

NOVEMBER 2014



Global Health Fellows

NORTHERN PACIFIC GLOBAL HEALTH RESEARCH
FELLOWS TRAINING CONSORTIUM

NPGH Fogarty Global Health Fellows Newsletter



Research Spotlight: Melanie Gasper

How did you get interested in infectious disease/global health research?

I spent my whole young life dreaming of becoming a doctor who would work with disadvantaged populations, and hoped to one day score a position with Doctors Without Borders. Toward the end of my undergrad career, and after more than six months of studying for the (in)famous Medical College Admission Test (MCAT), I was ready to rock it! But a few days before my scheduled MCAT session, one of my roommates came down with a pretty severe case of gastroenteritis. Despite avoiding her like the “plague,” I ended up contracting the illness and spent the entire night before the MCAT vomiting up about half of my own body weight. I tried my best to take the exam the following day, but I was just too dehydrated (dizzy and still nauseated) -- I was obviously in no condition to take an exam of such importance. *Cont. on page 3*



Upcoming Event

November 20th 2014: Core Competency Discussion

6am Seattle; 9am Lima; 2pm Ghana; 3pm Cameroon; 5pm Kenya/Uganda; 9pm Thailand; 10pm China

Link for Adobe Connect:

<http://uwmedical.adobeconnect.com/ghfellows>

(Login with your name)



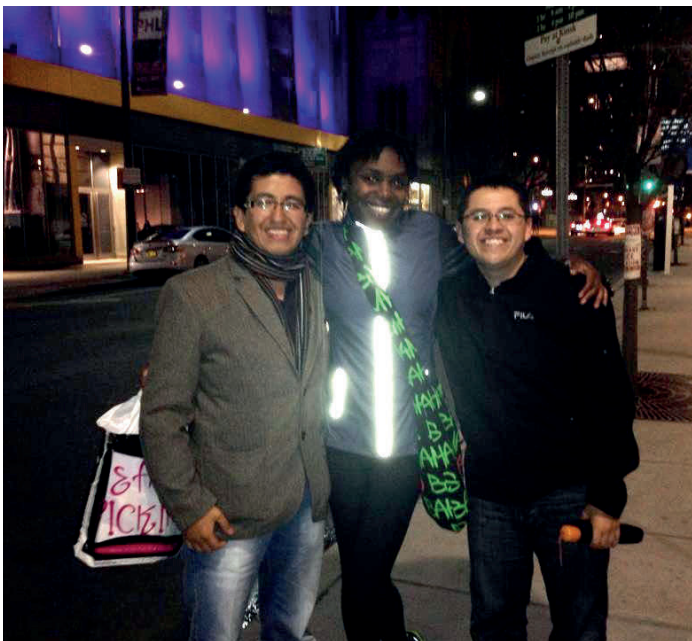
NPGH Fellow and Alumni Photos



Silvia Montano (mentor) and Nicanor Mori (Year 2) at the 63rd annual ASTMH meeting in New Orleans.



Can you guess who is posing with the blurry Frankline Onchiri (Years 1 and 2)? It's Bill Gates!



Mario Cornejo (Year 1), Iman Martin (Year 1) and Nicanor Mori (Year 2) meet up after TropMed.



Mario Cornejo (Year 1) receiving an award for third place and a prize of 1,000 soles!

Research Spotlight: Melanie Gasper

Continued from Page 1

After sitting down and staring at the first test question, I ended up going home, where I proceeded to alternate between crying and sleeping for the next two days. Dramatic? Maybe. But all of this happened when the MCAT was only offered twice per year, so I wasn't able to simply reschedule the exam in time to apply for that year's round of med school application deadlines. I then had to figure out what to do with a year-long (unplanned) gap in my life.

The summer before all of this happened, I had scored an internship as a summer student in a lab at the NIH. When I realized that I had this one-year gap to fill, I contacted the PI of the lab I had worked in and asked if he would be willing to take me on as a post-baccalaureate fellow in his lab for a year while I re-prepared my medical school applications. Luckily, he agreed. Because I was trying to both keep my brain sharp and bolster my application for medical school, I took advantage of classes that the NIH offers to fellows as part of their NIH Academy (taught by NIH-resident experts in the field). I took anatomy and physiology, and as luck would have it, I also took an epidemiology class as well as an "emerging infections" class. It was here that everything "clicked" for me, and I first started thinking about how to merge my skills in lab research with my passion and interest for global health and infectious diseases. It was also at this point when I realized that I could still do important and meaningful work by collaborating with people across disciplines to attack the core of global health problems.

To work on merging these passions of mine, I sought out a PhD program with a strong public health foundation, which is how I chose the Pathobiology program in the Department of Global Health at UW for my PhD, where I studied the immunology of HIV and tuberculosis coinfection. And the rest is history (in the making)...

