

Jekesa Remangwana (Futures Ignited)
Zimbabwe
Davidson College
Kimberley Tanatswa Muchenje, Zimbabwe

During the Jekesa Remangwana (Futures Ignited bootcamp), I partnered with three other students from Zimbabwe to run a biotechnology bootcamp during which we collaboratively taught biotechnology techniques and their applications in biomedical, industrial, environmental, and agricultural processes around the world. We also provided mentorship and professional development opportunities in the field of biotechnology, to ensure that students received a clear picture of how one can advance in Biotechnology whilst in Zimbabwe.

We sought to present an opportunity for students to learn the applications of biotechnology techniques whilst conducting experimental and computational research. Biotechnology has applications in all sectors that are key to solving Zimbabwe's economic challenges and we believe by enriching the field, we are creating the much-needed solutions. This was an important goal for us to effectively inspire students in high school STEM programs to pursue and use biotechnology as a tool to combat some of the issues that are at the heart of endless internal and external conflict amongst Zimbabweans. We conducted the boot camp in two sessions, one during the school term at the USAP community school (USAPCS) and one during school holidays to enable all students to participate and we recruited 25 students from at least six towns in Zimbabwe. After partnering with the Biotech institute in Zimbabwe to secure physical laboratory facilities and classroom space for the bootcamp, we established a great relationship with the organization leading them to agreeing to assist with future iterations of the Futures Ignited program if we can provide teachers to run the bootcamp and whatever funding we can to cover experimental reagents. Students who participated, gained an opportunity to continue their professional development whilst interning at a place like the Biotech Institute, and most students expressed interest in such opportunities in the Future. Our partnership with the USAPCS, also presented great insight to the students and two of the students will be applying to join the USAPCS this year (the USAPCS is a two-year high school program that trains and mentors students and helps them apply to colleges in the United States). Some of the senior participants in my project who are going to university in this coming year are

also thrilled to be teaching the next iterations of this bootcamp. To make this project sustainable, we have kept communication with all students, which means we will be mentors to them in future endeavors.

I believe peace is the absence of conflict, and the presence of harmony amongst groups of people. One could also describe individual peace as a state of tranquility where one is free from oppressive thoughts or emotions. A struggling economy, lack of medical equipment, and droughts in a country like Zimbabwe with an agricultural economy are all deterrents towards the attainment of all kinds of peace. Jekesa Remangwana provides a long-term solution aimed at generating the scientists who can enter the field of biotechnology and purpose it to create solutions. During our project, I witnessed students develop very specific interests towards applying techniques like genomic sequencing to the study of native plants that have medicinal uses in Zimbabwe and many more creative ideas. Some of the students will present their final projects from the boot camp in the African Science Buskers festival, a science festival in Zimbabwe and other African countries. I learnt that to bring change, towards any issue, one needs connections with people in the field of interest, people who can advise on challenges to be faced and I am glad that the host organizations advised me on some of the issues holding back scientific advancement in Zimbabwe. Due to previously stated economic hardships causing a lack of funds targeted towards research, and no research literature in the native language at all, scientific advancement in biotechnology has been inaccessible to a lot of people in Zimbabwe. Jekesa Remangwana is a step towards creating more biotechnological research advancements by future Zimbabwean scientists and even though it is such a small step as of now, I am challenged to continue this work, to make a lot more steps ahead of this first one.

Jekesa Remangwana is a first step in a long-term effort in generating biotechnological solutions to Zimbabwe's impending biomedical, agricultural and industrial issues and participating students may someday develop crops that are resistant to pests, diseases or adverse environmental conditions reviving Zimbabwe's declining agricultural industry which serves as the country's key source of income to alleviate food shortages and increase peace amongst people.