

Biomedical and Health Informatics Series

Tuesday, October 31st, Room RR 134, 12:00-1:00

James F. Brinkley, MD, PhD

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“Managing, Integrating and Visualizing Biomedical Research Data”

The primary problem addressed in this talk is integration of distributed and heterogeneous biomedical research data. The work in our group is guided by several propositions: 1) that the physical structure of the body is a rational basis for organizing and integrating large amounts of biomedical information, including both data and computational models, 2) that the evolving structure of the Internet, which increasingly seems to resemble the structure of the human brain, is a rational basis for developing the information systems that manage and access these data, and 3) that the information systems we develop should be designed from the “top-down” to accommodate data integration across diverse resources, but implemented from the “bottom-up” in order to accommodate one of the primary expressed needs of biomedical researchers, namely to manage their own increasingly complex and voluminous data. The application of these principles will be described for the management and integration of human brain mapping data as part of the national Human Brain Project, as will research issues that need to be addressed in order to scale these and other efforts towards a global biomedical information infrastructure.

Dr Brinkley has been involved in biomedical informatics for over 30 years. He received a BA in math from Amherst College, an MD from the University of Washington, and a PhD in medical computer engineering from Stanford University. His initial work was in 3-D reconstruction of anatomical objects from ultrasound using spatial knowledge of anatomy. These methods were then applied to 3-D protein structure determination from NMR. On returning to the UW he applied these methods to 3-D brain reconstruction from MRI, as part of the national Human Brain Project. He coined the term, “Structural informatics” in 1991, and together with Cornelius Rosse, co-founded the UW Structural Informatics Group, which he now directs. His current primary interest is in applying a structural information framework to the problems of data and computational model management, integration and visualization. He is a fellow of the American College of Medical Informatics, and has served on the editorial boards of the Journal of the American Medical Informatics Association, the Journal of Biomedical Informatics, and Methods of Information in Medicine. He has also served on several NIH and other advisory boards and study sections.

The Biomedical and Health Informatics lecture series covers current topics and developments in Biomedical and Health Informatics. Presenters include faculty, students, researchers and developers from the University of Washington, other academic institutions, government, and industry (locally and nationally). The intended audience is the broader University of Washington and Seattle area community with an interest in BHI as well as BHI faculty and students.

Series Website: <http://courses.washington.edu/mebi590/>