Health physics profs collaborate with Geisinger

Collaborations between Bloomsburg University’s departments and with other institutions offer students and faculty members a symbiotic relationship to explore new discoveries and opportunities, says David Simpson, associate professor of physics and engineering technology and the coordinator of the health physics program.

May 2011 health physics graduate Jason Vognetz received a full travel grant from the Health Physics Society to attend their annual meeting in West Palm Beach, Fla., in June to discuss his senior-year research done in collaboration with Geisinger Medical Center’s radiation therapy department.

His research, Heart Shift and Reduction in Heart Dose to Left-Breast Cancer Patients Using the Deep Inspiration Breathing Holding Technique, studied patients undergoing radiation therapy and found that having them hold their breath to shift the position of the heart lowered potentially harmful radiation to the organs.

“Geisinger has the facilities to do a great deal of research, but they lack the time and manpower to publish it, and our students need somewhere beyond what we have available to do their research,” Simpson says. “It’s a very good, mutually beneficial relationship.”

And that relationship pays off, he says. Many new Geisinger health physics hires are BU graduates, as are new employees at the Pennsylvania Department of Environmental Protection’s Bureau of Radiation Protection, where Simpson and his colleague, fellow physics professor Naz Fallahian, work closely with director Dave Allard. There is a nationwide shortage of trained health physicists, and BU’s recognition by leading employers and graduate schools, such as Texas A&M, Idaho State and Oregon State Universities, offers an excellent market to graduates.

“We have many connections in local, state, power and medical fields, and our students get hired at all of them,” says Simpson. “Health physics covers several kinds of science, allowing us to work with biology, chemistry and nursing professors and students in the college. We’re always looking for new combined projects.”

The duo conduct their own research as well, and made headlines in March when they found traces of radioactive Iodine-131 in

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The training consists of three nights of instruction led by a Nuclear Emergency Planner from the PPL Susquehanna Nuclear Power Station and covers topics such as proper radiological survey of individuals, types of radiation, radiation instrumentation and labeling of radioactive shipments. The students, who are all volunteers, would respond to the Columbia Montour Vo-Tech School to assist in monitoring emergency workers in the event of a radiological incident at the power plant, but may also be called upon to assist in monitoring in the event of a motor vehicle accident in the county involving radioactive material.

This program, which began in 2007, has been conducted five times for Bloomsburg University students, and has had more than 30 students participate.


BU students train for radiation response

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rainwater samples in nearby Danville, carried by atmospheric patterns from the Fukushima reactor in Japan. The sensitivity of their top-of-the-line radiation detection equipment allowed them to pick up on very subtle changes in radioactivity levels, Simpson says.

“Iodine-131 isn’t particularly rare or dangerous and only has a half-life of eight days, but it wouldn’t normally show up around here,” he says. Before coming to BU, he worked at a nuclear plant of the same type as the Fukushima reactor, and has given presentations at a PPL meeting for federal, state and local emergency response agencies, Geisinger and the Danville Rotary Club describing the Fukushima reactors accidents and their consequences.

Simpson and Fallahian are also conducted work sampling water in Fishing Creek to assess radiation levels in the Marcellus Shale drilling area, which are potentially harmful to the environment and water supplies, and are collaborating with BU’s biology department to study the effects of irradiating skin cells.

Profile:
Linda Cook, Nursing

Linda Cook has taught psychiatric/mental health nursing to senior nursing students since joining Bloomsburg University in August 1998. Certified as a psychiatric/mental health nurse by the American Nurses’ Credentialing Center, Cook provides classroom theory and clinical instruction to students in the acute treatment setting at Geisinger Medical Center, the long-term care setting at Danville State Hospital and outpatient settings, such as the partial hospitalization program offered by Community Services Group in Sunbury. She also teaches addictions nursing when students affiliate at the White Deer Run Treatment Facility, Allenwood, as well as online graduate-level nursing courses in research and family health nursing.

Cook has served as the project director of Bloomsburg University’s Campus Suicide Prevention Program since receiving a grant from the U.S. Department of Health and Human Services, Substance Abuse and Mental Health Administration, in September 2006. She regularly provides Campus Connect Suicide Prevention Gatekeeper trainings through the nursing department’s Wellness Center and online via the Bloomsburg Online Learning and Teaching program (BOLT) and has trained several thousand students, faculty and staff on depression in college students and suicide prevention since the program began. Cook now is working with the Central Susquehanna Valley Mental Health Association to extend suicide prevention efforts into the local community, with a particular focus on teens and young adults.

She has presented nationally and at the state and regional levels on suicide prevention. She also has published articles in the Journal of Psychosocial Nursing and Mental Health Services related to mental health issues, including ways to address the mental health needs of college students, development of programs for faith-based organizations to prevent child abuse and substance abuse issues in women.