

Abstract No. Chan0124

Structural Genomics: A Pipeline for Providing Structures for the Biologist

M. Chance, A. Bresnick (AECOM), S. Burley (Rockefeller U.), J. Jiang (BNL), C. Lima (Weill Med. Coll. Of Cornell), A. Sali (Rockefeller U.), S. Almo (AECOM), J. Bonanno (Rockefeller U.), J. Buglino (Weill Med. Coll. Of Cornell) et al.

Beamline(s): X9A

Progress in understanding the organization and sequences of genes in model organisms and humans is rapidly accelerating. Although genome sequences from prokaryotes have been available for some time, only recently have the genome sequences of several eukaryotic organisms been reported, including *Saccharomyces cerevisiae*, *Caenorhabditis elegans*, *Drosophila melanogaster*, *Arabidopsis thaliana*, and humans. A logical continuation of this line of scientific inquiry is to understand the structure and function of all genes in simple and complex organisms, including the pathways leading to the organization and biochemical function of macromolecular assemblies, organelles, cells, organs, and whole life forms. Such investigations have been variously called integrative or systems biology and -omics or high-throughput biology. These studies have blossomed because of advances in technologies that allow highly parallel examination of multiple genes and gene products as well as a vision of biology that is not purely reductionist. Although a unified understanding of biological organisms is still far in the future, new high-throughput biological approaches are having a drastic impact on the scientific mainstream.