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ASOCIACIÓN PERUANA DE HELMINTOLOGÍA E INVERTEBRADOS AFINES

Project Proposal for Global Health Program research

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Proposed Study: Global Health Program in Peru: Parasites and Education in Pamplona Alta.

Background & Aims

Billions of people are infected with parasitic or infectious organisms which cause extreme suffering and millions of deaths (mostly children) each year; most of these people live in developing regions of the world. These diseases and their effects are not just biological phenomena, but are the result of the intersection of biological, political, and socio-economic factors that mainly revolve around issues of poverty. My goal for this project is to provide focused opportunities for students to learn about this multidisciplinary problem and to contribute work towards its solution. I believe that this endeavor will strike at the heart of Wabash College's mission to have students "act responsibly" and "to live humanely."

My aim for this part of my work in Peru is to partner with university and non-governmental organizations (NGOs) to address global health problems. I am interested in working – and helping – with parasitic and infectious disease problems which exist in areas such as Pamplona Alta, an area of deep poverty in San Juan de Miraflores in Lima. This will occur in two main ways: (1) through assessing the levels of various parasitic disease which exist in the different human (and domestic animal) populations in Pamplona, and (2) through the development of educational materials that might be useful to the residents in their knowledge of prevalent parasites (and how to avoid infection), particularly soil-transmitted helminths (worms) and those infections acquired through contact with domestic animals (= zoonotic infections) such as pigs.

Materials & Methods

Many of the details of this project have yet to be determined, as these will come through collaboration with a NGO (e.g., *Solidaridad en Marcha, or SEM*) that currently works in Pamplona. I expect that in this project we will interview residents of the area about their nutrition, history of parasitic infections and other pertinent information relating to their health status. In addition, we likely will collect fecal samples from

residents of the area to assess their level of parasite infection. This involves sampling a small amount (a few grams) of fecal matter using various concentration techniques to assess the intensity (and diversity) of infections through parasite egg counts. Infection intensities will be analyzed in association with epidemiological information on health status to determine the patterns of infection in the population. Recommendations will then be made as to possible treatment, and education materials generated in cooperation with SEM.

Financial Support and Schedule

The need for laboratory space or materials for this part of my work in Peru is relatively minimal. Most of the lab space needs at the Museo de Historia Natural at URP will be associated with our snail-trematode project. Materials that might be needed for fecal analyses (e.g., Kato-Katz kits, microscope slides, coverslips) are relatively inexpensive and can be funded through my home institution (Wabash College).

The "Global Health Program" part of my sabbatical project (i.e., the pilot projects and coordination with SEM) will be completed during my January–March, 2010 stay in Lima. My longer-term plan is to bring to Peru a group of students from Wabash College in Indiana, USA; the timeframe for this would be late May to early June, 2011 (specific dates yet to be determined).

References

Huiza, A et al. 1994. Enteroparasitosis en el sector 23-A Primera Etapa del distrito de Villa El Salvador _ Lima. Marzo – Abril. 2003. Rev. Per. Med. Trop. U.N.M.S.M. 8 (1-2): 75 – 80.

Leguia, G. 2002. Enfermedades parasitarias de perros y gatos. Epidemiología y control. Editorial de mar. Segunda edición. Lima. Perú.

Medina J. et al. 2002. Diphyllobothrium pacificum en niños del Peru. Diagnostico. 41(4): 161 – 164.

Santoro, C et al. 2003. Inca expansion and Parasitism in the Lluta Valley: Prelimanary Data. Mem. Inst. Oswaldo Cruz, Rio de Janeiro. 98 (Suppl. 1) : 161 – 163.

Tantaleán, M. 1994. Nuevos helmintos de importancia medica en el Peru. Rev. Per. Med. Trop. UNMSM. 8 (1 –2): 87 – 91.