Crossing borders to research emerging cross-border disease

USF Health is working with four other countries to research *Helicobacter pylori* (*H pylori*) infection, an emerging digestive disease with one strain leading to gastric cancer in many eastern countries.

Tadahiro Sasaki, visiting MPH student from Osaka University in Japan, is working with Dr. Ricardo Izurieta and Dr. Jaime Corvin in Global Health to undertake an epidemiological study of contributing factors to gastric cancer from *H pylori* infection. The disease, discovered about twenty years ago, infects the lining of the stomach and duodenum. About ten years ago it was suggested as a possible link to gastric cancer.

The project is part of a study that involves research samples and interviews of volunteers in Japan, Thailand, Ecuador, and Panama. Mr. Sasaki, along with Dr. Izurieta, is going May-July, 2007, with eight Global Health students assisting and several undertaking their International Field Experiences in Ecuador. Japan and Ecuador are among the countries with the highest incidence of gastric cancer in the world. The Ecuador component of the project will be carried out at the Bio-Medicine Center with the support of the Ecuadorian National Secretariat of Science and Technology (SENACYT), and directed by Country Coordinator Dr. Edmundo Estevez. MPH student Samantha Choudhury will be assisting with the research study in Ecuador. She said, "I feel incredibly fortunate to have been granted this opportunity . . to satisfy so many interests—the chance to put our classroom knowledge to work at the Ministry of Health, getting our 'hands dirty' in the clinical setting, and taking an active role in field research. These activities will serve as an amazing culminating experience for the last 2 years of my coursework at the College of Public Health."

The researchers have recently found a breakthrough in extracting DNA from stool samples (using a highly sensitive and specific non-invasive test, much easier for patients than biopsy samples from the stomach). Carriers of *H pylori* infection will also be screened for gastric cancer. The interviews focus on lifestyle, occupation, location, and health conditions, including cancer. Mr. Sasaki will be examining the correlations between *H pylori* prevalence, helminth (intestinal worms) prevalence and stomach cancer incidence. The study is researching two possibilities: that the helminth infection paradoxically reduces damage to the stomach and secondly that several genotypes of *H pylori* have varying degrees of aggressiveness. If confirmed, the implications will be to better predict the progression of this infectious disease into gastric cancer by identifying the *H pylori* genotype of those infected by this bacterium.

USF is working with the lead university in Japan—Osaka University, Graduate School of Medicine, with Professor Yoshimasa Yamamoto, Ph. D., who will be traveling here in June and then on to Panama to carry out the study there with Dr. Izurieta. Besides Ecuador and Panama, Osaka University is also including Thailand and Japan in this international comprehensive study ultimately aiming to discover effective treatment and prevention. As Dr. Izurieta commented, "In a globalized world, cooperation among different countries is a key element to achieve disease control or even eradication."