Stepping into Wichita State University professor Victor Isakov's simple office, you wouldn't expect that any research involving U.S. national security would be under way. But there is.

Isakov, a WSU mathematics and statistics professor for nearly 20 years, recently received a 3-year, $450,000 grant from the National Geospatial Agency to conduct research for the Department of Homeland Security.

"It's a good opportunity for us, for WSU," Isakov said. "It's big, national, and it's good for our students."

Information will be provided to the DHS to help determine the location and shape of underground cavities/passageways.

The research is part of an effort to investigate, measure and develop approaches and algorithms — a sequence of instructions typically used for computations and data processing — to interpret the potential of Earth's gravity and magnetic fields.

The grant was just one of several NGA awards to support research in selected areas of geospatial science that are considered critical to U.S. national security and industry. The NGA is a part of the Homeland Security Department. This is Isakov's first grant from the NGA, but he has received nine grants in past years, all from the National Science Foundation.

It was Isakov's project "Innovative Mathematical Methods for Gravimetric and Magnetometric Prospecting" that resulted in the grant. The proposal was submitted last year into a highly competitive national pool.

In addition to initial funding, as many as two one-year extensions are possible with a value of up to $150,000 a year. Isakov said the research is for three to five years, depending on NGA approval.

Assisting in the research are three WSU mathematics and statistics professors: Alexandre Boukhgueim, Alan Elcrat and Thomas DeLillo; and one professor from Michigan State University. A WSU graduate student will also be selected to join the team's effort.

A photograph is available at :http://www.wichita.edu/thisis/wsunews/newsrelease/highres/?pid=1331

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