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## Training Students to Use Professional Software for Scientific Plotting and Data Analysis

**Project Number:** 6000826

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**Grant Type:** TDG

### **Abstract:**

Data processing and data presentation are the two major keys to training science students. Traditionally Microsoft Excel has been widely used for data analysis in the study of chemistry. However, Microsoft Excel shows its limitations in data loading, no error control, little reusability, problematic scalability, lack of automatic, etc. In this proposed project, we aim to integrate free online software tools in our teaching to strengthen students' learning experience in the core course CHEM 2004 Principles of Analytical Chemistry. Two software tools will be fully incorporated to use in the course teaching and assessment, which allow the students to evaluate their experimental data through data plotting, statistical data analysis, testing hypotheses, defining problems and creating innovative and practical solutions. We believe that this software platform will not only enhance their learning experience both in the practical lab and in the course, but also be beneficial to students to translate the theory learnt in the lectures into practical application. By finishing this proposed project, students will become more motivated and more confident in the problems related to analytical chemistry. The success of this project will help foster future science talents for the advanced development of chemical analysis.