

**SMA AFRICOM Panel Discussion**

**Africa, Advanced Technology, and Security**

**22 July 2019**

**1030-1200 ET**

**Dial (866) 712-4038; Passcode 37250264#**

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# Agenda

Panel Description:The panel topic looks at the next decade of opportunity in advanced/emerging technology development to improve risk analysis for health, food security, governance, migration, and humanitarian crises in African countries. Each of these areas may contribute to more significant insecurity in a country or region. Technology-enabled solutions that offer improved monitoring or implementation efficacy due to localized understanding of context, variables, networks, or other problem-solving approaches has demonstrated the high value of design from within the populations affected by these issues. We will discuss the state-of-the-art with entrepreneurs, policy-makers, and operators in this space.

The increase in use of local languages (both for education and in applications), the increase in local talent, and the increase in data from the new applications all contribute to improved solutions in machine learning (ML). Machine learning requires data sets for training, creating or finding these datasets is a unique challenge in African countries, but one that exemplifies the phrase, “necessity is the mother of invention.” The absence of digital infrastructure or linguistic corpora means creativity is essential. This is why industry leaders have set up tech hubs to capitalize on the imaginative power distinct from conventional western approaches. Across the continent, there are unique opportunities to build partnerships.

Speakers will discuss details of their current projects and also what they anticipate for the near future. The panel brings together all the stakeholders in these solutions: policy-makers, entrepreneurs, and security experts-- to discuss the changes, risks, and needs we are seeing and the value for innovation. We hope to inform an audience that may not be aware of developments on the continent, opportunities for partnership, and problems that either still need attention or are being addressed through ML and other advanced technologies that are of interest to this community.

Please be ready to ask questions about trends, gaps, opportunities for partnership, and technology-enabled solutions. We plan to have approximately 60 minutes of discussion and 30 minutes of audience Q&A.

Speakers and Topics:The speakers and their topics of discussion are listed below:

* **Dr. Gwyneth Sutherlin [Moderator]** (National Defense University, College of Information and Cyberspace)
* **Mr. Ricardo Arias** (USAFRICOM Joint Capability Technology Demonstration (JCTD) Science, Technology & Innovation Office J804 Project Manager)
  + The science and technologies that USAFRICOM has invested in for the region
* **Mr. Karim Beguir** (InstaDeep AI CEO)
  + Solutions from technical perspective, the new approaches they are seeing from the human capital side, design approaches, and their value for our community of interest
* **Mr. Andrew Smart** (Google Associate Principal Machine Learning Fairness User Researcher)
  + Enfranchisement/fairness from user developed products, increased success with user design, and potential for partnerships
* **Prof. Bitange Ndemo** (Head of Kenya Taskforce for AI and Blockchain; former Permanent Secretary for the Ministry of Information and Communications)
  + Use cases in Kenya for AI and Blockchain for health, food security, and biometric monitoring and future projects for government, partnership potential, and the value to security in region
* **Ms. Kathleen Siminyu** (Data scientist, ML engineer, and Regional Coordinator for the Artificial Intelligence for Development Africa)
  + New projects and future direction of tech in East Africa with an emphasis on language technologies

# Speaker Biographies

**Mr. Ricardo Arias** **(JCTD PM, J804, USAFRICOM)**

Mr. Ricardo Arias is the Joint Capability Technology Demonstration (JCTD) program at U.S. Africa Command (USAFRICOM). He manages field activities that seek to fill U.S. forces capability gaps and to enhance Partner Nation capacity through technical exchanges, joint experimentation, partnerships, and enduring professional networks in AFRICOM’s Area of Responsibility.

Mr. Arias conducts evaluations of innovative technologies, systems and advanced concepts, and endeavors to enhance technical collaboration in the theater. He manages experimentation and technical investigations and is responsible for formulation of material solutions to operational needs, demonstrations and validations of technology in operational scenarios, and integration of mature technical capabilities into field activities.

A former Naval Aviator, in November 2008 Mr. Arias retired from active duty with the rank of Commander, culminating 24 years of exemplary military service. During his last tour of active duty, Mr. Arias served as Navy Programs Chief and Security Assistance Officer, at the U.S. Embassy, Islamabad, Pakistan (2005-2006), and at the U.S. Embassy, Santo Domingo, Dominican Republic (2006-2008). He was a trusted advisor to U.S. Ambassadors to Pakistan and the Dominican Republic on matters of security assistance, foreign military sales, maritime security, and military to military relations. Previous military assignments:

May 2002 to February 2005 – served as Operations Officer, Helicopter Anti-Submarine Squadron Light FOUR TWO (HSL-42), Naval Station, Mayport, FL. During this time, he also deployed as Officer in Charge, HSL-42 Detachment SEVEN onboard USS Gettysburg (CG 64). Commander Arias led Detachment SEVEN through operational deployments to the Indian Ocean, the Gulf of Oman, and the Northern Arabian Gulf in support of Operation Enduring Freedom.

July 2000 to February 2002 – served as Air Department Executive Officer, USS IWO JIMA (LHD-7), Naval Station Pascagula, MS, and Naval Station Norfolk, VA.

March 1998 to June 2000 – served as Naval Flight Instructor and Pilot Curriculum Officer, Helicopter Anti-Submarine Squadron Light FOUR ONE (HSL-41), Naval Air Station, North Island, CA.

