Latin America Program Trains Promising Scientists

2006 was another successful year for our Latin America training program, which provides local researchers with knowledge-based, hands-on workshops enabling them to address issues related to infectious diseases. As part of the prospective study, which follows approximately 3,700 children to learn about the natural history of dengue transmission and to contribute important information for vaccine safety research, serum samples are collected every July. The samples are used to measure the children’s anti-dengue virus antibodies. Staging of the annual sample collection at the Socrates Flores Health Center as well as in the field proved to be very efficient and greatly reduced staff time and energy spent locating patients and collecting specimens. Over 3,700 samples were collected in a five-week period thanks to the tireless effort of the Nicaragua team.

In another advance, databases in the Health Center, Hospital, and Laboratory, along with many lab procedures such as ELISA and virus isolation, have been automated and linked together, contributing to a more rigorous quality control scheme and to reduction in human error. The integration of information technologies, such as barcode scanning, PDAs, fingerprint scanning, and geographic information systems (GIS), have not only greatly benefited the study in Nicaragua but have also generated interest among international organizations in efforts to explore how SSI’s experience can be leveraged to enhance other studies around the world. The goal is to

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SSI News
A newsletter from the Sustainable Sciences Institute

Scientific Capacity Building: Now More Important than Ever

When we founded SSI, we set out to fight infectious diseases by building local scientific capacity in developing countries. Over the past eight years, SSI has done just that. The results of our work have been inspiring and have led to the establishment of new partnerships and collaborations, the use of improved diagnostics at the national level, the implementation of reference laboratories, the creation of Centers of Excellence, more publications and better access to scientific information, and improved surveillance of infectious diseases. More specifically, we have trained many hundreds of scientists and health professionals in more than 20 developing nations. While the results of our work are clear, I would like to take a minute to focus on the reason our work continues to be important. Take Latin America for example, where accelerating urbanization over the past fifty years has led to the appearance of “misery belts” around large cities. These settlements lack modern infrastructure and are perfect sites for the proliferation of infectious diseases. The lack of capability in the national health systems to rapidly and reliably diagnose these diseases only worsens the situation, which is compounded by poor

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Dengue Cohort Study Enjoys Continued Success

The past year has been an exciting one for the Pediatric Dengue Vaccine Initiative (PDVI) study in Nicaragua, with many successful accomplishments, some of which have caught the attention of foundations and health workers worldwide. As part of the prospective study, which follows approximately 3,700 children to learn about the natural history of dengue transmission and to contribute important information for vaccine safety research, serum samples are collected every July. The samples are used to measure the children’s anti-dengue virus antibodies. Staging of the annual sample collection at the Socrates Flores Health Center as well as in the field proved to be very efficient and greatly reduced staff time and energy spent locating patients and collecting specimens. Over 3,700 samples were collected in a five-week period thanks to the tireless effort of the Nicaragua team.

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**Spotlight on Dr. Mohamed Metwally:**

**Professor of hepatology at Benha University and two time SSI Small Grants recipient, interview by Kara Nygaard**

**Kara:** I’m interested in your upbringing. How did you end up where you are today?

**Mohamed:** I’ve been interested in science since I was a child. As a boy I was called Dr. Mohamed by my parents and relatives. It was a dream of my father’s to be a doctor and a famous scientist helping the diseased people. This encouragement and desire were supported by my teachers. I started medical school at Ain Shams University in Cairo and transferred to Benha University in 1990.

**Kara:** What motivated you and spurred you to study hepatology?

**Mohamed:** Hepatology is an important branch of study in our country. As a medical student I was confronted with many patients with complications from schistosomiasis, a disease endemic in Egypt and the Nile Delta where my governorate is located. I think everyone in Egypt has at least one family member or extended relative with liver disease, especially hepatitis C (HCV). I lost my uncle to liver disease when I was in medical school - a tragedy which also motivated me to work in this field.

**Kara:** What inspired your work and triggered an application to SSI’s Small Grants Program?

**Mohamed:** The idea came to me when I read about the prevalence of HCV among children under 10 years of age. This triggered a question for me about the role of vertical transmission of HCV in Egypt. It was while presenting my work during an international liver meeting that I met Dr. Ed Wäkil and discussed my interest in HCV research with him. He had the same interest and told me about SSI’s work. After reading more on the web, I decided to apply for a small grant. In 2004, I received my first $15,000 grant to determine the rate and independent predictor risk factors for vertical transmission of HCV in Egypt.

**Kara:** Can you describe the success of this research project? What do your results show?

**Mohamed:** It was the first time I managed a project as a principle investigator. It was a great chance for me to organize a team from my university and collaborate with well-known staff from other universities. I was able to work for two years, screening more than 1,200 pregnant females and doing follow-up on their children. Most importantly my results showed that the prevalence of HCV is not as high as previously documented in the literature; HCV antibody prevalence is 8.7% and HCV RNA is 6.9%. The second important result showed that transmission of HCV from mother to infant is less than 4%, which is similar to other areas around the world.

