

Round	14
Grant #	M89
Applicant Name	Donald Wayne Suggs
Applicant Position	Senior Academic Professional
Applicant Institution	University of Georgia
Applicant Email Address	dwsuggs@uga.edu
Other Team Members	N/A
Type of Project	Develop Ancillaries for an existing Course.
Course Number(s) and Title(s)	CHEM 2300L - Quantitative Chemical Analysis Lab
Final Semester of the Project	Summer 2020
Proposed Grant Funding Amount:	\$2,800.00
Currently-Existing Resource(s) to be Revised / Ancillaries Created	We have a lab manual that is based on historical analytical labs over the past 25 years. It is in need of updating to be more inquiry based.
Project Description	<p>It is proposed to develop inquiry based labs which reflect modern quantitative techniques in analytical chemistry. The current laboratories are based on relatively straight forward classical techniques in volumetric analysis as well as some modern instrumental techniques. The entire laboratory set needs to be reworked to provide a cohesive approach to modern quantitative methods.</p> <p>To accomplish this, three laboratories will be created to begin updating in-house course materials. The first lab would involve an inquiry update and expansion of an existing lab where an external calibration is used to quantitate iron in tap or ground water. A second lab would involve developing a standard addition method that would be applied to an instrumental technique involving light absorption or emission. The exact nature of this lab would have to be studied as part of this grant, but it will likely involve an environmental analysis of a heavy metal contaminant. A inquiry based laboratory involving cyclic voltammetry would also be developed. This technique would involve the quantitation of species by coulometry (measuring electrical current) and most likely involve the analysis of organic pollutants (yet undetermined).</p> <p>For each lab, a series of videos covering the different aspects of the lab will be</p>

	created. Content of the videos will explain the equipment and theory behind the technique.
Timeline and Personnel	<p>Summer 2019 Develop the external calibration lab for deployment during the Fall 2019 semester. Monies will be used to buy any chemicals or equipment. Dr. Suggs will be writing the lab.</p> <p>Fall 2019 Develop the standard-addition lab for deployment during the Spring 2020 semester. Monies will be used to buy any chemicals or equipment. Dr. Suggs will be writing the lab.</p> <p>Spring 2020 Develop the internal lab for deployment during the Summer 2020 semester. Monies will be used to buy any chemicals or equipment. Dr. Suggs will be writing the lab.</p> <p>Summer 2020 All three labs will be in place and feedback will be obtained for each.</p>
Budget	<p>\$2,800 is requested.</p> <p>\$2,000 will be used to pay dr. Suggs for the Summer 2019 thru-session.</p> <p>\$800 will be used to buy any needed chemicals, glassware or equipment needed during lab development.</p>
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