Desired learning outcomes for chemistry majors at Bates College

I. The writing component of the Chemistry major is designed to:

* Teach the principles of good writing: Building the simplest possible words and sentences into concise, well-ordered arguments, using the paragraph as the basic unit of composition. The rules for this have been written down many times.

* Teach students how to describe chemical and mathematical concepts in words. This includes being able to describe the interpretation of data and the conclusions drawn from an analysis of data. Drawing conclusions involves the construction of an argument based on an interpretation of data. When appropriate, evidence from the literature is often used to support the argument.

* Teach students the mechanics of writing a scientific paper following ACS guidelines. This includes learning how to communicate well with graphs, tables, diagrams and other visual materials.

* Teach students the skills needed to write about science for broader audiences: notably, policy makers and the public.

II. The laboratory and research component of the Chemistry major is designed to:

* Give students the skills to design and conduct an experiment and interpret the data obtained to draw conclusions about whether the results do or do not support a hypothesis being tested.

* Gain familiarity with an area of science such that the students can present their work to a professional audience and also discuss their work with a general audience.

* Develop problem solving skills and analytical thinking skills.

* Enable students to become independent learners of chemistry in particular and natural science in general.

III. The courses component of the Chemistry major is designed to:

* Teach students the foundational material in the following subdisciplines of chemistry: organic chemistry, inorganic chemistry, analytical chemistry, physical chemistry, and biochemistry.

* prepare students for careers and post-graduate schooling that require foundational knowledge in chemistry

* Develop problem solving skills and analytical thinking skills.

* Enable students to become independent learners of chemistry in particular and natural science in general.