



Editor: Rachel Baugh

Photo Credit: Susan Urmy

Aspirnaut™ Launches Chemical Biology Lab at Wynne High School

The **Aspirnaut™ Discovery Science Pipeline in the Arkansas Delta** launched on September 12th, 2024, with a ribbon-cutting ceremony for the opening of the state-of-the-art **Aspirnaut™ Chemical Biology Lab (ACBL)** and the adjacent freshwater and salt-water aquariums.

The novel iteration flips the location of the Aspirnaut™ holistic STEM (science, technology, engineering, mathematics) training from research labs at Vanderbilt University Medical Center (VUMC) to the Aspirnaut™ Chemical Biology Lab (ACBL)

at Wynne High School and is an extension of the highly successful Aspirnaut™ residential summer research internships at VUMC. **The pipeline is an innovative model for closing the STEM divide between rural K-12 schools and research universities.**

The pipeline brings hands-on discovery science experience to high school students at Wynne High School, focusing on real-world problems of health, environment, and agriculture, including diabetic kidney disease and toxic microplastics. Students engage in research with invertebrate animal models, such as flies, waxworms, and brine shrimp, and earn academic credit for advanced coursework in chemical biology. Students are mentored by teachers and an in-classroom scientist



Ribbon-Cutting for the Aspirnaut Chemical Biology Lab at Wynne High School

Photo Credit: KAIT News

working in collaboration with scientists at Vanderbilt University Medical Center and the Arkansas Biosciences Institute at Arkansas State University.



Aspirnaut Chemical Biology Lab at Wynne High School

Photo Credit: Wynne High School

The holistic training includes a guided discovery science experience augmented with guided development of professional and wellness skills. These include activities in science communication, ACT/SAT prep, long-term mentorship, psychological thriving skills, wellness training, and college counseling.

The project focuses on the Arkansas Delta, a rural region with high poverty, health disparities, low educational attainment, low STEM employment rates, and high rates of adverse childhood experiences. The anticipated outcomes will increase the number, diversity, and wellness of rural high school students entering STEM disciplines and the STEM workforce, ultimately improving public health and STEM education in the region. STEM careers are among the fastest-growing occupations in the United States.



Axolotl (Mexican Walking Fish) in Wynne High School Aquarium

Photo Credit: Julie Hudson

The activities enhance science education down to the kindergarten level as K-8 students observe live animals in the aquariums and observe high school students working in the lab in their white lab coats. Community engagement activities involve earlier learners and the broader community.

We seek support for the ongoing growth and development of the lab including additional equipment, the Delta Discovery STEM Camp for grades 5 and 6, scientists in the lab, community science cafes, and discovery science projects.

DONATE NOW

Medical School Admission

() indicates year of participation in Aspirnaut™

- **Tiffany-Chau Le (2021)** graduated from Vanderbilt University in 2023 and worked as a research assistant at the Vanderbilt Institute for Surgery and Engineering during her gap year. She has been accepted into University of Texas Southwestern's Medical Scientist Training Program and is working toward her M.D./Ph.D.
- **Sharon Lee (2019, 2021)** graduated from Berea College in 2022. Sharon started medical school this fall at the University of Kentucky School of Medicine.
- **Tess McNeely (2019)** graduated from Belmont University in 2022 and worked as a research assistant at Vanderbilt University Medical Center in the Skaar Lab. Tess attends The

University of Chicago Pritzker School of Medicine in the Interdisciplinary Scientist Training Program for her M.D./Ph.D.



Tiffany-Chau Le



Sharon Lee



Tess McNeely

More Graduation Announcements

- **Reagan Hagewood (2022)** graduated as an honors student from Prairie View A&M University in 2024 with a degree in biology. She was awarded the White House HBCU Scholar award. She was a member of the 50th Medical Education Development program cohort at the University of North Carolina School of Medicine this summer.
- **Hira Kiram (2023)** graduated from Berea College with a degree in chemistry. She is a research assistant in the Department of Microbiology, Immunology & Physiology at Meharry Medical College.



Reagan Hagewood



Hira Karim

F30 Training Grant Award

Amy Rushing (2013, 2014, 2015, 2016) was awarded the Ruth L. Kirschstein Individual Predoctoral NRSA for M.D./Ph.D. Fellowship. Amy is in her 5th year as an M.D./Ph.D. student at Yale School of Medicine.