**Kara:** What is next for you and what else would you like to share?

**Mohamed:** I am applying to study hepatitis B in my cohort and am preparing a proposal to submit to the U.S. National Institutes of Health. Also, I cannot end this interview without mentioning my mentor, Dr. Nizar Zein, who gave me support at the beginning, encouraged me to do clinical research, supervised my master’s thesis, and cooperated with me on all of my publications.

**Visit our website at www.ssilink.org to read the full interview with Dr. Mohamed Metwally.**

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**Dengue Cohort Study continued from page 1**

develop workshops and consulting programs to train staff working on studies in other countries, such as clinical trials in Africa, how to integrate these technologies to improve a project’s quality and efficiency. Regarding staff, a fond farewell to Samantha Hammond and a warm welcome to Nicole Fitzpatrick as PDVI Project Coordinator (see page 3). In terms of training, Célia Machado, a biologist from the National Virology Laboratory in Managua, has arrived at UC Berkeley to sharpen her skills in measuring antibodies to dengue virus in the study children’s sera. In Nicaragua, informatics technician Douglas Elizondo is enrolled in a computer programming course, and a number of staff are taking English classes to hone their language skills and in preparation for the upcoming 55th Annual Meeting of the American Society of Tropical Medicine and Hygiene in Atlanta, GA, where they will present their work. Looking to the future, the PDVI project will continue for three more years due to an extension of funding from PDVI/IVI. Negotiations are also ongoing for the launching of a tetravalent dengue virus vaccine trial in the cohort site in Managua, and health officials as well as project staff are very interested in this endeavor and its potential benefit to the local community as well as to the world.

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**Latin America Training**

The second workshop, which took place in Tegucigalpa, Honduras, from July 3 to 7, was held in conjunction with the Universidad Nacional Autónoma de Honduras (UNAH). During the hands-on workshop, SSI trained 14 investigators who wrote about a wide range of subjects, including helminthic parasitosis in Honduran schoolchildren, the detection of mutant strains of HIV, quality control of clinical laboratories, and more. As a result of the workshop, 14 publishable manuscripts were prepared. The third workshop took place between August 7 and 11 in Panama City, Panama. The workshop, which was co-sponsored by Panama’s National Secretariat for Science, Technology and Innovation (SENACYT), aimed to increase the number of scientific publications produced by the local scientific community. During the workshop, sixteen students from Panama worked with the instructors to generate manuscripts based on their own research and publishable data. SSI was pleased and gratified to see a distinct improvement in the work produced since the previous workshop conducted in 2003. The manuscripts were well thought out and nicely prepared, and we anticipate that a large number of them will be published. We are excited about the continued success of our training program and look forward to working with more promising scientists in the years to come.
In March, Scientific Director Maria Elena Peñaranda and Board Secretary Stephen Popper were invited to a workshop by the Global Dialogue on Emerging Science and Technology (GDEST) in Beijing, China. The workshop, which discussed the genomic revolution and new tools for combating infectious diseases, was a collaborative program by the Chinese Ministry of Science and Technology and the US National Academy of Science. Maria Elena discussed SSI’s model of technology transfer during a talk about practical tools used to fight infectious diseases in the developing world. Stephen, a research fellow at Stanford University, discussed the potential for developing new diagnostics and prognostic tests by examining gene expression patterns in the blood of patients with acute infections. In addition, Maria Elena attended the WHO-AFRO Integrated Disease Surveillance and Response Partners Meeting at the Centers for Disease Control, as part of our ongoing partnership with WHO-AFRO. The meeting, which took place in September in Atlanta, Georgia, generated discussions on issues such as cross-agency collaboration, advocacy, and publication, with the hope of obtaining further funding for this very successful program in Africa. SSI is eager to continue collaborating with WHO-AFRO and looks forward to bringing our training model to Africa.

It was another busy year for SSI’s President, Eva Harris, who presented SSI’s work on numerous occasions. In April, Eva attended the Northern California International Health Conference at UC Davis and discussed SSI’s experiences with scientific technology transfer in Latin America. Eva also spoke about SSI’s work during a Programme for Global Paediatric Research symposium in May, which focused on the problems of neonatal infectious diseases in developing countries. Eva discussed global partnerships for infectious disease research with a focus on pediatric studies of dengue in Nicaragua. In addition to the above events, she presented SSI’s work at the UC President’s Postdoctoral Fellowship Program Keynote Address, the Gates Foundation, the University of Wisconsin at Madison, the Center for Latin America Studies at UC Berkeley, the Women Global Health Scholars Program, Child Family Health International, and numerous courses at UC Berkeley. Lastly, a glowing article about Eva and SSI appeared in the October “Heroes” issue of GEO, a German magazine similar to National Geographic. SSI staff and board are looking forward to spreading the word about SSI’s work during many more engagements in the months to come.

