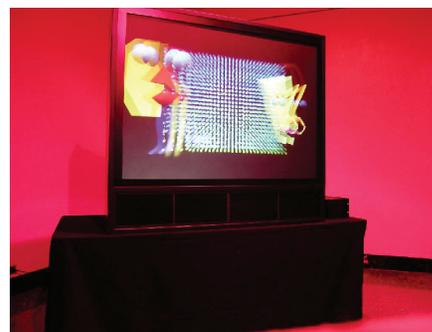**John N. Huffman**
Principal Developer

Eric A. Wernert, Ph.D.,
Co-Developer

Advanced Visualization Lab
University Information Technology Services

John C. Huffman, Ph.D.,
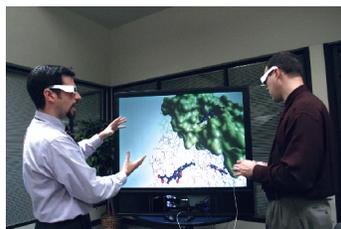Co-Developer, Department of Chemistry

A John-e-Box displaying an interactive VR art piece at the Indiana University Art Museum

The John-e-Box
## Accessible visualization and virtual reality

Over the past two decades, visualization and virtual reality technologies have had broad and significant impacts on Indiana University's missions in research, education, and creative activity. These technologies have been critical in helping scientists to analyze complex data sets and collaborate with colleagues; in helping students to experience historical spaces and understand important scientific phenomena; and in helping artists and designers communicate their innovative concepts and creative experiences.

Over the past five years, Indiana University's Advanced Visualization Lab (AVL), part of University Information Technology Services (UITS), has been working to harness the technological advances that have revolutionized the gaming, entertainment, and home theater industries in order to deliver advanced visualization capabilities to a broader audience across the University and the State. The John-e-Box is one significant and innovative realization of these efforts.

The John-e-Box being used for collaborative molecular visualization

The John-e-Box is a portable, large-format, 3D stereo display system developed by the AVL in conjunction with the IU Bloomington Department of Chemistry. It leverages advances in commodity-grade components, including small, bright, digital projectors; powerful PC processors and graphics cards; and flexible, open source software tools. Large-format, 3D stereo displays are crucial for fully engaging our natural sensory capabilities, for communicating complex spatial relationships, and for providing a sense of scale and environmental presence.
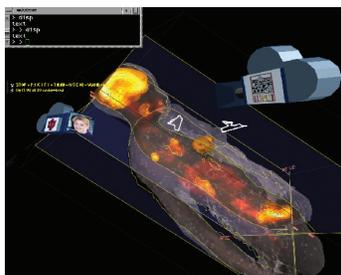
A screenshot of a tele-collaborative medical application made more accessible by the John-e-Box

The John-e-Box is a key component of IU's plan to deliver advanced visualization capabilities directly into the labs, classrooms, and studios of the University's researchers, educators, and artists. It has been licensed to and commercialized by Indianapolis-based CAE-net, Inc., and an initial deployment of nine John-e-Box systems is underway on the IU Bloomington, IUPUI, IU Northwest, and IU East campuses. This work is supported in part by a National Science Foundation grant directed by UITS and number of key academic departments, including the Department of Computer Science and the Department of Chemistry. The Indianapolis Museum of Art is one of the first external deployments of the John-e-Box.

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