My parents had a desire to make me a doctor, but I found my interest in life science at my pre-medical diploma, when I was learning basic information about the mechanisms of drugs and the pathophysiology of disease. At that time, the curiosity or thirst for seeking knowledge was established in my head. I wanted to know about molecular-level mechanisms. How the alteration of enzymes, genes, and cell structure influences the body mechanism and how we suffer from disease Along with that, how a drug interacts with that situation in our internal body What about its composition, which can control our cellular-level mechanisms? Triggers for research-based graduate study stood out in my mind at a time of COVID-19 when I saw the helpless surrender of my country due to the lack of manpower and scientists. When the whole world was busy with discovering the vaccine for COVID-19, we were looking towards the first world when it was discovered and given to us.

Unfortunately, I had to terminate my studies after obtaining my pre-medical school diploma due to the financial crisis in my family because of a sudden change in my father's business. I started a full-time job as a medical assistant at an NGO (BRAC) to support my family financially. However, it could not detach me from my dream of higher study in life science. After 3 years of hard-working professional life, I was admitted to undergraduate study in the department of biochemistry and molecular biology when the condition of my family slightly improved. I choose biochemistry to build my foundation in life science strongly and I had a plan to involve in research from the late second year of my undergrad, because my ultimate plan was to take graduate study.

I did not compromise on any course work in my undergrad. I have completed all of my courses, including Biochemistry, Molecular Biology, Metabolism, Biophysical Chemistry, and Plant Technology, with the highest grade. Nothing can stop me from studying by any means. Finally, I completed my undergrad study with a remarkable cGPA of 3.97 out of 4.00 and persistently maintained the first position in my batch out of 108 students.

In parallel with my course work, I served as a research assistant in the biochemistry and molecular biology lab of Primeasia University under Dr. Md. Shahinul Islam, where I learned about conducting research, including planning, questionnaire design, data collection, analysis through SPSS, and scientific writing with presentations. Besides, some hands-on laboratory experience in PCR and gel electrophoresis In this lab, I am immensely proud to have played a role in the scientific community’s response to the global crisis by co-authoring two impactful publications through data analysis related to COVID-19, which are about pre-existing health problems and their role in the prognosis of COVID-19 patients, as well as the effect of vaccination status in a second-time attack.

Subsequently, I was involved in some government-funded research projects under Dr. Bidhan Chandra Sarkar about the containing of trans fat in fast food and its effect on the young generation, as well as the measuring of bisphenol-A level and its role in breast cancer patients, who are the concern of our country now. Here, I learn the laboratory equipment for chromatography techniques like HPLC. Additionally, in my final year of undergrad, I completed my thesis on the myopia of school-going children and its prognosis rete due to the alteration of life style during the COVID-19 pandemic. The manuscript of this long-term research project has been submitted for publication. This experience not only honed my research skills but also highlighted the significance of interdisciplinary collaboration and addressing complex challenges.

After completing my undergrad, I started a full-time job at Bangladesh Eye Hospital and Institute as a research associate, where I worked as a part-time laboratory assistant. Here, I learned to perform various tasks in the biochemistry laboratory, including spectrophotometers, colorimetry, microscopes, modern biochemistry analyzers, and so on. Meanwhile, I have been working with Dr. Mahfuza Mubarak at her lab. I was involved in some research projects, such as the nutritional status of school-going children and how it's influenced by the fast-food shops around the Educational Institute, as well as the hematological and biochemical characteristics of dengue patients.

I tried to prepare myself with research and professional experience, along with a strong foundation in course work, so that I would fit for the PhD in Biochemistry at the University of Missouri. I am eagerly waiting to join the graduate research team at Missouri for mainly three reasons, which I carefully considered.

First of all, the curriculum system for a PhD in biochemistry at the University of Mussouri seems to offer more than what I expected, including course work and research rotation in the first year, which is very important for a student to select a proper lab and also helpful for the professor to choose the right student. The second and most important reason I chose this program in Missouri is the alignment of my research interests with some faculties' research areas, like Professor Kent S. Gates. I would like to join his team to accelerate my research skills on Molecular Genetics like DNA alteration, which have a role of devastating effect on our body like cancer and it may recover from it also. Additionally, the research area of Dr. Michael Baldwin also captivates me, especially since I am fascinated by the intricate interplay between bacterial pathogens and the human immune system. My academic and research experience have equipped me with a solid foundation in molecular biology, microbiology, and immunology. I believe I will be competent and enrich the ongoing endeavors in Prof. Michael Baldwin's laboratory. Last but not least reason for choosing Missouri, which is known to all, is the state of research facilities with highly qualified faculties.

