



Q&A with Keisa Mathis **2008 K-12 Minority Outreach Fellow**

Who are you?

Keisa Mathis

Where were you born?

Baton Rouge, LA

What childhood experiences led to your interest in science?

I believe I was pre-destined to be a life science researcher. In kindergarten when asked what I wanted to be when I grow up, I would answer, "a doctor and a teacher". It is amazing how my dream is coming true. Throughout grade school I always found science interesting. I participated in science fairs nearly every year and was also a member of the Science Club. Because my favorite subjects in elementary and middle school were science and math, I decided to attend a college-preparatory high school for the sciences and mathematics. In the 10th grade, I took an introductory biology course that got me interested in genetics and the human body. After taking that biology course, I was sure I would go on to have a career in the life sciences until I took a physics course in the 12th grade. I was never fascinated with physics as I was with biology, but I appreciated the challenge.

Why did you decide to study science?

When I was offered an undergraduate scholarship in physics, I jumped at the opportunity. I had a productive career as a physics student and student researcher. Each and every physics research experience helped me realize that although I was capable of doing the work, I did not want a career in physics. It was at this point that I made the decision to change disciplines. I chose to enter into the world of physiology due to my genuine interest in the human body.

Where did you attend school/university?

I have attained a BS in Physics from Southern University and A&M College (2001), a MS in Applied Physics from Purdue University (2003), and a MS in Physiology from LSU Health Sciences Center (2005). I am currently in the third year of the PhD program in the Department of Physiology at LSU Health Sciences Center in New Orleans, LA.

How did you decide on the school?

I decided on my undergraduate university (Southern) based on scholarship opportunities in physics. I chose Purdue for graduate school for the same reasons. I chose LSU Health Sciences Center for my physiology graduate work for several reasons. First, it was a medical school and I thought the research and lectures would be the best in trying to learn about the human body. Second, the researchers at LSU Health Sciences Center were well published and well funded. Third, it was very close to home, and after living in Indiana (Purdue) for 2 years, I wanted to be closer to home.

How did you become interested in physiology specifically?

In the 10th grade, I took an introductory biology course that got me interested in genetics and the human body. While working on my master's in physics, I took an undergraduate biology course that made me realize that physiology was the study of the human body. I wanted to understand the human body, so I thought getting a graduate degree in physiology would be best. I was thrilled that it involved research and teaching, because those were, and still are, my career goals.

What is your current position?

Pre-doctoral candidate

How did you decide on your current career path?

After completing the requirements for the PhD in Physiology, I plan to continue my research and career by first becoming a post-doc, then by establishing a laboratory of my own. My long-term goal is to reach full professorship and tenure in academia.

How did you get there?

I have passed both the written and oral components of my qualifying examination, and I am currently in the process of preparing for my preliminary examination which includes writing, presenting, and submitting a grant proposal.

What do you do within that position?

Graduate student work: lab duties, teaching, training new graduate students, writing abstracts and manuscripts.

Describe your work in lay terms?

Traumatic injury, one of the top five leading causes of death in the United States, is usually accompanied with the loss of large amounts of blood leading to a state of hemorrhagic shock. Acute alcohol intoxication is frequently associated with traumatic incidents such as vehicle accidents, falls, burns, and suicides. Our lab has found that blood pressure regulation is impaired following blood loss in alcohol-intoxicated rodents. We

hypothesize it is due to the lack of vasoactive hormones present in the alcohol-intoxicated rodents subjected to blood loss. My current studies focus on restoring the vasoactive hormones (epinephrine, norepinephrine, and arginine vasopressin), with the use of centrally acting cholinergic drugs, so that we may adequately restoration of blood pressure in the alcohol-treated animals following blood loss.

What are your outside interests?

Traveling, shopping, watching movies, scrapbooking, skating, and step aerobics.

What do you do for fun?

I love spending time with my family. When we want to have fun, we usually get together and go to the mall, the movies, or the skating rink. I also love traveling and spending time with my husband.

Volunteer work?

I have been a member of Alpha Kappa Alpha Sorority, Incorporated, for seven years and we pride ourselves with giving back to the community. I have been involved in several community service projects throughout my time in the sorority such as tutoring, mentoring, and raising awareness about breast cancer and the importance of using a seat belt. I have also volunteered through a joint program with LSU Health Sciences Center and the New Orleans Recovery School District which allows me to go into 4th grade classrooms to teach and lead experiments in science that will help the students prepare for the LEAP exam, one of Louisiana's mandatory standardized tests.

What advice would you give...

- **a precollege student considering a career in physiology?**
 - *Make sure you make the grades NOW; it matters for scholarships and placement in undergrad. Learn all that you can NOW; it will help in the future when you start to learn more difficult concepts. Also, find a mentor and keep in contact because they can be great help when it comes to deciding on schools, programs, classes, etc, in the future.*
- **an undergraduate student considering a career in physiology?**
 - *Take as many biology courses as possible, and if offered at your university, take a physiology course. Most importantly, study! If you learn it now, you will know it forever. Make sure to try to conduct research throughout the school year so that you can learn laboratory techniques. For an extra edge, consider summer research programs/internships that will allow you to have another mentor from another university and a project that you*

could perhaps present at national conferences while still in undergrad.

- **a graduate student in physiology?**
 - *Choose a mentor that has funding and wants to see you succeed. Stay on course...know what you have to do and make sure you do it in a timely manner so that you can receive your degree within 4-5 years.*
- **a postdoctoral fellow?**
 - *Choose a mentor that has funding, is well known, and wants to see you succeed.*
- **a new investigator?**
 - *Get out there... make sure the physiology world knows you and your work.*

Please list any recent publications you have had published in APS Journals.

N/A