



Smithsonian

Volume 2

# NHRE NEWS

REU Site, EAR-1062692



The Newsletter of the NSF REU Site: Natural History Research  
Experiences Summer Internship Program

NHRE 2013

1/3

Number of interns  
whose first name  
starts with the  
sound "K"

1/3

Fraction of men in  
the class of 2013

1/3

Fraction of interns  
who prefer gmail to  
their university email  
address

3

Invariably, the num-  
ber of leftover pizzas  
on Fridays

50

Approximate number  
of squid beaks  
"homogenized"

500,000

The number of photo-  
graphs taken by  
NHRE interns (the  
3000 fps camera in  
the volcano tank  
helped)



## Directors' Corner

Hello and welcome to the second edition of our Natural History Research Experiences newsletter! As you may remember, this newsletter is part of our ongoing efforts to stay in touch with you and to keep you connected with each other as you go out and do wonderful things in the world.

This past summer, NHRE was as busy and eclectic as ever, as interns worked with their mentors to understand phenomena as diverse as volcanic flows, cell phone repair and shrew locomotion. The NHRE web site has been updated with this year's projects so you can go there to learn about all of the work done by this year's class, and those of previous years, too. The summer passed in its usual blur of tours, lectures, and frenzied data collection. The research symposium again capped the ten weeks, drawing its usual strong crowd of museum staff. We also continued and expanded the outreach event in which the interns staff a cart in the exhibits and explain their science to museum visitors. As expected, this summer's group did marvelously (see story on p.10).

Liz continues to keep herself extremely busy with a lab full of post-docs and an insane travel schedule that has her sleeping in her own bed only a handful of nights between now and the new year. Gene's big news is a new addition to his family, a baby boy, Andrew, born in January. Home life has been turned upside-down, but in a good way.

As always, please feel free to send us an email to let us know what's new in your life. Starting grad school or making progress towards a degree? Working in a new field? Joined an ashram? Please let us know! In the following pages you'll see updates from some of your fellow NHRE alums. Many of them (and us) would like to hear about what you are doing.

All of our best,  
Gene & Liz



NHRE Class of 2013

## NHRE Class of 2010

### Two NHRE alumni receive NSF Graduate Research Fellowships

#### *Joanna Larson*

Joanna Larson has been awarded a prestigious National Science Foundation Graduate Research Fellowship. She will receive \$30,000 a year for three years and an additional \$10,500 cost of education allowance each year for tuition and fees. She will be attending The University of Michigan.

Joanna graduated from Harvard University with her bachelor of arts degree in organismic and evolutionary biology. Her research interests are in the macroevolution of African amphibians, and integration of morphological and molecular data. Her advisors will be Professors Dan Rabosky and Lacey Knowles. She is currently in Gabon, Africa.



Joanna Larson, NHRE 2010



Jessica Glass, NHRE 2010

#### *Jessica Glass*

Jessica received a National Science Foundation Graduate Research Fellowship. She is part of a NSF IGERT (Integrative Graduate Education Research Traineeship) program known as MESAS (Marine Ecosystems Sustainability in the Arctic and Subarctic) and is currently applying to PhD programs. Jessica is planning to continue next fall with marine fisheries phylogenetic research on a collaborative project with the South African Institute for Aquatic Biodiversity, looking at fish diversity in the western Indian Ocean, particularly the Seychelles Islands. Jessica is in her final year of her Master's program at the University of Alaska Fairbanks in the School of Fisheries and Ocean Sciences.

### Rebecca Richards receives her Master of Philosophy degree from Oxford

#### *Submitted by Rebecca Richards*

I have just finished an MPhil in Material Anthropology and Museum Ethnography at the University of Oxford. I am about to return to Australia to start a PhD and lectureship in anthropology at the University of Adelaide in January.