Mr. Arias was born in Colombia, South America. In 1978 his family immigrated to the United States and settled in Portage, Michigan, where he spent the rest of his formative years. In 1983, immediately after graduating from high school, he enlisted in the United States Navy. In 1985, Mr. Arias became a naturalized U.S. citizen and in 1986 he earned a Naval Reserve Officer Training Corps (NROTC) scholarship.

In 1991, Mr. Arias received a Bachelor of Arts degree, with a major in Political Science, from the University of Colorado and was commissioned as an Ensign in the U.S. Navy. He was designated a Naval Aviator in 1993, an Airborne Tactical Officer in 1995, a Naval Flight Instructor in 1998, and a Navy Foreign Area Officer, in 1999. Mr. Arias is a graduate of the Defense Institute for Security Assistance Management, Wright Patterson AFB.

**Mr. Karim Beguir** **(InstaDeep AI)**

Karim helps companies get a grip on the latest AI advances and deploy them in practice. A graduate of France's Ecole Polytechnique and former Program Fellow at NYU's Courant Institute, Karim has a passion for teaching and using applied mathematics. This encouraged him to co-found InstaDeep in 2014, and in 2017 the company was named as one of the 20 global tech startups to watch by PCMag. Karim is a Google certified Machine Learning Developer Expert, one of less than 100 worldwide, and he is also on the steering committee of Indaba – Africa’s most important AI event series. Karim is now on a mission to democratize AI and make it accessible to a wider audience.

**Prof. Bitange Ndemo (Head of Kenya Taskforce AI/Blockchain)**

Bitange Ndemo is Professor of Entrepreneurship at the University of Nairobi’s Business School. His research centers on the link between ICTs and small and medium enterprises with emphasis on how ICTs influence economic development in Africa. Prof. Ndemo is the Chairman of Kenya’s Distributed Ledgers and Artificial Intelligence Taskforce that will develop a road map for the country’s digital transformation. He is also an advisor and Board member to several organizations including Safaricom one of the leading telecommunication company in Africa, Mpesa Foundation, Research ICT Africa that is based in South Africa. Besides having been a Permanent Secretary of Kenya’s Ministry of Information and Communication where he was credited with facilitating many transformative ICT projects, he is a Senior advisor to UN’s Global Pulse (Big Data initiatives) and the UNCDF’s Better than Cash Alliance. He is an Open Data/Big Data evangelist and dedicated to simplification (visualization) of data for ordinary citizens to consume. He writes two columns every week for the Business Daily and Nation on-line.

**Ms. Kathleen Siminyu (Network Coordinator, Artificial Intelligence for Development Africa | Nairobi Women in Machine Learning & Data Science | Deep Learning Indaba)**

Kathleen is a data scientist and machine learning engineer who is Regional Coordinator for the [Artificial Intelligence for Development](https://ai4d.ai/) - Africa Network. She is Co-Founder and Co-Organiser of the [Nairobi Women in Machine Learning and Data Science community](https://meetup.com/Nairobi-Women-in-Machine-Learning-Data-Science/) as well as part of the [Deep Learning Indaba](http://www.deeplearningindaba.com/) Steering Committee.

Kathleen is also currently a Masters student at the Georgia Institute of Technology undertaking the Online Masters in Computer Science with a specialization in Computational Perception and Robotics. She is keen on investing time and effort in ventures that involve natural language processing for African languages as well as low-cost hardware robotics.

She can be reached on twitter @siminyu\_kat and on [LinkedIn](https://www.linkedin.com/in/kathleen-siminyu-7356b810/).

**Mr. Andrew Smart (Google Associate Principal Machine Learning Fairness User Researcher)**

Andrew Smart is a researcher at Google in the Trust & Safety organization working on accountability and risk for machine learning. He's currently interested in causal inference and social ontology as these relate to model predictions. He's also working on developing ways to incorporate social impact and human rights into the design of AI systems. Andrew is the author of two books on the brain, AI and consciousness. He has a background in anthropology, philosophy and cognitive neuroscience.

**Dr. Gwyneth Sutherlin (National Defense University, College of Information and Cyberspace)**

Dr. Sutherlin is a leading expert in socio-cultural analysis--the translation of qualitative research into discrete technology design for decision-making. Her work explores the strategic impact of culture, emerging technology, cognitive linguistics, and ethics in the context of National Security.

In her current faculty role in the College of Information and Cyberspace at the National Defense University, she develops curriculum around information, influence, culture, and emerging technologies. She acts as a subject matter expert supporting the Joint Staff, Combatant Commands, NATO, and partner nations on Operations in the Information Environment. 

Her work draws from experience in multilingual communications, risk evaluation, and cognitive pattern analysis in conflict environments. She received UN recognition for innovation for her Arabic program development in North Africa addressing conflict, identity, and media. 

Today, Dr. Sutherlin’s publications and research interests contribute to the growing social science and technology field. She has written about Haiti, Libya, Uganda, Syria, Iraq, Somalia, Iran, Ukraine, Georgia, and Russia. Her research in information technology appears in security training, textbooks on emerging technology for conflict analysis, and UN special reports. Dr. Sutherlin has a degree in political science from Indiana University and a PhD in peace and conflict studies from the University of Bradford. She has worked in eight languages.