Distinguished Speaker Seminar

In light of the growing importance of the interdisciplinary field of cyber-enabled discovery and innovation, the Institute for CyberScience and the Center for Brain, Behavior, and Cognition are sponsoring this speaker series. Prominent experts are scheduled to present talks on campus throughout the academic year. The goal is to explore the frontiers of this intrinsically interdisciplinary research area and to bring the diverse community of Penn State researchers together around new and emergent themes.

Advancing the digital revolution in science education: Examples from computer-based instruction of human brain anatomy

Dr. John R. Pani, Ph.D., Professor of Psychological and Brain Sciences; Director, Laboratory for Cognitive Science and Instruction, Dept. of Psychological and Brain Sciences, University of Louisville, USA

Date: Nov. 14, 2014
Time: 12:00-1:15pm
Location: 127, Moore Building

Abstract: As soon as graphics appeared on computer screens, the future benefits of simulation and virtual worlds for education were praised. But while newspapers are now read online, much scholarship proceeds through use of databases and search engines, and most professional correspondence is through email, the value of computation and digital graphics is relatively modest in the realm of education. I will suggest in this talk, however, that there are areas of education where computer technology will indeed be revolutionary. Neuroanatomy, for example, is an area in which ready access to graphical illustration is essential, and students must engage in many hours of self-study in a large and complex domain. In such a discipline, computer-based instruction will be invaluable. Drawing on our own research, I will outline how development of computer-based learning can aid instruction in this discipline, discuss changing technologies that provide new opportunities, and suggest how cognitive scientists can guide a productive future in this area.

Biography: Dr. Pani is currently Professor of Psychological and Brain Sciences at the University of Louisville, where he directs the Laboratory for Cognitive Science and Instruction. He has a background in the study of spatial cognition, where he paid particular attention to the boundaries between spatial problems that people understand intuitively and ones that require unique abilities or experience to solve. This work moved in more recent years to problems of spatial learning and to the question of how people can learn to master initially challenging spatial information. His current work applies these interests to the development of computer-based instruction in challenging areas of science education, with a particular focus on the development of 3D computer graphics in computer-based learning of neuroanatomy and the practice of microscopy in histology. Dr. Pani received his Ph.D. from the University of Illinois, Urbana-Champaign, and he did post-doctoral training through an NIH NRSA fellowship at Harvard University. His work has been funded by NIH and NSF, and it is published in a variety of recognized journals in cognitive science, psychology, and STEM education.

The Institute for CyberScience is a part of the Office of the Vice President for Research and The Center for Brain, Behavior, and Cognition is supported by the Huck Institutes of the Life Sciences and Social Science Research Institute