organizations in the Global South with the offices and communities of Future Earth (FE).

- Collaborative implementation of the Program for Early-stage Grants Advancing Sustainability Science (PEGASuS) including co-development of added value activities to broaden connectivity between the awardees and other Latin-American and Caribbean-based coastal resilience experts and practitioners.
- Advancing networks and connectivity in Latin America and the Caribbean (LAC) while instituting mechanisms to advance science policy and science diplomacy across the region.

- Developing added value activities together with LAC regional coordination bodies including the International Science Council to meet sustainability and decision-making goals.
- Designing mechanisms to facilitate knowledge transfer between the Global South and North utilizing a plethora of media forms.
- Supporting the onboarding of the new Future Earth Africa Hub in South Africa to inform Hub priorities, canvassing all 54 countries integrating regional LAC stakeholders within the value framework.
- Co-leading the post-award coordination of Belmont Forum's Migration and Mobility awards together with the Global Development Network and the Centre for Systems Solutions.
- Serving as the principal focal point and scientific expert on African-region prioritized research activities to include working with funder organizations, incorporating those representing private sector interests, and increased outreach to solicit support for FE-managed awards.

U.S. Department of State – *Foreign Affairs Officer*; Office of International Health and Biodefense, Bureau of Oceans and International Environmental and Scientific Affairs, Washington, DC – 01/2022 to 01/2023

Promoted U.S. national security and economic prosperity by combating biothreats and outbreaks of infectious disease through diplomacy on global scales.

- Served as the Bureau's lead COVID-19 response officer. Lead weekly briefings with colleagues throughout the Department for knowledge transfer of COVID-19 information across regions.
- Developed U.S. Government posture and positioning on the Access to COVID-19 Tools – Accelerator (ACT-A) as the lead officer and member of the Finance and Resource Mobilization Working Group. Provided substantial input on their strategic plan, financing framework, internal evaluation, transition steps, and organizational future of a medical countermeasures mechanism.
- Identified and analyzed public health issues and their impact on operations that are critical to the public health community at large.
- Drafted and shared daily COVID-19 Items of Note (IONs) across the Department containing key developments in the COVID-19 testing and treatment ecosystem and epidemiology update.
- Identified and analyzed public health issues and their impact on operations that are critical to the public health community and economies at large.
- Provided Memo reports and other written products for Secretary Antony Blinken and the National Security Council of the White House containing pertinent COVID-19 updates on a global scale.

- Identified and assessed emerging complex issues and advised the Division Director and his senior staff of potential and emerging problem areas and formulated appropriate program responses.
- Collated input into the second Survey of Host-country Administrations for U.S. government Donated COVID-19 Vaccine Doses on the utilization of USG-donated vaccine doses in-country.
- Reviewed and collated country vaccine implementation plans for the U.S. Government's Initiative for Global Vaccine Access to expand assistance and enhance international coordination to rapidly overcome vaccine access barriers, with a specific emphasis on scaling up vaccination support in sub-Saharan Africa. Developed standards and recommendations.
- Served as the overall lead COVID-19 Pandemic Prioritized Global Action Plan for Enhanced Engagement (GAP) Officer and coordinated the Bureau's effort across all Lines of Effort (LOEs) with a focus on Get Shots in Arms (LOE 1).
- Planned and coordinated of GAP Meetings with foreign diplomats including Senior Official Meetings and Foreign Ministerial inclusive of diplomatic engagement and policy formulations document and summary documents.
- Served as the secondary officer and analyst responsible for analyzing, evaluating, and advising the COVID-19 Vaccines Global Access (COVAX) and Coalition for Epidemic Preparedness Innovations (CEPI) organizations.

National Institutes of Health – *Health Science Policy Analyst*; Office of Strategic Coordination, Office of the Director, Rockville, MD – 01/2021 to 10/2021

Supported high priority research in areas of emerging scientific opportunities, challenges, and knowledge gaps affecting many diseases or conditions broadly related to human health

- Developed messages appropriate for scientific and lay audiences pertaining to each program.
- Identified specific audiences for each program and developed strategies to reach each audience.
- Drafted summaries and reports of Common Fund programs and the related research findings for diverse audiences, including NIH senior staff, the scientific community, and the general public.
- Created content for Common Fund program web pages and assisted with the overall management and coordination of the Common Fund website.
- Participated in the development of Program Announcements, Requests for Applications, and Requests for Proposals in areas of research.
- Identified appropriate evaluation metrics to measure the outcomes and impact of each program, and collected and analyzed data for these metrics.
- Tracked progress towards goals and milestones to determine program success.
- Conducted analyses of the NIH and external research portfolios to identify research trends and gaps to assist in program planning and management.