## Organizing a sanitation project in the rural village of Accra, Ghana.

*Submitted by Sarah Ehlinger*

I am currently in Ghana and will graduate with my Master's Degree in Geography and Resource Development in November. My thesis was titled, "Environmental Risk Perception on Air Pollution and Health in Accra, Ghana". In the meantime, I am working on a sanitation project in a rural village on the outskirts of Accra. With a grant from Rotary International, I am organizing the removal of a long-standing toxic waste pile, completion of a public toilet facility, insertion of public trash bins, planting of trees, and a community educational outreach on environmental health.

You can see a video I made on the project here: <http://www.youtube.com/watch?v=Nyp063tsj3c&feature=youtu.be>

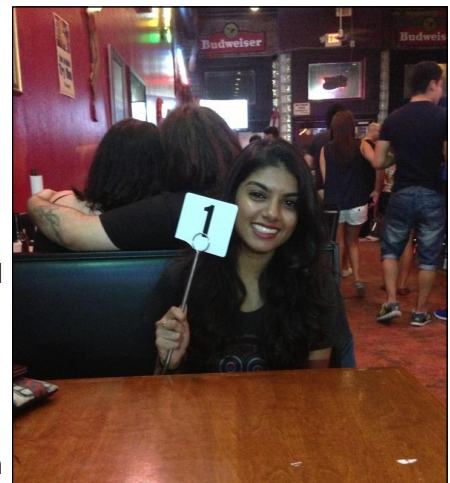
## Teaching High School Biology in Dallas, Texas

*Submitted by Sheel Jagani*

In April of 2011, I presented a version of my NHRE poster at the Society for American Archaeology annual meeting in Sacramento. The NHRE project also became the cornerstone chapter in my undergraduate honors thesis, which is now in the UC Berkeley Anthropology Library records, and surprisingly also here: [https://books.google.com/books/about/Prehistoric\\_Anthropogenic\\_Change\\_in\\_Coas.html?id=RB0gMwEACAAJ](https://books.google.com/books/about/Prehistoric_Anthropogenic_Change_in_Coas.html?id=RB0gMwEACAAJ)

In September 2012, I graduate with Distinction from the University of Oxford with a Master of Science in Cognitive and Evolutionary Anthropology. I was lucky enough to stay in Oxford until February 2013 assisting in research at the Nuffield Centre for Experimental Social Science, Department of Experimental Psychology, and Institute of Cognitive and Evolutionary Anthropology.

I am now a biology teacher at Sunset High School in the Dallas Independent School District. It's tough but rewarding.



Sheel Jagani, NHRE 2010

## Alumni update 2010

**Heidi Wollaeger** completed her Masters in August and should have a couple publications coming...Her latest news is that she is an extension educator for Michigan State University, specializing in nursery and greenhouse production serving southwest Michigan. Heidi will be consulting with a couple of hundred, mostly ornamental plant producers and a handful of native plant producers.

**Matthew Nielsen** is finding that graduate school is keeping him very busy, particularly over the past few months as he begins his dissertation research involving how color change and behavior interact in the thermoregulation of the pipevine swallowtail caterpillar.

He is focusing on getting a PhD in Ecology and Evolutionary Biology from the University of Arizona.



**Sabrina Monsalve** graduated as a biologist in March. She is now working for an NGO in Bogota called Fundación Malpelo ([www.fundacionmalpelo.org](http://www.fundacionmalpelo.org)), whose president is renowned environmentalist Sandra Bessudo. Sabrina is a research biologist at the foundation, where she writes up projects and grants, analyzes data, writes scientific articles, attends seminars, and coordinates the annual scientific expeditions to the Malpelo island. This position gives her the opportunity to meet Colombian ministers and heads of famous organizations, as well as travel extensively. She is planning on starting her Masters in August 2014.

**Sunjana Supekar** worked in Puerto Rico last year doing ecological field work which focused on setting up a long term plot and censusing dry forest trees. She is now working in Washington DC as a research assistant for a statistical consulting company. Sunjana still has a passion for natural history and tries to visit NMNH and the Zoo regularly, as well as finding the time to sneak out into the woods and hunt neat bugs.

Sunjana eventually plans on attending graduate school in a field related to environmental studies.