What are some of the more exciting findings that have come out of your field recently?

Well, I consider myself to have a few fields. My main project here in Lima is a study of Immune Reconstitution Inflammatory Syndrome (IRIS) in HIV-infected patients newly initiating antiretroviral therapy. IRIS results from an overzealous inflammatory response to coinfecting pathogens following successful antiretroviral therapy, which can serve the patient more harm than good. We currently don't know why IRIS occurs in some people and not others. As an immunologist, I want to know if there are immunological markers that we can use to predict an IRIS event, whether that be at a molecular (DNA/RNA), cellular, or biochemical (proteins) level. Therefore, the fields of HIV immunology, coinfections, inflammation, immune reconstitution inflammatory syndrome, etc, which are all largely intertwined, but are still often thought of as separate fields, are all extremely pertinent to my project and my interests.

One of the more exciting findings in HIV immunology is the demonstration of reproducible immunogenicity of the ALVAC/AIDSVAX HIV vaccine used in the Thai trials (circa 2009). During these trials, ALVAC/AIDSVAX was found to lower HIV infection by about 30% in subjects who were vaccinated compared to their unvaccinated counterparts. However, the protection afforded by ALVAC/AIDSVAX was insufficient to warrant licensing, and the statistics used to determine its efficacy were called into question. At the very least, however, it was found to be safe, tolerable, and suitable for further research. Fast forward to October, 2014 when the immune response elicited by the vaccine was found to be reproducible in a small cohort of South African participants.

Continued on Page 3

Research Spotlight: Melanie Gasper

Continued from page 3

This is important because the South African trial participants differed from the Thai trial volunteers with regard to several ethnic and demographic parameters, suggesting that the vaccine can elicit immune responses (which may translate to protection from HIV infection) in diverse groups of people. Although the step is small, it strengthens evidence of consistent, incremental progress in a field that is notorious for setbacks and frustrations. You can find more information about this recent progress here:

<http://bit.ly/ThaiVaccine>

Describe some of the work you are most proud of:

Well, I guess I'd have to default here to obtaining my PhD from the Global Health Department at the University of Washington! My thesis project (based on HIV and tuberculosis coinfection), was not only hugely interdisciplinary, but was also something that nobody else in my lab worked on or had experience with (including my own PI)! Trying to eke out an entire research project with little to no existing foundation to build upon is tricky business for a first-year graduate student! It took me a while (longer than I care to admit), but once I realized the value in seeking help from people outside of my lab, my productivity measurably increased.

By regularly attending other laboratories' weekly meetings and journal clubs, I began to form my own niche of expertise through building on the collective expertise of people in other, related fields, like the HIV, TB, or straight up immunology fields. It was by far the most challenging five years of my life, but it gave me a lot of experience with building and fostering collaborations, which is an intangible skill that will serve me the rest of my life. Also, seeing everything (finally) come together into one final thesis was pretty amazing and rewarding!

What was the best thing you saw/did on your honeymoon?

Hands down, the Santa Cruz Trek in Huaraz (about 8 hours north of Lima)! We're both big into hiking and backpacking, so our honeymoon was full of that. The Santa Cruz Trek passes by some of the most brilliantly-colored glacier-fed lakes and is surrounded by some of the tallest peaks in the Andes. Also, the trek passes over Punta Union Pass at 15,617ft (4760 meters), which is nearly double the highest altitude we had ever hiked! The high altitude made the hike incredibly physically challenging for us, but in turn, also more rewarding. And it made for some amazing pictures!

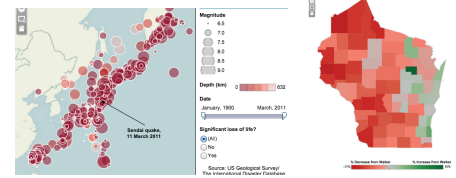


In case you missed it...



Tableau is an easy to use software that takes complex datasets and turns them into attractive visualizations. Full time students receive a 1-year license for free, and non-students can sign up for a free public version.

<http://www.tableausoftware.com/academic/students>



The Painted Veil by Somerset Maugham is a novel about a British bacteriologist and his wife in rural China during a cholera epidemic. Don't have time to read the book? Watch the 2006 movie with Edward Norton and Naomi Watts.



Have you heard of neurocysticercosis? It's why pork is better well-done.