The F30 training grant enhances the integrated research and clinical training of promising predoctoral students in a combined M.D./Ph.D. program. The F30 can support up to six years of pre-doctoral research training for dual-degree students.



Congratulations

Katie Gell (2022) was selected for the 2025 American Gastroenterological Association Dr. Harvey Young Education & Development Foundation's Young Guts Scholars Program. Katie is a Vanderbilt University sophomore majoring in biochemistry and chemical biology and is working in the DelGiorno Lab.

2025 Application is OPEN

Please check our [website](#) for the application links

Application Deadline: January 15, 2025

We are currently accepting applications for Lu-Springer High School Research Scholars, NIDDK/KUH R25 Undergraduate Discovery Science Experience in Renal Biology and Disease, and Berea College/Hal Moses Aspirnaut™ Summer Research Internships. Recruitment focuses on individuals from rural and diverse backgrounds who are underrepresented in STEM careers. We are looking for students who have achieved excellent grades and test scores in math and science and who have demonstrated a commitment to pursuing a career in a STEM field. **Undergraduate students interested in early admission need to submit the application and all supporting material by December 20th, 2024.**

DONATE NOW

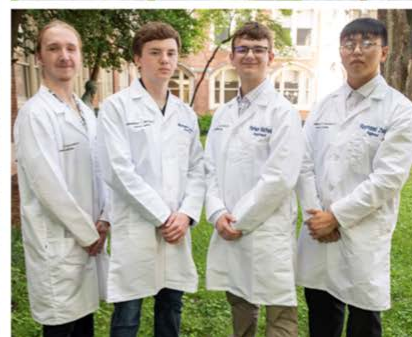
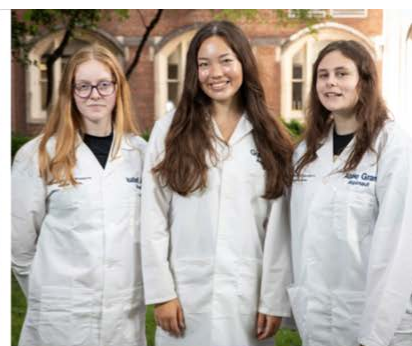
Summer 2024 was Extraordinary!!!

We kicked off a fantastic summer with **20 high school Lu-Springer Research Scholars from ten states and 15 undergraduate research interns from ten states and Tibet.** Aspirnauts

