

## Annual Report on Program Student Learning Outcomes Assessment

**Program:** Division of Natural Sciences

**Program Contact and Title:** Professor Peter Busher, pbusher@bu.edu

**College Contact and Title:**

Natalie McKnight, Dean *ad interim*

John Regan, Senior Lecturer, Undergraduate Assessment Committee member

### Outcomes for the Division of Natural Sciences and Mathematics

The learning outcomes for courses in the Natural Sciences and Mathematics follow the general guidelines for learning rubrics set by the AAC&U and adopted by the College of General Studies in the Assessment Rubric used for eportfolio evaluation. The general CGS rubric is modified for specific use in the Natural sciences.

The mission of the division is to create and encourage in our students a climate of critical thinking about the natural world and the process of science. We encourage our students to explore, problem-solve, analyze and innovate as they develop as scientific thinkers in an inquiry driven environment. We also develop our students as evolutionary thinkers allowing them to carry an understanding of the role humans play in the evolutionary process as agents of natural selection.

Specific outcomes are listed below:

- 1) The ability to communicate effectively in writing, orally and quantitatively about the natural sciences. This includes the clear visual presentation of data.
- 2) The skills needed to gather, analyze, integrate and document scientific information in a systematic and unbiased manner.
- 3) A detailed understanding of the historical processes working in the development of scientific knowledge, as well as the aesthetic and cultural movements that may have shaped the process of gaining scientific knowledge.
- 4) An understanding of the science process as a "way of knowing" and how this differs from knowledge acquisition in other disciplines. This includes how and why the scientific process is a powerful means of acquiring new knowledge.
- 5) The ability to use and understand quantitative methods in the natural

sciences including the analysis of data sets with statistical methods.

6) The ability to integrate scientific knowledge and modes of thinking with that of other disciplines to produce an interdisciplinary and integrative understanding of complex problems.

7) The ability to do close reading of texts, scientific journal articles and popular science writing. This is essential in their development as critical thinkers.

8) The ability to become close observers of the natural world so they can better interpret patterns and processes. This is essential in their development as critical thinkers.