



VT PREP & IMSD EXTRA: News & Tidbits from IMSD/PREP Family



Message From Program Directors

We were very pleased about the reception of our first VT PRIME and happy to be moving on with the second edition. Reactions were overwhelmingly positive especially from our Alumni and former family members of the PREP-IMSD family. In one reaction Dr. Jennifer King stated that "what a wonderful progress the young ones are making, you better mention me in the next edition." So, in this one we have her featured along with a former outstanding IMSD scholar, Dr. Anjolie Diaz.

We welcomed our newest cohorts for both IMSD and PREP at our 12th Annual Orientation, attended by almost 50 scholars and faculty members. Dr. Glenda Scales, our Keynote Speaker, provided valuable advice to our scholars recommending they always carry a business card with them to facilitate networking.



Dr. Glenda Scales speaking at this year's PREP & IMSD orientation

Suggested readings that we think you may find useful:

Minority voice: Richard Tapia has prepared generations of minority students for academic jobs, but he says they still aren't welcome. Science 344: 1076-1078.

Unbroken, by Laura Hillenbrand: Has been on the New York Times Best Sellers List for 183 weeks. The horrific tale of survival in World War II may help you understand that the challenges you are facing in Grad School can be overcome!!

U.S. Science Suffering From Booms And Busts in Funding, by Richard Harris & Robert Benincasa. <http://www.npr.org/blogs/health/2014/09/09/3407160/91/u-s-science-suffering-from-booms-and-busts-in-funding>. This story about the challenges of losing grant funds is instructive and should give us in the PREP-IMSD family additional motivation to keep doing the "awesome job" and "memorable experiences we" provide our scholars.

Save the Date:

VTLSS Speaker, Dr. Donita Brady Oct 31st 2014

ABRCMS - Nov. 12 -15, 2014

MAPRS -mid May 2015



*The Newest IMSD Undergrad and Grad Cohort: 1st row L to R- Ariel Leon, Ashley Peralta, Kristina Jiles, & Lara Dahora, 2nd row L to R- Dexter Austin, Mynor Medrano, Kisha Gresham, Sarah Sam, Alise DeBruce & Albert Hinman
Not pictured: Ben Okyere & Armand Meza
Please see Page 5 for Fun Facts about each scholar*



*The Newest PREP Cohort: 1st row L to R- Jasmine Reed, Johanel Caceres, & Alexandria Kelley, 2nd row L to R- Chanelle Brown, Richard Sawyer, Adewole Oyalowo & Leland Fleming. Not pictured: Chelsee Holloway
Please see Page 5 for Fun Facts about each scholar*

VT PREP Website:

<http://www.apsc.vt.edu/academics/vtprep/index.html>

VT IMSD Website:

<http://www.apsc.vt.edu/academics/vtimsd/index.html>

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PATH TO SCIENCE: PREP ALUMNI,

Dr. Jennifer King



Dr. Jennifer King was born in 1981 to Billy and Margaret King. Dr. King and her sister, Gwendolyn, grew up in Fayetteville, NC. Raised in the church, Jennifer was always groomed to pursue her passions and that

any goal was attainable. Having parents who were both educators at one time instilled the importance and power of education. During high school Jennifer developed a love for science in her AP Biology class and never looked back.

After her completion of high school, King entered Howard University in 1999 to complete a Bachelor of Science degree in Biology. Upon graduation she entered the first cohort of the Virginia Tech Post Baccalaureate Research and Education Program. Under the mentorship of Dr. Ed Smith and research guidance of Dr. Josep Bassaganya-Riera, she conducted a study exploring the immunological response of piglets to a baby formula the lab designed which included her feeding the piglets by bottle and taking fecal samples. King admits that although the program was challenging she loved the experience and learned tools from PREP that she still utilizes to this day.

After her time in VT-PREP, she engaged in doctoral training in the Department of Neuroscience & Pharmacology at Meharry Medical College in Nashville, TN. Under the guidance of Dr. Clivel Charlton she explored the dysregulation of dopamine synthesis induced by the Parkinson's disease therapy L-DOPA and its possible role in the untoward effects of the treatment. She can honestly say

that graduate school was one of the most rewarding experiences of her life. Although there were obstacles, she tried to turn any difficult experience into a learning opportunity. Dr. Charlton was a very supportive mentor who encouraged her to be proud of her discoveries and present her research at local and international conferences.