- Used electronic databases to conduct programmatic analyses and advised program staff on issues related to the program and attended scientific review meetings.
- Provided substantive program consultation and developed, implemented, and evaluated program operations and strategies.
- Provided assistance to prospective grantees on various grant mechanisms and grant review processes through webinars and other virtual communication methods.
- Prepared materials summarizing evaluative data for a variety of audiences, including NIH senior staff, members of Congress, and the general public.
- Responded to congressional requests relevant to the departmental funding portfolio.
- Provided rapid and effective input to the Office of Scientific Workforce Diversity's diversity/inclusion strategy development.
- Organized the High-Risk High Reward Research Program Symposium that brought together ~400 awardees to discuss research innovation and outcomes.
- Disseminated results of research projects via publications, peer reviewed journals, summaries, manuscripts, and special reports and conducted literature searches on relevant scientific areas and collaborated to meet timelines for publication.
- Conducted webinars and made presentations and training on grant submission processes and monitored submission and awards.
- Served as functional representative for all related High-Risk High Reward projects and activities and maintained relationships with internal and external stakeholders.

National Science Foundation – AAAS Science and Technology Policy Fellow; International Activities Program, Office of the Assistant Director, Alexandria, VA - 09/2018 to present

Advances GEO activities through international science leadership, development of strategic partnerships and multilateral funding initiatives through the following organizations

- **Belmont Forum - Secretariat**
 - Uses scientific and technical knowledge to resolve difficult management and administrative problems that prevent effective program application.
 - Plans, develops, and implements global environmental health programs in collaboration with 29 internal member organizations of the Belmont Forum representing more than 50 countries.
 - Works extensively with global national funding agencies, private foundations, and relevant US Government interagency partners to develop and implement international multi-lateral funding mechanisms to support 91 high impact, transdisciplinary projects involving researchers from 62 countries.
 - Serves as steward of each organization and spokesperson to variety of stakeholders from international research organizations, funding agencies, philanthropic and other resource organizations. Provides overview of peer review processes, collaborative research programs, partnership models and advice on forming strategic networks.

- Recruits new members and partners through significant outreach and partnership building. Spearheads recruitment and outreach efforts in the African and Caribbean region for partnership in 5 upcoming collaborative research actions.
 - Analyzes existing systems, strategies and services and advises relative to environmental health gaps and operation policies.
 - Monitors and manages activities of implementing partners by taking the initiative in contributing ideas, offering technical direction and leadership, analyzing options, suggesting corrective measures, and offering informed opinions based on technical expertise and knowledge.
 - Performs output analyses and developing performance metrics for measuring impacts of funded transdisciplinary projects for 17 international calls.
 - Serves as an expert analyst in developing, monitoring, implementing, and evaluating current and projected complex, interrelated environmental health programs involving research agreements.
 - Develops environmental health messages, reports, and disseminates data to funders and program partners in the form of presentations and reports to target lay audiences.
 - Leads organization and facilitation of virtual and in-person project kick off and end of term meetings. Building cross-project networking and leveraging existing scientific strategies for future research plans.
 - Organized a pan-African Scoping Workshop in Accra, Ghana for two new CRAs – Pathways to the Sustainable Development Goals and an African Regional Call and advised on emerging directions of environmental health research.
 - Drafted the call text for Collaborative Research Actions (CRA) - Climate, Environment and Health and Pathways to the Sustainable Development Goals.
 - Responsible for planning, managing, supervising and executing special events and public outreach activities such as at the AGU, AAAS, SRI, FEOH, APRFHE, GHIN, E2A, UNSPBF, GRC, and SGCI meetings and conferences.
 - Created evaluation metrics for the Open Data and Data Management Protocol policies and wrote a white paper on the established metrics.
- ***Future Earth International Research Program - Secretariat***
- Supports international partners including UNESCO, UNEP, United Nations University, International Council for Science (ICSU), International Social Sciences Council (ISSC) and World Meteorological Organization (WMO) to enable an international, inter-transdisciplinary research community.
 - Expands activities across 5 international hubs of the Global Secretariat. Routinely works with senior staff to develop and implement collaborative programs, policies and activities of the organization that leverage the expertise across the Secretariat hubs.
 - Cultivates relationships across the Global Research Hubs and Knowledge Action Networks and facilitates new partnerships with relevant organizations for key programs and projects.