After completing my graduate studies, I'll join the research and development department of Ahsania Mission Cancer Hospital and Research Center. However, my ultimate goal in life is to establish a specialized research training academy and prepare a strong community of life scientists. I'll arrange for that team member to come from different universities in different divisions of our country. By giving proper guidelines and conducting periodic training sessions, we will provide a new generation that will be interested in the research sector. I am confident that I will succeed in this because I have a strong network and leadership skills as a former patrol leader of Rover Scouts in my division. We have a lot of famous pharmaceutical companies that export drugs globally, but we have no significant research output. So, we have to achieve this by encouraging and giving proper education. Therefore, I have to prepare myself with strong research skills, which I will apply.

To sum up, I believe that graduating from the University of Missouri is the best choice for me to achieve my educational and personal goals. I possess the data analysis ability, laboratory experimental skills, strong communication, and leadership with attention to details that are essential for success in this field.

My parents harbored the hope of seeing me become a doctor but my fascination for life sciences began to bud during my pre-medical studies. As I delved into the fundamentals of drugs and the pathophysiology of diseases, I became increasingly intrigued by the molecular-level mechanisms at play. Questions about the alterations in enzymes, genes, and cell structures and their impact on the human body's functioning and vulnerability to diseases consumed my thoughts. I yearned to understand how drugs interacted with these intricate mechanisms within our bodies and how their composition could exert control at the cellular level. However, the turning point towards a research-based graduate study was unmistakable during the onset of the COVID-19 pandemic. Witnessing the plight of my country, grappling with a dire shortage of scientists, deeply affected me. While the world was engrossed in the race to discover a vaccine for COVID-19, we were left looking towards more developed nations for a solution. This dire need for scientific expertise and research capabilities propelled my determination to contribute to the scientific community and address critical health challenges through advanced studies in life sciences.

Unfortunately, due to an abrupt shift in my father's business that led to a significant financial crisis, I had to discontinue my studies after achieving my pre-medical school diploma. Faced with the responsibility of supporting my family, I took up a full-time role as a medical assistant at an NGO (BRAC). Despite the demands of this professional commitment, my dream of pursuing higher education in life sciences remained steadfast. After three years of dedicated work, when my family's circumstances showed a slight improvement, I seized the opportunity to enroll in undergraduate studies within the Department of Biochemistry and Molecular Biology. I intentionally chose biochemistry as it offered a robust foundation in life sciences, aligning with my aspiration to delve into research starting from my second year. This was a strategic step towards realizing my ultimate goal of pursuing graduate studies.

Throughout my undergraduate journey, I remained unwavering in my dedication to academic excellence. I approached every coursework with utmost diligence and commitment. I successfully completed all prescribed courses, encompassing key subjects such as Biochemistry, Molecular Biology, Metabolism, Biophysical Chemistry, and Plant Technology, achieving the highest grades possible. My determination to excel propelled me forward, resulting in an outstanding cumulative grade point average (cGPA) of 3.97 out of 4.00 upon the completion of my undergraduate studies. Notably, I consistently maintained the top position in my batch, surpassing 108 fellow students, a testament to my steadfast pursuit of knowledge and academic success.

In conjunction with my academic coursework, I actively served as a research assistant within the biochemistry and molecular biology laboratory at Primeasia University under the mentorship of Dr. Md. Shahinul Islam. This invaluable experience significantly enhanced my understanding of research methodologies, encompassing vital aspects such as research planning, questionnaire design, data collection, and analysis using tools like SPSS. Additionally, I honed my skills in scientific writing and effective presentation of research findings. The hands-on laboratory exposure I gained included proficiency in PCR and gel electrophoresis techniques. It brings me immense pride to have contributed to the scientific community's response to the global crisis, co-authoring two impactful publications centered around COVID-19. These publications delved into the role of pre-existing health conditions in the prognosis of COVID-19 patients and explored the effects of vaccination status on the potential for a second-time infection.

Following my stint at Primeasia University, I continued my research journey by actively participating in government-funded research projects led by Dr. Bidhan Chandra Sarkar. These projects were particularly focused on crucial health concerns in our country. One project delved into investigating trans-fat content in fast food and its potential impact on the younger generation. Another project involved studying the levels of bisphenol-A and its potential role in breast cancer among patients, an issue of current concern. During this period, I acquired valuable hands-on experience with laboratory equipment, particularly in chromatography techniques like High-Performance Liquid Chromatography (HPLC). Moreover, in my final year of undergraduate studies, I devoted myself to an extensive research endeavor. My thesis centered around the prevalence of myopia among school-going children and its prognosis rate, influenced by altered lifestyles during the COVID-19 pandemic. The manuscript detailing this long-term research project has been diligently prepared and submitted for publication.

