Mapping an innovative course

Faculty outreach strengthens Virginia high schoolers BY MARTHA BELL GRAHAM

Reaching beyond the classroom is a concept that Bob Kolvoord embraces.

Kolvoord, interim dean of the College of Integrated Science and Engineering, co-created the Geospatial Semester, a class that combines the best of Madison's hands-on approach to learning with cutting-edge technology to teach Virginia's high-school seniors about the innovative field of geospatial analysis.

Geospatial analysis applies a variety of mapping techniques and technologies to the complex relationships between events, populations and the environment at a variety of geographic scales.

During a semester that melds highly inventive and technical training with classroom and hands-on learning, Kolvoord and two JMU colleagues work closely with high-school seniors and their local teachers, who teach the senior-level course in 18 high schools throughout Virginia.

The course is "a way to introduce technology and concepts that are not usually taught at the high-school level," Kolvoord says.

Students enrolled in the Geospatial Semester not only learn the technology, but they also use it. Working in teams, students employ GIS technologies to solve real-world projects for local businesses, governmental agencies or nongovernmental organizations such as the Nature Conservancy. Students have created evacuation plans for a small city, analyzed crime patterns and studied land conservation.

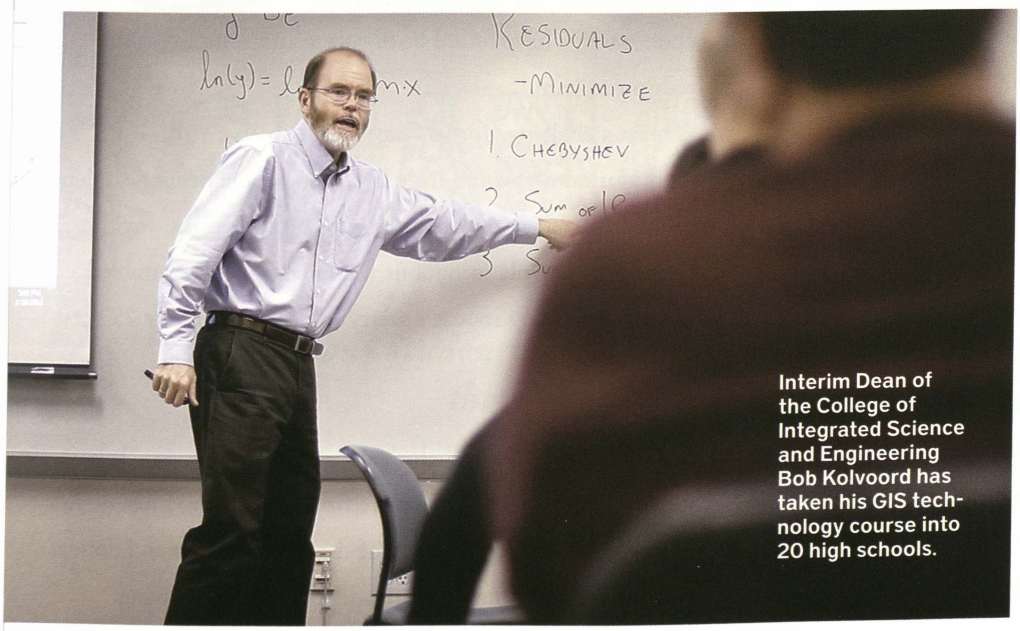
JMU faculty outreach in GIS technology studies has reached more than 2,000 high-school students and 30 high-school teachers.

"Too often," Kolvoord says, "students were taking AP courses and coming to JMU unable to use what they had learned. The Geospatial Semester solves that."

Like AP and IB courses, enrolled students can earn college credit at JMU. Unlike those courses, however, students do not face standardized exams but are evaluated during an oral midterm, a final project presentation and close project mentoring, Kolvoord says.

The advantage of Geospatial Semester for students is obvious; less obvious is the opportunity for JMU to attract excellent students. According to Kolvoord, the program has become a "fertile recruiting tool." Quite a few students have chosen to come to Madison after taking the course, he notes.

In the program's eight years, more than 2,000 high-school students have taken the class and more than 30 high-school teachers have taught it. This year, 550 students are enrolled, and for the first time the program has moved beyond Virginia's borders. A school on Long Island, N.Y., is participating in the Geospatial Semester.



Interim Dean of the College of Integrated Science and Engineering Bob Kolvoord has taken his GIS technology course into 20 high schools.

KOLVOORD PHOTOGRAPH BY CHRIS MEYERS '01

Engaging one child at a time improves power of community

The longtime relationship between JMU and the Harrisonburg Big Brothers Big Sisters organization was strengthened in 2011 when JMU researchers and agency staff started collaborating on a groundbreaking research study funded by a $438,229 federal grant from the U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention.

According to 2011 assessment data, a majority of children served by the Big Brothers Big Sisters program reaped these benefits:

- **83%** improved academic performance
- **88%** increased self-confidence
- **81%** were able to make better decisions
- **84%** had better relationships with family and peers
- **76%** improved classroom behavior

Volunteerism and civic engagement are ingrained in the culture of Madison and even a requirement in some academic majors. "By creating a national model for an engaged university, we are creating the best learning environment both in and outside the classroom," says JMU President Jonathan R. Alger. "Our students and faculty members will be engaged with ideas and with the world around them. The JMU learning community is committed to the idea that all humans are interconnected, and we have the power and potential to solve any issue. The students who volunteer for Big Brothers Big Sisters prove that engagement makes a difference in their lives and in the world around them."