

Undergraduate research opportunities create scientific foundation, new generation of cancer fighters

By Stephanie Jacques



Adam Schieferecke, junior in microbiology and biochemistry from Bennington, Kansas, chose Kansas State University because of the university's emphasis on undergraduate research, which is proving to be a mutualistic relationship.

As a freshman, he started working in the lab of Stefan Rothenburg, assistant professor in the Division of Biology, and received his first of three undergraduate Cancer Research Awards from the university's Johnson Cancer Research Center. The Cancer Research Award program offers faculty-mentored research experiences and \$1,000 awards for up to 50 students per year, plus \$1,000 per student for the faculty mentors to cover research expenses.

"It has been a tremendous opportunity to work in Dr. Rothenburg's lab," Schieferecke said. "My experiences in the lab will leave me well-prepared to pursue a successful and rewarding career as a scientist. I've built presentation skills, learned how to conduct independent research and worked on a project directed at making an alternative therapy for cancer."

While working in a functioning lab gives Schieferecke research experience, the student assistance also helps grow the university's research programs, including Rothenburg's most recent project. Schieferecke and Chen Peng, a doctoral student in the lab who also mentors Schieferecke, are testing the cancer-killing effectiveness of a modified strain of

myxoma virus. They are measuring how well the virus can replicate in and kill different breast cancer cell lines.

Rothenburg said the Cancer Research Award gives him manpower in the lab and provides valuable experience to undergraduates so they don't have to spend their time outside of class working a job that doesn't contribute directly to their education.

"The scholarship allows the students to spend more time in the lab," Rothenburg said. "This award can give a K-State student a competitive edge. This is the kind of thing that makes a difference in the application and success of the student."

Schieferecke says the research awards helped him generate data that he has used to apply for additional awards such as the national Barry M. Goldwater Scholarship. Schieferecke is one of the university's 2016 nominees. In addition, he has received 16 academic, philanthropic and research-related awards since that initial award from the cancer research center, including a Kansas-INBRE Top Poster Presentation Award two years in a row.

Schieferecke also is the president of the Microbiology Club and an active member of the K-State Cancer Fighters, a student organization that assists the center with fundraisers and other activities. Schieferecke is the club's science writer, a position he initiated to increase scientific literacy and cancer awareness among the public.

"I've become really passionate about cancer research," Schieferecke said. "If it were not for that funding source from the cancer research center and Dr. Rothenburg's mentorship, I may have ended up taking my research in an entirely different direction. They helped me figure out that I was passionate about doing cancer research, and that is what has driven me to work so hard."

We invest up to **\$100,000** per year to train 50 undergraduates to do scientific research.