Southeastern alum gives insight into engineering careers

A group of Southeastern Illinois College students received, among many other things, a pep talk on the importance of calculus from Dr. Robert Holmes, an SIC alum who is a hydrologist and flood specialist for the United States Geological Survey (USGS).

"I still use calculus to this day. I hear many students who think they’re never going to have to use that information after they graduate," Holmes said, instructing the students, “Don’t treat calculus as something you’re just trying to ‘get through.’ You’re learning how to critically think, to dissect a problem. If you look at it as a whole, it may overwhelming you, but if you break it down, you can solve it.”

Holmes – who also serves as an adjunct professor for the University of Illinois and the Missouri University for Science and Technology – was visiting with several SIC students on November 13 over brunch in the school’s “Grad Talk” series, which attracts SIC alumni to speak about their careers and educational experiences.

After attending SIC, Holmes earned Bachelor’s and Master’s Degrees from the University of Missouri-Rolla, and later, a Ph.D. in Civil and Environmental Engineering from the University of Illinois at Urbana-Champaign.

While at Rolla, Holmes participated in a USGS internship, and he said, “I’m still with them, 22 years later.” He served as the state director of the USGS in Illinois from 1998-2007, but took on his current position to go back into the research area of his field.

Dr. Robert Holmes (top right) speaks about careers in engineering to SIC students as SIC instructor Kim Martin looks on. An SIC alum himself, Holmes is a hydrologist and flood specialist for the United States Geological Survey.

Dr. Holmes presented a slide show detailing some past projects, and a variety of topics that engineering students might find themselves studying in a few years. They included a federal case involving a company that had dumped PCBs into a river, in which he was charged with finding out how far those pollutants traveled. In cracking that case, Holmes noted, “I didn’t have a lot of experience at the time with chemical transport modeling. It really stretched me, but we built the model from scratch, with governing equations, and were able to work through that problem.”

Holmes also did work studying the 1993 Mississippi River flood, which caused devastating damage throughout the upper Midwest, including the St. Louis area. Holmes studied levee breaks and damages from that event in order to learn “what we can do better, what should flood policy be, and how to inject science into existing public policy.”

Noting the current economic downturn and the ways in which some people may come out of it better than others, Holmes stressed flexibility and a good, interpersonal attitude as other keys to success.

“I believe you should strive for a position, a career, that is something you really enjoy. I’ve built and designed a lot of material things in my career, and over time, those things will deteriorate. But the causes you get involved with, the people you meet and interact with, are the things that truly last.”