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Proposed title of talk for Workshop

Previous Funding Support for Computational Biology From the REF Center of Protein Structure, Function and Design.

The objectives of the Center of Protein Structure, Function and Design (CPSFD) remain the same as indicated for the past ten years. Genetic, molecular biological and protein chemical techniques are necessary in modern biotechnology to modify or improve protein utilization in commercial processes, in development of new products in agriculture and in biomedicine. To understand the basic science of how proteins function so that they can be modified to perform more efficiently in industrial processes is of paramount importance. For this to occur, it is essential to develop at MSU the expertise and the chemical and physical procedures required for the analyses of protein structure. Thus, acquisition of the modern and sophisticated instrumentation used for protein separation, purification and analysis is necessary. For the past ten years, MSU has been developing a strong base of instrumentation and recruiting new faculty expert in the design and analysis of proteins having high commercial potential. The establishment of analytical facilities at MSU for analysis of proteins has been progressing very well with support from REF funds. One facility, The Macromolecular Structure Sequencing and Synthesis Facility, has serviced investigators from many national and foreign universities as well as state and federal institutes (up to 600 researchers) and can be ranked as one of the three top facilities in the U.S.A. The availability of analytical facilities and faculty expertise, has also spurred expansion and modernization of the MSU teaching programs in protein chemistry and modeling, molecular biology and *in vitro* mutageneses procedures to analyze protein structure, function and conformation. Modest funding has been provided by the CPFSD for support of computational biology in several ways. It has been used for set-up funds for new faculty expert in protein folding and computational biology. CPFSD has provided computational biology grants to faculty in the form of mini-grants, has supported in part, the establishment of a Campus Computer Facility in the Biochemistry Department which is utilized in a Biochemistry graduate course in computer-based modeling and analysis of DNA and protein sequences and structures. With a greater development of programs and fields of genomics, proteomics, and other bioinformatic areas there is no question greater support for a computational biology program in research at MSU is of great necessity. A strong input in the biological area should come from individuals strong in the area of genomics and proteomics. Courses in the areas of genomics, proteomics and bioinformatics also should be planned and established.