- Guides the development of programming for the Sustainability Research and Innovation Conference including the selection of the host country, program themes, participating academics, industry partners and demonstrations.
 - Consults with the Sustainable Water Future Programme scientists for the establishment of a Future Earth Society and the launch of the Sustainability Research and Innovation Conference.
 - Established and applied evaluation criteria and standards to measure financial, technical, social and environmental soundness during the external review.
 - Identified problem areas, trends, program accomplishments, merit and deficiency situations, as well as areas of imbalances within the Future Earth program.
 - Drafted external report to provide the organization, sponsors and funders with an external assessment of progress and plans towards achieving the original mandate and goals – assessment of current governance, operational structures, priorities and actions and recommendations for improvement.
- ***Global Sustainability Scholars Program – Executive Advisory Board***
 - Analyzes existing systems, strategies and services and advises on environmental health gaps, sustainability and STEM education policies.
 - Serves the expert technical advisor responsible for coordinated novel environmental, public and global health related matters.
 - Bolsters NSF’s impact, by broadening participation, stem education and human resources, increasing inclusion and diversity in transdisciplinary science through teaching and outreach.
 - Wrote a grant to secure funding for the second cohort of scholars which will focus on water and ocean sustainability issues through a transdisciplinary lens.
 - Collaborates with and designs outreach to the Belmont Forums’ Food-Energy-Water Nexus Collaborative Research Action PIs and Future Earths’ Water-Energy-Food Nexus Knowledge Action Network to identify mentors for the program.
 - Networks with the Belmont Forums’ Oceans Sustainability Collaborative Research Action PIs to identify potential grantees that may serve as mentors for the scholars.
 - Provides guidance on programmatic issues relevant to transdisciplinary and transboundary education and mechanisms to increase diversity within the workforce.
- ***U.S. Global Change Research Program - Representative***
 - Coordinates workshops and focused meetings with Future Earth International Research Program, START and World Climate Research Program to improve collaboration between these entities and increase connectivity across federal government agencies.
 - Provides expert technical support for the formation of the newly developed Coasts Working Group which focuses on the impact of global environmental change on coastlines and coastal populations.
 - Coordinates network building initiatives for the International Inter-agency Working Group. Facilitates new partnerships between US agencies (e.g., Department of State,

USAID, NASA, NOAA, DOE) and international global change research programs such as Future Earth, World Climate Research Program and the Global Change System for Analysis, Research and Training (START).

National Academies of Sciences, Engineering, and Medicine – *Science Policy Fellow*;
Florida Department of Agriculture and Consumer Services, Office of the Commissioner,
Tallahassee, FL - 09/2016 to 12/2017

Advances State of Florida Agriculture activities through science leadership and the development of strategic partnerships through five divisions: Food Safety, Plant Industry, Animal Industry, Aquaculture and Agricultural Environmental Services

- Increased connectivity across national, state and local researchers and governments relative to hurricane preparedness, Zika Virus, HIV incidence, and aquaculture initiatives.
- Utilized scientific knowledge and expertise to perform a scientific peer review of ELISA validation proposal for use as a first-tier testing method in harmful algal bloom events.
- Designed, and implemented scientific studies to identify and solve public health problems relevant to disaster risk, infectious and chronic diseases, and environmental health.
- Provided policy direction and coordination for the planning and execution of initial scientific and technical review of novel mosquito control techniques for feasibility in the state.
- Developed and coordinated a Memorandum of Understanding agreement and contract with University of Florida Center of Excellence relative to a new initiative for Zika, Dengue and Chikungunya viral testing.
- Provided policy direction for the planning and execution of the technical review of an emergency Incident Response Task Force following hurricane Irma.
- Identified and analyzed environmental health issues and their impact on operations that are critical to the environmental health of regional, national and global communities.
- Spearheaded the expansion of the Don't Pack A Pest program to include international and study abroad students and researchers to reduce the human health risk associated with the importation of agricultural goods.
- Evaluated and reviewed a novel inspection rating system for food safety and food defense supporting a consortium of scientists for the implementation and expansion of Precision Agriculture.
- Executed data compilation and analyzed statistical data and discerned trends associated emerging cases of infectious diseases and creation of an extension piece and outreach.

