

Application Number	M68
Applicant	Suzanne Ellenberger
Position	Director of General Chemistry
Institution	University of Georgia
Email	suzanne.ellenberger@uga.edu
Team Members	Daphne Norton, Joel Caughran, Wayne Suggs, Ana West, Sara Blankenship, Wenjian (Vince) Du
Type	Creation of ancillary materials for the lab course that accompanies an OER revision lecture class
Course Number / Title	CHEM 1211L
Final Semester	Fall 2019

Grant Amount	\$4,800.00
Works Being Revised	Creation of New Laboratory Experiments for General Chemistry I

Description	<p>CHEM 1211 has recently adopted and is reorganizing the OER textbook, "Atoms First". This has involved reorganizing the content so the traditional order of presentation has been changed. An additional significant change is that key topics are introduced multiple times in early chapters on a basic level and are then covered in depth in a later chapter in either CHEM 1211 or 1212. The purpose of this is to help students see the interconnectedness of the material to both chemistry and other disciplines rather than viewing the content as individual or discrete subjects. A result of this reorganization of material has necessitated a review of the laboratory experiments employed in both CHEM 1211L and 1212L.</p> <p>The purpose of this mini-grant proposal is to develop several new CHEM 1211L experiments to better align the lab with the lecture content. We need to write approximately three to four new lab experiments for use in CHEM 1211L. An example of the proposed work is to replace the traditional Lewis structure and Valence Shell Electron Pair Repulsion (VSEPR) labs that utilize ball and stick models with experiments that instead utilize the molecular modeling program SemiChem Agui. The UGA Chemistry Department recently purchased a site license for this program which is downloadable on student's personal computers. This capability allows students to perform the experiment on their own devices during the lab period while TA's are present to assist them and to then complete the lab at home if needed.</p> <p>A major benefit of incorporating the Agui software program into the CHEM 1211 lab would be linear scaffolding of this technology. The same Agui molecular modeling program is used in organic chemistry laboratory experiments and its use is being developed in additional higher level chemistry courses.</p> <p>One or two additional labs will also be developed.</p>
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Timeline	<p>All team members will be involved in each of the tasks listed below. Two of the team members (Ellenberger and Norton) may teach a summer class; Ellenberger and Du both teach two spring semester classes; fall 2019 semester Ellenberger teaches two classes, Norton one class, and Du three classes.</p> <p>February 1: Begin work on developing the two molecular modeling experiments using Agui by SemiChem.</p> <p>March 15: Completion of the molecular modeling experiments</p> <p>March 16 – April 26: Graduate students and/or undergraduate lab assistants will perform the lab experiments and make recommendations for necessary changes.</p> <p>March 16 – May 30: One or two additional experiments will be written</p> <p>April 27 – May 10: Any necessary changes to the molecular modeling experiments have been completed.</p> <p>June 1 – July 1: Graduate students and/or undergraduate lab assistants will perform the lab experiment(s) and make recommendations for necessary changes.</p> <p>June 1– July 26: Create a survey for the new experiments to be given to student users in CHEM 1211L</p> <p>July 1 – July 19: Any necessary changes to the new experiment(s) have been completed.</p> <p>August 30 – December 1: The new experiments will have been performed by CHEM 1211L students.</p> <p>December 13: Survey data for the new experiments has been collected and compiled from students in CHEM 1211L</p>
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Budget	Funds will be used to provide one month of summer support for eligible team members (maximum of \$2,000 support to any individual). Projected expenses are unknown until the new experiments have been identified.
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