



## NIDDK Director's Update Fall 2012

### News Around NIDDK

## Rural students soar with Aspirnaut science programs

By Amy F. Reiter



Photo credit: Anne Raynor

Vanderbilt University's 2012 Aspirnaut Summer Research high school, undergraduate and graduate student interns stand with Aspirnaut staff.

Brilliant minds can come from hard-to-reach places. That's the thinking behind Aspirnaut, an NIDDK-supported program that encourages students from rural areas to learn about STEM fields—science, technology, engineering and math—in the hopes of sparking careers.

It worked for Cody Stothers. The Vanderbilt University junior began his Aspirnaut K experience as a high school summer researcher at Vanderbilt. After his summer, he went home to Sheridan, Ark., where he served as a conduit between Aspirnaut and local middle and high schoolers. Stothers helped conduct science lab classes between Vanderbilt professors and rural students and teachers via videoconference and supported activities on a “Magic School Bus,” where academically gifted students were given computers and Internet access to do enrichment activities during their sometimes hour-and-a-half rides to and from school – just two facets of the Aspirnaut program.

“Prior to the Aspirnaut program, prior to college, I was not planning to be a scientist. (Both) helped me solidify in my mind that it would be a rewarding career for me,” Stothers said.

The program, begun by Dr. Billy Hudson—himself a product of a rural upbringing and now the Elliot V. Newman Professor of Medicine, Pathology, and Biochemistry at Vanderbilt—is partly supported by NIDDK grants. The funding supports high school and college summer research experiences for students from rural areas or otherwise underrepresented groups. The students enter high school from elementary and middle schools that, in many cases, do not have science labs, Hudson said. “Teachers are under-resourced and often lack science training.”

In the program, Hudson said, students are exposed to scientists—including many from rural or disadvantaged backgrounds—and expected to learn and contribute. “When they return (to their community), they can dream and see the possibility that this way of life can include them,” Hudson said. “We’re shining the light out there, showing them a pathway to success.”

NIDDK originally began supporting the initiative in 2009 when Hudson successfully applied for an ARRA supplement through NIDDK to support the summer program for high school and undergraduates. Dr. Hudson and his colleagues have been able to leverage this stimulus to a successful NIDDK AREA grant—a grant for undergraduate or underserved institutions—to Tennessee State University, and an NIDDK R25 education grant to Vanderbilt University. Other students have been supported by the NIDDK Short-Term Education Program for Underrepresented Persons. “NIDDK is front and center in helping us (develop) this model,” Hudson said.

In addition, this year American Indian high school summer interns were supported in part by a Native American Research Centers for Health grant from NIH and the Indian Health Service.

Dr. Tracy Rankin, NIDDK Career Development and Training Program Director of Kidney and Urologic Diseases, said the Aspirnaut program fits an immediate need for “more undergraduates choosing to pursue basic research in our mission areas, including nephrology. There has been a dearth of interest in nephrology, so we, in conversation with the American Society of Nephrology, have tried to brainstorm how to recruit more individuals to this area. The consensus is that the earlier we target, the better.”

Geoff Hunt, the public outreach coordinator for the American Society for Biochemistry and Molecular Biology, which is also supporting Aspirnaut’s efforts, agreed. “In a world where scientific knowledge and training are requisites for maintaining our nation’s competitive and technological edge exposing students to science at an early age is critical,” he said. “The Aspirnaut initiative provides a wonderful example of how organic, grass-roots efforts can supplement traditional classroom science education and inspire the next generation of scientists.”

Several hundred students have taken part in some element of Aspirnaut, with many more to come. Aspirnaut co-founder and Vanderbilt Assistant Vice Chancellor for Health Affairs Dr. Julie Hudson—also a pediatric anesthesiologist married to Dr. Billy Hudson—points to the numbers for results of the program’s success.

“At least one in two students state that the Aspirnaut program has impacted...their course choices and career goals,” she wrote in an e-mail. Of the students who participated in high school summer internships, all but one who’ve since graduated have continued to college, and 25 of 27 of them have chosen STEM-related studies. Stothers is among them. Three years after his first Aspirnaut experience, he has now been accepted early to Vanderbilt’s medical school and gives much credit to the program for his success. “I don’t know