## NHRE Class of 2011

### NAGPRA Student Consultant Assistant

*Submitted by Angela Rueda*

I just started my second year of graduate school at the University of Denver where I am working toward a master's degree in anthropology with a concentration in museum and heritage studies. My thesis research explores the social responsibility of museums in representing racial and ethnic heritage, and uses Denver as a case study. In addition to my research, as a graduate student I've had the opportunity to participate in several outreach programs, including doing museum education programs in local schools. My NHRE experience also prepared me for a position as a NAGPRA Student Consultant Assistant. In this position I helped with the successful repatriation of several Native American individuals from the University of Denver Museum of Anthropology.



NHRE 2011 intern Angela Rueda

### Senior Year at the University of Maryland

*Submitted by Alison Post*

I can't believe that over two years have already passed since I was an NHRE intern— a lot has happened during that time! I am currently a senior at the University of Maryland studying biology with an ecology and evolution concentration, and I am also a surficial geology minor.

I spent the spring of my sophomore year abroad in Costa Rica where I lived with a host family and became nearly fluent in Spanish. I fell in love the rainforest, especially the cloud forest. The summer after my sophomore year, I returned to the Natural History Museum to work with my NHRE mentor, Cara Santelli, again. This past summer, I did another REU (Research Experience for Undergraduates) at Mountain Lake Biological Station in Virginia. I studied the mating system of a wildflower, the American Bellflower. I also work with a professor on campus looking at how soybeans are impacted by elevated levels of UV radiation.

As for the non-academic part of my life, this is my fourth and final year with the Mighty Sound of Maryland marching band. I also enjoy dancing swing and salsa.

I plan to go to graduate school for some area of ecology or agricultural science. However, I am taking a gap year between the end of my undergraduate career and graduate school. I would like to be a field tech or assist with a research project during that time.

## The Second Year of her PhD and a Spring Wedding for Rhiannon!

*Submitted by Rhiannon LaVine*

I am beginning my second year of my PhD program at the University of Chicago. I'm currently working with my advisor, Dr. Mark Webster, to put together my research project that will serve as my proposal to pass into candidacy by the end of this academic year. It's quite daunting, but I'm making significant progress!

I spent part of the summer engrossed in the Marine Invertebrate Zoology course at Friday Harbor Labs in Washington state. To my surprise, Danny Keil (2011 NHRE cohort) was there taking a course as well! While it can't compare to my summer in D.C., it was a truly wonderful experience.

As a final note, I'll announce that I am getting married next year (June 21st, 2014) to my significant other of 6 years, Damien. I have already obtained my tea length bridal gown and my wedding shoes: tall, military-style, white Doc Martens with embroidered white roses---quite appropriate for me! As we're having an outdoor wedding, I'm planning on providing some basic supplies to my guests for insect collecting and mounting (nets, jars, pins, board, etc). I figure that an insect collection would be a lovely memento in place of a scrapbook!



Rhiannon LaVine, NHRE 2011, showcasing a marine invertebrate, a basket star (*Gorgonocephalus* sp.)

## Alumni update 2011

**Sean Boaglio** is currently in his first semester of medical school at Rocky Vista University College of Osteopathic Medicine. In 4 years he will have a DO degree. Sean is living in Parker, CO a suburb outside of Denver. His school is going very well and he is thriving in life overall. He reflects often on his experience as an NHRE, and is so grateful for the amazing opportunities from that summer, in particular the chance to meet some truly amazing people. In all, he says it most certainly was one of the most maturing experiences of his life.

**Kristin Lapos** was recently employed on a six-week archaeological dig in the Delaware Water Gap National Recreation Area. She was doing archaeological testing (Phase I and III) in advance of a new power line project. Kristin will be filling out graduate school applications in the upcoming months. She plans to go in Fall 2014.

**Anikó Tóth** visited the Tsavo national park with NHRE mentor Kay Behrensmeyer to do some bone surveys as a pilot study for future ecological monitoring using bones. The study followed up on Kay's bone work in Amboseli and will hopefully be followed by more surveys. They also spent some time in Nairobi at the National Museum of Kenya using the osteology collection to supplement our dataset on mammal occurrences in Kenyan national.



