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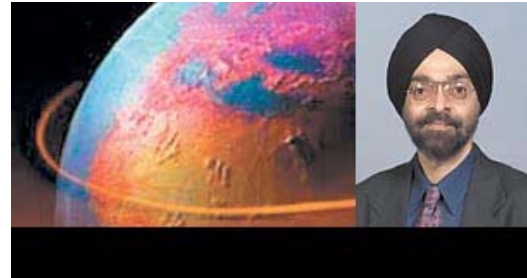
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Researcher of the Year

DESTINATION: COLLABORATION

The 2003 Ball State University Researcher of the Year is distinguished not only by his investigations in graph theory and graph algorithms, but also by his productive international research activity. **Jay Bagga**, professor in the Department of Computer Science, has participated in collaborative inquiry in countries as far flung as Japan, Great Britain, India, and the Philippines.



As a Fulbright Scholar to Zimbabwe in 2000, Bagga drew on his years of administrative experience as director of graduate programs in Ball State's computer science department to develop the curriculum for a new computer science graduate program at the University of Zimbabwe. While in Zimbabwe, he also taught undergraduate and graduate courses, advised student research projects, and organized two week-long international conferences on issues in computer science and graph theory. "I was involved in the educational process on many fronts, which was very gratifying," Bagga says.

Especially fulfilling for Bagga was time spent collaborating with scholars in graph theory—research efforts that are used to improve the efficiency of software applications.



His research in graph theory as applied to network integrity has led to the discovery of efficient algorithms for creating communication and other types of networks that are less susceptible to disruption. Bagga's work in formal methods for improving software reliability has been applied in industry to produce highly dependable and error-free software that controls automated machines.

"I love to do collaborative research," he says. "I wanted an ongoing collaboration with professionals from different countries, and that's the goal of Fulbright, too—to promote the exchange of ideas."

Since his return from Zimbabwe in 2000, Bagga has focused his research on formal methods in software development. He also has continued his mission to promote international exchange of knowledge, adding Macau, Denmark, and Hong Kong to the list of countries he has visited for conferences and research presentations. During spring 2003, he acted as program chair for an international information technology conference in Nepal, where he organized workshops and arranged for international experts from Nepal and India to make presentations on formal methods.

Bagga is working to establish an exchange program with the United Nations University's International Institute for Software. As a part of the program, computer science teachers from developing nations would visit Ball State University for training in computer science teaching and research.

Now chairperson of the Department of Computer Science, Bagga still finds time to pursue his research agenda and to maintain his advisory relationship with the University of Zimbabwe. He also serves as an external reviewer for the Fulbright program in Zimbabwe, evaluating and providing feedback for potential scholars to follow.