

- **Communicate information in a manner that is overt and logical:** Graduates should be capable of writing a scientific narrative that is direct, with an overt and transparent logic.
- **Communicate information in a manner that is precise and concise:** Graduates should be capable of communicating scientific ideas and principles in a manner that is concise, unambiguous, and inclusive of correct terminology.
- **Present and interpret data in context:** Graduates should be able to contextualize scientific problems or issues in terms of what is known and what is unknown. They should be able to generate narrative that moves from data to conclusions, reflecting the cumulative and contributive nature of science.
- **Synthesize ideas in new ways:** Graduates should be able to present ideas relevant to content at hand, building on what is known. They should be able to organize information and take a position—synthesizing information from a variety of sources rather than presenting a laundry list of ideas.
- **Analyze and interpret published work, gauging the efficacy of evidence:** Graduates should recognize and use scholarly sources without accepting everything that they read. In other words, they should be able to critique reasoning, data and/or methodology.
- **Identify significant gaps in scientific knowledge and develop research questions to address those gaps:** Graduates should be able to identify critical gaps in scientific knowledge and propose research questions that could yield findings to address those gaps.
- **Read analytically, recognizing choices made by authors:** Graduates should be able to recognize characteristics of scientific discourse in scientific articles.
- **Become comfortable with ambiguity:** Our graduates should communicate in a manner that recognizes that there are usually several ways to interpret data.
- **Demonstrate data appropriately:** Graduates should be able to properly construct, caption and format figures and tables. They should make intentional choices about how data is presented to audiences (when to use a figure, what kind of figure to use, what is the most logical sequence of evidence). They should be able to use technical programs (like Excel) to create effective figures, but should understand the underlying mathematical and/or statistical principles.
- **Understand and use recognized formats for scientific research papers:** Our graduates should understand the components of a typical scientific research paper and know how scientific information is conveyed in each component.
- **Alternate appropriately between multiple modes of communication:** Graduates should effectively communicate scientific thoughts and principles in the following ways (oral, written, graphic, numeric) and use these modalities in complementary ways.
- **Write compellingly to audiences within and outside of the discipline:** Graduates should be able to communicate both the science and the significance of the science to multiple audiences, using terminology that is appropriate for the intended audience.
- **Work and write collaboratively**
- **Develop strategies to effectively revise and/or self-edit written work**