Anikó Tóth, with her NHRE mentor Kay Behrensmeyer

**Kara Hodges** transferred from Michigan Tech to Central Michigan University last semester. She is also changing her major from geology to natural resources, with a minor in geology. Unfortunately she has not had much of a chance to participate in research, mainly due to the transfer of schools and change in majors. Hopefully that will change soon. Her main focus now is focusing on her class work and working with various environmental activist groups.

**David Reed** is still working for an educational technology company called 2U. The company is in graduate admissions. They're based out of Landover, MD. David is currently living in DC.

## NHRE Class of 2012

### Samantha's NHRE Penguin Research becomes one of her theses

*Submitted by Samantha Hauserman*

I'm wrapping up my undergraduate career this year with a couple of thesis projects. For my Biology and Society major thesis, I'll be presenting the penguin research I did with the NHRE internship and continued last fall at the American Museum of Natural History. For my honors thesis, I'm writing and designing a literary magazine that focuses on topics at the intersection of science, philosophy, and culture. I'm really enjoying the literary nonfiction writing, especially trying to make things like theoretical evolutionary biology (still a passion) accessible to a broader public. Other than that, I've been working in a computational history and philosophy of science lab, backpacking with the geology club, and taking a really cool organic gardening class!

### Akela receives a year long Fellowship at Stanford

*Submitted by Akela Kuwahara*

I am working in Dr. Theo Palmer's lab at Stanford University in a year long fellowship funded by the California Institute for Regenerative Medicine. I am doing stem cell research as well as research involving mouse-models of Autism Spectrum Disorder. During this year, I will be applying for PhD programs in stem cell biology or neuroscience to start in Fall 2014. Earlier this year I presented my NHRE work at The Society for Integrative and Comparative Biology's Annual Meeting in San Francisco. I worked with my NHRE mentor Chris Meyer for the first half of the year editing invertebrate DNA sequences that were uploaded to the Biocode database. We are still in touch and are talking about publishing a paper on the ARMS research I did.

## Maris is among six to be selected for a prestigious Mellon Mays Undergraduate Fellowship

*Submitted by Maris Jones*

I'm currently studying abroad in Rio de Janeiro, Brazil for the semester. In March I was selected as a Mellon Mays Undergraduate Fellow. The goal of the Mellon fellowship is to support minority students who want to pursue grad school and eventually diversify the academy. It will provide me with mentorship, aid me in applying to graduate schools, and help with funding. The fellowship allowed me to go to Salvador, Bahia, Brazil over the summer to begin my thesis research on Afro-Brazilian percussion. My current research question is: What is the role of Afro-Brazilian percussion, as a form of black performative cultural production, in establishing a unified black identity? How does drumming facilitate youth and community engagement and encourage political activism? What role does music play in the formation of national and diasporic identities, and what are the roles of culture and cultural spaces in process of claiming and practicing citizenship?

I am also keeping a blog of my time here in Brazil: [batepapobatidas.wordpress.com](http://batepapobatidas.wordpress.com)



Maris Jones with other Mellon Mays fellows

## Off to the Mojave Desert

*Submitted by Tyler Imfeld*

My primary update is that I graduated magna cum laude from Xavier University with my BS in Biology in May! I was able to present my research from last summer and this summer at the 98th Meeting of the Ecological Society of America in Minneapolis. I presented at a biogeochemistry poster session, attended a bike tour of the city and a VIP dinner at the Minnesota Twins baseball stadium, and met potential graduate mentors and their graduate students from many universities. I had an absolute blast.

I'm happy to say that I am officially employed for the next year! I accepted a position with the Student Conservation Association, AmeriCorps and Bureau of Land Management, through which I will be working in the Desert Restoration Corps. From our home-base in Ridgecrest, CA, we will drive out to isolated field sites in the Mojave Desert where, for 10 days, we will work to mitigate the effects of illegal off-highway traffic in the desert. This work will include removing traces of unauthorized trails, replanting damaged vegetation and removing invasive species.

