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Welcome to the fall Aspironaut™ Newsletter

#GIVING  
TUESDAY

 DONATE NOW

Aspironaut™ will participate in #GivingTuesday\* on December 3<sup>rd</sup>. Our fundraising goal on GivingTuesday is to **increase the number of internships in 2020** for talented students from rural and underrepresented communities. These students face numerous barriers to entering a STEM career. Help us increase the numbers and diversity of the STEM workforce by providing summer research for talented students. Make a difference in the lives of student with a desire to learn and discover.

### Our Success

**100%**

of High School Interns graduate from High School

**95%**

of High School Interns Matriculate to college

**83%**

of High School Interns Persist in STEM majors

The data is in! And, after 11 summers, we are achieving our goal. Help us continue our mission and donate today. You can truly make a difference in these students' lives.

\* #GivingTuesday is a global day of charitable giving to kick start the holiday season. Donations can be made at any time before or after December 3rd, 2019.

# Catching up with Calisa Henry

Calisa Henry completed her 3rd year with Aspirnaut™ as a resident counselor at the University of Michigan Life Sciences Institute in Ann Arbor, Michigan. She generously found time in her busy schedule as a sophomore at Berea College to talk with us.

## 1. Tell us about your career aspirations.

I have discovered that my passion is helping people. I am leaning towards something in the field of psychology or sociology (or perhaps both) where I could use the power of personal relationships with people to help make the world a better place such as advocating for people, mentoring students, and being a resource for people who need someone to believe in them.

## 2. How did you first learn about Aspirnaut™?

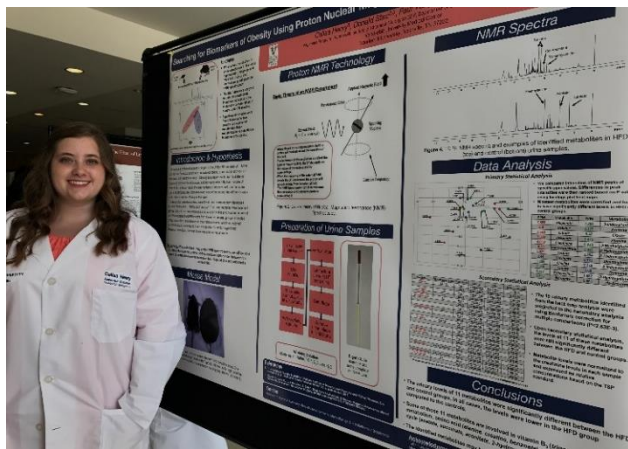
I learned about Aspirnaut™ through another student at my high school (The Mississippi School for Mathematics and Science). Jenny Nguyen had participated in the Aspirnaut™ program the year before my first year of the program. She shared the experience with our counselors who included Aspirnaut™ on a list of summer program opportunities. With Jenny being one of the seniors that I looked up to, I considered the program and it seemed to line up with my interests almost perfectly.

## 3. What are some tools Aspirnaut™ provided to help you along your academic journey?

Aspirnaut™ has provided me with so many tools that I use almost daily in my academic journey. I learned from Aspirnaut™ to always have a question and that opportunities are always out there. We were going through orientation, and one of the first things Dr. Billy Hudson said to us was to always ask a question. At the time, we may not have understood what he was teaching us, but since then I have learned that asking a question has taught me to listen more intently when people are speaking to me and helps me to make more of a connection with the speaker or the subject at hand. The second thing Aspirnaut™ taught me is to look for opportunities and reach for them. The Aspirnaut™ motto is "Aspire. Seek. Achieve." I use this as a frequent reminder that if I have dreams, all I have to do is seek out the opportunities and I will achieve anything I set my mind to.



## 4. How has Aspirnaut™ impacted your academic and career pathway?



Aspirnaut™ has influenced my academic and career pathway by teaching me the power of personal relationships. One part of Aspirnaut™ that has inspired me is how much everyone cares. From constant encouragement to Dr. Julie Hudson's career planning meetings, I have always felt like the Aspirnaut™ staff (and everyone involved with the program) sincerely cared about my goals and aspirations. Taking the time to get to know me and creating a personal relationship have been so meaningful in my pathway. I know that if I ever need academic or career advice that Dr. Julie is only a phone call away and is willing to help in any way she can. This level of caring and showing that she believes in me has been an inspiring piece in helping me figure out what career I want to pursue. I want to be this inspiration and positive influence in other people's lives. Aspirnaut™ has shown me the model of believing in people and watching them succeed, and this is something I want to give back to others.

