Exploring physics through study and research has directed my growth in thinking creatively about open-ended problems and applying my knowledge to understand processes and concepts. Combining my interest in the clinical setting with my love for scientific investigation, I want to pursue a dual degree M.D./Ph.D. so that I can play a personal role in impacting individual patient's lives and also lead the search for discoveries that lead to better outcomes for patients.

My four years of research experience with Wei Li, Ph.D., Assistant Professor in the Department of Physics and Astronomy at Rice University in high-energy physics has developed my passion for scientific investigation and effective communication. Working on independent research projects has forced me to think creatively to troubleshoot and solve experimental design problems often requiring exploration of deeper concepts of the field. This continual exploration and creativity are both aspects that I appreciate about the process of scientific discovery. But, communication of these discoveries is also essential to scientific advancement. My desire to communicate was primarily influenced by two experiences: at the European Organization for Nuclear Research (CERN), which operates the largest particle accelerator in the world, where I collaborated with teams of physicists, and in the coalescence of my work into a senior thesis, where discussions of both my work and my peers' work expanded the scope of my knowledge and highlighted the importance of effective communication.

The interdisciplinary nature of research also appeals to me. I can explore my interests that exist outside the immediate scope of the clinical and medical field and integrate them into medicine in novel ways. Furthermore, it leads me to new interests fostering new directions and perspectives. For instance, my undergraduate research and education has led me to an interest in computational science, which drives my current research interest in medicine. I want to apply my programming background to advance the application of machine learning in areas such as imaging, bioinformatics, or personalized medicine.

The dual degree satisfies my career aspirations as a physician-scientist to perform cutting edge research and to care for patients. As an MD, I will work on the front lines of providing healthcare where I can develop relationships with patients and directly determine what innovations would benefit medicine. As a Ph.D. scientist, I will have the training and resources to produce these innovations by solving abstract problems involving the intersection of multiple fields. This will allow me to explore the interests that I have found during my undergraduate experience and continue to make new ones. Working in both settings will benefit each facet of my career allowing me to make new discoveries and provide superb care to patients by establishing the bridge between discoveries in the lab and their application in the clinic.