Contribution ID: **17** Type: **Oral Presentations**

BioStruct-Africa: empowering Africa-based scientists through structural biology knowledge transfer and mentoring - recent advances and future perspectives

Thursday, 19 November 2020 15:36 (12 minutes)

Being able to visualize biology at the molecular level is essential for our understanding of the world. A structural biology approach reveals the molecular basis of disease processes and can guide the design of new drugs as well as aid in the optimization of existing medicines. However, due to the lack of a synchrotron light source, adequate infrastructure, skilled persons and incentives for scientists in addition to limited financial support, the majority of countries across the African continent do not conduct structural biology research. Nevertheless, with technological advances such as robotic protein crystallization and remote data collection capabilities offered by many synchrotron light sources, X-ray crystallography is now potentially accessible to Africa-based scientists. This leap in technology led to the establishment in 2017 of BioStruct-Africa, a non-profit organization (Swedish corporate ID: 802509- 6689) whose core aim is capacity building for African students and researchers in the field of structural biology with a focus on prevalent diseases in the African continent. The team is mainly composed of, but not limited to, a group of structural biologists from the African diaspora. The members of BioStruct- Africa have taken up the mantle to serve as a catalyst in order to facilitate the information and technology transfer to those with the greatest desire and need within Africa. BioStruct-Africa achieves this by organizing workshops onsite at our partner universities and institutions based in Africa, followed by post-hoc online mentoring of participants to ensure sustainable capacity building. The workshops provide a theoretical background on protein crystallography, hands-on practical experience in protein crystallization, crystal harvesting and cryo-cooling, live remote data collection on a synchrotron beamline, but most importantly the links to drive further collaboration through research. Capacity building for Africa-based researchers in structural biology is crucial to win the fight against the neglected tropical diseases, e.g. ascariasis, hookworm, trichuriasis, lymphatic filariasis, active trachoma, loiasis, yellow fever, leprosy, rabies, sleeping sickness, onchocerciasis, schistosomiasis, etc., that constitute significant health, social and economic burdens to the continent. BioStruct-Africa aims to build local and national expertise that will have direct benefits for healthcare within the continent.

Primary authors: Prof. NJI, Emmanuel (Biostructafrica); NJI, Emmanuel (University of Stockholm, Sweden)

Co-authors: Dr JOKO, Carolyn A; Dr TRAORE, Daouda (Monash University); Dr DOYLE, Declan (BioStruct-Africa, Stockholm, Sweden); Dr NDI, Mama

Presenters: Prof. NJI, Emmanuel (Biostructafrica); NJI, Emmanuel (University of Stockholm, Sweden)

Session Classification: AfLS2020 Session :

Track Classification: AfLS2020 track