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June 12, 2012

Ever wondered what chemical compounds give ginger ale its pungent flavor? Jeremy Griffin has, and thanks to Gardner-Webb's new Summer Research Scholars program, he's got a significant research grant, free room and board, and nearly unlimited time in the Gardner-Webb chemistry labs this summer to figure it out.

The story of Griffin's fascination with gingerols started with a sickness. Last year, Gardner-Webb chemistry professor Dr. Benjamin Brooks, battling a fearsome cold, fixed himself a soothing ginger tea and thought, "I wonder what chemical compounds give ginger tea its potent flavor and odor." Brooks shared the question with his colleague, Dr. David Judge, who shared it with Griffin.

"I had been looking for some type of original research to do, because I want to go on to the graduate level in chemistry, so this was perfect," Griffin said. "We started with just that question: what makes ginger products so pungent? We began some in-depth research on it, and it just snowballed from there."

By "we," Griffin is referring to himself and Judge, the professor who directed his independent study into gingerols and who is working directly with him this summer. In fact, the Summer Research Scholars program was built especially to involve students and professors in collaborative scholarly projects that come to fruition outside the boundaries of the classroom.

For their preliminary research alone, Griffin—a Vale, N.C. native—won the first-place presentation prize for chemistry at the North Carolina Academy of Science's annual meeting in March. Then in May, he won Gardner-Webb's prestigious Stefka Eddins Undergraduate Research Award for excellence in a student/faculty collaborative project. As Judge says, Griffin was the perfect choice for the University's first-ever undergraduate Summer Scholar.

"Jeremy is incredibly talented, and very smart. But it's his work ethic that really sets him apart," Judge said. "He is one of the most diligent workers I have ever known, and that above anything else will make him successful at the next level."

Beyond giving him a perfect reason to taste-test exotic ginger ales from around the U.S., the project is also teaching Griffin the ropes of rigorous scientific research. "We're actually comparing two different methods of extracting the chemicals from ginger ales," Griffin

explained. “One method already exists in the research, but we’re hoping to show that our method is more effective.”

Essentially, Griffin and Judge are pumping the ginger products through equipment that separates their chemicals based on polarity. Once they identify which compounds are present and in what degree, they can begin to determine which contribute to pungency.

Griffin sees possible long-term benefits of the research for quality control labs seeking to standardize the flavor and composition of ginger products, or for medical researchers looking to isolate the compounds that give ginger its medicinal qualities.

For Judge, the benefit of the project lies in its transformative impact on Griffin himself. “Jeremy wants to be a professional scientist. Learning the right way to do research takes time. It takes learning to work through the inevitable bumps in the road. That’s not something that can be taught in the classroom; it has to be experienced, and that’s what Jeremy is doing this summer.”

Griffin says he has enjoyed the opportunity to let his curiosity roam free. “In the classroom setting, there are usually specific instructions we have to follow in our lab work. But during this project, I have some control over the direction. I can decide what things I think are important, and what don’t seem so important, and talk through those with Dr. Judge. That’s basically what I’ll have to learn to do in graduate school.”

As a professional researcher, Griffin will also have to publish, which requires identifying a novel idea, a gap in the current body of knowledge, and working to contribute research that might fill that gap. That is precisely what he and Judge hope to do at the end of this summer’s research on gingerols—and what Griffin wants to do for the rest of his life.

“I think there’s value in knowledge,” Griffin said, “and I have always tried to do whatever I could in school to gain as much knowledge as possible. But it feels different, with research, to be contributing to the knowledge that’s out there rather than just taking in what’s already known. That’s a pretty awesome thing.”

For more information about opportunities for undergraduate research at Gardner-Webb, including the Summer Scholars Program, contact Dr. June Hobbs, professor of English and director of undergraduate research, at 704-406-4412.

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