Laboratory for Advanced Biomedical Informatics

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Laboratory for Advanced Biomedical Informatics (LABi) represents the foundation of biomedical informatics activities at LSUS. LABi provides an academic and research environment where faculty, researchers, and clinicians as well as undergraduate and graduate students from a wide range of fields collaborate on solving real-life problems.

In LABi, the computer scientists learn the ins and outs of biology and chemistry, while the life scientists learn the intricacies of computer science. The results of this cross-pollination of expertise are sophisticated and biologically relevant tools, techniques and applications.

labi.lsus.edu
The National Institutes of Health’s Biomedical Information Science and Technology Initiative Consortium defines biomedical informatics as “research, development or application of computational tools and approaches for expanding the use of biological, medical, behavioral or health data.”

As biomedical informatics, experts, we at the Laboratory for Advanced Biomedical Informatics (LABi) are making use of powerful in-house as well as Louisiana Optical Network Initiative (LONI) computers consisting of thousands of processor cores to help manage and analyze biological, chemical and medical processes in the interest of improving medicine and assisting with diagnostic techniques to therapeutics and patient information. Our stock in trade are databases: gene and protein sequence data, structure/function information, patient databases, and a wide assortment of data collections from biological research.

Our mission is to facilitate, promote, and harness interdisciplinary research related to biomedical informatics, data mining, information storage and retrieval, visualization, and high-performance computing, just to name a few.

The ultimate goal of biomedical informatics is to turn these complex and diverse data sets into useful and valuable knowledge that enhances the understanding, prevention, and treatment of a variety of diseases—from cancer to diabetes as well as Alzheimer’s and Parkinson’s.

LABi is located in the Department of Computer Science in the newly renovated Technology Center, a home to major research laboratories.

Our research revolves around collaborative projects with Louisiana State University Health Sciences Center, Feist-Weiller Cancer Center, University of Texas MD Anderson Cancer Center, LSU and Center for Computation and Technology, University of Louisiana at Monroe, United States Army Institute for Surgical Research, University of Massachusetts, Medical University in Graz, Austria, and Osaka University, Japan and ranges from Department of Defense, National Science Foundation and National Institutes of Health funded projects such as gene expression analysis for protein regulation in breast and skin cancer, image analysis, and development of novel algorithms, applications and system integration for the analysis of Next Generation Sequencing data.