BACKGROUND INFORMATION

Over the past 3.5 months of living and studying Swahili in Arusha, Tanzania, through the Boren language scholarship program, I got to intimately engage with the culture and history of Tanzania and develop an incredible sense of community. One element of community visible each day was the power of connection and intention through food. Sharing traditional meals, cooking with my host mom, and witnessing the transparency of a fresh, local food system were so valuable to me. I have spent much of my academic and extracurricular endeavors engaging in public health at the intersections of nutrition and food security, specifically as it pertains to sustainable food sources and human-environment relations. I believe access to healthy, quality food is a basic human right and a core component of environmental justice and health equity, two integral elements of addressing global poverty and achieving stability, productivity, and peace. Throughout the duration of my study abroad program, I completed an independent research project on malnutrition and food insecurity in Tanzania, specifically affecting the youth population. This is a priority in the greater scope of Tanzania, as a country where 5.3 million people lack sufficient food for consumption and 13% of the nation’s population is facing crisis food insecurity levels as of 2022, with that number projected to rise to 17% this year.¹ It is a double burden for a high prevalence of undernutrition and an increasing prevalence of obesity among youth and adolescents.

The consequences of inadequate nutrition most visible among school children are anemia, iron and vitamin deficiency, poor malaria outcomes, growth retardation (stunting), and increased risk of wasting and death. Currently, stunting, which is impaired growth and development in children as a result of chronic undernutrition, affects 32% of children under age 5 in Tanzania, one of the highest rates of any individual country in the world.² Malnutrition also contributes to approximately 50% of Tanzania’s under-five mortality.³ There are multiple elements to improving nutrition and eating habits, including accessibility, cultural relevance, climate change intervention, and education.

Malnutrition is an increasingly complex, interconnected challenge that demands urgent attention and intervention from many different angles. For the scope of my project, I will focus on nutrition education. During my homestay in Arusha, my 9-year-old host brother asked me the question if chapati bread was a meat and another day if sausage was a fruit. While comical at first, the conversation made me realize how I take for granted the basis of understanding fundamental nutrition that I have. With extended discussion with others, it was clear nutrition education is not a component of Tanzanian school systems, thus both youth and parents often do not consume a balanced, nutrient-rich diet. On another day, my 6-year-old host sister, who was the pickiest eater around any vegetables on her plate, took a heap of leafy greens at dinner, pridefully explaining how she had helped pick them from our family’s newly built backyard garden. I watched a tangible transformation as her personal connection to homegrown food changed her attitude around eating vegetables and diversifying her consumption of essential vitamins and minerals. Research supports that participatory learning correlates with building longer, more consistent changes to food preference, desire, and healthier choices of vegetables like leafy greens that can provide necessary vitamins and nutrients substantially lacking in the diets of many, especially low-income, Tanzanian households.

In my research this past fall, I interviewed Tanzanian teachers and read literature that supported the idea that any current nutrition lessons (if present at all), which happen in a biology class context, are not taught in a way that is practically applicable once students leave school. I hope to bridge the existing disconnect between nutrition education and practical methods for healthier food choices and autonomous food sovereignty in action through school gardens that develop longer-term skillsets and knowledge on agricultural production. Additionally, the gardens can serve as a sustainable contribution to school feeding programs. To leverage schools’ valuable potential for nutrition interventions, NGOs are considered integral in funding and supporting nutrition gardens because of lacking or unsustainable government funding that has resulted in prior attempts at such programs dissolving. NGOs with a consistent volunteer basis and

CORE GOALS
The direct objectives of this project are to increase students’ consumption of vegetables and nutrient-rich produce and to build agricultural skills and basic nutritional knowledge on identifying and eating culturally appropriate, nutritionally-diverse foods. This is important to address disproportionately high rates of stunting, wasting, anemia, and other adverse diet-related health challenges for Tanzanian youth. Moreover, gardening offers incredible opportunity for building social connection amongst students, who can develop elements of psychosocial support through this common activity. It also fosters connection to the earth. Longer term, indirect goals are thus to foster positive interactions between students and the earth that nourishes through food to build gratitude in mindsets on caring for and interdepending on the environment. I want to integrate messaging and reflection exercises in the lesson plans on the importance of human-environment connection and its impact on our happiness and mental health as well, understanding that mental health support, advocacy, and education are extremely lacking in Tanzania. The intersection of food justice, environmental justice, and physical and mental health are core tenets of advancing peace. Peace requires cooperation, mutual respect, and justice to enable and empower individual and community flourishing. Building relationships and community through foodways and gardens are steps in the process of nurturing a culture of peace, specifically amongst children most capable of empathy. It is necessary as we face threats of increasing vulnerability in Tanzania to climate change, food insecurity, and public health.

PROJECT SUMMARY
I will work with Widows Encouragement & HIV/AIDS Foundation (WEHAF), a local NGO founded and directed by two Tanzanian women. WEHAF serves a number of roles in advocating, educating, and promoting self-reliance and social empowerment to widows living with HIV and their children. I will be under the supervision of Director Theresia George Mollel, who I befriended during my time in Arusha. Our project for implementing school gardens at five primary schools will address nutritional challenges, a gap in WEHAF’s current community health initiatives, while building upon foundations in place for their recently-started adult gardening programs and youth education projects.