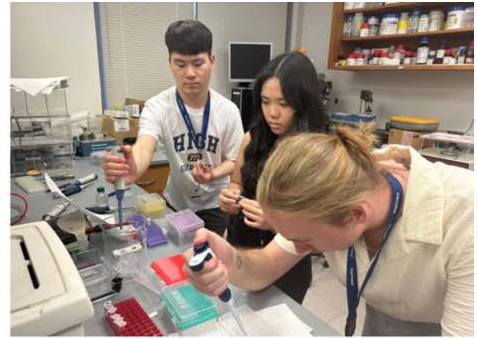
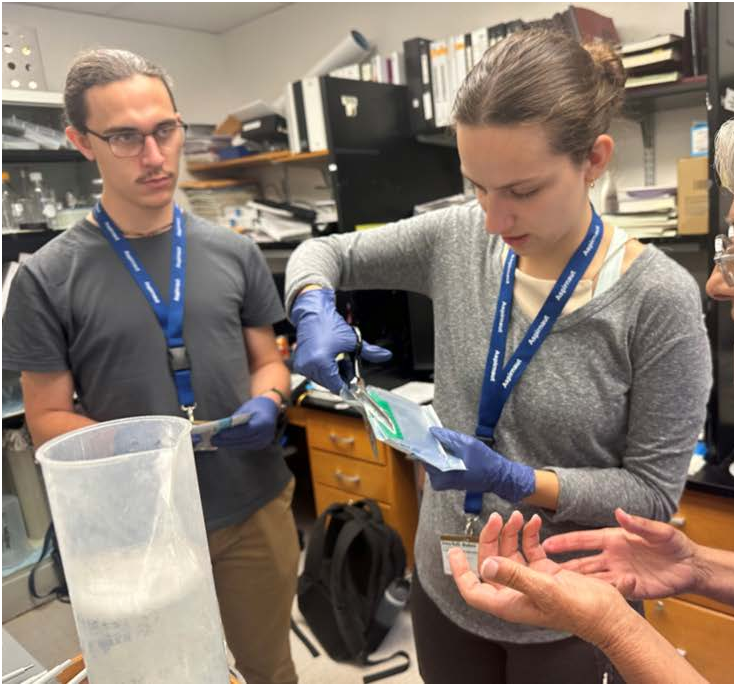
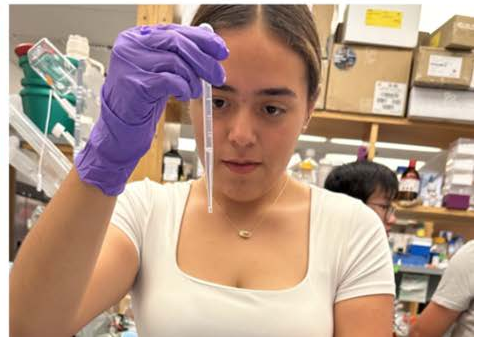
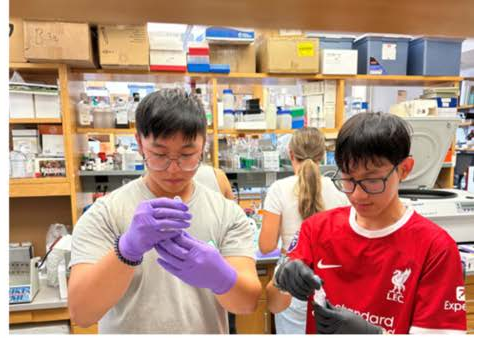
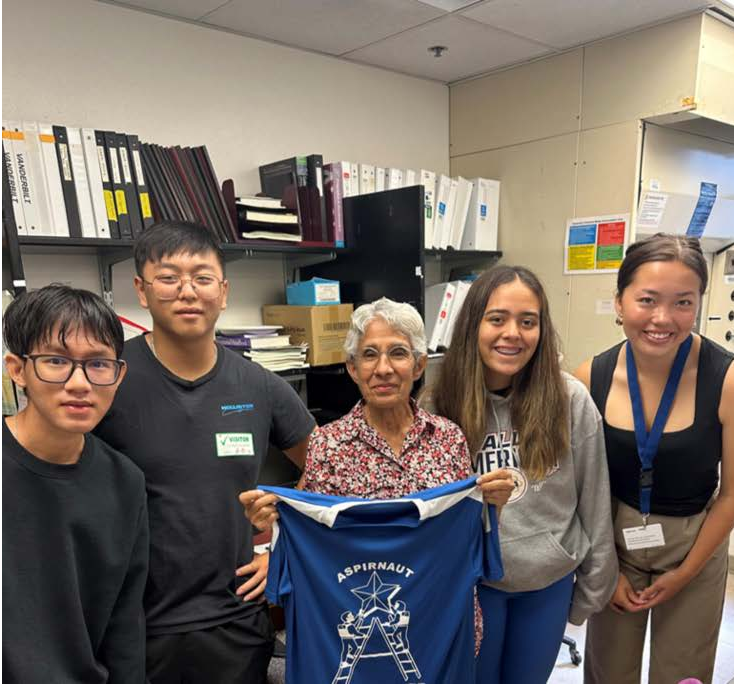
experienced full-time discovery science in biomedical research labs, professional skills development, and wellness training at Vanderbilt University Medical Center.

Summer Photo Gallery

White Coat Ceremony



Lab Skills Course (Elena Pokidysheva, Ph.D., and Team)



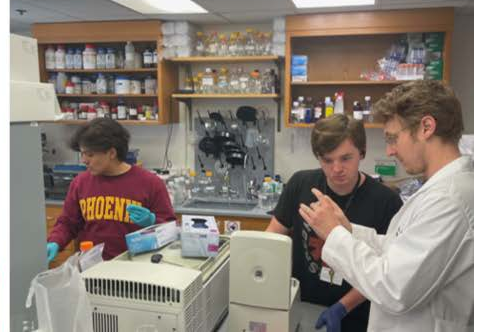
Science Communication (Bradley Clarke, Ph.D.)