UPenn-PREP supported her as a post-doctoral fellow as well as a year of teaching at a partnering institution. This opportunity allowed Dr. King to gain invaluable teaching experience while still conducting her scientific pursuits. Dr. King will begin her teaching career as an Assistant Professor in the Department of Biology at Ursinus College in Collegeville, PA. The path thus far has been uncertain at times but she has always tried to keep a positive outlook and confidence in all she does. The one piece of advice that she gives to young scientists is that sometimes things will get uncomfortable, and that's ok. Moving outside of your comfort zone is one of the best things you can do. She admits she still has a lot of growing to do as a professor and has goals she is working towards, but she is confident that by faith and hard work, the best is yet to come.

PATH TO SCIENCE: IMSD ALUMNI,

Dr. Anjolie Diaz

Dr. Anjolie Diaz was born in 1985 to Linda Contino and Vicente Diaz in Mayaguez, Puerto Rico. Her and her older brother, Vincente M. Diaz, were raised in Ponce, Puerto Rico, Brooklyn, New York and Milford, Pennsylvania. Anjolie attended Penn State where she majored in Psychology with a concentration in Neuroscience and a minor in Biology. She discovered her passion for science after her first experience in the lab. "To find out that your hypothesis is empirically justified by the data you collected is endlessly fulfilling."

Upon completion of her Bachelor of Science degree in 2007 at Penn State, she knew that she wanted a career in academia, so she set her sights on attending Graduate school at Virginia Tech to attain her goals. Anjolie was recruited as a member of the first IMSD cohort. Under the mentorship of Dr. Martha Ann Bell and Dr. Ed Smith, she immersed herself in her research. Her graduate training was in the Cognitive, Affect and

Psychophysiology Lab. She was involved in many projects but a unifying theme in her research was trying to bridge the gap from the once hard divide between emotion and cognitive processes in early development. Specifically, her research examined behavioral and psychophysiological aspects of executive functioning and its association with individual differences in emotion regulation and reactivity in infancy and children. She admits that Grad school was hard work, stressful and full of sleepless nights, but in the end she wouldn't have changed any of it. Grad school gave her the necessary tools and support necessary to do notable research and publish her work.



Anjolie is now a post-doctoral fellow at Sanford School of Social and Family Dynamics at Arizona State University. As a postdoc at ASU, she is developing and expanding her current research interests in

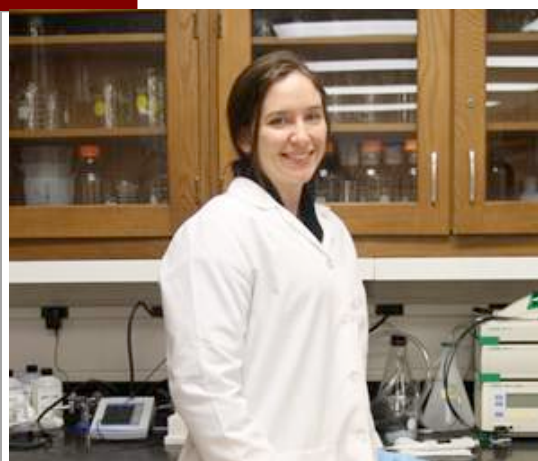
biological processes (adding a new focus on sleep) and gaining additional expertise in specific emotions (i.e. anger, sadness, positive emotions) and "emotional context" (i.e., classroom, peers) as predictors of children's academic competence.



Her long-term goal is to develop a research program utilizing psychophysiology measures to understand the role of cultural and individual differences in cognitive and emotion development on children's social and academic competence.

