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Attending the short course on modeling infectious diseases in Africa will be very beneficial to my academic career because I will be able to gain knowledge that will help me with future and current research topics.

I have had some experience with modeling diseases at both the undergraduate and graduate level. While attending the University of Maryland Baltimore County, I completed several internships; however, the career changing internship happened the summer of my senior year when I participated in the Mathematical Theoretical Biological Institute in Los Alamos, NM. It was at MTBI where I was introduced more in-depth to math biology, and completed my first modeling project related to disease. In a group, we completed a mathematical model of the effects of lifestyle choices on atherosclerosis and other cardiovascular diseases. In this project we modeled unhealthiness as an infectious disease by using guidelines of healthy lifestyles given by the American Heart Association; and we learned the effects of unhealthiness on a population. After this experience I decided to continue my studies in the master's in applied mathematics program at Arizona State University, January 2006. Here at ASU, I have been able to take courses that have helped expand my knowledge base in math biology and relating fields. Upon finishing my first semester, I had the opportunity to work with Dr. Sara Del Valle at Los Alamos National Laboratories, in Los Alamos, NM. It was there that I began work on modeling the effects of population mixing on pandemic influenza. On this project I used an agent-based stochastic model, EpiSimS, to study the dynamics of specific population sizes on the spread of pandemic influenza. My research experiences and classes have given me a great start to building a background in math biology and modeling, but I desire to learn more on modeling within different topics.

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As I continue my graduate studies I look forward to doing research on infectious diseases. I want to model diseases on a cellular level, as well as focus on population dynamics as a result of the diseases. From this short course I plan to gain topic ideas that can be translated into a research topic that will allow me to model using techniques from both mathematical cell physiology and population ecology. Since I have had success on the qualifying examinations here at ASU, passing two at the PhD level in my first year, my plan is to enroll in the PhD program beginning fall 2007. From there I hope to make significant contributions in the field of mathematical biology in both the present and future.