# NPGH Fogarty Global Health Fellows Newsletter



## ALUMNI SPOTLIGHT: James Kelley, Thailand

*James Kelley, PhD, MPH studied dengue in Thailand from 2013-2014 as an NPGH Fogarty Fellow. He continues to work on vectorborne diseases, now as a lecturer at Mahidol University in Bangkok, and Assistant Professor at the University of Hawai'I in the Departments of Tropical Medicine, Medical Microbiology, and Pharmacology.*

### What should the average global health MD or PhD know about dengue?
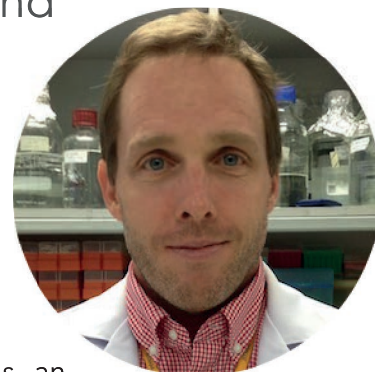
Dengue virus is transmitted by the Aedes mosquito and remains an important cause of disease burden in tropical climate countries. Dengue virus can cause a debilitating "breakbone" fever, primarily in children, and in some cases cause severe dengue hemorrhagic fever and death. As symptoms found during acute dengue infection are very similar to other acute febrile illnesses, proper diagnosis using field-ready rapid diagnostic tests or laboratory based PCR is of critical importance to differentiate dengue from other etiologies of febrile illness. Because there are no licensed vaccines or therapeutic options to prevent or treat dengue, clinical and translational dengue virus research are priorities in the field of tropical medicine.

## In This Edition

## How has your fellowship impacted your career?

The Fogarty NPGH fellowship served as a springboard for my current global health research. As an NPGH fellow, I initiated a clinical case-control study to examine innate immune responses in children with dengue fever and dengue hemorrhagic fever in Bangkok, Thailand. Since the fellowship ended in 2014, I have continued this research study (expected to enroll patients through 2017) as an Assistant Professor and Lecturer at the Departments of Tropical Medicine, University of Hawaii and Mahidol University, respectively. The fellowship positively impacted my ability to coordinate and implement a global health, multinational clinical research study.

## What do you think about the different approaches to eliminating mosquito-borne illnesses? Human and mosquito vaccination, mosquito elimination, or any others?

The optimal approach to eliminate mosquito-borne illnesses is an effective pathogen specific human vaccine. However, given there are two major mosquito-borne infectious categories, viral (dengue, West Nile, Yellow Fever, etc.) and parasitic (malaria), unique challenges exist for respective vaccine development strategy. An effective vaccine for dengue should be available within 10 years, likely sooner; an effective malaria vaccine, not nearly as soon. A second approach to prevent mosquito-borne illnesses involves mosquito sterilization techniques using RIDL (Release of Insects with Dominant Lethality) technology or *Wolbachia* bacteria induced sterilization. Although promising technologies, the political policy barriers for country adoption are quite high.

## Upcoming Events

**OCTOBER 15**
Consortium Call
Presentations by Shama Virani, Vorapot Sapsirisavat, and Thidarat Jupimai

**OCTOBER 22**
Consortium Call
Presentations by Elizabeth Abbs, Hilary Zetlen, Neha Limaye, and Anastasia Vishnevetsky

**OCTOBER 25-29**
ASTMH 64th Annual Meeting
Philadelphia, PA
NPGH alums Valerie Cortez and James Kelley will be presenting at the conference.

**OCTOBER 29**
Consortium Call
Presentations by Odessa Marks, Paul Bangirana, and Viviana Pinedo

**NOVEMBER 2**
2016-2017 NPGH Global Health Fellows Applications Due
To apply visit: fogartyfellows.org/apply

**NOVEMBER 11-14**
XXVIII Panamerican Trauma Congress
Santa Cruz, Bolivia
NPGH trainee Lacey LaGrone will make two short oral presentations

**NOVEMBER 19-21**
HEALTH GIS 6th Int'l Conference
Mysore, India
NPGH trainee Shama Virani will make an oral presentation at the conference

Some[1] have theorized that the toll of malaria alone accounts for a good portion of the underdevelopment in malaria-endemic regions—do you think there's any truth to that?

The "Columbian Exchange" in its form of disease (malaria) importation into the Americas in the 1490s certainly contributes towards slower economic development. Whether malaria accounts for most of the underdevelopment in malaria-endemic regions, I am not sure. I suspect feudal wars and other infectious diseases including influenza, small pox and the plague had significant contribution towards slowing development. Additionally, I would point towards a lack of basic sanitation and poor water quality (enteric diarrhea) as culprits as well.

