From the laparoscopic appendectomy surgery to the blood tests that uncover my family’s thalassemia genes, I could not help but imagine the situation decades back, when surgeries and technologies we deem 'standard’ today had not existed. Sooner or later, technologies like AI in surgeries or stem cell transplants would be available as new options for patients, even deeming today’s “incurable” diseases curable. These examples make me realize how biomedicine, engineering and technology combined can create such a major, widespread impact.

My determination and curiosity towards the field of STEM lead me to seek for more experience and knowledge above what school provides. I would spend my free time watching surgical videos from ‘*Gebrüder Betz Medical Animation’* to physiology and drugs in ‘*fuseschool*.’ The book ‘Emperor of the Maladies’ by Siddhartha Mukherjee gave a captivating history to the development of cancer research, while the minor thalassemia diagnosis inspired me to write a review paper on newly FDA-approved drugs for sickle-cell disease like voxelotor and crizanlizumab that can ameliorate the disease more efficiently compared to the widely used hydroxyurea. I too enjoy enrolling in competitions like the National Medical and General Biology Competition, which is a nationwide competition that allows high-school students to not just learn biology in more depth, but the intricate process of diagnosis through symptoms and cases. In addition to that, I started IGCSE Biology and Physics classes in hopes of cultivating the interest of science for my fellow juniors.

Obtaining a biomedical engineering degree will allow me to give back to the health industry, especially to families suffering from rare diseases that require unconventional methods to be cured. I managed finances for a volunteering programme, ‘Ronald McDonald,’ which is a foundation that aims to improve children’s health in places with least access to medical needs. I am also a co-founder for two Instagram platforms: ‘Listen Louder’, which aim to shine the spotlight on the world's underrepresented issues, and ‘Life Online,’ which is created to promote the knowledge and interests of youths towards life sciences, respectively.

As engaging as science might be, I also found enjoyment in theatre as an extension of my expression. I’ve obtained various main roles like ‘Galinda’ in Wicked and ‘Wednesday Addams’ in Addams Family in my school’s musicals, as well as producing and directing several other school plays. I also find interest in cultivating my speaking and writing skills, hence competitions like World's Scholar's Cup allowed me, in a group of three, to solve problems and share our points efficiently to bring out the best rebuttal performance. In my school’s cup, despite obtaining the role as main-manager of a well-known singer, the outcome of the night was distributed among the hard-work of each student who volunteered. From all of this, I became aware of how each role connects and build up from one another, affecting the result of each performance. It reminds me of how engineering works, in which collaboration among roles and attention towards detail are essential for a solid outcome.

After joining and winning the most voted award in an international research team competition by Iowa State University, proposing the gene silencing of mosquitoes’ Cactus protein for the eradication of lymphatic filariasis in Indonesia, I want to take another step forward. UK, a country known for world-leading research for biomedical engineering, is my top pick as it will allow me to truly experience and obtain vital knowledge needed to give a great impact in the healthcare industry. By understanding the fundamental principles, I could use it to advance the world of biomedical technology, innovating tools and technology that could improve people’s health conditions as I have always aspired to be.

Knowing biomedical engineering is a rigorous course that requires mastering both medicine and engineering, I believe that it takes more than just my spirit of inquiry and capability in learning STEM to succeed. I confidently look forward to episodes of engaging lectures and discussion, meticulous research, rewarding iterative processes, all of which shapes me to be a biomedical engineer.