Seven Cambridge University PhD students participated in the Africa Science Week (ASW) in Niger

The Next Einstein Forum's Africa Science Week is Africa's annual celebration of science and technology with thousands of individuals – from students to scientists to technologists – actively engaging in coordinated science events across the continent.

In December 2018, the Cambridge Africa Science Week team headed to Niger to run five intensive workshops on Education, International Relations, Virology and Physiology, Applied Mathematics and Geology. A truly collaborative endeavour, in the months before the event the Cambridge team worked with students in Niger to tailor the respective sessions for maximum impact. This engagement ensured a mutually beneficial exchange and capacity building on all sides. In total approximately 200 students took part in these five different sessions at the University Abdou Moumouni of Niamey. The workshops had a rippled effect: following the 'officially' organised sessions, students from a newly established programme at the University of Niamey invited the Cambridge researchers who were social scientists to engage with them on research methods at the intersection of education, security, and development.

The opening ceremony of the session was attended by the Vice Chancellor of the University who gave a truly inspiring talk about why science matters, particularly for Africa. One of the project's advisors, Professor Tidjani Alou said, "As a senior African scholar, it is a great privilege to contribute to establishing and solidifying a bridge between my students at the University of Niamey and young African researchers at the University of Cambridge. These workshops at the University of Niamey will provide a common platform for these young minds to engage, work together, and learn from

each other to further their respective research agendas. This represents what I, an African researcher situated in an African institution in Niger, see as a model of collaboration between institutions in the Global South and Global North. The future of research lies in equitable, solid, and forward-looking collaborations."

The Cambridge workshop leaders who travelled to Niger with the support of the Cambridge-Africa Alborada Fund were: Nafisa Waziri, Taskeen Adam, Halimatou Hima, Chinedu Ugwu, Stephen Manchishi, Surer Mohammed, and Mamasa Camara. Some of the workshops were co-organised with Nigerien researchers in other universities. This marks the beginning of a novel institutional partnership to foster and strengthen relationships, creating an important network for knowledge creation and exchange between exceptional scholars from Francophone African institutions and Cambridge.

Chinedu Ugwu (PhD candidate in Veterinary Science at the University of Cambridge) ran a ground-breaking workshop to introduce participants to basic skills and apparatus in biological science research not yet easily accessible in many African universities. These include fluorescent microscopy, Polymerase Chain Reaction (PCR) and immunohistochemistry. One fourth-year student at the Faculty of Medicine exclaimed that she had only ever read about PCR machines but had never seen one. Chinedu explained the principle of PCR and how it can be utilised in disease diagnosis and gave a demonstration using a mini-PCR machine provided by his lab - the African Centre of Genomics of Infectious Disease (ACEGID) in Nigeria. The workshop participants were also introduced to a very cheap, yet versatile kind of microscope called foldscope - which is ideal for fieldwork or resource-poor areas to get quick diagnostic results - in a session run by Professor Ibrahim Cisse of the Massachusetts Institute of Technology (MIT).

In addition to the workshops at the University, the Cambridge team held interactive demonstrations and sessions in 'The Science Village' that welcomed over 2,500 high school pupils. Designed as a space for students to have hands-on engagement with practical scientific experiments, the Science Village hosted exhibitions, installations with live demonstrations and side talks. Over two days, young learners were exposed to scientific instruments and techniques which sparked their imagination and curiosity, allowing them to get a better understanding of scientific concepts only before seen in textbooks, and relate to the phenomena in a real way. One student in the city of Zinder explained her enthusiasm as Taskeen Adam and Nafisa Waziri showed her how to make a projectile practically demonstrating the principles of acid-base interactions, "I have been in school for ten years and have never done any experiment in school. I did not think that some of the things I read in books could happen in real life. Doing actual experiments could help us better understand and learn differently". It matters that young people get exposed to science early: most of the public schools do not have a laboratory, and often students could graduate without ever doing a single experiment. Our hope is that the Science Village will help to change the perceptions on scientific research, by showing young people, especially young girls, that scientific careas being within their reach.

These events could not have taken place without all the wonderful student volunteers from Niger. We are grateful for the support from the Cambridge-Africa ALBORADA fund and extend thanks to Professor Tidjani Alou, Dr Adam Branch, Dr Shailaja Fennell, Professor Ramatou Sidikou, Dr Sido Mariama, and Mr Ibrahima Guimba among many others who have advised and supported us. In recognition of the work done during the Africa Science Week, the Cambridge team was received by the country's highest authorities including the President of Niger.

Written by Nafisa Waziri, Taskeen Adam, Stephen Manchishi, Chinedu Ugwu and Halimatou Hima