Student Learning Objectives

Skills
- Ability to observe and describe nature accurately.
- Ability to construct logical arguments in biology.
  - Generate and state testable hypotheses
  - Develop and elaborate models
- Ability to critique logical arguments in biology.
  - Design experiments to test hypotheses
  - Recognize possible outcomes & assess the probability of occurrences
  - Collect, organize, and analyze relevant data
  - Draw conclusions and evaluate their relative quality
- Ability to communicate ideas and arguments effectively both orally and in writing.
- Ability to work effectively in a team.
- Ability to apply problem-solving to learning.
  - Develop strategies for identifying deficits in knowledge
  - Acquire information gathering and study skills
  - Self-assess progress in learning
- Ability to apply quantitative reasoning to biological questions.
  - Construct and interpret graphs and plots
  - Analyze data using statistical methods

Perspectives
- Appreciation that learning changes "how one thinks" as well as "what one knows."
- Ability to approach novel problems with flexibility, creativity, and confidence.
- Appreciation for the interconnectedness of knowledge.
- Appreciation that the pursuit of science can be exciting and fulfilling.
- Confidence in oneself as a College-Trained Biologist.
- Appreciation for the diversity of living things and the diversity of approaches used to study them.
- Appreciation for the impact of biological science on the environment and society.

Assessment tools
- Indirect:
  - The Classroom Undergraduate Research Experience (CURE) survey, administered as a pre and post test evaluation of scientific attitude, learning style, learning gains in the course elements, learning benefits, and overall evaluation of the experience.
  - Surveys of Undergraduate Research Experiences (SURE I and SURE II)
  - In-house designed surveys using Survey Monkey
- Direct: Courses (and their activities) developed as part of the Howard Hughes Medical Institute Undergraduate Science Program are reviewed and evaluated by the HHMI Program Director in coordination with the instructors.

Highlighted recent activities
- CURE survey implemented to understand students’ experiences in three new laboratory-based courses (funded through a grant from the Howard Hughes Medical Institute).
- Based on assessment data indicating that Junior Year Writing courses were not effective, the Department has appointed a Coordinator of the JYWP, bringing more instructors together to discuss their course formats, providing students with more online information about the writing section, and incorporating projects and presentations as part of the course format.