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**RAMAPO COLLEGE PROFESSOR AWARDED GRANT TO ADVANCE
COMPUTER TECHNOLOGY**

(Mahwah) – Dr. Amruth Kumar, a professor of computer science and co-founder of Ramapo College’s bioinformatics program, is co-principal investigator on a three-year \$220,000 grant awarded by the National Science Foundation. The title of the project is “Adaptive Explanatory Visualization for Learning Programming Concepts.” The project will be carried out jointly with Dr. Peter Brusilovsky, a noted researcher in the field of intelligent tutoring systems who is affiliated with the University of Pittsburgh.

Brusilovsky has developed adaptive visualization techniques for computer programming concepts. Kumar explains that visualization is the study of graphically viewing a process or an object for the purpose of analyzing or explaining it. “A system is said to be adaptive if it changes based on the needs of the user, such as the learning needs of a student,” says Kumar. “Hence, adaptive visualization.”

The Ramapo College professor has developed algorithms for automatic generation of text explanations of processes such as the execution of computer programs. “The system I have been developing is capable of explaining the execution of a computer program, even though the system has not been ‘told’ how the program executes,” he says.

Throughout the research project, Kumar and Brusilovsky will be adopting each other’s technology (explanation generation and visualization) to develop two independent systems that combine both. They will then evaluate the effectiveness of the resulting systems. Kumar says, “The results of this research will help researchers build more effective tutors--software that will help the user learn anything from computer programming to aircraft maintenance.”

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Kumar is a board member of the Consortium for Computing in Small Colleges: Eastern/Northeastern Regions, and the recipient of a National Science Foundation Grants in 2000 and 2003.

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