

The Cancer Biomedical Informatics Grid (caBIG): Enabling the Patient-centric Molecular Medicine Revolution

Prof. Kenneth H. Buetow, USA

Dr. Buetow received a B.A. in BioAlogy from Indiana University in 1980, and a Ph.D. (1985) in Human Genetics from the University of Pittsburgh. From 1986 to 1998 Dr. Buetow was at the Fox Chase Cancer Center in Philadelphia, where his group generated and electronically distributed the human genetic map. Dr. Buetow serves multiple roles at the National Cancer Institute (NCI). He is NCI Associate Director for Bioinformatics and Information Technology, Director of the NCI Center for Bioinformatics (NCICB) and Chief of the Laboratory of Population Genetics (LPG). His research interests include the application of genetics and genomics tools to understand the genetic basis of complex traits, specifically human cancer.

The NCI is one of the National Institutes of Health and is a part of Department of Health and Human Services. The NCI is responsible for leading the nation's cancer efforts. As NCI Associate Director, Dr. Buetow is responsible for coordinating bioinformatics and information technology efforts throughout the NCI. The NCICB coordinates and deploys informatics in support of NCI research initiatives. Its goal is to maximize interoperability and integration of NCI research and its related information. The Center participates in the evaluation and prioritization of the NCI's bioinformatics research portfolio, conducts or facilitates research that is required to address the NCICB's mission, serves as the locus for strategic planning to address the NCI's expanding research initiative's informatics needs, establishes information technology standards (both within and outside of NCI), and communicates, coordinates, or establishes information exchange standards.

The LPG conducts human genetic and genomics research, both at the bench and using informatics tool. The major goal of this research program is to apply and extend human genetic analysis methods and resources to better understand the genetics of complex phenotypes, specifically human cancer.

Dr. Buetow has spearheaded efforts of the Genetic Annotation Initiative (GAI), an attempt to identify variant forms of the cancer genes identified through the NCI Cancer Genome Anatomy Project (CGAP). He is particularly interested in genetic variations that make individuals more susceptible to liver, lung, prostate, breast, and ovarian cancer. His group combines computational tools with bench-top laboratory findings to understand how genes and environment interact to increase cancer risk.