<http://bit.ly/Neurocyst>

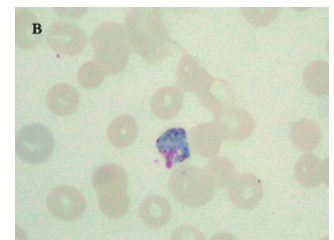


The London School of Hygiene and Tropical Medicine released a podcast that touches on the problem of "brain drain" as they discuss the consequences of one of their training programs in Uganda: African academics- barriers, issues and the impact of international researchers

<http://bit.ly/LSHTMPodCast>

Think you know your tropical diseases? Take this quiz to test your diagnostic skills:

<http://bit.ly/ASTMHQuiz>



Congratulations to Fogarty alumna Kristen Heitzinger who together with Carlton Evans and Claudio Rocha was just awarded a Grand Challenges Canada Stars in Global Health grant (co-funded by CONCYTEC) to investigate the effect of the use of a water pasteurization indicator on childhood diarrhea in the Peruvian Amazon. This work is a continuation of the water quality interventions research she conducted in Ica as a Fogarty scholar. Watch a 2-minute video of her project idea here; a simple device for knowing when water is safe to drink without needing the fuel to bring it to a full boil. <http://bit.ly/KristenStar>



ALUMNI SPOTLIGHT: NITTAYA PHANUPHAK

BEING A MENTOR

Nittaya Phanuphak, MD PhD was a Fogarty Fellow in Thailand from 2012-2013, and did her project on anal intraepithelial neoplasia, HIV, and men who have sex with men. She is now Chief of SEARCH at the Thai branch of the Red Cross AIDS Research Centre, and is helping plan a “training the trainers” workshop in Bangkok that will take place just prior to the Bangkok International Symposium on HIV Medicine.

Have you ever imagined how cool it would be to be a mentor one day? Life could be much easier than being a mentee. Instead of having to read all those articles, prepare the protocol, case record forms, information sheets, consent forms and endless lists of documents for IRB submissions present the project and revise it again numerous times, you would only need to sit back, listen and give comments.

Is it that easy to be a mentor? It would certainly be if you think you are ready to be that person whom your mentee can always count on. No one actually has that ability, but you will need to be capable of showing it to your mentee so that he or she believes it! Challenging! However, after years of being a trainee, all that experience acquired during training will assist you whenever needed when you are leading and assisting your mentee in their tasks.

You will not believe how many skills you have gained and developed during the NPGH training which will certainly benefit your time as a mentor. In addition to using your particular expertise and your experience working with the stakeholders in the field your mentee is going to work in, the most important skill you have learned from the NPGH training is the “ability to establish and maintain good teamwork.”

You can now use this team building skill to provide a support team for your mentee. A support team may include a secretary who arranges travel and accommodation, a financial person who supports the budget spending, clinic staff who help recruit participants and laboratory staff who manage sample processing and storage for the mentee. Motivating your team members to help them understand how important and interesting the project your mentee is going to conduct is a good start. Conducting research in another country with people who are unable to speak your language is frustrating enough. Therefore, providing understanding staff who know why you are here and are willing to lend a hand to you would greatly support the training process.

Being a mentor is a great way of expanding the research world. Thinking of how good a mentor you could be one day can also help boost your enthusiasm throughout the NPGH training. Who knows, one day, you’re a learning mentee and the next day, you’ve become a skilled mentor just like me!





Mentor Spotlight: Joe Zunt

Joseph Zunt, MD MPH is a professor of neurology, global health, and epidemiology at the University of Washington. Originally from Minnesota, he is one of four co-PIs for the NPGH Fogarty Fellows. His research interests include infectious diseases of the central nervous system and education and training.

Networking: The Importance of Candy

Article written by Nikki Eller

Joe Zunt first went to Peru on a Fogarty-funded infectious disease fellowship, spending seven months there researching HTLV-1 infections of the central nervous system in a move that would shape his career and life for years to come. Zunt went to Peru with the advice and support of Dr. King Holmes, first Chair of the Department of Global Health at the University of Washington and currently head of the Center for AIDS Research, after a Dr. Joan Kreiss, Director of the UW International AIDS Research and Training Program, advised him that the lack of CT scan machines in Kenya, where Zunt had been planning to go, would make it difficult to study brain infections in patients with AIDS. On his first trip to South America, Zunt forged friendships and professional connections with other researchers with whom he is still collaborating after 19 years.

Although Zunt trained as a neurologist and still spends part of every week in the clinic, it is clear that training and mentoring have become the major focus of his career, and Peru remains the center of many of his projects. The four main grants he co-directs all involve sending researchers back and forth to Peru for training with the ultimate goal of improving the quality of care and research on neurological disorders in that country (and in the entire world if you ask him). Add to that his own research projects on

meningoencephalitis, a family life, and regular trips for conferences and workshops and you begin to wonder how he does even a third of that. But remember that strong network of collaborators he has? Nobody plans an “HIV: Mixed Methods and Sociobehavioral Research” workshop in Bangkok by himself.

