Introduction

• The Turkana people in Northern Kenya live a nomadic lifestyle and have adapted to desert conditions and a high-protein diet through centuries of evolution.
• However, many Turkana people have urbanized in recent years, and little is known about how rapid lifestyle changes will impact their health.

Objective of Internship

• I studied how the gut microbiomes of Turkana people residing in urban, peri-urban, and rural areas differed.
• I also studied how the water quality and water microbiome used by people residing in urban, peri-urban, and rural areas differed.

Work Profile

• Collect blood, urine, fecal, and water samples from communities
• Return to lab for DNA extraction and PCR
• Develop a protocol for water DNA extraction

Reflection

Kaleb and I working in the lab on DNA extraction. Photo creds: Patriciah Kinyua

Contributions

• Kaleb and I helped to develop a protocol for sampling and extracting DNA from water samples
• Extracted DNA from 60 fecal samples and 25 water samples
• Helped develop an inventory system

Highlights

• Sampling water in nearby towns, Lekiji, Juakali and Naibor
• Learning from the other researchers at Mpala and shadowing multiple projects
• Meeting the children in the nearby village
• Going on sundowners with the other Princeton interns and the Turkana team

Lessons Learned

• How to save on pipette tips
• Developing a protocol takes trial and error
• Important research can take years to conduct
• Having good relationships with people on your team makes the work not seem like work
• Living and working abroad is a rewarding experience

Looking Ahead

• The extracted DNA still need to be sequenced at Princeton
• Research is a lengthy process, but it is very valuable
• It’s important to understand culture and lifestyle differences.
• I plan to study medicine and work abroad as a doctor and policymaker

Questions

• Whether or not there is a difference between urban, peri-urban, and rural areas is to be determined
• What will happen with our water quality results?

Conclusion

• Our bodies are constantly adapting to changes in our environment. We must be mindful that climate change, technological progress, and “innovation” change our genetics and evolutionary path.

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