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Welcome to the fall **Aspirnaut™** Newsletter

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## Our Mission:

The Aspirnaut™ K-20 STEM pipeline for diversity and wellness identifies and develops future leaders in STEM from diverse backgrounds. Our mission is to shine a light on the pathway to opportunity for students coming from under-served and under-represented communities across the nation. Aspirnauts are “aspiring voyagers” whose motto is to ASPIRE, SEEK and ACHIEVE. Our goal is to increase the numbers and diversity of the STEM workforce by elevating STEM achievement. For over a decade, Aspirnaut™ has provided summer research experiences for high school and under-graduate students using a holistic and innovative approach that includes discovery science, professional skills development, self-discovery, and long-term mentorship. Aspirnaut™ provides talented individuals from diverse backgrounds with the tools and empowerment to affect positive change in themselves, their families and communities for generations to come.



# Aspirnaut™ Summer 2019 Recap

Summer 2019 marked the 11<sup>th</sup> year for the Aspirnaut™ Summer Research Internship Program at Vanderbilt University Medical Center. Thirty-three Aspirnauts (16 high school and 17 undergraduates) from 15 states conducted discovery science across 20 labs with over 30 mentors. Participants spent 40 hours a week conducting discovery science as part of a research team. Professional skills development and self-discovery modules rounded out the holistic programming. Sessions included a weekly interactive luncheon with distinguished speakers, science communication sessions, an unconscious bias seminar, psychological thriving skills, individual career planning, wellness for life, and much more.

The high school group concluded their science discoveries by presenting their findings on July 12<sup>th</sup>, while the undergraduate group completed their research with an oral presentation on July 30<sup>th</sup>. The undergraduate group also had the opportunity to join other undergraduate interns from nine institutions on the Vanderbilt University campus for the KUH Undergraduate Research Conference from July 31<sup>st</sup>- August 1<sup>st</sup>.



Don't worry, we had some fun outside of the lab as well this summer. The group attended the Nephrology Department picnic where the interns were able to interact with department faculty and staff in a relaxed setting. We also had a pretty intense water balloon fight during our 4<sup>th</sup> of July BBQ. It's amazing to see the transformation through the summer as our interns gain confidence in their ability to perform research science and engage with like-minded individuals.

If you are interested in participating, please visit our website for the 2020 application link.



## **Meet our newest team member: Associate Director Rachel Baugh**

Rachel Baugh joined the Aspirnaut™ team this summer. She is developing the Wellness for Life portion of Aspirnaut™ to foster lifetime wellness among participants. She will have a key role in strategic planning and development for the program.

Rachel Komisarz-Baugh is a 2004 Olympic gold and silver medalist from the Olympic Games held in Athens, Greece. She is a former world record-holder, 4-time American record holder, 7-time NCAA AL-American and 3-time USA National Champion.

Rachel began swimming after a career ending gymnastic injury left her with two fractured vertebrae at the age of 15. After overcoming her fear of the water, her potential for swimming success was quickly recognized.



She graduated from the University of Kentucky with a Bachelor of Arts in Education as a Kinesiology major. Later she went on to earn her Master of Science degree in Sports Administration from the University of Louisville.

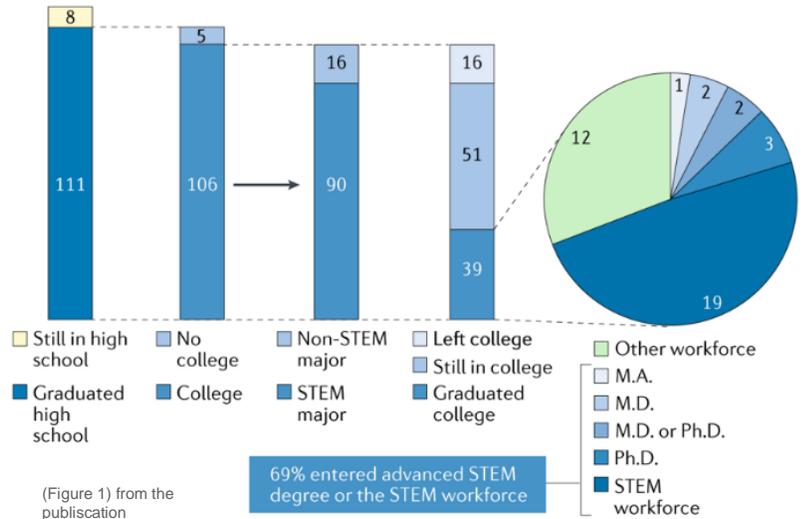
This summer, Rachel worked with the Aspirnaut™ interns on making good lifestyle choices and leading them through two workout sessions each week. The Wellness for Life sessions included topics such as building resilience, taking ownership, making healthy lifestyle choices, nutrition, and mindfulness training. The Aspirnaut™ interns showed a tremendous amount of improvement measured through pre- and post- program physical fitness testing and a health and wellness checklist. Ongoing communication and tracking will continue throughout the year to motivate participants to continue their path of Wellness for Life.

