Career Interview 2

Name_____Date_____Period_____

Krishna Veeramah, PhD
Postdoctoral Scientist, DNA and History Program

Postdoctoral Fellow, DNA and History

Krishna Veeramah, PhD.

Place of Employment:

University of California, Los Angeles (UCLA)

Type of Work:

Human population genetics, with emphasis in Sub-Saharan Africa

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Careers in the Spotlight:

Postdoctoral Scientist, DNA and History

What do they do?

Postdoctoral Scientists are people with a PhD who desire more training. The DNA and History program at UCLA is unique – a result of the dramatic increase in DNA data and biotechnology. The increase in DNA data influence research beyond biology, into the humanities and social sciences, like the history of human populations.

What kind of training is involved?

Dr. Veeramah has a PhD, and is doing additional training and teaching at UCLA.

What is a typical salary for a Postdoctoral Scientist?

The minimum salary for a Postdoctoral Scientist funded by the National Institutes of Health (NIH):

Starting salary: $37,740 ($18/hour).

5 years of experience: $47,940 ($24/hour).

Source: *National Institutes of Health*

1. **Where did you grow up?**

I was born in England, in a small town just outside of London, where I went to school until I left for university at University College London.

2. **What do you do (i.e. what career or field are you in, what is the title of your position)?**

I am a Postdoctoral fellow in the UCLA Department of History "DNA and History" programme. My duties include teaching a course in "Using Genetics to Infer Human History," and organizing the "DNA and History Faculty Seminar."

My research interests include: human population genetics, anthropological genetics, evolutionary medicine and pharmacogenetics, with particular emphasis on sub-Saharan African populations.

3. **How did you choose your career? When did you first know this is the career you wanted?**

I always liked genetics, but it wasn't my first choice at school. I wanted to be a footballer (or soccer player), but during my third year of undergrad, I was studying human genetics and working on a project with Dr. Mark Thomas in the Center for the Evolution of Cultural Diversity, working with all these clever things like Y chromosomes that possibly descended from the brother of Moses. I eventually started doing my own work, and got wrapped into it. I liked it so much, I decided to stay and do my PhD. Then I came to UCLA to help transform the humanities to use genetic tools to help with their research.

4. **Did your family support your decision to pursue your career?**

Initially, being from Mauritius, next to Madagascar in Africa, and being of Indian descent, my family wanted me to do medicine – but eventually I convinced them that even though I won't make a lot of money, I can make some, and they are very supportive, especially with me being here in the States and them in England. As you get more successful, you get more papers published, and they realize it's a real career.

5. **What is the highest level of education you have?**

PhD

6. **What is the highest level of education reached by other members of your family?**

My mom came to England as a mental health nurse. My Dad came to England to do a Bachelor's degree in economics, and then a Master's degree – but because of the immigration law, he couldn't do economics in England. Then he met my mom, and then he got a job as a lecturer at the university, and then went on to get his PhD at the same time I got mine – a little friendly competition.

7. **What is the salary range for a person in your position?**

As a Postdoc [Postdoctoral Scientist] I make about $35,000 - $50,000/year ($17.50-$24/hour), and then you get a big pay jump once you have a faculty position.

8. **What do you like most about your job?**

The interdisciplinary part is pretty incredible. I'm pooling lots of information and putting together a puzzle more so than with a lot of other problems in genetics. I'm working with linguists, anthropologists, archeologists, and historians. It's a very unique field. And you get to travel a lot, because I collect samples from all over. I went to Africa – it is very Indiana Jones-like. Every day you're finding out something completely new, and it is always very exciting.

9. **What do you like least about your job?**

It's not the job so much as the complete lack of structure in the sciences –you don't know how your career is going to progress, or how many good jobs are out there – you go from job to job until you get a faculty position.

In the last few years, there has been less of an elegance of the sciences, and more just pumping out data. There is less of a health emphasis in my field, so it's harder to get funding; so I spend lots of time trying to raise money by writing grants.

10. **What's an abbreviated day-in-the-life of your job?**

I have very strange working patterns – I get up at midday, unless I have a meeting or need to talk to someone in England where the time zone is different, and then I go back to sleep for a few hours.

If it's a teaching semester, I have to teach class every week, and have office hours in mid-afternoon – talking to people, talking to my supervisor about what work to do – and from 6pm onwards I sit down and do work until about midnight. If I'm not teaching, things are a little easier. I may not be a good example because I'm very unstructured! But I can be flexible in my work. It's very, very flexible.

11. **How would you describe how you use bioinformatics in your work? If you don't use bioinformatics directly in your work, how has bioinformatics impacted your career field?**

We've had a big shift in our field to using SNP [single nucleotide polymorphisms] and CHIP [microarray] data, with a 500,000 to 1 million SNPs on a CHIP for each person costing only $300-$400 for each individual. With over a million data points per person, you don't really see the data; you have to keep them in databases to do all your analyses.

My boss just had a paper in *Nature* in 2008. They had all this data from 2000 European SNP CHIP datasets in which they did principal connection analysis to see how each person is related to each other, and then they graphed it and it looked like a map of Europe! There is lots of bioinformatics involved with this, messing around with datasets.

Now we are starting to look at new sequencing data to sequence individual genomes within a week, which costs about $10,000, versus $20 million and 8 years to sequence the first human genome. That is a lot of data – 10 GB of data per individual, so we need new bioinformatics tools to use and develop. Everyone is developing and trying different things, and there are lots of forums to discuss how to deal with all that data and data compression.

12. Do you have any recommendations for students who are interested in entering your field?

I got really interested in genetics by listening to a professor called Steve Jones, who did TV programs on genetics, and wrote popular science books. I saw him speak, and he was a very good speaker; very funny, and his books are very interesting, but not very complex. He actually rewrote Darwin's *The Origin of Species* in a modern format. I would suggest students read his books, and read more popular science because they're accessible and they're specifically for non-scientists. Podcasts like *Nature Podcasts* are another great way to learn more about science.

Also, labs are always happy to have undergraduate students look around and see what they're doing. My labs were always looking for undergrads to do DNA extractions, or play around with data. Ask labs "Can I have a look around? Can I help with anything?"

13. What are your favorite hobbies?

I play a lot of videogames now. I've always been doing population genetics and I always mess round with computers, and I guess videogames are a natural extension of that. I also like running, walking, and hiking in the hills near Los Angeles.

Resources:

- Dr. Krishna Veeramah's Homepage: http://kveeramah.bol.ucla.edu/
- To learn about **job prospects** and **salary information for the Biological Sciences** visit the US Bureau of Labor Statistics : http://www.bls.gov/oco/ocos047.htm
- **Center for Genomics and Society** at UNC (University of North Carolina) Chapel Hill: http://genomics.unc.edu/genomicsandsociety/