Distinguished Speaker Luncheon Series



In The Lab (Thank you to our wonderful PIs and mentors!!!)



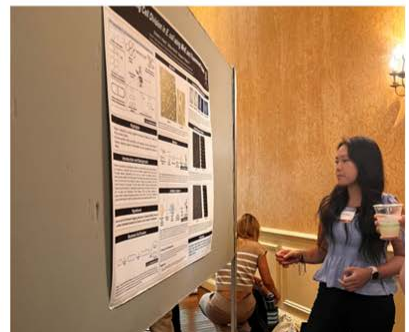
College Counseling (Cynthia Nash) and ACT/SAT Prep & General Chemistry Prep (Kyle Vallone)



Wellness/Fitness Training (Rachel Baugh, M.S., NBC-HWC, OLY)



Poster Presentations



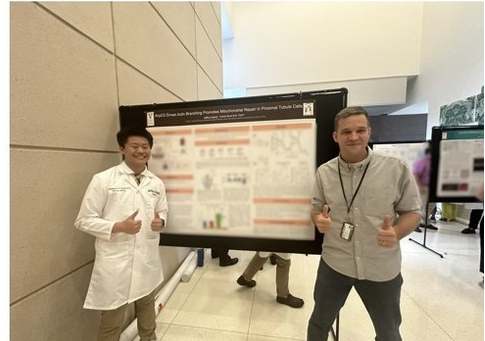
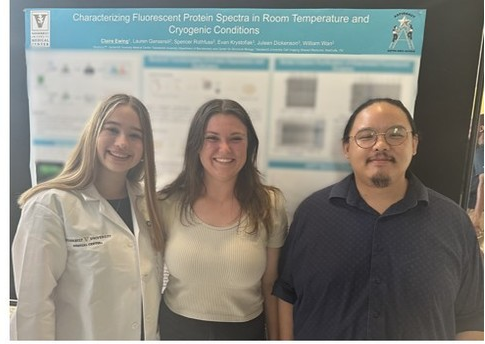
Oral Presentations



4th of July



Amazing Mentors



Celebration of Summer Success



NIDDK/KUH Summer Undergraduate Research Symposium at the University of Virginia



Friends for Life



Summer Program Impact: In Their Words...

- "I loved working in the lab this summer! I feel like I could continue research like this in the future."
- **"This program has pushed me to be better in all aspects. Including health, school, my future. Literally everything."**
- "I discovered more about myself and was able to come out of my shell. I also improved myself physically and have a better understanding of science and biology. Lastly, I was able to create so many great relationships with wonderful people."
- **"Aspirnaut™ has opened my horizons, and I can now see a future I couldn't imagine before. Prior to the summer, a career in the medical field seemed so far away."**

After hearing all the distinguished speakers and their stories, as well as being able to gain the professional experience of working in a lab, I have more confidence in my ability to have a career as a medical professional/researcher."

- "I stepped out of my comfort zone, and it paid off. I loved the hands-on work with my lab and mentor, and getting my data back was so exciting. I also loved the bonds with people from all over the country and hearing their unique backstories. Plus, the distinguished speakers were extremely inspirational."
- **"This opportunity will forever resonate in my life. I have not only learned new things, but I was able to do new things. The people who gave me advice are the best at what they do, so it'll all have a big impact on my future."**
- "The Aspirnaut™ Summer Research Internship further solidified my love for science. I was able to listen to multiple distinguished speakers who inspired me to continue seeking a career in medicine. I learned a lot about science communication, and how to work in a lab and team environment."
- **"My research experience with Aspirnaut™ has motivated me to work towards earning a Ph.D. and pursuing a career in research."**
- "The Aspirnaut™ program is truly a life-changing experience. My first completion of the Aspirnaut™ program opened my eyes to the world of science and completely changed my mindset about what I could accomplish. Returning a second time has also been an amazing experience, and I've continued to push myself further."
- **"The Aspirnaut™ Summer Research Internship program provided a space where I felt I belonged and allowed me to work with a group of diverse individuals. This program showed me what it is truly like to be a scientist and work in this field."**

DONATE NOW

If you are interested in getting involved or sponsoring an Aspirnaut™ experience, please contact Rachel Baugh at rachel.baugh@aspirnaut.org.

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