Q&A

With Former Mentor,
Dr. Elizabeth Gilbert



Introduction

Peer mentoring has been a hallmark of the first R25 at VT and adapted for VT IMSD. It was even remarked upon by a reviewer for NIH that “a lot of programs use peer mentoring but what they are doing with this is very innovative.” As a grad student, Dr. Elizabeth Gilbert was a peer mentor to now Dr. Rebecca Ortiz, then an IMSD scholar working on her Ph.D. in Microbiology in Dr. Isis Kanevsky’s lab. Dr. Elizabeth Gilbert is currently an Assistant Professor in the Dept. of Animal and Poultry Sciences. She has been a Peer Mentor to PREP Alumni, Samantha Casterlow (5th Cohort ‘07-08) and recently a Research Faculty Mentor, to PREP Scholar, Brittany Rice (11th Cohort ‘13-14).



1. What was your experience like being a peer mentor at Virginia Tech?

During my time as a graduate student and postdoctoral researcher, I served as a peer mentor for several PREP and IMSD scholars. I thoroughly enjoyed the peer mentoring experiences. It was immensely rewarding to watch the Scholars progress in their programs and realize their full potential. We developed friendships and I learned about different types of research being conducted at Virginia Tech. I looked forward to the monthly lunches where in addition to

discussing coursework and research, we shared stories about our personal lives and backgrounds.

2. What are some qualities of effective peer mentoring?

To be an effective peer mentor requires a cultivation of listening skills. This involves being able to listen without exercising judgment, to be a sounding board, and to know when you should offer advice or help. I think that it is also important to maintain a positive attitude and to be encouraging. We all have failed experiments, good days, bad days; the mentoring experience is valuable for putting life into perspective, because it allows us to share these experiences and convey to the mentee that they are doing well despite a perceived failure (we are all in the same boat!). I also think that the mentoring relationship is terrific for building communication skills. As I said, I have mentored students from departments and areas of research far outside my comfort zone. This required both of us to explain our research in more basic terms. This ability to cross disciplines is critical nowadays for succeeding in science where multi-disciplinary projects are expected.

3. What should people avoid when being a peer mentor?

Exercising judgment can be detrimental to a mentoring relationship. It goes hand-in-hand with learning how to be a careful listener and knowing when to exert influence and advice. I think that it is important that the mentee arrive at conclusions and decisions independently and thus build confidence and independence. My role as a mentor is to offer perspective and to share my experiences, and to offer suggestions when I feel that it is warranted by the situation. This might be an important distinction between being a peer mentor and a major advisor. I never wanted a

mentee to feel as though they were being pulled in multiple directions or pressured and I don’t think I have yet encountered a situation where the mentee was not receiving adequate attention or mentorship from their major advisor. In that case, a little more intervention may be required.

4. How has being a peer mentor benefited your career in science?

I was fortunate to mentor students from diverse fields of science, such as mammary immunology and human clinical nutrition. These areas of study were far outside my own expertise and gave me breadth and new perspective. Learning where they struggled in academics or research and understanding how their advisors helped them has allowed me to make a smooth transition from being a peer mentor to major advisor. Because mentoring is a major part of a career as a university professor, having this valuable experience early on in my academic career has benefited me tremendously.

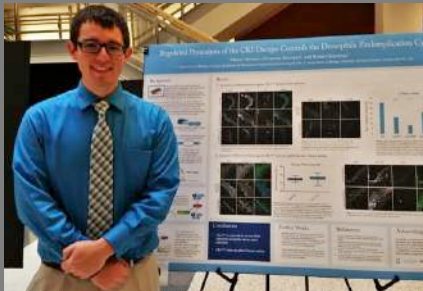
5. How do you continue to mentor in your current position?

Mentoring is central to my career and livelihood. I am an academic advisor to more than 20 undergraduate students in the Animal and Poultry Sciences major and at any given time I mentor at least 3 undergraduate students in my lab, and serve as major advisor to several graduate students. This past year I served as a major advisor to a PREP scholar, Brittany Rice, an extraordinarily talented young lady who is now embarking on a graduate program at Eastern Kentucky University. My mentoring philosophy revolves around having an open door policy. I communicate with my students on a daily basis and I strive to impart a sense of family and community in my program.