Before leaving for California, I will be applying to the National Science Foundation Graduate Research Fellowship Program as well as Ph.D. programs across the country. My top choices as of now are University of California - Santa Cruz, University of Michigan and Cornell University. Regardless of where I attend, I hope to study the ecology of migratory and/or marine birds.

## Travelling To Ecuador

*Submitted by Calder Atta*

This semester I am traveling abroad in Ecuador with the Tropical Ecology Program from Boston University with 8 other students. The program consists of 4 ecology courses, 3 of which focus on different ecosystems in Ecuador: Tropical Montane Ecology, Tropical Coastal Ecology, and Tropical Rainforest Ecology. Classes, taught by professor Kelly Swing, primarily involve learning to recognize native flora and fauna through field excursions, and conducting independent research projects.



Stationed in Quito, we have travelled to the Andean grasslands (páramo) at Cotopaxi volcano, and have spent a weekend in an Andean cloud forest. Next week we will be spending a week on the coast of Ecuador by Manta. Then we will spend another week on the Galapagos. The climax of our trip will be spending the entire month of November in the Amazon basin at the Tiputini Biodiversity Station.



Calder Atta doing fieldwork in South America

## Mud Logging in New Mexico



A very muddy Sarah Verghese, NHRE 2012

*Submitted by Sarah Verghese*

For the last (almost!) four months I have been working as a mud logger in West Texas and more recently in southeastern New Mexico. As a mud logger I work with one other person on an oil rig to catch samples of whatever strata we are currently drilling in. We log the lithology, dry and bag samples for the geologist, and monitor the gas coming up from downhole. While by no means my dream job, this has been a very eye-opening experience that I am very grateful to have had. I am currently in the process of trying to figure out my next step, but I'm fairly sure I would like to eventually get a job where I don't work a 12/7 schedule for weeks on end.

I have also attached a photo of me. This was taken after my first nine days as a trainee after we reached total depth on the first rig I was assigned to. Everyone who works in the oilfield who has seen this picture wonders how on earth I managed to get so dirty. Meanwhile, I still don't understand how they can all stay so clean!

## Tich gains Lab experience studying bioluminescent algae

*Submitted by Leticia Jones*

I have been up to quite a bit since my NHRE internship last year. I was a cover model for an archaeology book which recently came out, titled '*Ground Penetrating Radar for Archaeology*'. The photograph for the book was taken at Mission Guevavi Ruins at Tumacacori National Park in southern Arizona, where I was involved in a dig this spring. The author, Dr. Conyers, is an anthropology professor at the University of Denver who specializes in using ground penetrating radar to map the topography and structures of archaeology sites. During preliminary digging at the site, we discovered multiple pit houses (dwellings dug into the earth and covered with a roof of some sort) as well as agave roasting pits, so we asked him to do ground penetrating radar to see if other areas of the site had structures beneath the ground surface. Ground penetrating radar works by sending electromagnetic radiation into the ground, and detecting signals that are reflected from structures beneath the ground. Otherwise, we have to dig multiple test pits which is time consuming. I was really interested in it so I asked him if I could try it.



I did a whole section of the site and he took my picture. I then received an email from him later asking if he could use it on the cover of his book. And voila!

I graduated from the University of Arizona in May. This summer I participated in an NSF funded archaeology project examining the relationship between animal food procurement and the demographic, social and environmental changes that occurred in the Southwest between A.D. 1200 and 1500. I worked for a really nice zooarchaeologist at Arizona State University named Dr. Katherine Spielmann. Dr. Spielmann specializes in studying faunal (animal) remains from Southwestern archaeology sites. She hired me because I had volunteered previously with a zooarchaeologist at the University of Arizona, so I had some experience with terminology and analysis. Basically my part of the project was deciphering and converting handwritten faunal data cards from the early 20th century into a digital format that could be entered into the Digital Archaeology Record tDAR. These cards were in the basement of the Arizona State Museum on the U.of Arizona campus, so I felt like I was in a dungeon. It was very challenging and VERY interesting. I finished the project in August.

