

UNIT REPORT

Biological Sciences-Academic - APR**Self-Study Report by Academic****Unit/Department**

Generated: 3/15/22, 3:33 PM

Program Mission

Biological Sciences Mission Statement

Program Mission Statement:

The mission of the Department of Biological Sciences is to provide high quality teaching and research at the undergraduate, graduate and post-graduate levels in biological sciences. The goals of the department include, a) preparing individuals through education and life-long learning to become leaders and contributing members of society and b) discovering, applying, and disseminating science-based knowledge. As such, Biological Sciences is essential to the mission of the University of Idaho by training students in the life sciences.

Program Goal (add a minimum of 3 program goal "plan items")

#1 Deliver high quality programs in Biological Sciences

Goal Statement:

Prepare and deliver up-to-date, high quality undergraduate and graduate programs in the Biological Sciences.

Alignment to UI Strategic Plan Goals:

Innovate (Goal 1): Scholarly and creative products of the highest quality and scope, resulting in significant positive impact for the region and the world.

Indicators/Metrics to Evaluate Progress:

Successful progression of students through their program.

List of Actions the Program Will Take to Achieve Goals :

Continuously upgrade teaching materials and pedagogy.

Goal Achievement Level: Met

#2 Conduct research at the frontiers of knowledge in the Biological Sciences

Goal Statement:

Conduct scientific research at the cutting-edge of knowledge in the field of Biological Sciences.

Alignment to UI Strategic Plan Goals:

Engage (Goal 2): Suggest and influence change that addresses societal needs and global issues, and advances economic development and culture.

Indicators/Metrics to Evaluate Progress:

Publications in a wide range of peer-reviewed journals scientific that represent the faculty diversity in Biological Sciences.

List of Actions the Program Will Take to Achieve Goals :

Host and mentor undergraduate and graduate students in contemporary fields of scientific research in the Biological Sciences.

Goal Achievement Level: Met

#3 Expand the participation of underrepresented groups

Goal Statement:

Encourage the expansion of underrepresented groups within the student population in Biological Sciences.

Alignment to UI Strategic Plan Goals:

Transform (Goal 3): Increase our educational impact.

Cultivate (Goal 4): Foster an inclusive, diverse community of students, faculty, and staff and improve cohesion and morale.

Indicators/Metrics to Evaluate Progress:

Monitor numbers of underrepresented students within the Biological Sciences program.

List of Actions the Program Will Take to Achieve Goals :

Actively recruit from underrepresented populations.

Goal Achievement Level: Not Met

Student Learning Assessment Report (add one "plan item" for each major, degree, and/or certificate offered by dept)

Neurobiology PhD

Assessment Report Contact: James J. Nagler

Program Changes in Past Year:

None.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

No outcomes data available.

Summary of Student Learning:

Students are performing well and meeting expectations.

Summary of Faculty Discussion:

Faculty discussions indicate satisfaction with assessments in this major.

Summary of Changes/Improvements Being Considered:

No changes are being considered.

Inter-rater Reliability:

Learning outcomes are developed and discussed by the faculty.

Closing the Loop:

This graduate program has a small number of students and assessment of this program can be based on the successful presentation and public defense of the thesis.

Neurobiology MS

Assessment Report Contact: James J. Nagler

Program Changes in Past Year:

None.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

No outcome data is available.

Summary of Student Learning:

Students are performing well and meeting expectations.

Summary of Faculty Discussion:

Faculty discussions indicate satisfaction with assessments in this major.

Summary of Changes/Improvements Being Considered:

No changes are being considered.

Inter-rater Reliability:

Learning outcomes are developed and discussed by the faculty.

Closing the Loop:

This graduate program has a small number of students and assessment of this program can be based on the successful presentation and public defense of the thesis.

Microbiology, Molecular Biology, and Biochemistry PhD

Assessment Report Contact: James J. Nagler

Program Changes in Past Year:

None.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

No outcomes data available.

Summary of Student Learning:

Students are performing well and meeting expectations.

Summary of Faculty Discussion:

Faculty discussions indicate satisfaction with assessments in this major.

Summary of Changes/Improvements Being Considered:

No changes are being considered.

Inter-rater Reliability:

Learning outcomes are developed and discussed by the faculty.

Closing the Loop:

This graduate program has an adequate number of students and assessment of this program can be based on the successful presentation and public defense of the thesis.

Biology PhD

Assessment Report Contact: James J. Nagler

Program Changes in Past Year:

None.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

See below.

