

EXECUTIVE SUMMARY [NON-CONFIDENTIAL, NON-TECHNICAL ABSTRACT FOR PUBLIC INFORMATION OR PROGRAM PROMOTION]: State the application's broad, long-term objectives and specific aims, making reference to the potential public benefits of the project relevant to California. Do not include proprietary or confidential information. This may be distributed before the funding decision has been finalized.

We propose to incorporate the protein database searching programs, Turbo Sequest and Mascot, into the software utilized in the mass spectrometry facility at San Francisco State University (SFSU). Mass spectrometry (MS) in combination with these powerful database searching programs will significantly enhance our capacity to assist faculty and students in their proteomics research. The Turbo Sequest and Mascot programs will help us identify proteins in various biological systems and in disease vs. normal tissues. In addition, these programs will enable us to identify protein modifications that can dramatically alter their activities. Such studies will lead to a better understanding of protein structure and function, key for designing new drugs for therapeutic application. The availability of the MS core facility at SFSU will enhance faculty research and provide training for students that will increase their opportunities for admission into doctoral programs or employment with biotechnology companies.