In this project, we have developed a public domain MAPLE library that contains various custom programs for the learning and teaching of multivariable calculus. This will be the an electronic marketplace where experienced and inexperienced instructors can exchange ideas and experience.

Also we have developed two versions of Maple Lab manuals which will demonstrate how to use the customized MAPLE programs in the proposed library. The first version of the manual covers the conventional multivariable calculus topics that appear in most standard calculus textbooks. The second version of the lab manual will integrate Maple with the non-conventional multivariable calculus syllabus developed by the Calculus Consortium based at Harvard. Both manuals are published by Wiley. Currently, we are working on the Mathematica version of the material, a draft edition will be available to the public in January.

Experienced instructors will find the lab manual very helpful because it provides a source of programs and suggested ways of using them. They can then adopt the programs to their own lab manual. Inexperienced instructors can follow our manual closely to start an instruction lab. They can choose the topic or format in the manual that is most appropriate to the class. After one or two semesters when they feel more comfortable with the material, they can design their own lab manual based on ours.