## 5. Can you tell me a little about your recent research publication?

I worked under the mentorship of Dr. Paul Voziyan and Dr. Don Stec on a project titled "Searching for Biomarkers of Obesity Using Proton Nuclear Magnetic Resonance Urinary Metabolomics." The goal of this project was to see if there would be any significant differences in the levels of metabolites found in the urine of mice fed a high fat diet compared to those fed a normal diet. We used proton nuclear magnetic resonance (NMR) to analyze the samples, and then performed multiple levels of statistical analysis to determine significance. I really enjoyed this research because it gave me the opportunity to learn techniques that I would later use in statistics and organic chemistry classes. My mentors were very helpful along the way in taking time to explain things and make sure I understood what I was doing.

## 6. What advice would you give to a future Aspirnaut™ intern?

To a future Aspirnaut™ intern, the best advice I can give is to take advantage of all the opportunities and resources Aspirnaut™ provides you. Everything you learn from the Aspirnaut™ program can be useful in many aspects of your life. I use the skills I learned from Aspirnaut™ daily. I would say to always keep the motto "Aspire. Seek. Achieve." in mind and never stop reaching for your dreams because you can do anything.

## 7. What else do you want people to know about you?

The only other thing I would include is a thank you to my support system over the years. I wouldn't be where I am without all the support I have received throughout my life.

## The Aspirnaut™ Kidney STARS Shine at ASN Kidney Week in D.C.

**Courtney Browne** (Senior, Oakwood University), **Emily Chuang** (Junior, Vanderbilt University), **Tess McNeely** (Sophomore, Belmont University), **Sangyal Dorjee** (Junior, Berea College), **Jenny Nguyen** (Junior, University of Pennsylvania), and **Jacob Summers** (Junior, University of Tennessee Knoxville) were selected to participate in the American Society of Nephrology's Kidney Week as part of the Kidney STARS program.

In a joint program between the ASN and NIDDK/KUH, a handful of undergraduate students from nine R25-funded institutions were invited to travel to D.C. and learn more about the missions of ASN and KUH.

Aspirnauts became aware of the profound impact of scientific discoveries at Vanderbilt University Medical Center (VUMC) on the national and International scientific community including those of the Hudson lab. VUMC's own Dr. Leslie Gewin and UCSD nephrology fellow Dr. Warda Zaman guided students through the poster sessions. Interns connected with pediatric nephrologist, Dr. Oliver Gross, and patients on the topic of Alport Syndrome.



The group participated in an interactive virtual reality kidney model testing their knowledge of kidney function and working together to see the outcome of their decisions. *InBody Technology* provided each intern with a comprehensive breakdown of their own body's composition and fluid balance while seeing the clinical application for nephrology patients. Aspirnaut™ interns attended VUMC's Division of Nephrology annual reception.



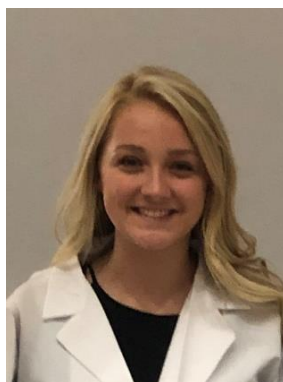
"My experience at ASN was one that reignited my drive to engage in research as part of my future career. Talking with Alport patients, speaking with group mentors like Dr. Gewin and Dr. Warda, attending numerous lectures, and discussing them with my fellow Aspirnauts all helped me solidify that I want to conduct research on autoimmune diseases." **Courtney Browne** (Oakwood University).

"ASN Kidney week was a great experience for me as an undergrad! I spoke with physicians and researchers from around the world. The conference truly expanded my view, and I learned a great deal not only from the posters but also from my Kidney STARS mentors, Leslie Gewin, Ph.D., and Warda Zaman, M.D. My experience at ASN Kidney Week was unforgettable!" **Tess McNelly** (Belmont University).

