The Effect of Ignorance: Neglected Tropical Diseases in El Salvador
CISLA Proposal

One of the reasons I chose Connecticut College over other institutions was because of the vast opportunities to study abroad as well as the option to participate outside of the academic world while abroad. The chance to interact with the global community in a professional setting is too much of an "open door" to let it simply pass me by. CISLA offers students the ability to mature within a growing global society as well as the resources to refine the tools that allow such a community to exist and prosper.

Ever since I was tall enough to reach the power button on the television I have known that I wanted to go into medicine. The constant hours of Discovery Channel health documentaries, even those that my mom did not want me watching because "I was not old enough," furthered my interests in health sciences. From a young age, health related discussions were a regular occurrence between my mother and myself. As the years passed the conversations continued and the only changes coming from the difficulty of the topic as I learned more from various science courses.

In addition to an increase in my biomedical knowledge, these exchanges also increased my Spanish proficiency. As both of my parents are immigrants from the Dominican Republic, Spanish was the language for daily home interactions. The aforementioned conversations between my mother and I were more often than not discussed not solely in Spanish but in "spanglish." The dual development of my medical and Spanish knowledge has added a very viable asset to my arsenal of tools: bilingualism. The ability to discuss medicine in both English and Spanish allows me to connect with a wider range of people and sometime in the future will enable me to treat a

spectrum of patients.

My Senior Integrative Project will merge my interest in human health and my Latino heritage through work within the health profession in El Salvador. Latin America is one of the regions most affected by a mixture of deadly diseases such as HIV/AIDS, tuberculosis, and malaria. Though deadly in their own right, this blend is accompanied by a much more debilitating mixture of infections referred to as "neglected tropical diseases" or NTDs. These "neglected diseases" include schistosomiasis, dengue, leishmaniasis, leprosy, lymphatic filariasis and trachoma; the most prevalent being hookworm infections, soil-transmitted helminthiases, and Chagas disease (Hotez, P.J. *et al*, 2008).

The most devastating blow comes from the vicious circle of poverty and disease that exists in El Salvador; as the majority of those affected by NTDs live in rural areas (approximately 42% of the Salvadorian population) and cannot afford/attain health care. The often long-term and debilitating effects of these diseases disallows any advancement, leaving many bedridden with empty wallets. (Hotez, P.J. and Brown A., 2009) Since these infections affect a very distinct group of people and do not produce alarming mortality rates, there are still a startling number of chronically afflicted patients; NTDs do not get the attention they deserve. Though the Food & Drug Administration rewards companies for drug production geared towards NTDs through the Priority Review Voucher, the lack of consideration still translates into lack of overall funding for treatment. The lack of funding has allowed the development of drug resistance among the responsible bacteria, virus, and protozoa to the point where drug and vaccine production is lags behind. (Ridley D.B. *et al,* 2006) The only feasible way to combat NTDs is through a long-term effort by the Salvadorian government and other institutions, such as

the World Health Organization and various pharmaceutical companies, to spread effective drug treatment, preventative care, and awareness (Zhang *et al,* 2010).

The status of Salvadorian health, and Latin American health in general, brings up many questions as to the overall effect of NTDs. Why have diseases with such a harmful effect been neglected for so long? What social implications do NTDs have on the afflicted? How are infected patients treated for their respective diseases? How effective are the treatments in use today and what are their long-term projections? How are individual communities handling the spread of NTDs? What is the combinatorial effect of NTDs and HIV/AIDS, malaria, and tuberculosis? What government action has been taken in response to NTDs? Are there educational programs to raise social consciousness towards NTDs? These are some of the questions I want to address.

In order to better understand the effect of NTDs on the Salvadorian population, my ideal internship would be in a hospital or clinical setting that receives many patients affected by said diseases. This would allow me to acquire firsthand experience on the effects of NTDs and how they are being handled on the front lines. The clinic would preferably be located between an urban environment and a rural location, where a mixture of rural and urban patients would be the norm. This blend of patients would show a spectrum of the result of NTD interaction with the socioeconomically diverse population of El Salvador. I would also enjoy working for an organization that concerns itself with the treatment and awareness of NTDs or other major diseases affecting specific regions, communities, and types of people in El Salvador. The organization could be one with a global reach, such as the World Health Organization, or something more local and community based like Doctors for Global Health in La Estancia (part of

Santa Ana) or Santa Marta. Another possibility would be to intern at an organization with a focus on raising social consciousness of healthy living, where my duties would include interacting with local people and educating them on health risks and preventative action. Interning at a clinic or a health-conscious organization would give me personal experience in the medical field that would allow me to grow as an individual and help me in my pursuit of a medical degree.

My support courses are *Chemistry 300: Medicinal Chemistry*, which will allow me to gain a better understanding of all the thought and work that goes into the drugs that are currently being used to combat NTDs and those in the works. *Hispanic Studies 309: Latin America in Film* will allow me to further understand the culture of the region through the examination of films surrounded by multiple issues and values in past and present Latin American society. *Philosophy 229: Bioethics* will permit me to gain an alternative insight on the world of medicine through the study of issues in biomedical research, experimentation, biomedical technologies, and doctor-patient relationships. *Biology 106: Cells* has taught me the basic concepts that allow the human body to function as well as the effect on the body when a viral or bacterial infection interrupts said bodily functions. In addition, the course has allowed me to gain first hand experience of basic laboratory techniques through various experiments.

My Senior Integrative Project not only represents a combination of my two passions, health care and Latinos, but also possibly embodies my future life as a member of the medical community. The time I spend in El Salvador will definitely foster my academic and personal growth but my hope is to impact the life of at least one person.

Literature Cited

Ridley D.B., Grabowski H.G., Moe J.L. 2006. *Developing Drugs For Developing Countries.* Health Affairs. Volume 25 (Issue 6). Pages 313 – 324.

Hotez, P.J., Bottazi, M., Franco-Paredes, C., Ault, S., Periago, M. August 2008. *The neglected tropical diseases of Latin America and the Caribbean: A review of disease burden and distribution and a roadmap for control and elimination.* PLoS Negelected Tropical Diseases. Volume 2 (Issue 9).

Hotez, P.J., Brown, A.S. June 2009. *Neglected tropical diseases vaccines.* Biologicals. Volume 39 (Issue 3). Pages 160 – 164.

Zhang, Y., MacArthur C., Mubila, L., Baker, S.K. October 2010. *Control of the neglected tropical diseases needs a long-term commitment.* BMC Medicine. Volume 8 (Issue 67).