

Taking the First Step Toward a Research Career

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TAKING THE FIRST STEP TOWARD A RESEARCH CAREER

Senior Shantelia Shook ('22) spent her summer making barcodes for cancer cells.

Shantelia Shook was in the lab this summer as a student at the Sanford Program for Undergraduate Research (SPUR) in Sioux Falls. And if she didn't have a heart for research before the program, she certainly does now.

"This program is a great way to see what graduate school would be like," she says.

SPUR is unique because it offers hands-on experience in a laboratory setting. Students are given a project and paired up with a professional lab team and a personal mentor.

"You could be doing cancer research, biochemistry, or whatever it is the lab is studying. They show you how to think like a researcher, not just show you the lab," she says.

One of the main reasons Shook's interest in laboratory research was piqued because she's seen family members battle cancer. She wants to play her part in fighting the disease, and she's gotten a good start through the SPUR program.

One of the projects she worked on at SPUR was cellular barcoding, which is an attempt to track cancer cells. The experiment takes a cell and essentially creates a barcode, like the ones you'd see in a grocery store, for that cell. By using the barcode for the cell, Shook and other researchers can track how cells change, "because not all tumor cells act the same way."

If researchers can create a tried-and-true method of tracking cancer cells, it may help to identify why certain cancer cells keep coming back, according to Shook.

There's a system called V(D)J recombination, which produces small antibodies inside cells. Shook says her research team's goal is to "hijack that V(D)J recombination system and turn it



CABBY PIKE, SANFORD HEALTH

Shantelia Shook learned firsthand the frustration and satisfaction that can come with laboratory research.

on in other cells."

"Then, we want to track cells that already exist in our body and use that tracking in whatever cell lines we want to use for our cancer cells," she says.

Two proteins, RAG (recombination-activating gene) 1 and 2, activate the process. Shook has been researching methods to take those proteins and activate the V(D)J recombination anywhere in the body.

"It's a very frustrating process that does not work 90% of the time, but when it does work, it's like 'yay!'" she says.

Shook said the SPUR experience convinced her to continue studying cancer cells in the future. She plans on eventually heading to graduate school.

"People here are so helpful and supportive," she says. She'd encourage anyone who's interested in a career in research to apply for the SPUR program.

SIMON FLOSS, SANFORD HEALTH

Professor of Music **Dr. Onsbby Rose** presented at the International Society for Research and Promotion of Wind Music Conference in Valencia, Spain, in July.

His Symphony No. 1, "Heroes," placed second in the Professional Division for Wind Band Composition in The American Prize for the Performing Arts.

In June, Assistant Professor of Physics and Engineering **Dr. Jason Ho** published a paper with collaborators in *Physical Review D*. The paper, titled "Correlations between the Strange Quark Condensate, Strange Quark Mass, and Kaon PCAC Relation," explores "new constraints on fundamental properties of strange quarks and assesses existing determinations of these values."



Professor of Theology **Dr. David Moser** published "The Flesh of the Logos, *Instrumentum divinitatis*: Retrieving an Ancient Christological Doctrine" in the International Journal of Systematic Theology in July. The article argues that Thomas Aquinas' teaching that the humanity of Jesus Christ is "an instrument of the divinity" best explains why Christ's human actions cause salvation for Christians in the present.

This summer, Professor of Art **David Platter** was invited to serve on the advisory board for Christians in the Visual Arts (CIVA).



"This is a wonderful opportunity to engage the visual arts with artists who profess Christ as Lord," says Platter. In September, Platter also installed a solo art exhibition called "Super Fascia," which features an ongoing body of work that Platter has developed for nearly 10 years.

Professor of Mathematics **Dr. Tom Clark** recently published the article "Classroom and Computational Investigations of Camel Up" in *The College Mathematics Journal*.