THREE IMSD UNDERGRADUATE SCHOLARS REFLECTIONS OF SUMMER RESEARCH INTERNSHIP EXPERIENCES

ALBERT HINMAN

(Senior, Biological Sciences)
Lab Affiliation: Dr. Daniela Cimini
Hometown: Smithfield, VA
Internship: University of North Carolina
Chapel Hill



Albert presenting his research at UNC

1. What did you do at your summer internship?

My summer internship was with the

University of North Carolina at Chapel Hill with their SURE-REU program, this program focused broadly on biomedical sciences. In particular, my summer project in Dr. Robert Duronio's laboratory observed how the E3 ubiquitin ligase, CRL1 (Skp2), interacts with the cyclin-dependent kinase inhibitor Dacapo in regulating the *Drosophila melanogaster* endocycle within salivary gland tissue.

2. What was the most enjoyable part of your internship?

The most enjoyable parts of my summer internship were interacting with the research community at UNC, as well as having those special moments when the research data started to pave a story for my project.

3. What was the least enjoyable?

The worst aspect about the experience was being unable to cook all my own meals due to a small kitchen, although this was a really

small annoyance.

4. Did you present your summer work? Poster or oral? And do you have an abstract you could send or that will be published?

I presented my work at a poster presentation at an Undergraduate Research Symposium at UNC, I have an abstract that I have sent to SACNAS and may present at ABRCMS.

5. What was most valuable part of your summer experience and how will it help you with your research at Virginia Tech?

This research experience I felt really helped me mature as a young scientist. It allowed me to explore different aspects of genetics that Virginia Tech does not traditionally focus in. The different climate, personalities, and perspectives I received from my mentors and peers were extremely beneficial, and I hope to carry and apply their ideas throughout my career as a scientist..

DAVID VASQUEZ

(Senior, Biological Sciences,
Lab Affiliation: Dr. Dana Hawley
Hometown: Virginia Beach, VA
Internship: University of Georgia

1. What did you do at your summer internship?

I studied the effects of the naturally-occurring nematode parasite (*Chondronema passali*) on the immune system and fighting behavior of a Bess Beetle (*Odontotaenius didsjunctus*) in Dr. Andy Davis' laboratory at the University of Georgia.

2. What was the most enjoyable part of your internship?

Learning the process of coming up with novel questions in parasitology, behavioral ecology, and immunology.

3. What was the least enjoyable?

Learning how to troubleshoot a project, determining what isn't working, and trying to make up for lost time; overall a good

learning experience for graduate school since projects almost never work out as planned.

4. Did you present your summer work? Poster or oral? And do you have an abstract you could send or that will be published?

I presented my research at a poster presentation. I have an abstract that is written and available for when I apply to research conferences. My adviser and I also have a paper in the works from my summer internship that we plan to publish in Behavior Ecology.

5. What was most valuable part of your summer experience and how will it help you with your research at Virginia Tech?

Learning what to think about when running experiments that potential reviewers could argue about during reviews (to avoid rejections). Dr. Andy Davis constantly thought about what reviewers might say and used that when developing the experiment to reduce the number of complaints we could receive from

reviewers. That was beneficial for me to learn and observe for when I do more experiments at Virginia Tech that could be potentially used for publication as well. It will definitely help for graduate school.



David holding one of the Bess Beetles he studied during his summer research

Reflections by Seniors Continued on Next Page

DAVIA BLAKE

(Senior, Biological Sciences)
 Lab Affiliation: Dr. Daniel Capelluto
 Hometown: Chesapeake, VA
 Internship: University of North Carolina
 Chapel Hill



Davia presenting his research at UNC

1. What did you do at your summer internship?

My summer internship focused on the lipid-protein interactions in the platelet activation signaling pathway in Dr. Leslie Parise's lab in the Biophysics and Biochemistry Department at the University of North Carolina at Chapel Hill.

2. What was the most enjoyable part of your internship?

The most enjoyable part of my summer internship was learning a broad range of different topics concerning biophysics from different professors at the University of North Carolina at Chapel Hill. Every professor who taught my summer internship cohort was able to bring something new to the table because of their varying backgrounds.

3. What was the least enjoyable?

My least enjoyable part of the internship was waking up early for all of my morning lectures everyday.