## High School Students Return for More Experience

Three high school Interns are back at work in the lab following their 2019 Aspirnaut™ summer research experience. Three-time Aspirnaut™, **Cadiz Cantwell** is returning to the Hudson Lab under the mentorship of Dr. Sergei Chetyrkin. Two-time Aspirnaut™ intern, **Mehrael Ibrahim**, will return to the Hudson lab under the mentorship of Dr. Elena Pokidysheva. **Mariham Mousa** will be working in the Schey Lab under the mentorship of Romell Gletten.

"An academic year lab experience gives students the chance to continue work on projects they started during the summer. The Interns spend five to ten hours per week engaged in a 'deeper dive' on their research question," stated Executive Director, Julie Hudson.



Cadiz Cantwell, a senior at Harpeth High School



Mehrael Ibrahim, a senior at STEM Prep High



Mariham Mousa, a senior at STEM Prep



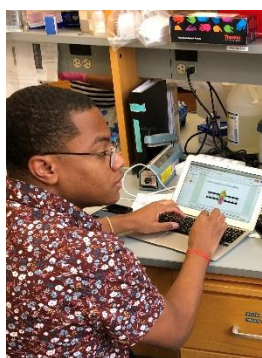


## Congratulations, Aloyce Riziki!

We are proud to announce Aloyce Riziki will start pharmacy school at Campbell University in North Carolina in Fall 2020. He participated in the summer research program as a Berea College student this past summer.

## Congratulations to our 3 QuestBridge National Match Finalists!

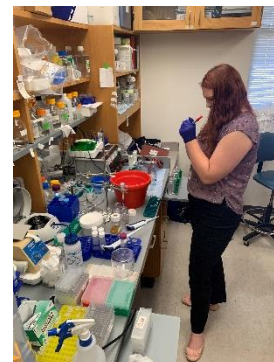
**Kaleb Branch** (senior at Valley View High School in Jonesboro, Arkansas), **Cadiz Cantwell** (senior at Harpeth High School in Kingston Springs, Tennessee), and **Madison Yarbrough** (senior at Poyen High School in Poyen, Arkansas) are all finalists in the QuestBridge National College Match. QuestBridge matches high-achieving students with economic need to a full four-year scholarship to QuestBridge college partners. The three Aspirnaut™ finalists submitted early-decision applications in September and learned of their selection for the full match opportunity in October. The students then completed all supplementary materials for their ranked college choices. On December 2, the finalists will learn where they matched. Congratulations to all three!!!



Kaleb Branch



Cadiz Cantwell



Madison Yarbrough

## Aspirnaut™ Mentor Jerod Denton Remembers His Roots

Jerod Denton has been at Vanderbilt for nearly two decades but will always call Arkansas home. It was there that he attended the University of Central Arkansas for his Bachelor's in biology as well as a Master's in physiology, and these educational opportunities ultimately led him to a Ph.D. in physiology at Dartmouth College. Afterward, he took a post-doctoral position at Vanderbilt University where he has resided ever since, and now holds dual appointments as Associate Professor in Pharmacology and Anesthesiology. Since 2012, Dr. Denton has "paid it forward" by mentoring nine Aspirnaut™ students in his laboratory, many from similar backgrounds. "Having grown up in a small rural town in Arkansas myself, I can relate to the sense of excitement these students feel coming to Vanderbilt and seeing life in a biomedical research laboratory for the first time," stated Denton.

It's that excitement that has driven not only Dr. Denton's career but his appreciation for what education and experience can give. "For some students, it's like the proverbial 'kid in a candy store.'" says Denton. "The Aspirnaut™ summer research program is a season of rejuvenation that we all look forward to every year." In the last few years, Dr. Denton has not only hosted students in his lab during 6- and 10-week summer experiences but has also employed two Aspirnauts full time during their gap years. Meghan Kramer and Bryson McCarthy worked as research assistants as they gained more skills at the bench, studied for the MCAT, and applied to medical school.

Both students are reaching their dreams of becoming physicians. Meghan is a 2nd-year medical student at the University of Tennessee Health Sciences Center, and Bryson is a 1st-year student at the University of Louisville School of Medicine. Reflecting on their achievements, Denton stated, "I get a sense of renewed excitement experiencing that vicariously through them."

To become involved as a mentor or sponsor of an Aspirnaut™ intern, visit [aspirnaut.org](http://aspirnaut.org)



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*If you'd like more information on how to get involved with Aspironaut™, please contact*

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