- Expansion of the Florida Agriculture in the Classroom program to include elementary students within the private school system in the state.
- Composed and submitted a grant to the National Oceanic and Atmospheric Administration on behalf of the Department of Environmental Protection for an “Assessment of Natural Ecosystem Indicators on Resilience Capacity in High Hazard Coastal Communities”.

Academic Positions

University of Florida – *Graduate Research Assistant*; Department of Environmental and Global Health, Gainesville, FL - 08/2012 to 08/2016

Worked extensively along with a consortium of university scientists across the U.S. on a community based federally funded project: *Seafood Safety Following the Deepwater Horizon Oil Spill*.

- Developed partnerships with researchers, community leaders, seafood workers, federal and state agencies to manage a five-year research project.
- Collaborated with twenty-two natural, social, environmental health scientists and toxicologists from six universities to address topical issues for coastal communities including coastal community resiliency, seafood safety, water quality, coastal hazards, offshore drilling, and restoration priorities.
- Toxicological assessment of ~1,000 seafood samples, exposure assessment of ~900 participants (survey data), and subsequent human health risk assessment.
- Developed and used innovative methodologies and survey and tool development techniques.
- Administered all facets of the exposure assessment / seafood consumption project sub-award including budgeting and reporting within a university system.
- Designed, and implemented major scientific surveys to identify and solve public and environmental health problems relevant to disaster risk, infectious and chronic diseases, and environmental health.
- Developed and managed outreach, dissemination initiatives and risk prevention programs including attendance at seafood festivals and community meetings.
- Recruited, supervised, and trained research assistants in required protocols for consistency in assessment implementation.
- Lead and managed a team of scientists in the effort to discern the safety of fish in Lake Victoria, Kenya.
- Developed short and long-range goals and objectives for sustainable measures for human health risk reduction related to wild caught and fish farm seafood.
- Identified and analyzed environmental health issues and their impact on operations that are critical to the public health of regional and global communities.
- Collaborated with international scientists including; public health scientists, medical doctors, health care workers, community leaders and policy makers, at Great Lakes University Kenya to discern the safety of fish from Lake Victoria, Kenya.

- Utilized scientific knowledge and expertise to perform a variety of management functions associated with research training support activities related to infectious disease control.
- Experienced in extramural and intramural scientific peer review related to environmental health research manuscript submissions.

Ivy Tech Community College – Adjunct Professor; School of Liberal Arts and Sciences, West Lafayette, IN - 08/2011 to 08/2012

- Prepared lectures and class activities focusing on fundamental principles of biological sciences to undergraduate students; freshman through senior academic levels.
- Created and graded course assessments to ensure students understood material and stayed on track.
- Lectured academically talented students of the Associate Accelerated Program (ASAP).
- Integrated multimedia approaches and used instructional technology to enhance pedagogical approach.
- Responsible for advising students, curriculum development, and grading papers.

Strategic Measurement & Evaluation Incorporated - Educational Assessment Consultant; Lafayette, IN - 04/2009 –08/2012

- Developed science and mathematics assessments for standardized high school achievement testing in Kentucky, Ohio, Tennessee and Texas.
- Lead team of 50 scorers of standardized biology assessments high school students for the state of Indiana.

Selected Invited Talks

Promoting the Equality and Status of Women in Research – International Practices and Initiatives, Global Research Council Africa Regional Consultative Meeting, November 14, 2019. Dar es Salaam, Tanzania.

Enabling Transformation: Building Capacity to Inform Policy, Guide Decision Making, and Encourage Best Practices, Belmont Forum 10th Anniversary Meeting, October 21, 2019. Taipei, Taiwan.

Advancing the African Science and Policy Enterprise: Investment in Actionable Research in Africa, Evidence to Action Conference, July 12, 2019. Accra, Ghana.

Sustainability Research and Innovation 2020 - UN Science Policy Business Forum on the Environment, March 10, 2019. Nairobi, Kenya.

