

EXECUTIVE SUMMARY [NON-CONFIDENTIAL, NON-TECHNICAL ABSTRACT FOR PUBLIC INFORMATION OR PROGRAM PROMOTION]: State in layman's terms 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.

Inductively Coupled Plasma Mass Spectroscopy is a relatively new but rapidly growing, multi-elemental analysis technique that is becoming increasingly important in biotechnology, nanotechnology, biochemistry and analytical chemistry. This workshop aims to provide CSU faculty and students hands on, practical experience on the instrumentation and some of its many applications in the life and physical sciences. Attendees will be trained in the theoretical and practical aspects of ICP-MS analysis using two different ICP-MS instruments that have been funded through National Science Foundation Major Instrumentation Grants; a Perkin Elmer 6100DRC and a GBC Scientific orthogonal TOF-ICP-MS. These grants, which total more than \$520,000, include \$100,000 cost share from CSULB indicating substantial institutional commitment to the development of this technology as an academic resource and its use for research and student training. In addition to introducing the basic concepts behind conventional sample preparation and quantitative multi-elemental analysis, the workshop will focus on the use of coupled front-end, introduction devices such as laser ablation systems, flow injection preparative devices and multi-dimensional HPLC for specific biotechnological applications involving the analysis of gels, sectioned cells and complex cytosolic matrices. These technologies do not currently exist elsewhere in the CSU or UC system. Educating faculty and students on the virtues and limitations of this emergent technology will increase both its usage for research and its incorporation within the curriculum. Students exposed to this cutting edge technology have been shown to have a distinct competitive advantage over the general workforce in obtaining jobs in the biotechnological areas. It is anticipated that the workshop will introduce new research applications and possibilities to our CSU faculty; making them more competitive in obtaining external funding and allowing them to branch out into new areas of research within their discipline.