Through these experiences, not only did I refine my research capabilities, but I also gained a profound understanding of the importance of interdisciplinary collaboration and the necessity of addressing complex challenges in the realm of scientific research.

Upon the successful completion of my undergraduate studies, I transitioned into the professional realm by taking on a full-time role as a research associate at the Bangladesh Eye Hospital and Institute. Concurrently, I also worked as a part-time laboratory assistant, where I had the opportunity to develop and refine various skills essential for biochemistry research. This included operating sophisticated laboratory instruments such as spectrophotometers, colorimetry devices, microscopes, and modern biochemistry analyzers, among others. During my tenure, I had the privilege of collaborating with Dr. Mahfuza Mubarak and actively participating in several research projects. One notable project revolved around evaluating the nutritional status of school-going children, investigating how it was influenced by the proximity of fast-food establishments to educational institutes. Additionally, I delved into the hematological and biochemical characteristics of dengue patients, shedding light on vital aspects related to this significant health concern. These experiences significantly enriched my understanding of applied research and strengthened my laboratory competencies.

In my journey thus far, I have been intentional in cultivating a blend of research acumen and professional experience, fortified by a solid educational foundation. This deliberate preparation has been geared towards making me a fitting candidate for a Ph.D. in Biochemistry at the University of Missouri, a goal I ardently aspire to achieve. There are three compelling reasons why I am eagerly anticipating the opportunity to join the esteemed graduate research team at Missouri, each carefully considered and aligned with my academic and career ambitions.

Firstly, the curriculum structure of the Ph.D. program at the University of Missouri exceeds my expectations. The integration of coursework and research rotations in the first year is a vital component for both students and professors. This setup facilitates an informed selection of research labs, allowing students to align their interests effectively. It's equally beneficial for professors in identifying the right students for their teams.

Secondly, a paramount reason for choosing this program is the alignment of my research interests with the expertise of esteemed faculty members, particularly Professor Kent S. Gates. I am keen to be a part of his team to enhance my research skills in Molecular Genetics, specifically focusing on DNA alterations and their profound effects on the human body, such as in cancer development and potential recovery. Additionally, Dr. Michael Baldwin's research area, focusing on the intricate interplay between bacterial pathogens and the human immune system, has captivated me. My academic and research experiences have provided a robust foundation in molecular biology, microbiology, and immunology, making me confident in my ability to contribute meaningfully to the research in Prof. Michael Baldwin’s laboratory.

Lastly, the University of Missouri's renowned state-of-the-art research facilities and highly qualified faculty members make it an ideal choice. The combination of an exceptional curriculum, alignment with my research interests, and exceptional research resources further solidifies my eagerness to become a part of the academic and research community at the University of Missouri.

Upon completing my graduate studies, my immediate plan is to join the research and development department of the Ahsania Mission Cancer Hospital and Research Center. This step aligns with my commitment to contribute actively to research. However, beyond this, my ultimate life goal is to establish a specialized research training academy. My vision is to nurture and cultivate a strong community of life scientists, carefully curated from different universities across various divisions of our country. In establishing this academy, my approach is to assemble a diverse team of individuals passionate about research. Drawing from my strong network and effective leadership skills developed during my tenure as a former patrol leader of Rover Scouts in my division, I plan to facilitate proper guidelines and conduct periodic training sessions. This initiative aims to spark a new wave of interest in the research sector, particularly among the younger generation.

It is essential to note that while our country boasts numerous globally recognized pharmaceutical companies exporting drugs, there remains a significant gap in terms of substantial research output. Bridging this gap necessitates a concerted effort to encourage and provide proper education. Hence, my objective is to equip myself with robust research skills during my Ph.D. studies, which I intend to apply vigorously in realizing this vision for a vibrant research training academy.

In conclusion, I am firmly convinced that obtaining my Ph.D. from the University of Missouri is the optimal pathway to achieve both my educational and personal aspirations. My skill set includes proficient data analysis abilities, adept laboratory experimental skills, effective communication, and strong leadership capabilities with keen attention to detail. These attributes collectively position me for success in the dynamic and demanding field of biochemistry.