Do you have any advice for current trainees?

My biggest hurdles during the fellowship were obtaining IRB approvals and shipping/ordering supplies. I suggest getting started on IRBs at least 8 months in advance and determine a reliable ordering and shipping strategy before arriving in country. Additionally, as it may take months to collect project specific data, I would consider writing and submitting a review-type manuscript early during the project.

Would you rather have dengue or malaria?

Haha, of course neither if possible! I had dengue fever when I lived in Samoa and it was awful. Although I have not had malaria, I would certainly worry about recrudescent malaria and want to avoid infection at all costs. So I guess, if I had to choose, dengue.

[1] Mann, CC (2011). 1493: Uncovering the New World Columbus Created. New York: Knopf.

Gallup, JL & Sachs, JD (2001). The economic burden of malaria. Am J of Trop Med and Hyg, 64(1).

# STROKE REHABILITATION WORKSHOP: LIMA, PERU

Current Scholar Amy Fuhs recently helped run a weeklong workshop on interdisciplinary post-stroke rehabilitation in Lima, Peru, with mentors Cody McDonald, Angela Carbone, Joe Zunt and a team of specialists from the University of Washington and Harborview Medical Center. The workshop consisted of didactic and hands-on sessions and held at the Instituto Nacional de Ciencias Neurológicas (INCN) and the Instituto Nacional de Rehabilitación (INR). Nearly 80 people participated at each location, from nine hospitals across Lima. All participants received CDs containing information from the trainings.

Amy writes that "Participants gave us a lot of positive feedback on the content and organization, and as a team, we felt that it was very successful. We've already been asked when we'll be back for another." Cody McDonald and Amy will analyze results of participant surveys, and hope to use this feedback to improve future workshops. Amy will also continue working with the Rehabilitation Department at the INCN to develop a protocol to integrate some of what was covered in the training, and perform a cost-effectivity analysis.

# FUNDING OPPORTUNITIES AND TOOLKIT

Wondering where to find post-fellowship funding?
These are some of the sites where we look for funding opportunities!

## LINKS

A horrific case study of involuntary experiments with STIs and prisoners in Guatemala:
http://bit.ly/bioethicsguatemala
A good reminder of why IRBs are necessary while you're waiting for approval.

SEAPAX offers small grants up to $500 for projects based in WA state or abroad. An affiliation with the Peace Corps is preferred, but anyone can apply on a rolling basis.
http://bit.ly/seapaxgrants

### WHAT'S YOUR PASSION?

For projects at home or abroad, SEAPAX offers grants up to $500!

**SEAPAX IS NOW ACCEPTING GRANT APPLICATIONS**

### About SEAPAX Grants

The Seattle Area Peace Corps Association (SEAPAX) offers small grants to community-based projects both in the state of Washington and countries around the world. Go to our website to learn more about:

- ✓ Eligibility
- ✓ Guidelines
- ✓ Application Procedures

### Complete An Application Today!

**1** Go to home.seapax.org/fundraising/seapax-grant-guidelines/ and download a grant application.

**2** Complete your application and send it to grants@seapax.org.

## TOOLS

### ETHICAL TRAINING

As a principal investigator, it's your responsibility to make sure your research team is working in an ethical manner. Johns Hopkins has created a handy training guide with translations in French, Thai, Swahili, and Spanish to help train data collectors or research assistants:
http://bit.ly/ethicaldatacollection

### STATISTICAL ANALYSIS PLAN

While waiting on approval to start data collection, it's never too early to start thinking about the data analysis:
http://bit.ly/cdcdata This workbook produced by the CDC walks through the creation of a Statistical Analysis Plan; the more you know about what results you would like to present at the completion of your study, the easier it will be to collect the data you need.

### STATA HELP

Can't remember how to do a negative binomial regression in Stata or R? Don't know what that means? UCLA has some great walk-throughs and code if you click on "Data Analysis Examples:"
http://bit.ly/uclastata