4. Did you present your summer work? Poster or oral? And do you have an abstract you could send or that will be published?

I presented my work in a poster presentation. I will submit an abstract for future conferences and I have a good likelihood of being published in a paper from this project.

5. What was most valuable part of your summer experience and how will it help you with your research at Virginia Tech?

I attended lectures given by professors in the Department and seminars given by other professors who study Biophysics across the country. These lectures gave me new insight into Biophysics techniques and how to apply them to new and current research.

FUN FACTS

IMSD Undergrad Scholars

Sarah Sam- She loves to sing and write
Dexter Austin- He was a member of his High Schools Debate team

IMSD Scholars

Kristina Jiles- She is half Native American and a member of the Occaneechi-Saponi Tribe
Alise DeBruce- She is getting married next summer
Kisha Gresham- She lived in Hawaii for 9 years
Mynor Medrano- Has been playing the guitar for 10 years
Benjamin Okyere- As a hobby, he is a saltwater aquarist and enjoys cooking
Ariel Leon- Played a varsity sport in college
Lara Dahora- She is trilingual, she speaks English, Spanish and Portuguese
Ashley Peralta- She attended High School overseas, Naples American in Napoli, Italy

PREP Scholars

Richard Sawyer- Took 2 ½ years of Arabic in High School and College.
Johanel Caceres- In the past 2 years has lived in 2 countries, Denmark and Australia, and has traveled to 13 in total.
Jasmine Reed- Obtained her undergrad degree at VT's #1 rival UVA
Adewole Oyalowo- Has a twin sister named Sade
Alexandria Kelley- In her free time likes to workout and write poetry
Chanelle Brown- She enjoys acting and dancing, in high school performed in several plays and was also a member of the drama club
Chelsee Holloway- Her favorite color is purple
Leland Fleming- He knows four languages- English, Spanish, Greek and Latin

Thoughts & Prayers

For **Dr. Karey Sutton** and her family for the loss of her father who was always generous with his sweet potatoes as a gift to Dr. Smith when Dr. Sutton was in PREP

For **Tere Williams** and her family for the loss of her father

For **Dr. David Bevan** and his family for the loss of his father

ALUMNI NEWS

Dr. Brandy Huderson (PREP Alumni, 3rd Cohort)- Recently was appointed an Assistant Professor of Molecular Biology at the University of District Columbia (D.C.).

Adedayo Adeniran (PREP Alumni, 6th Cohort)-

A Bioengineering PhD student, was awarded a 2014 BME Innovation and Career Development Award from the Biomedical Engineering Society, September 2, 2014.

Valerie Rojas (PREP Alumni, 9th Cohort)- Recently passed her preliminary exam and is officially a Ph.D. Candidate at Duke University.

Snider Desir (PREP Alumni, 9th Cohort)-

Presented at the University of Minnesota 7th Annual Biomedical Science Grad Program and won the popular vote from the audience (People's Choice award) for his presentation.

Dr. Brian Lewis (Peer Mentor to Dr. Yared Kidane, IMSD Alumni)- Was quoted in The New York Times article "U.S. Scientists See Long Fight Against Ebola" published Sept. 12th, 2014.

Recent peer-reviewed publications by our scholars

Regina Wallace- Wallace RA1, Black WP1, Yang X1, Yang Z2. 2014. A CRISPR with roles in Myxococcus xanthus development and exopolysaccharide production. J

Bacteriol. 2014 Sept 8. pii: JB.02035-14.

Brittany Rice- Rice BB1, Zhang W1, Bai S1, Siegel PB1, Cline MA1, Gilbert ER2. 2014. Insulin-induced hypoglycemia associations with gene expression changes in liver and hypothalamus of chickens from lines selected for low or high body weight. Gen Comp Endocrinol. 2014 Aug 23. pii: S0016-6480(14)00321-9.

Cynthia "Alicia" Traugher- Mitra S1, Traugher CA, Brannon MK, Gomez S, Capelluto DG. 2013. Ubiquitin interacts with the Tollip C2 and CUE domains and inhibits binding of Tollip to phosphoinositides. J Biol Chem. 2013 Sep 6;288(36):25780-91