Public health always strikes me as my ideal academic area to work in. Public health is "the science and art of preventing disease, prolonging life and promoting human health through organized efforts and informed choices of society, organizations, public and private, communities and individuals." It is a truly comprehensive area - the "public" in question can be as small as a handful of people, an entire village or it can be as large as several continents, and the "health" takes into account physical, mental and social well-being. I have hoped to work in the field of public health since high school. My college education provides me with a basic understanding and a general introduction to public health. The MPH program will be useful to further my study.

At the core and heart of public health, in my opinion, lies biostatistics. In the era of evidence-based medicine, the integration and transformation of medical science evidence with biostatistical methods are becoming a critical component of medical practice. Data-oriented cohort research will become a hotspot, and the establishment of a large sample pool of biological samples will make it possible to study the biological mechanisms behind it and provide ideas for basic research. Various methods including the progress in mobile health are increasing the amount of available data, so a method to analyze, sort, and induct is needed and more reliable conclusions will be obtained this way. Emphasizing on the application, biostatistics is the application of statistical methods to specific medical problems, from data to knowledge and finally to action. In the past year, I worked for Dr. Wu of Pediatrics Department of The First Affiliated Hospital of Xiamen University on the construction of an AI-aided diagnosing system, where we gathered, processed, and organized the data from various sources. With these data, we are able to build a comprehensive database upon which statistical methods could be applied to provide suggestions in diagnosing new patients and draw medical conclusions.

The biostatistics MPH program will provide me with the possibility to start getting into the US public health system earlier. It also allows me to learn, master, and apply systematically basic mathematical analysis methods of public health. Biostatistics provides suggestions on interventions from a clinical perspective; at the same time, everyone can improve his/her health level a little bit from his/her daily routine and effectively access public health services. Hopefully, I can apply statistical methods to the surveillance of specific chronicle disease and communicable disease to find the pathogenesis and also test whether the application of certain treatments was effective. Nowadays, the increase in size and complexity of molecular datasets leads to the use of increasingly powerful and sophisticated statistical methods, in particular, machine learning methods. Data mining and machine learning allow detection of patterns in data with a complex structure, as biological ones. I learned that many laboratories associated with the biostatistics program are conducting researches with machine learning and artificial intelligence. I have conducted some research in machine learning in biomedical areas, and it would be beneficial if I could receive a systematic study and in-depth research experience of the application of machine learning in biostatistics.

After graduation, I plan to apply to Ph.D. programs, potentially with a focus in biostatistics. During my college life, I excelled in all biological and medical courses, especially biostatistics and epidemiology. I believe such a solid foundation of education gives me a strong starting point in the study and research in graduate school. The courses of the MPH program would provide me with a more systematic and comprehensive understanding of biostatistics, which would be helpful and necessary. I would also acquire practical experiences in a first-line realistic working environment. While my strongest interest lies in biostatistics, other areas of public health are fascinating to me as well. In the next 2 or 3 years, I plan to actively engage in all kinds of courses, participate in field works and internships, and have various laboratory rotations to find the most inspiring topic to dig into.

After completing my education, I will stay in the academia and dedicate my time and effort to research in public health, hoping to make my own contribution to the community and the health of humanity. Through biostatistical analysis, we can allocate medical resources more efficiently with limited resources, more reliably evaluate the actual effects of a health measure or treatment, establish a more sensitive disease surveillance system to enable early warning, find new causes for cardiovascular and cerebrovascular diseases, diabetes, obesity, and neurodegenerative diseases, provide possible etiological clues for basic research, and establish reasonable diagnostic criteria. No matter what path I choose, what awaits me out there is a road of many failure and disappointments. I will embrace all the possible obstacles and accomplish my goals step by step. I genuinely believe that the future is the sum of small efforts - repeated day in and day out.