

Project Title: Development of New Integrated Third-year Chemistry Experiments – Year three

Project Summary (150 words maximum)

We propose continued funding support for undergraduate students to help chemistry faculty develop new integrated third year undergraduate lab experiments. The department has recently *completed* construction of its new shared instrument facility, which houses ~\$800K worth of modern instruments. The facility directly benefits undergraduates by providing hands-on experience with instruments that were previously inaccessible. To effectively use these instruments and capitalize on the teaching opportunities arising from the facility's shared nature (for teaching and research), new laboratory experiments must be developed. We wish to continue our development of 'research-style' projects that integrate the different disciplines within chemistry. These projects will better reflect the difficult, real world chemistry problems our graduates are likely to face. This will be a considerable improvement over the current labs which teach 'text-book' experiments, sometimes with obsolete equipment, in a discipline-segregated way. Reinforcing the goals of this project, we have recently made substantial curriculum changes to desegregate the disciplines of the chemistry laboratories. This project will impact about 200 students per year but impact them repeatedly through several chemistry courses.