In another transition, Samantha Hammond, who worked for four years on numerous SSI-UC Berkeley projects in Nicaragua and was the Study Coordinator of the PDVI/Gates-funded “Pediatric Cohort Study of Dengue Transmission in Nicaragua”, moved on to continue her studies and will be going to medical school. Samantha was incredibly dedicated to the projects in Nicaragua and made major contributions to all of them. Her tireless work, numerous capabilities, and infinite initiative will be remembered and missed. We think of Samantha often and wish her the best of luck in the future!

We have lots to report in our personnel department. Rebecca Hekman has left SSI in pursuit of a joint law degree from the University of California, Los Angeles together with a master’s in Law and Diplomacy from the Fletcher School at Tufts University. Rebecca came to SSI three years ago and while she was initially hired as the staff writer, she went on to run many aspects of the SSI operation. Rebecca is an unbelievable multi-tasker who somehow balanced writing responsibilities with just as much fundraising, accounting and human resources management in addition to the numerous other details that crop up in a non-profit organization. Rebecca did an incredible job at identifying what the organization needed, taking ownership of these tasks, and then seeing them through completion. Determined and intelligent, Rebecca seemed happiest when she was tackling something new and significant. She will be most missed for her innovation, her dedication to SSI’s mission, her ability to focus and follow through and, not least, her sense of humor. Rebecca touched the lives of all of us at SSI and we wish her all the best in her endeavors - there is no doubt Rebecca will succeed at whatever she sets her mind to!

We would like to introduce our new staff:

**Nicole Fitzpatrick**, MPH Project Coordinator for the PDVI Study, SSI-Nicaragua, is responsible for the overall on-site management of the project in Managua with the aim of meeting PDVI study objectives.

**Armando Molina**, Finance and Operations Consultant, is helping to design and implement our new financial system in SSI-San Francisco and SSI-Nicaragua.

**Martine Zoer**, Fundraising and Publicity Associate, is ensuring the smooth functioning of SSI’s development and publicity efforts by providing comprehensive writing and fundraising support.
Yalla Egypt! (Let’s Go Egypt!)

Despite the turmoil in the Middle East, SSI-Egypt’s programs continue to flourish. Our popular Small Grants Program is now entering its third year of awarding grants to competitive applicants. To date, we have been very impressed with our grantees, many of whom have gone on to present their results in conferences outside of Egypt, including Mohamed Metwally, Maissa El Raziky, and Mona El Raziky, who were selected to present their work at the World Congress of Gastroenterology in Montreal, Canada. We’ve also successfully kicked off our Fellowship Program, which provides funds on a smaller scale for supervised research training in epidemiological and laboratory investigation of viral hepatitis.

An additional goal for 2006 has been to bring Egypt’s institutions up to speed with online access to electronic scientific journals. Unfortunately, it is inherently cost-prohibitive for Egyptian academic institutions to pay for annual journal subscriptions. Luckily, a program exists through the World Health Organization (WHO), which grants free online journal access to countries that qualify for the program. It is our hope to bring Egypt onboard this program through a formal proposal to WHO, as we feel it is vital to ensure that citizens around the world have equal access to published scientific material.

We have also launched an ambitious acute hepatitis C virus (HCV) immunology pilot study centered in the Egyptian ‘Fever Hospital’ system from Cairo south to El Menya. The study is a collaborative effort between Egyptian and San Francisco-based scientists developed to better understand the human body’s natural immune response to genotype 4 HCV during the initial 24 weeks of infection (the acute phase), a time period when clearance of the virus can naturally occur. The few individuals who spontaneously clear HCV hold a key to the development of vaccine-based therapies - the motivation behind this study.

Finally, with solid footing in Egypt and excellent collaborations currently underway, we are paving the way towards setting up an independent SSI Research Center in Egypt. Such a center would give SSI a hub to centralize our operations and support our fellows, grantees, collaborators and volunteers. It would also afford SSI an opportunity to establish itself as a local NGO, thereby allowing us to network with other NGOs working in Egypt on urgent public health issues. We look forward to an exciting year as we, along with our Egyptian partners, work towards making hepatitis C research in Egypt more sustainable. Let’s go Egypt!