Advancing the African Science Enterprise – UN Science Policy Business Forum on the Environment, March 9, 2019. Nairobi, Kenya.

Emerging Trends in Zoonoses: A Look to One Health for Solutions – Keynote Address:

Symposium on Zoonoses: Tuberculosis, Leptospirosis and Yellow Fever, September 11, 2017. Trinidad and Tobago.

Seafood Safety in the Gulf of Mexico following the Macondo Blowout: Community-Based Science to Support Communities. Graduate School Appreciation Week, Research Day, March 29, 2016. Gainesville, FL.

Coastal Seafood Consumption Post DWH is >200 Fold Higher than National Estimates: Opportunities for Improved Risk Assessment in Seafood Safety. Emerging Pathogens Institute Research Day, February 18, 2016. Gainesville, FL.

Coastal Seafood Consumption Post DWH is >200 Fold Higher than National Estimates: Opportunities for Improved Risk Assessment in Seafood Safety. Gulf of Mexico Oil Spill and Ecosystem Science Conference, February 1-4, 2016. Tampa, FL.

Seafood Safety in Gulf Coast Communities: Public and Environmental Health Efforts After the Deepwater Horizon Oil Spill. College of Public Health and Health Professions Advisory Board Meeting, October 2, 2015. Gainesville, FL.

Consumption Patterns And Analytical Toxicology Of Inshore-Caught Gulf Seafood: Bridging Environmental And Public Health Concerns Post-DWH Oil Spill. Aquatic Ecosystems Health Conference, June 2-4, 2015. Gainesville, FL.

An Assessment of Seafood Consumption Patterns in Northern Gulf of Mexico Coastal Communities. College of Public Health and Health Professions Research Day, April 8, 2015. Gainesville, FL.

A Probabilistic Analysis of Seafood Consumption in the Gulf of Mexico. Society of Risk Analysis Annual Meeting, December 6-10, 2014. Denver, CO.

Analytical toxicology of seafood and communications post-DWH oil Spill: Bridging environmental and public health concerns. 7th International Symposium on Aquatic Animal Health, August 31-September 5, 2014. Portland, OR.

Food Frequency Questionnaire to Discern Seafood Consumption Patterns in Northern Gulf of Mexico Coastal Communities. Emerging Pathogens Institute Research Day, February 27, 2014.

Food frequency questionnaire to discern seafood consumption patterns in northern Gulf of Mexico communities as relevant to the DWH oil spill. Gulf of Mexico Oil Spill and Ecosystem Science Conference, January 21-23, 2014. Mobile, AL.

Peer-Reviewed Publications

Charles MKS, Stuchal LD, Matthews AE and Kane AS. 2020. Test-retest Reliability of a Food Frequency Questionnaire to Assess Seafood Safety Intake Dynamics for High-end Consumers in Coastal Gulf of Mexico Communities. Journal of Environmental and Public Health, Vol 2020. p. 1-10. 10.1155/2020/2704074.

Charles MKS, Stuchal LD, Roberts SM, Matthews AE and Kane AS., 2019. Probabilistic Risk Assessment for High-End Consumers of Seafood on the Northeastern Gulf Coast. Journal of Exposure Science & Environmental Epidemiology, Volume 30, No 3, p. 478-491.

Charles MKS, Lee T. 2019. Belmont Forum Open Data Policy Evaluation Metrics. Zenodo. <http://doi.org/10.5281/zenodo.3455832>.

Charles MKS, Stuchal LD, Roberts SM, Matthews AE and Kane AS. Seafood Consumption Patterns in Northern Gulf of Mexico Coastal Communities Exceeds National Estimates. *(In review)*

Charles MKS, Stuchal LD, Roberts SM, Matthews AE and Kane AS. Seafood Intake Amongst Higher End Consumers in Coastal Gulf of Mexico Communities. *(In review)*

Charles MKS, Stuchal LD, Roberts SM, Matthews AE and Kane AS. Seafood Consumption in Northeastern Gulf of Mexico Coastal Communities Varies by Community and Age Groups. *(In progress)*

Statistical Software Proficiencies:

ArcGIS

Microsoft® Excel Add-In @Risk Analysis software

Oracle Crystal Ball Risk Analysis software

ProUCL package (environmental datasets)

R & R Studio

Statistical Analysis System (SAS)