Perhaps that is why Zunt puts so much of his energy into mentoring; more than just a buzzword, interacting with

more experienced researchers is perhaps the most important resource a young scientist can have and Zunt’s own work has gained much from his mentors. He still meets almost daily with Holmes, who set him on his path, although their discussions are more often about the merits of malted milk balls vs. Reese’s Peanut Butter Cups over the office candy jar. When you are not too busy stressing over IRB applications and working on your research, remember to pay attention to the people around you—you never know when a conversation might spark a publication, a friendship, or an Interdisciplinary Cerebrovascular Diseases Training Program in South America.



RESEARCH SPOTLIGHT: VALERIE CORTEZ

Valerie Cortez received her PhD in molecular and cell biology from the University of Washington last spring and did her thesis work on HIV vaccine design. She is currently researching zoonotic infectious diseases in Peru as a Fogarty Fellow.



I began my Fogarty Fellowship a little over two months ago, and have spent as much time settling into my new apartment in Lima as I have trekking through the Madre de Dios region of the Peruvian Amazon. I recently returned from my first month-long field work trip to the jungle, and I admittedly found it hard to come back to the city. Although the work was physically demanding, especially in temperatures above 95°F/35°C, and there were things I lost on the trip—15 lbs, my reluctance to bathe in murky waters—as well as gained—lingering rashes, a plethora of persistent insect bites— I truly enjoyed every minute of it.



I am currently working with my mentor, Dr. Daniel Bausch, and colleagues at the U.S. Naval Medical Research Unit-6 (NAMRU-6) on a five year project to survey rodent populations along the Trans-Oceanic Highway, which bisects a previously remote and undeveloped region of the Amazon. The effects of this highway and the subsequent changes in land use in the area have been dramatic, as the economic opportunities for farming and mining continue to increase. Indeed, I witnessed forest burnings on a daily basis, with the land being cleared for growing papaya, corn, watermelon and other crops. It is unclear how these changes may be impacting the wild rodent populations in the area, and in turn, the microbial communities they harbor, as domestic animals and humans now encroach on these previously undisturbed lands. The potential for zoonotic transmission of rodent-borne pathogens could be significant, and this highlights the need for surveillance in the region. To this end, NAMRU-6 has begun rodent sampling trips four times a year, with each trip directed by a rotating team of two veterinarians, one mammologist, eight field workers, and a few fellow bench scientists. We visit four different towns during each trip and in each town we spend four “trap nights,” setting up over 400 large and small traps across six grids in the areas surrounding the town, each chosen based on their level of land disturbance.

Continued on Page 9...



Continued from page 8...

Using a delicious concoction of peanut butter, oatmeal, and tuna, we bait the traps at dusk, and then collect them the following day at dawn. In between these times, we process the captured rodents in a makeshift “lab” that we set up and breakdown each day. Powered air-purifying respirators and other personal protective equipment are donned during this time to prevent any potential exposures while we obtain blood samples and biometric data before tattooing the footpads of the animals in order to track whether they are recaptured later in the study. Since my project specifically aims to survey the prevalence of *Leptospira* species in the environment and rodent communities, when I wasn’t tattooing animals, I collected water samples and inoculated cultures in the field to hopefully obtain isolates of the bacteria, as new species are still being identified.

Overall, I feel like this was an absolutely amazing introduction to field work and I am incredibly fortunate to have had the opportunity to learn about so many new plant and animal species. But I really have my colleagues to thank for having such a fun, productive, and perhaps most importantly, safe field work experience. While I’m excited about the next phase of fellowship setting up assays in the lab, I cannot wait for my next field work trip in January!



Have something to share?

Email your submissions to Mallory Erickson
emallory@uw.edu

Stata Tip

Tip contributed by Frankline Onchiri (Year 1 alumnus, Kenya)

****Quick way of generating a dataset of summary statistics/aggregated data**

“stat2data” this command is kind of an extension of “tabstat” command, and creates a dataset of descriptive statistics for a list of variables. Names of summary statistics are in the columns (variable names) and the variables for which the statistics were calculated are in the rows. That is statistics become variables and variables become observations.

*/*Install the Command*/*

```
ssc install stat2data
```

*/*Example using the command stat2data to generate a dataset of summary statistics*/*

```
sysuse auto, clear
```

```
stat2data price mpg trunk weight length turn, saving(summary_stats_data,
replace) by(rep78) stat(mean sd k sk q) missing
*mean=Mean, sd=Standard deviation, k=kurtosis, sk=skewness, q=quartiles
(25%, 50%, 75%)
```

```
preserve
```

```
use summary_stats_data, clear
```

```
list
```

```
restore
```

The option “saving(filename, replace)” specifies that the dataset to be generated for the calculated statistics be saved to the Stata data file filename. The dataset will be placed in the current directory. The sub-option “replace” will overwrite an existing filename.

Ask Globie

Q: Why don't bears wear shoes?

Because they'd still have bear feet!

Q: What do you call a bear without teeth?

A gummy bear!

Q: What do you call a wet bear?

A drizzly bear!