After that, I moved to San Francisco to live with my boyfriend (he works at the Google complex here) and I am now searching for a lab position at one of the local universities (UCSF, Stanford or Berkeley). I haven't decided what I want to do about graduate school yet, because even though my experience has been in archaeology, I don't feel that it is what I want to do in the future. I am currently volunteering at a community bio-hacker lab, on a project studying bioluminescent algae. I don't have much laboratory experience so I figured this would be a great way to get some. Plus bioluminescent algae are SO COOL. We are trying to get them to reproduce more so that we can conduct bioengineering experiments but are having a difficult time. They're very sensitive to light, pH, temperature, stress, nutrient levels so their current density is too low.

*November 27th Update:* Tich has recently accepted a position as the Assistant to the Executive Director/ Assistant Dean of the Research Centers at Stanford Graduate School of Business.

## Alumni Update 2012

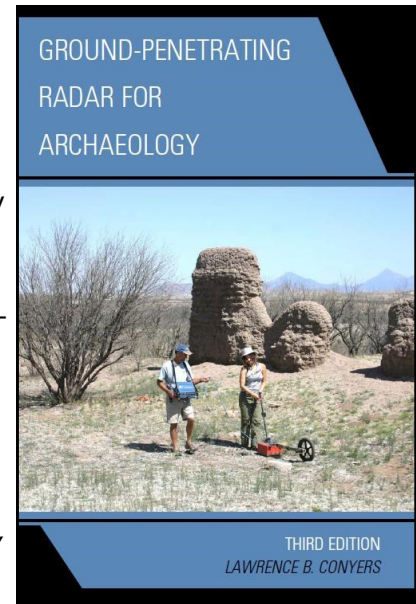
**José Fuentes** graduated last May from the University of Puerto Rico-Rio Piedras Campus with a BS in Cellular Molecular Biology (magna cum laude). He then spent the summer travelling in Europe. José started law school in August but is hoping to go back into science once he graduates.

**Sarah Gaffney** did research this past summer at the University of Córdoba in Spain. She was looking to see if rabbit abundance in the olive groves had an effect on nest egg predation and what were the most common predators.

**Dakota Rowsey** is currently working on graduate school applications, presenting research on extra oral taste buds of Otophysan fishes, and preparing the

manuscript for the research on *Trichosurus* possums that he started during his NHRE internship.

**Shannon McElroy Rosser** is currently finishing the one class remaining before she officially graduates, as well as working as a student researcher in the archaeology lab in the university. The project involves cataloguing and analyzing human remains and artifacts from a Fur Trade-era Native American burial. Shannon is collaborating with a couple of local historians to give a presentation in the spring that links to the history of Terre Haute. Her professor is hoping to publish. She is now beginning to prepare for grad school, hoping to know exactly where she will end up by March or April of next year.



Tich Jones, cover model and NHRE 2012 intern

**Salvatore Anzaldo** spent this last summer at Penn State working on a research project at the Frost Entomological Museum, which he will be presenting at a conference in November. In August, Sal began a PhD program in evolutionary biology at Arizona State University, where he will be studying a large group of beetles called weevils. While still working out his project, it will most likely include a Neotropical group, consequently he hopes to have an opportunity to conduct research in Panama.

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## 2013: Interns in the Exhibits

What started as a pilot program in the summer of 2011 with just four NHRE interns has blossomed into a full-day, full-participation event. In the final week of the 2013 program, all 18 NHRE interns took to the exhibit halls, armed with enthusiasm, some nerves, and carts full of objects in order to explain their science to museum visitors. Working in ~2 hour shifts throughout the day, the interns talked, pointed, explained, and then talked some more as they were faced with a continuous stream of visitors of all ages. Data collected by the Education Department estimates that, over the course of the day, NHRE interns interacted with a total of nearly 4,700 museum visitors! Some of the youngest visitors no doubt gained a new appreciation for a potential future in science as a result.



Interns Caitlin Boas, Raquel Bryant, Subir Shakya and Amy Rutter (clockwise from upper right) discuss science with museum visitors.

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