NURSES DISCOVER HIDDEN LINKS THROUGH SUMMER ‘GENE CAMP’

In the summer of 2002, Sheila Alexander (BSN ’89, PhD ’04) was in the process of earning her PhD at the University of Pittsburgh School of Nursing when her mentor, Mary Kerr (MNEd ’81), PhD, FAAN, a former nursing professor at Pitt and now the deputy director of the National Institute of Nursing Research (NINR), encouraged her to apply to the Summer Genetics Institute (SGI). Affectionately known as “gene camp,” SGI is an intense two-month fellowship in genetics research and clinical practice sponsored by NINR and held on the campus of the National Institutes of Health (NIH) in Bethesda, Md.
Along with 17 other SGI fellows from across the country, Alexander spent the summer attending lectures and learning genetic laboratory techniques while earning 12 hours of doctoral-level college credit. The fellows lived, ate, studied, and worked together, bonding so closely that when she sees someone from the group today, she feels as though she's greeting a long-lost sibling.

“It was one of the best experiences of my life,” says Alexander, who joined the School of Nursing faculty a month after defending her dissertation. “My SGI experience has helped me do the type of research for which I have a passion.”

Today, as an assistant professor of acute and tertiary care, Alexander is a mentor to students of her own, encouraging them to consider attending SGI. It’s her way of bringing nurses to the forefront of the field that many believe will guide the future of health care research.

THEORY INTO PRACTICE

Often, nurses’ research questions and lines of investigation are ripe for genetic inquiry; they just need exposure to genomics to appreciate fully the possibilities, according to Yvette Conley, PhD, associate professor in the Department of Health Promotion and Development.

The School of Nursing has a fully equipped molecular genetics laboratory, which serves as a resource for students and faculty at both the school and the University. Conley, who also serves as an administrative faculty member and academic liaison for SGI, says nurse-scientists often bring a connection to the patient into their research and truly want to translate research findings into the health care setting—which is something that genomic research very much needs.

The field of genetics has expanded exponentially since scientists began unlocking the secrets of the human genome. “With that understanding has come increased applicability to health care,” Conley says. “The technology is better to collect data; there really is this huge expansion in connecting genetics to health care applications, and nurse-scientists need to be ready to incorporate genomic approaches into their research when applicable. Otherwise, their expertise will not come to bear upon the field.”

Mandy Bell (BSN ’05), who is finishing her second year of the PhD program and will serve as an SGI fellow this summer, is a prime example of the nurse who hopes her research will one day improve care for patients at the bedside.

As a nurse in women’s health at Penn State Milton S. Hershey Medical Center, Bell took care of many women who had preeclampsia and hoped that furthering her education would help her do more for them.

“Seeing these women have to deliver preterm had a profound effect on me,” she says. “The babies had to be taken to the neonatal intensive care unit; the mothers themselves were very sick and didn’t have ample time to bond with their babies. You could see the stress.”

Through her dissertation, she hopes to discover a link between a genetic pathway and preeclampsia to help identify women at increased risk for the condition and intervene before it escalates.

“It was frustrating to see what this disorder could do to them,” Bell says. “I wanted to shift my focus back to investigate preeclampsia’s pathophysiology.”

Though she misses direct patient contact, Bell adds, “I feel like I am in the right place right now. I think the end product will eventually affect what we do as bedside nurses.”

Bashira Charles (MSN ’03, PhD ’08), a postdoctoral research fellow in the Intramural Research Program (IRP) at NIH’s

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Sheila Alexander

[Left to right] Mandy Bell, Sheila Alexander, and Yvette Conley
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Matt Gallek

Mark O. Hatfield Clinical Research Center, is another example of a nurse-scientist who is applying genetics research that may ultimately affect practice. An SGI fellow in 2004, Charles credits the program with broadening her knowledge of genetics research and helping her to hone her focus in order to develop a research grant proposal worthy of funding.

As a result, she has been investigating the genetic basis for the development of complex disease in general and diabetes in particular. As a PhD student, Charles held a graduate student assistant position related to children’s responses to genetic testing for type 1 diabetes and a position in the genetics lab at the School of Nursing.

After practicing as a nurse for a dozen years, she had returned to school with thoughts of becoming a pediatric nurse practitioner. A doctor suggested that she consider research. Charles thought he was crazy, but a class with Conley began to change her mind.

“I didn’t know what the possibilities were,” she says. “When I was at Pitt, I learned more about research, and I discovered I actually do have an interest in it.”

NETWORKING, BOOT CAMP-STYLE
SGI veteran Taura Barr (BSN ’04, PhD ’09), another postdoctoral research fellow in NINR’s IRP, studies diagnostic biomarkers of stroke and credits the collaboration and interdisciplinary mentoring she received with helping to launch her career.

“It was pretty intense,” she laughs, but adds, “I wouldn’t take it back, because I really did gain a lot of insight into how to conduct clinical research.”

Matt Gallek (BSN ’01, PhD ’08) attended SGI in the summer of 2008 and now works as an assistant professor at the University of Arizona College of Nursing. He believes that the networking opportunities were one of the most rewarding benefits of the gene camp experience.

Having spent eight hours a day, five days a week, working with top researchers in the field, Gallek developed relationships with them and felt he could draw upon their expertise.

“I feel like if I ran into a question, I could pick up the phone and call any of my SGI colleagues and get an answer,” he says.

A PERSONAL INTEREST
The same is true of the fellows who attended SGI together.

“You remember each others’ names and what research they were interested in,” says Nicole Zangrilli Hoh (BSN ’03, PhD ’08). “You really become invested in their project also: Did things work out? Did you get the funding?”

For Hoh, there also is a personal investment in her research. In 1975, when she was 14 months old, her father was paralyzed in a car accident. Prior to earning her nursing degree, she worked in social services and thought that becoming an RN would help her in that career.

She entered Pitt’s BSN to PhD program in the fall of 2003 and worked on studies related to traumatic brain injury and subarachnoid hemorrhage, through which she was introduced to the idea that genetics could affect outcomes following a neurotrauma. Suddenly, her career plans shifted.

Hoh was an SGI fellow in the summer of 2006 and defended her dissertation in September 2008. Today, she is a T32 genetics postdoctoral scholar at the School of Nursing, exploring the genetic variations that affect recovery and rehabilitation after traumatic spinal cord injury.

“Hopefully, it will be a valuable contribution to spinal cord research at the University,” she says.