Information Technology Resources Bolster IUPUI Research

Researchers across the disciplines on the IUPUI campus have access to an advanced cyberinfrastructure that accelerates research, supports scholarly collaboration and promotes the creation and dissemination of artistic works. Access to constantly refreshed IT resources is necessary to attract and retain the best faculty, students, and researchers. The university’s investment in the development and deployment of a national research cyberinfrastructure contributes to US research competitiveness and bolsters Indiana’s economy.

The university research cyberinfrastructure includes the supercomputer clusters Big Red, Quarry, and the Research Database Complex. Through multi-year efforts to build a comprehensive, distributed infrastructure for scientific research, investigators can access remote computing power, data management and storage facilities, high-resolution visualization environments, scientific instruments, large datasets, and computing portals and toolkits. The Data Capacitor, a high-speed, high-bandwidth storage system, allows sharing of large amounts of data with researchers at multiple remote sites. The university’s expertise in network research, planning, and operations continues to enlarge the international framework for scholarly communication through such recent initiatives as the TransPAC3 connection to Asia and the ACE (America Connects to Europe) network.

IUPUI researchers also have access to resources and specialized consulting services for virtual and immersive reality, high-end computer graphics, and visual telecollaboration; computational biology; biomedical applications; and digital library development. In addition, the Pervasive Technology Institute at Indiana University, with its Digital Science Center, Data to Insight Center, and Center for Applied Cybersecurity Research, develops innovative information technology to advance research, education, and industry. The Institute brings together researchers and technologists, from a range of disciplines and organizations within the university, with external partners.

Navigating the Aural Web

Dr. Davide Bolchini, assistant professor of human-computer interaction at the School of Informatics, seeks to make the Web a more accessible environment for users. With funding from the National Science Foundation’s highly-competitive Human-Centered Computing Program, Bolchini is working on ways to identify and evaluate strategies to help blind and visually-impaired users better navigate the Web using their auditory senses. The three-year project, “Navigating the Aural Web,” hopes to improve upon existing audio-only web navigation designs and applications for both visually-impaired and sighted users. Design and evaluation will directly involve students from the Indiana School for the Blind and Visually Impaired using screen readers as well as sighted participants using mobile devices. The mobile navigation solutions investigated in the project may prove to be transferable to other situations such as walking, where users must listen to content, rather than read it on a screen.