Thank You to Our Volunteers and Donors


Your donation sustains our work. Give online today at www.ssilink.org
SSI Meets Ludy Family Foundation Challenge

SSI has many supporters. Ernie Ludy, president of the Ludy Family Foundation, is one of the best. For over four years, Ernie has been supporting SSI and SSI’s president Eva Harris in myriad ways – funds, advice, contacts, consulting, and most importantly, with his friendship. Earlier this year, Ernie made SSI an offer we could not refuse. Aware of our need to raise funds for the Latin America Program, Ernie kicked off our fundraising campaign with a challenge grant. He vowed to match donations given as part of the campaign dollar-for-dollar, up to $10,000, with funds from the Ludy Family Foundation. “What an incredibly generous offer,” said Eva, “and what a great way to jump-start our fundraising campaign!”

SSI invited its friends and supporters to participate in the special opportunity, and by the end of the summer the challenge had been met. Thanks to Ernie and our many generous supporters, the challenge grant was a great success. SSI raised over $23,000 towards our campaign to fund our core Latin America Training Program. “It’s clear from the success of this event,” said Rebecca Hekman, former SSI finance and operations manager, “that when we work together, we can raise the funds needed for this program that is the essence of our mission!”

SSI was not the only one thrilled by the success of the challenge grant; Ernie too was delighted. “Terrific!” he said. “It worked out really well! I am happy that I was able to help and that people responded the way they did. I admire the work SSI does with the children in Nicaragua and with getting laboratory techniques out to the labs that need them. I support SSI’s mission of transferring technology and know-how out of the university in ways that build sustainable intellectual capital for developing countries. SSI is a unique organization. There are very few organizations dedicated to building capacity and setting up laboratories in countries that need them for dealing with infectious diseases. I am a big fan and will continue to support this important work.”

Ernie Ludy is the founder and former CEO and chairman of Medstat Systems. Since leaving Medstat in 1995, Ernie has been investing in and advising early stage healthcare companies through EGL Investments, LLC. He currently serves on the boards of NightHawk Radiology, Rubicon Genomics, and Arboretum Ventures. He is also a member of the National Health Council’s Advisory Commission, and on the advisory board of the Life Sciences Institute and of course SSI. We are grateful to count Ernie among our supporters. Thanks to the Ludy Family Foundation, and your continued support, we will be better able to meet the needs of scientists and public health professionals in Latin America. Our supporters inspire us to move forward and aim ever higher!

The Importance of Scientific Capacity Building

SSI News

epidemiological and clinical data that cannot be used to devise adequate health strategies and policies. As a result, there is a defined need for local personnel able to employ modern techniques to detect and study emerging and endemic infectious diseases and to design appropriate interventions for their control. SSI is in a unique position to respond to the needs of local scientists and health professionals. We believe that they have the ability - and the responsibility - to confront and manage infectious diseases in their countries, but that they lack the necessary tools. At SSI, we make a difference by partnering with local scientists and public health officials and offering them long-term assistance and mentoring to help them make an impact on the health of their communities.

Our Latin America Program, led by Scientific Director Maria Elena Peñaranda, responds to the needs of these public health professionals by providing hands-on training workshops in laboratory and epidemiology skills, grant preparation, and manuscript-writing; small grants; material aid; and continued networking and consulting support. The people we have trained have been instrumental in curbing infectious disease outbreaks and advancing science on local health priorities. They have made their work sustainable by adapting modern technologies to local resources, have established molecular biology laboratories with donated equipment, have published scientific papers in both local and international journals, and have succeeded in securing funding for their research.

Despite the exciting results achieved by the Latin America Program, which is at the very core of our mission, infectious diseases continue to kill nearly one in two people in developing countries, in contrast to one in 10 in the developed world. Your continued support is needed in the fight against infectious diseases. At SSI, we have a vision of a world in which scientists and public health professionals across the planet are able to meet the health needs of their communities. Your support helps us make this vision a reality!

Eva Harris, PhD, President, Board of Directors

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Shop Online To Raise Funds
Now you can help SSI raise funds by shopping through our website at no cost to you! The concept is simple: you shop online and SSI receives a percentage of the sale. To get started, go to our website (www.ssilink.org) and click on the shopping bag icon, which will take you to our marketplace. When you shop through our marketplace, a percentage of all purchases will be redirected to SSI. Over 1,000 nationally recognized merchants are part of the network that aims to complete the circle of finance by returning money from the for-profit to nonprofit sector. All purchases remain anonymous. Thank you for your support!

2006-07 Operational Budget
Total Budget: $956,000

Hepatitis C in Egypt
Training, Grants & Research
25%

Nicaragua Dengue Studies
55%

Latin America Training & Grants
8%

New Projects
2%

Administration & Fundraising
10%

Sustainable Sciences Institute

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SSI News Editors: Josefina Coloma, Nicole Fitzpatrick, Eva Harris, Kara Nygaard, Maria Elena Peñaranda, Martine Zoer. Photos: Alejandro Belli, James Colbert, Hongwei Liu, Annalisa Synnestvedt. Thanks to all who contributed.