My strong foundation in statistics, combined with over four years of professional experience in health interventions, has not only sharpened my analytical skills but also fueled my passion for solving complex health-relevant phenomena through data-driven research. Pursuing a PhD in Public Health Sciences in Health Promotion & Behavioral Sciences is the next essential step in expanding my expertise and preparing for an independent researcher as a faculty member. This program at University of Louisville aligns perfectly with my goals of deepening my Public Health knowledge, contributing to innovative health research, and enhancing Public Health promotion & behavioral systems through effective policy-making. In the short term, I aim to master in Public Health to address vital health related concerns, while in the long term, I aspire to lead a research lab that advances in Statistics/Machine Learning/Deep Learning/Artificial Intelligent through different application related to Public Health, trains future researchers, and fosters a collaborative research environment. This ambition is driven by the mentorship I have received and my commitment to continual learning in Health Promotion & Behavioral Sciences studies.

During my undergraduate studies, I became fascinated by various subfields of statistics, including Data Mining, Biostatistics and Epidemiology, Time Series Analysis, and Statistical Inference. In particular, I found the Biostatistics and Epidemiology course particularly engaging due to its insightful applications and course projects, which sparked my strong interest in Public Health. This sparked the beginning of my health research journey, which included various projects and fieldwork, beginning with data collection for a health research project and progressing through multiple projects and publications. These fields have equipped me with the tools to analyze complex health related data and derive actionable conclusions to improve health outcomes. To strengthen my skills, I pursued a double major in Computer Science and Engineering, which is quite uncommon for Bangladeshis to undertake simultaneously. Through double major, I gained proficiency in statistical programming languages and data analysis such as SAS, Stata, R, and Python. This interdisciplinary training has enhanced my ability to address pressing health issues through rigorous, data-driven approaches. It has prepared me to utilize various application related to health tools and programming languages for conducting experimental health research, incorporating advanced statistical applications through big data, deep learning, and machine learning techniques to apply and resolve emerging health related issues.

To gain real-world experience, I began working with the Joint Rohingya Response Program in 2021, focusing on health projects as a Data Management and Reporting Officer. A recent initiative I led, 'Community Health, Water Sanitation and Hygiene (WASH), Health System Support & Health Post for Forcibly Displaced Myanmar Nationals and Host Community Population,' aims to improve healthcare access & suggest policy in Cox’s Bazar, Bangladesh. This role has expanded my understanding of the complex health challenges faced by marginalized populations during humanitarian crises and sharpened my skills in research, data analysis, and program implementation.

My research career has been distinguished by publications in prestigious journals and successful projects funded by the Government of Bangladesh and University Grants. As a research assistant, I contributed to these projects at every stage, from developing research proposals to submitting reports, including supervising data collection, analyzing data, and writing the final reports. Most of those projects focused on socio-economic issues, such as the Vicious Cycle of Poverty, Social Safety Nets Program, and Food Security. My research work primarily focuses on community health, maternal and child health, and environmental health.

From several publications, research on an early childhood development (ECD) status using ECD Index in Bangladesh which employed bivariable analysis and logistic regression models. Our study determined that ECD status is improving through factors such as early childhood education programme, accessibility to children’s books, level of household mothers’ education and family income. Furthermore, I researched about married women’s knowledge and attitudes towards HIV/AIDs in Bangladesh. The study showed that age, division, mass media access and economic status have a significant effect on the knowledge level of the respondents when analyzed using a logistic regression. I have presented my research at several conferences, including the 2020 World One Health Congress, serving as an editorial board member and reviewer for multiple journals. Moreover, I am teaching and mentoring students in data analysis and research methodologies, particularly using SPSS, Stata and R. Reviewing other papers has inspired me with the innovative thinking of various authors and motivated me to explore new methods in health research. I also found great joy in mentoring students on their data analysis and research projects, which solidified my desire to pursue a career in academia.

Given my academic and professional goals I believe the PhD in Public Health Sciences in Health Promotion & Behavioral Sciences at University of Louisville, is my best choice. I have confidence in, the program will prepare me higher education, management of health agencies, and research across sectors. I heard that, the program has a multidisciplinary faculty that will equip me with diverse theories, methods, and tools necessary for addressing complex public health problems, with a concentration on health equity and social justice. Graduates will demonstrate a social justice perspective, analyze health inequities, apply theoretical models, conduct ethical research, apply critical pedagogical techniques, communicate effectively, and translate evidence into equitable policy and practice, which is also my ambition. In addition, the program will train me to develop solutions and improve public health policies for better health outcomes. This aligns with my interests/experience and will deepen my knowledge by being a part of this department.

I am excited about the opportunity to collaborate with esteemed faculty like Dr. A. Scott LaJoi, his extensive contributions to the "Medical decision-making and risk communication" field greatly captivated me. I am eager to contribute my skills and knowledge to his ongoing projects while pursuing my academic aspirations. Upon reviewing Dr. Jovita Murillo León Research profile, I became particularly drawn to your work on "The Role of Nutrition and Breast Cancer, Preventive Measures, and Community Engagement- Addressing Breast Cancer Using a Community Lens" seems to offer exciting doctoral training opportunities that resonate with my prior experience working with women's reproductive health, Social Determinants of Health, Health Disparities, Gender Inequities, and Community Based Research. Dr. Jelani Kerr research and its potential impact on the community has inspired me to pursue my PhD under his mentorship.

With a strong background in statistics, hands-on experience in research, data analysis, program implementation, and a dedication to advancing public health research, I am confident that I will be able to make meaningful contributions to both the academic and public health communities. After earning my PhD, I aim to work in academia, leading a research lab focused on advancing public health research to address global health challenges. I look forward to engaging with the vibrant academic community at University of Louisville and contributing to research that addresses pressing health promotion and behavioral sciences issues worldwide.