**Stata command for data management: Generating a list of discrepancies after double data entry**

Checking discrepancies after double data entry. `cfout` is intended to be used to compare two datasets as part of the data entry and cleaning process, especially double data entry validation to check for discrepancies in all variables or a subset of variables. So if you compared the first entry of a dataset to the second entry, it would output the discrepancy rate for each pair of data entry officers. It uses unique ID variables to match variables between dataset in memory (the master dataset) and corresponding variables in another file (the 'using' dataset). `cfout` lists the observations/variables where differences exist, and optionally saves the list of differences to file. The `cfout` command is particularly useful for data cleaning if you are doing data entry and want to get an easy-to-work-with list of discrepancies between the first and second entries of a dataset. `cfout` outputs a user-friendly list of all discrepancies between two datasets (e.g., the first and second entry of a double-entered dataset).
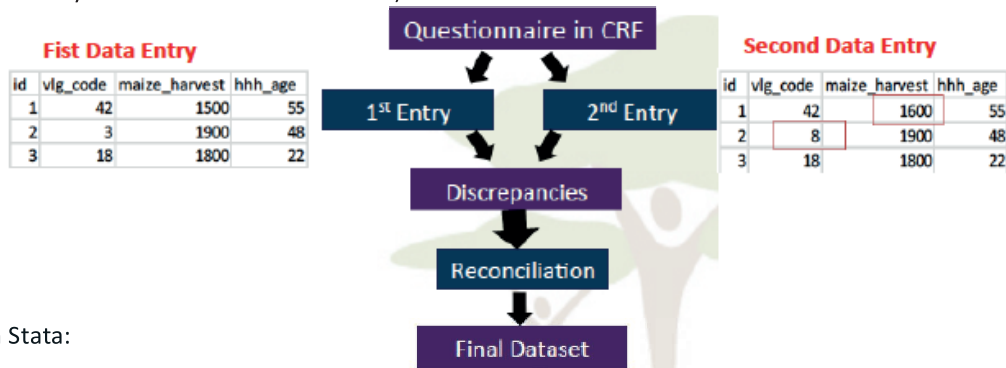


To install the command, type in Stata:

**ssc install cfout**

**Example:**

Assume we have two datasets **firstEntry.dta** and **secondEntry.dta** as in the above diagram**.**

**\*Load the data that was entered in the first entry (the masterfile)**

```
use firstEntry, clear
```

\*Compare it with the data that was entered in the second entry.

\*Run the `cfout` command to check whether the data entries match those in the second data entry.

```
cfout firstname using secondEntry, id(uniqueid)
```

The Stata output after running cfout is presented below.



The cfout produces discrepancy report

▪ double data entry example/discrepancy report.csv

| id | Question | Master | Using |
|---|---|---|---|
| 1 | maize_harvest | 1500 | 1600 |
| 2 | vlg_code | 3 | 8 |

**\*Instead of checking whether all variables in two datasets match, we check select variables. For example, suppose we wish to check whether variables var1, var2, var4, var5, var6, var7 match in two datasets: firstEntry, and secondEntry.**

**\*First load the data that was entered first (First enrty)**

```
use firstEntry, clear
```

\*Run the cfout command to check whether the data entries match those in the second data entry.

```
cfout var1, var2, var4, var5, var6, var7 using secondEntry, id(uniqueid)
```

• Save the differences to the file **diffs.dta**

```
cfout var1, var2, var4, var5, var6, var7 using secondEntry, id(uniqueid) saving(diffs)
```

\*Inspect the differences:

```
use diffs, clear
browse
```

\*Save all comparisons to the differences dataset, not just differences

```
use firstEntry
        cfout var1, var2, var4, var5, var6, var7 using secondEntry, id(uniqueid) saving(diffs, all)
```

\*Inspect the differences:

```
use diffs, clear
count if diff
```

# IN CASE YOU MISSED IT

**2015-2016 NPGH Trainees** meet at the NIH Orientation before departing to their fellowship sites.



**Viviana Vanessa Pinedo Cancino** traveled from Peru to Seattle to meet with her mentors and grabbed a cup of coffee with NPGH Program Coordinator Mallory Erickson while at the UW.

**AUGUST 2015**  Several NPGH trainees, including **Bozena Morawski, Josh Rhein, Abdu Musubire, Nathan Bahr, Mario Cornejo, Barclay Stewart, Frankline Onchiri** among others published articles this month. Click here to see the full list.



**SEPTEMBER 2015**  NPGH Alum **Linnet Masese** traveled from Nairobi to Brisbane, Australia to present a poster at the World STI and HIV Congress.  Her abstract was titled "Screening for sexually transmitted infections in adolescent girls and young women in Mombasa, Kenya."

# ASK GLOBIE

*Dear Globie,*

*Do you ever participate in the Consortium Calls?*

Why yes!  I have been listening quietly to the research presentations, and I have to say that I am most impressed!  Congrats to all of you who have presented so far.  Your preparation and care is apparent in your work.  Kudos as well to those who have submitted feedback for your peers.  Who knows… maybe I'll provide some feedback for October's presenters!