

# Assessment: Assessment Plan

## Degree Program - AS - Biology (PHD)

**CIP Code:** 26.0101.00

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**Modality:** Face-to-Face

### Student Learning Outcome: Content and comprehension

To have a broad understanding of biology and be able to discuss fundamental biological concepts both generally and specifically in the students' respective areas of research.

**Outcome Status:** Active

**Outcome Type:** Student Learning

**Start Date:** 09/01/2016

**End Date:** 09/01/2017

#### Assessment Methods

Method 1 - To have the student write a research proposal that will demonstrate both general understanding of biology and specific knowledge of the particular area of biology that their doctoral research will involve.

(Active)

**Criterion:** Method 1 - Satisfying the graduate committee that the student has taken the proper amount of course work as listed in the degree plan to be able to pursue the research that they are proposing to do; if there are areas that need to be supplemented; update the degree plan and take these classes as well....we anticipate that at least 90% of the students should be able accomplish this.

Method 2 - To pass the qualifying exam for doctoral candidacy that is administered by the student's graduate committee. (Active)

**Criterion:** Method 2 - students must demonstrate the ability to think critically in both oral and written formats and provide sufficient amount of information that the graduate committee is satisfied. Should the exam not be passed on the first attempt, a second attempt is possible. At least 80% of all students should reach candidacy in two attempts; if the qualifying exam is not passed on the second attempt, the student is dismissed from the program.

Method 3 - To pass the final exam of the dissertation defense following a public presentation of the research. (Active)

**Criterion:** Method 3 - students must demonstrate sufficient content knowledge and comprehension to satisfy the graduate committee in the final dissertation defense. We expect that at least 90% of doctoral candidates students will meet these criteria.

### Student Learning Outcome: Presentations, authorship and funding

To ultimately be able to present research findings at regional, national or international meetings and publish their results in peer reviewed journals. In addition to be able to write grant proposals and fund research.

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**Outcome Status:** Active

**Outcome Type:** Student Learning

**Start Date:** 06/15/2016

**End Date:** 09/01/2017

## Assessment Methods

Method 1 - In BIOL 6202 (Preparation for Graduate Teaching and Learning in Biology) students will develop skills in utilizing resources in the library, making posters, writing papers and presenting talks. Doctoral students also lead discussions in lab group meetings developing skills of being a mentor and providing constructive criticism.

(Active)

**Criterion:** Method 1 - Students must demonstrate the ability to research and present data in an oral and written format to the satisfaction of the instructor and to their peers and to provide constructive criticism to each other according to the rubric provided by the instructor.

Method 2 - In an Advanced Special Topics class (BIOL 6301 - Grant Writing), student skills in identifying funding sources and writing proposals to leverage funds are evaluated. (Active)

**Criterion:** Method 2 - Students must write an NSF or NIH style proposal that is submission- ready according to the guidelines set up the instructor.

Method 3 - Writing, presenting and defending the Doctoral dissertation. (Active)

**Criterion:** Method 3 - Students must write, present and defend the dissertation to the satisfaction of the graduate committee in the final exam. We expect that at least 90% of the students will successfully meet this criterion.

## Student Learning Outcome: Getting a job

Upon graduation, to be able to successfully compete for positions in academia or industry.

**Outcome Status:** Active

**Outcome Type:** Student Learning

**Start Date:** 09/01/2016

**End Date:** 09/01/2017

## Assessment Methods

Method 1 - applying skills learned in seminar (BIOL 6101) and Advanced Special Topics classes (BIOL 6301) and BIOL 6202, as well as gaining experience in leadership and mentoring in research group lab meetings to then be able to apply and compete for positions

(Active)

**Criterion:** Method 1 - it is expected that at least 50% of graduates will have suitable positions (postdoctoral, faculty or industry) within 6 months of graduation and that 80% will have a position within a year

Method 2 - attending and presenting at scientific meetings to meet with colleagues and potential employers and become part of the professional science scene (Active)

**Criterion:** Method 2 - it is expected that as developing professional scientists, all doctoral students will at least attend and in

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years 2+ present results at one or more conferences per year. That number should rise with candidacy, increased experience and the added results of continued research

## Student Learning Outcome: Learning to teach

To have demonstrated the ability to teach at the undergraduate level.

**Outcome Status:** Active

**Outcome Type:** Student Learning

**Start Date:** 09/01/2016

**End Date:** 09/01/2017

### Assessment Methods

Method 1 - BIOL 6202 (Preparation for Graduate Teaching and Learning in Biology), developing and comparing presentation skills in peers and constructively criticizing one another

(Active)

**Criterion:** Method 1 - Students are expected to present, receive evaluations from and evaluate other students. Student evaluations from their teaching experiences are expected to be at least 3.5 on a scale from 1-5 (1 - poor, 5 - outstanding)

Method 2 - BIOL 6301 (Biological Pedagogy) methodologies such as self reflection, formulation of a teaching philosophy, mentor observations and mentoring other students provides the graduate teaching assistant with tools (Active)

**Criterion:** Method 2 - Student evaluations from their teaching experiences are expected to be at least 3.5 on a scale from 1-5 (1 - poor, 5 - outstanding) after completing the course