

Mohammad Nayeem Hasan
Statement of Purpose

My strong foundation in statistics, combined with over four years of professional experience in health programs, has not only sharpened my analytical skills but also fueled my passion for solving complex One Health issues through data-driven research. Pursuing a PhD in Public Health concentration with One Health is the next essential step in expanding my expertise and preparing for an independent researcher as a faculty member. This program at the Department of Environmental & Global Health aligns perfectly with my goals of deepening my Public Health, Veterinary Health, and Environmental Health knowledge, contributing to innovative health research, and through effective policy-making. In the short term, I aim to master One 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 intelligence through different applications related to Health Science, 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 and solving health issues.

During my undergraduate studies, I became fascinated by various subfields of statistics, including Data Mining, Time Series Analysis, Statistical Inference, Biostatistics, and Epidemiology. 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 public health research journey, which included various projects, fieldwork, and progressing through multiple publications. These fields have equipped me with the tools to analyze complex real-life public health 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 my 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 One Health issues through rigorous, data-driven approaches. It has prepared me to utilize various applications of health tools and programming languages for conducting experimental health research, incorporating advanced statistical applications, deep learning, and machine learning techniques to apply and resolve emerging health issues.

Given my academic and professional goals, I believe the Doctoral Program in Public Health, One Health concentration at the University of Florida is ideal for those seeking advanced training. I chose this program because my previous work aligns with One Health, which emphasizes collaboration across public health, veterinary health, and environmental health to address complex health challenges. I'm particularly focused on emerging diseases and investigating the environmental factors affecting disease prevalence in humans. This program aims to bridge the gap between animal, plant, and human health, which aligns with my research interests. It will prepare me to tackle environmental health issues through transdisciplinary coursework and hands-on research training, equipping me to lead in academia, policy, and research after completing my PhD. I am excited about the opportunity to collaborate with esteemed faculty, particularly Dr. Sarah L. McKune, whose extensive contributions to global health, food security, nutrition, and climate change deeply resonate with my interests. Especially, her work on "Integrated modeling of the determinants of household food insecurity during the 2020–2021 COVID-19 lockdown in Uganda" has reinforced my belief that the University of Florida is the best place for my PhD. I also admire Dr. Jennifer W. Applebaum's work on social inequalities, human-animal interaction, social determinants of health, and One Health, which aligns with my prior experience. Additionally, Dr. Benjamin D. Anderson and Dr. Michael von Fricken's focus on Global Health, Virology, Emerging infectious diseases, and One Health aligns with my interest and my recent project on Biostatistics, Epidemiology, Infectious disease, Environmental Health, One Health, and Public Health. I believe their works align closely with my research interests and will enable me to engage in meaningful and impactful studies during my PhD program under their supervision.

With a strong background in statistics, hands-on experience in research, 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 the University of Florida and contributing to research that addresses One Health issues worldwide.