## Key Publication Features Aspirnaut™

### Nature Reviews Nephrology Article

The Aspirnaut™ high school summer research program was featured in a *Nature Reviews Nephrology* invited commentary by co-founders Billy and Julie Hudson and published on Aug 8<sup>th</sup>. After ten years, the data suggest Aspirnaut™ is achieving its objectives (fig.1). Aspirnaut™ participants have a 100% high school graduation rate, 95% attend college and 85% declaring a STEM major. These statistics exceed comparative national norms by a wide margin. Congratulations, Aspirnauts™!!

Click [HERE](#) to view the full article



### Aspirnaut™ hosts KUH Conference



Nashville and Vanderbilt University Medical Center were the hosts of the 6<sup>th</sup> Annual National Institute of Diabetes and Digestive and Kidney Disease (NIDDK); Kidney, Urologic and Hermatologic Deases (/KUH) Summer Undergraduate Research Conference, July 31 – August 2. In total, 120 interns and 30 mentors registered for the conference. The conference is the culminating event for undergraduate research interns funded by KUH. Students interact with a prominent group of speakers, gain career insights, and present their scientific research. Participating institutions included: Emory University, Harvard University, Mayo Clinic, University of Alabama Birmingham, University of Texas Health Science Center San Antonio, University of Texas Southwestern, Wake Forest, Yale University, and VUMC.

New this year were “breakout” sessions that fostered greater interaction. Billy Hudson, Ph.D., and Jamie Dwyer, M.D., presented an Alport/Goodpasture Syndrome Case discussion including patients that presented their stories, scientific basis of the diseases, and clinical insights about diagnoses and treatment. Roy Zent, M.D., Ph.D., led Kidney 101, a discussion of the relevance of kidney health and disease. The third session, Nephro360 hosted by Aleksandr Vasilyev, M.D., Ph.D., provided the interns with a hands-on, virtual reality experience inside the glomerulus, tubules, and collecting system and the ability to manipulate membranes, proteins, and pharmaceuticals. Two moderated poster sessions gave each undergraduate a chance to present their scientific research discoveries among a panel of their peers and mentors.

The final speaker of the conference was Dr. Elizabeth Ann Yakes, an Assistant Professor of Internal Medicine and Advisors to the Wellness Committee at Vanderbilt University School of Medicine. The importance of self-care and personal wellness were examined as important components to personal and career development.

The group will re-convene in 2020 at the University of Texas Southwestern in Dallas, Texas.

# Aspironauts Moving Forward



Congratulations to these Aspironauts on their recent achievements!!

**Ethan Clements** is one of the first Aspironauts, having both been on the school bus project in rural Arkansas and in one of the first summer research internships. She is in her first year at the University of Arkansas for Medical Sciences College of Medicine in Little Rock, Arkansas.

**Bryson McCarthy** is a two-year Aspironaut™ participant and graduate of Berea College. He has started his first year of medical school at the University of Louisville School of Medicine.

**Hanna Abe** started her Interdisciplinary Graduate Program at Vanderbilt University this fall. She participated in the summer research program as a Berea College student.

**Kateryna Nabukhotna**, a two-year Aspironaut™ participant and Berea College graduate, has just started the Interdisciplinary Graduate Program at Vanderbilt University.

## ASN All-Stars

Six Aspironaut™ undergraduate Interns were selected to represent VUMC as Kidney STARS at the American Society of Nephrology (ASN) Annual Meeting in Washington, DC, from November 5-9, 2019. The Kidney STARS program partners with KUH in a special program to KUH-supported research interns to provide ravel support and meeting registration. Special activities include a career guidance panel, guided poster tours, a welcome breakfast and farewell networking lunch. Congratulations to the following Aspironauts!!



**Courtney Browne**  
Rising Senior at Oakwood University  
Grenada, West Indies



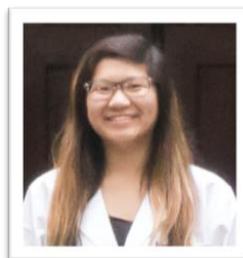
**Emily Chuang**  
Rising Junior at Vanderbilt University  
Naperville, Illinois



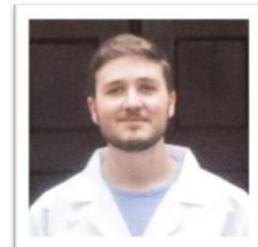
**Tess McNeely**  
Rising Sophomore at Belmont University  
Hohenwald, Tennessee



**Sangyal Dorjee**  
Rising Junior at Berea College  
Kham, Tibet



**Jenny Nguyen**  
Rising Junior at University of Pennsylvania  
Biloxi, Mississippi



**Jacob Summers**  
Rising Junior at University of Tennessee  
Pleasant Shade, Tennessee

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

*Rachel Baugh @ [rachel.baugh@vumc.org](mailto:rachel.baugh@vumc.org)*

*Executive Director | **Julie Hudson, MD., M.A.***

*Scientific Director and Co-Founder | **Billy Hudson, Ph.D.***

*Associate Director | **Rachel Baugh, MS, OLY***

*Program Manager | **Lin Chang, M.Ed.***

*Assistant Scientific Director | **Aaron L. Fidler, Ph.D.***