



College of Science and Mathematics  
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January 12, 2021

Program Officer, Office of Integrative Activities, Major Research Instrumentation Program  
National Science Foundation  
2415 Eisenhower Ave  
Alexandria, VA 22314

To the Cognizant Program Officer:

I am pleased to write in strong support of Dr. Gao's proposal to the NSF Major Research Instrumentation Program for the acquisition of a High-Resolution Accurate-Mass Orbitrap LC-MS System at Montclair State University. Dr. Gao's team will use the Orbitrap LC-MS system for a variety of research projects distributed across three departments (Chemistry and Biochemistry, Biology, Earth and Environmental Studies) and three research institutes (NJ Center for Water Science and Technology, Sokol Institute for Pharmaceutical and Life Sciences, PSEG Institute for Sustainability Science) across the college. Examples include addressing biomolecule quantitative and qualitative analysis, identification of high-molecular-weight compounds in soil, quantitation of cyanotoxins, identification of emerging contaminants and their transformation products in water, and differentiation of the isomeric drug candidates.

Montclair State University (MSU) is a Carnegie R2 Doctoral University serving 21,000 students and is one of only 4 Public Research Universities in New Jersey. We are a Hispanic Serving Institution whose student body is also 13.3% African American and > 60% female. As such, we have the honor and privilege of educating a highly diverse student body as we prepare the next generation of STEM professionals. Dr. Gao and his co-PIs are funded by the NSF, NIH, USEPA, USDA, New Jersey and Department of Environmental Protection, among others. Dr. Gao's team is highly committed to education and outreach with a track record of training students to be independent users of our research equipment in dissertations and theses, as well as incorporating equipment into hands-on analytical methods and instrumentation courses. Dr. Gao's team has an impressive record of broader impact activities such as mentoring high school interns in the American Chemical Society's SEED program for economically disadvantaged students, mentoring local high school students in MSU's Weston Scholars summer program, and running environmental education summer camps for economically disadvantaged students.

Montclair State University is committed to the successful operation and maintenance of the Orbitrap LC-MS system over its expected lifetime. All necessary space and other infrastructure and instrumentation needed to conduct the work described in the proposal are in place. If awarded, the Orbitrap LC-MS system will be housed in the Department of Chemistry and Biochemistry in Richardson Hall. The system will be overseen by the PI and co-PIs with the assistance of Dr. Kevin Olsen, a full-time instrumental specialist in the Department of Chemistry and Biochemistry with over 15 years of experience in technical support and maintenance of Agilent, Shimadzu, and Thermo LC/MS, HPLC/MS, and GC/MS systems, respectively. Dr. Gao has over 10 years' experience in the operation, maintenance, and modification of LC/MS/MS, providing the perfect background for the supervision of the proposed Orbitrap LC-MS instrument. A student assistant will assist Drs. Gao and Olsen with routine maintenance. Dr. Olsen will continue the operation and maintenance after this NSF project expires.

Sincerely,

A handwritten signature in cursive script that reads "Lora Billings".

Dr. Lora Billings, Dean College of Science and Mathematics