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Regional

Geography is not just for memorizing capitals

Aldemaro Romero College Talk

Geography, these days, is not about memorizing country capitals. In fact, geographers are using some of the most advanced computational and space technologies available.

One of those is Randy Pearson, an American geographer who was born in Frankfurt, Germany. Although college was never really in his plans (he thought that was only for rich people), Pearson obtained his bachelor's and master's degrees in geology and geoscience from Murray State University in Kentucky and a doctorate in physical geography from Indiana State University.

Today, he is a professor in the department of geography at Southern Illinois University Edwardsville, where he works not only with other geographers but also with many other professionals.

"As a geographer, I work with agronomists to monitor yields. I work with school districts looking at the placement of those schools and the transportation of students to those schools. Literally, it is any spatial issue that one has," Pearson explained. "That is what geography deals with — space and time."

In fact, Pearson began his career at NASA.

"I started down at Stennis Space Center (in Mississippi) and I worked for a group called the Space Remote Sensing Center," Pearson said. "We were a commercial center for the development of applications, and our task was to look at the technologies that NASA had and try to take them and integrate those

with commercial companies."

One of the technologies Pearson uses in his work is Geographic Information Systems (GIS), a technology that combines map-making with statistical analysis.

"It is being used by commercial companies all the way from McDonald's to Hardees to Monsanto to Frito Lay to International Paper, to figure out where to sell their products," Pearson said. "Even non-profits and charities are using it. I had a church contacting me about three or four months ago wanting to understand its patronage within the area that it is located."

Another technology used by Pearson and his colleagues is called remote sensing.

"One of the things a lot of people don't realize is that we can measure wavelengths of light beyond human vision," Pearson said. "For instance, when we worked with an agricultural company in the Midwest, we wanted to look at all the acreage of corn and soybean in great detail. What we did is that we actually looked at satellite pictures with different wavebands, and we were able to process it with computers to actually segment the landscape into the important levels of agriculture that they were interested in. We were able to show them, within these



Shan Lu/SIU

Geographer Randy Pearson compares some computerized maps.

levels of agriculture, the stressed areas and the healthy areas."

But these cutting edge technologies also have applications in the military.

"When I first got into this back in the late '70s, early '80s, the unit of a measurement was about the size of an acre. If we could separate space from water, trees from grass, and grass from base soil, we were high-fiving each other," Pearson said, describing the early days of the technology. "Now the technology is such that we can buy imagery

down to about a foot, or a foot and a half."

Pearson explained that the military has even more remarkable capabilities.

"As a matter of fact, I saw some things recently where they showed an image — a three-dimensional image by the way — that because of how they had processed it, you could see trees, you could see the billowing nature of the trees, you could see the buildings, and you could see the grass," Pearson said. "And so they showed an image before and after somebody had walked across the

grass of his yard and you could see their footprints. They were able to measure the distinct differences just in the bent grass that they were walking across. It was incredible."

Despite these exciting technologies, geography as a subject does not seem to be particularly interesting to today's students.

"There is a huge disconnect between what is being taught at the high school level and what we expect of students when they enter college," Pearson explained.

"Most students don't have a clue what geography is. They think it is names and places, and it is everything but that. You can go look up in a book or on a map a name and a place, but it is understanding how things work spatially."

Pearson is trying to change this misconception about geography.

"We are actually working very closely with (Edwardsville) District 7 in Illinois to implement an AP (Advanced Placement) human geography course in which we are taking the technology into the school to help them teach students, so that they are prepared once they hit college," he said. "We are taking a very pro-active approach on this."

Aldemaro Romero is the Dean of the College of Arts and Sciences at Southern Illinois University Edwardsville. His show, "Segue," can be heard every Sunday morning at 9 a.m. on WSIE, 88.7 FM. He can be reached at College_Arts_Sciences@siue.edu.