**Tell us how your community or communities have influenced you, and, if relevant, how they have shaped the choices you have made so far in your postsecondary path.**

I was born in Borana, a small town in southern Ethiopia where my family still lives. Though small, Borana is a symbol of diversity and tolerance. People from different ethnic backgrounds, languages, and religions have coexisted peacefully for generations. From my community, I learned to live for others, to share with those in need, to keep promises, respect elders, unite in hardship, and remain resilient in the face of fear.

Growing up, I also witnessed the devastating effects of recurrent droughts and malaria. Between 1991 and 2021, multiple severe droughts destroyed over 3.3 million livestock, leaving more than 800,000 people in urgent need of food and water. Malaria, too, is a persistent threat, with tens of thousands of cases reported in our region. These tragedies were not due to a lack of hard work, but to insufficient access to modern knowledge and technology to withstand such challenges.

This environment shaped both my character and my academic path. I chose to study Biotechnology in my undergraduate degree because it offers sustainable solutions to human challenges in agriculture and health. With biotechnological tools, we can develop drought-tolerant crops and livestock, and create lasting treatments for diseases like malaria. Inspired by my community’s resilience, I am determined to lead initiatives that apply science for lasting change—transforming hardship into opportunity for Borana and beyond.

**Describe why you’ve chosen the specific McGill program(s) listed in the "Interests" section and how you hope the program(s) will lay the foundation for your long-term goals and aspirations.**

All five McGill programs I have chosen align directly with my long-term vision of eradicating drought and malaria outbreaks in Borana, Ethiopia. For example, the Master of Science in Parasitology is research-intensive and integrates multiple disciplines to understand parasites and their interactions with humans. Completing this program would equip me with the knowledge and skills to study the genomic and molecular aspects of malaria and contribute to discovering better treatments.

The Master of Science in Biochemistry is also research-focused and allows specialized study in RNA and infectious diseases. This program would enable me to investigate the molecular aspects of pathogens, including malaria, and develop improved prevention and treatment strategies. The Applied Master of Science in Biotechnology combines coursework and practical training in molecular biology and protein biochemistry, preparing students to translate research into real-world solutions.

Similarly, the Master of Science in Biology would provide broad training in molecular and environmental biology, allowing me to study both human and ecological factors contributing to disease and drought. Finally, the Master of Science in Plant Science focuses on plant breeding, crop management, and plant-pathogen interactions, giving tools to improve food security in drought-affected regions.

Each program offers a unique pathway to gain the expertise required to tackle malaria and agricultural challenges in Borana. By joining any of these programs, I will build the foundation to transform scientific knowledge into tangible solutions that improve health and livelihoods in my community.

**Please list up to three leadership roles you have taken on within a team in the last five years (ending in January 2020 or later). If you have more than three leadership roles, choose the ones that are most significant in terms of the complexity of the work, the size of your team, the time you invested, the impact you had, and/or the lessons learned.**

**Select one of these experiences as the topic for your leadership essay. You will be asked additional questions about this experience.**

**Briefly describe your role and that of your team members. What were the team's goals and how did you manage the team to meet them? What was the result? What did you learn? What, if anything, would you do differently?**

* Undergraduate final year project
* Biotechnology Student Association (BSA)
* Research Project on the topic of Metagenomics

**Leadership Role: Undergraduate Final-Year Project Team Leader**  
During my final year of undergraduate studies, I led a team of five students to complete our senior research project titled “Isolation, Identification, and Characterization of Hexavalent Chromium (Cr VI) Reducing Bacteria.” Our goal was to identify bacteria capable of reducing toxic chromium into a safer form, offering a potential solution to heavy metal pollution.

As team leader, I wrote the research proposal, designed experiments, and coordinated task assignments to ensure equal involvement and accountability. To build ownership and efficiency, I divided the workload based on each member’s strengths and asked everyone to complete specific tasks (such as sample collection, culturing, biochemistry tests, or data recording) within set timelines. I organized regular progress meetings where members shared their results, challenges, and next steps.

This approach fostered responsibility, teamwork, and steady progress. By the end of the project, we successfully isolated several bacteria with promising chromium-reducing potential and delivered our findings through a well-received presentation. Through this experience, I learned how to coordinate people with different work styles, communicate expectations clearly, and motivate peers by trusting them with meaningful roles.

If I were to lead this team again, I would introduce a written progress tracking system from the beginning to further streamline communication and avoid delays.

**Please list up to three volunteer roles or positions of service to your community in the last five years (ending in January 2020 or later), that have been most significant in terms of the time you have invested and / or the impact you have had.  
  
Select one of these experiences as the topic for your contribution essay. You will be asked additional questions about this experience.**

**Briefly describe the purpose of the activity/organization and your contribution. Who or what prompted you to get involved? Why was it important to you and to others? How has your involvement impacted you and others?**

In October 2020, a classmate and I began discussing how we could use our biotechnology training to contribute beyond the classroom. That conversation inspired us to cofound the Biotechnology Student Association (BSA), a volunteer group driven by students who wanted to apply scientific knowledge to serve our local community.

From the beginning, I played a leading role in shaping the goals of the association and mobilising volunteers. Together, we focused on three core purposes:  
(1) providing nearby farmers with practical advice on sustainable farming practices,  
(2) creating awareness among high school students about biotechnology and its applications, and  
(3) organising on campus events that connected university students with industry experts to foster knowledge exchange and mentorship.

At first, recruiting members was challenging because many students were overwhelmed with coursework. Through persistent outreach, I helped grow the group to over fifty committed volunteers. Once established, we began visiting nearby farms to provide hands-on help during harvest season and share information about improved farming techniques. We also delivered presentations in two local high schools, inspiring students to consider biotechnology as a future field of study. On campus, we hosted seminars that brought together students, faculty, and industry guests for discussions, student presentations, panel sessions, and even live experiments such as blood type testing.

Although the BSA was short lived, the experience had a meaningful impact. Farmers gained practical support, high school students discovered new career possibilities, and our campus community became better connected to industry. Personally, this experience strengthened my leadership skills, taught me how to persevere through setbacks, and deepened my belief in using science to serve others.

**Tell us about a significant “course correction” you have made in your life. For example, this could be a change in how you approach challenging situations, in your academic path, or in how you work with or motivate others.**

After graduating in 2023 at the top of my class, I intended to immediately begin working in a research institution or public laboratory in Ethiopia, developing scientific solutions for problems like drought and malaria in my region of Borana. However, I soon discovered that due to instability and structural challenges, many research centres were not functioning and recruitment was often influenced by non-merit factors. Despite my qualifications, I could not secure a role where I could meaningfully contribute.

This difficult realisation forced me to make a course correction. Rather than becoming discouraged or abandoning my vision, I took a position at a private elementary school while actively developing myself. More importantly, I experienced a shift in mindset: instead of trying to fit into systems that are not ready for people like me, I decided I must one day create the systems my community needs. I realised I needed not only technical expertise but also an entrepreneurial spirit and leadership skills to turn ideas into sustainable impact.

That is why pursuing a master’s degree abroad, particularly through the McCall MacBain Scholarship at McGill, is so important to me. It will equip me with high-level scientific training, global networks, and leadership development that I can bring back to Ethiopia. My goal is no longer just to be employed, but to establish a research initiative that develops local solutions to malaria and drought, offering a path forward where none currently exist.