Part I: Consultation and Recruiting
We will begin by surveying the five designated primary school sites (being selected ahead of time by WEHAF) at which we will be building gardens and developing nutrition education programs. The first goal will be to better understand the space, environment, and location-specific needs of each school. WEHAF already has established connections with several government primary schools in the local area, particularly where students, who are the children of women with HIV/AIDS who partner with WEHAF, study and participate in other programs such as “Elimu” for menstrual health education. We will also connect with the local professionals, gardeners, and teachers, who will be identified by staff at WEHAF from prior projects with the women’s “Mboga Mboga” garden program. Based on these pre-existing relationships, this consultation will discuss the outline of our garden sites and help envision the exact supplies and materials necessary for initiating the garden spaces. Connections with teachers and parents will also be vital to confirm the best timetable of when this nutrition education session will meet (time and days), as well as a garden maintenance schedule, and how many students will be participating. During this first week of my time there, I will put together graphics in the form of printed handouts and a video documenting the Lishe Learners & Leaders program to be used for promotion purposes. Additionally, I will meet with designated teachers and WEHAF volunteers assigned to this project to discuss and compile creative activities to accompany learning time spent in the garden. For example, we will be creating coloring activities, worksheets, and simple games with a nutritional education focus to engage students. These resources will be used to begin compiling a storage of materials to be used by future programs with new cohorts of students.

Part II: Training and Building
The next stage, ideally during the second week, is to review the newly developed curriculum for the garden activities and nutrition lesson plans to train the local teacher and gardener administrators, again in conjunction with WEHAF staff and community members. Another option that we are hoping to incorporate
is to employ one of WEHAF’s mothers with HIV/AIDS who has completed the *Mboga Mboga* self-sustenance farming employment program to be hired as a facilitator of these programs, in order to create a cyclic and sustainable program amongst projects already operating through WEHAF and the communities. Additionally, week 2 will be for purchasing all the necessary start-up materials for the five gardens, delivering to the sites, and building the setups with the support of experienced facilitators that WEHAF has worked with previously. This work will additionally be supported by intentional community sensitization strategies to the models of learning and conversation about food and agriculture in this way.

**Part III: Class sessions and Implementation**

For the final two weeks of my time, we will begin hands-on planting, gardening, and learning with the primary school students. We will track attendance of students to gauge how to adjust the number of resources for the gardens. We will also conduct informal feedback sessions with the students to evaluate what approaches are especially effective and enjoyable in the curriculum on nutrition. I will help to facilitate some of these beginning lessons, while also making space for the local teachers to do so. The sessions will be 30-45 minutes once a week, so we will conduct collaborative reflection and self-evaluation after week one to better prepare for the following weeks’ lessons and garden tasks. I will also help to organize some speaker series to bring in professional gardeners, farmers, and health workers to talk about the importance of diet and its connection to our earth and our health. We will send students home with handouts or physical items to share with their families and continue these conversations outside of school to build greater awareness and family engagement and encouragement.

**PROJECT SUSTAINABILITY AND FUTURE IMPACT**

This project will be sustained by the commitment of WEHAF staff, volunteers, and community partners at the schools. The funding provided by this grant will get the project off the ground and allow it to continue for approximately one year. From there, with the turnover of seasons and crops, WEHAF will delegate resources for upkeep and continued investment in staffing and the garden facilities. Additionally, the models and resources for the lesson plans will continue to be used and enhanced through the experience of the teachers and garden facilitators to cater to what the students engage effectively with. These resources, like pamphlets, picture books, games, and the video, will be made into physical and digital copies to be used as a resource for future developments of the project. The goal of these gardens, if successful, is to integrate more student leadership, such as “classroom garden managers” and to develop skills for student leaders to become community leaders and translate these important skills outside of school. I also foresee the local team expanding into nutritional cooking lessons and classes with upper-level school children. This foundational start to discussion and development of nutrition-based education and activity has great potential for building into more and continuing to be relevant and necessary to the ubiquitous realities of childhood malnutrition across Tanzania. This project here is just one small, yet impactful, step forward.

**PERSONAL STATEMENT**

I am prepared to enter spaces through this project where my main language of communication with students and community members will be Swahili. I pledge to continue utilizing my language abilities to maintain my fluency, as I understand the great value in deeply knowing and collaborating with a community and culture through their local language. Additionally, I recognize that while I have had extensive experience teaching youth nutrition education, gardening, and volunteering in food insecurity spaces here in the US, my understanding of these systems and norms may differ from those in the Tanzanian context. Thus, it is my priority to be patient and open-minded to differing approaches, priorities, and methods of nutrition education and particularly mindful of cultural values that matter a lot in personal issues such as what individuals eat and how they take care of their bodies. In no way am I the expert or “fixer” of widely identified problems in this sphere of malnutrition and food-based public health. Rather my intentions are to be a listener and advocate while cooperating to implement the most respectful, inclusive, culturally suitable, accessible, and sustainable program possible alongside the team of collaborators on a project I care deeply about.