2.

Research Skills

Formulate hypotheses and conduct original research to test hypotheses. Use critical thinking to explore and understand real-world issues, solve problems and make consequential decisions.

Academic Year 2020-2021: **Biology (Ph.D.)**

Term: **Fall 2020**

No Results

Summary of Student Learning:

Students are performing well and meeting expectations.

Summary of Faculty Discussion:

Faculty discussions indicate satisfaction with assessments in this major.

Summary of Changes/Improvements Being Considered:

No changes are being considered.

Inter-rater Reliability:

Learning outcomes are developed and discussed by the faculty.

Closing the Loop:

This graduate program has a good number of students and assessment of this major can be based on the successful presentation and public defense of the thesis.

Biology MS

Assessment Report Contact: James J. Nagler

Program Changes in Past Year:

None.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

None.

2.

Hypotheses Testing

The student will be able to formulate hypotheses and conduct original research to test hypotheses.

Academic Year 2020-2021: **Biology (M.S.)**

Term: **Fall 2020**

No Results

Summary of Student Learning:

Graduate programs contain coursework and individual research projects that culminate in a written thesis, which is publically defended. Since most of the effort is on the thesis work that is where the focus is.

Summary of Faculty Discussion:

Faculty discussions indicate satisfaction with the assessments of this graduate program.

Summary of Changes/Improvements Being Considered:

No changes are being considered.

Inter-rater Reliability:

Learning outcomes are developed and discussed by the faculty.

Closing the Loop:

This graduate program has a small number of students and assessment of this program can be based on the successful presentation and public defense of the thesis.

Microbiology BS

Assessment Report Contact: James J. Nagler

Program Changes in Past Year:

None.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:**Import Outcomes Data (from Anthology Outcomes):**

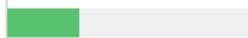
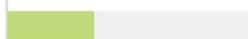
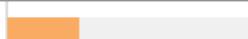
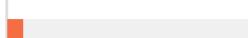
1.

Application Skills

Upon completion of the program, the student will be able to apply their knowledge and skills to solve modern microbiological problems.

Academic Year 2019-2020: **Microbiology (B.S.Microbiol.)**

Term: **Overview**

Exceeded		29.41%	5
Met		35.29%	6
Partially Met		29.41%	5
Not Met		5.88%	1

Summary of Student Learning:

Students are performing well and meeting expectations.

Summary of Faculty Discussion:

Faculty discussions have revolved around improvements to the curriculum to strength the required course structure and reduce impediments to timely graduation.

Summary of Changes/Improvements Being Considered:

Several courses, including a couple of new offerings, are being considered as required courses. Currently, they are electives. Two new courses Microbiomes and Microbial Physiology will be taught this academic year. If these courses are successful we will consider adding them as required courses for this major. We are also considering the removal of a lab techniques course that is not meeting the objectives of this major.

Inter-rater Reliability:

Learning outcomes are developed and discussed by the faculty.

Closing the Loop:

This major has maintained low, but steady enrollment. It has been perceived as weak, due to a lack of key courses that we are attempting to remediate by the addition of new courses and moving some courses from the elective list to required. An advanced lab techniques class will be discontinued.

Biology BA/BS

Assessment Report Contact: James J. Nagler

Program Changes in Past Year:

None.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment: Not applicable.

Import Outcomes Data (from Anthology Outcomes):

See below.

1.

Application Skills

Upon completion of the program, the student will be able to apply their knowledge and skills to solve modern biological problems.

Academic Year 2020-2021: **Biology (B.A., B.S.)**

Term: **Overview**

No Results

Summary of Student Learning:

Students are performing well and meeting expectations.

Summary of Faculty Discussion:

Faculty discussions indicate satisfaction with assessments in this major.

Summary of Changes/Improvements Being Considered:

No changes are being considered.

Inter-rater Reliability:

Learning outcomes are developed and discussed by the faculty.

Closing the Loop:

A gradual decline in first-year student enrollment in this program is thought to be due to students interested in preparation for a health-related career, and consequently enrolling in a new major Medical Sciences.

Medical Sciences BS

Assessment Report Contact: James J. Nagler

Program Changes in Past Year:

None.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

See below.

2.

Problem-Solving Skills

Upon completion of the program, the Medical Sciences graduate will be able to use different modes of thinking to examine concepts and issues related to the molecular and microbiological sciences, explore creative avenues and solve complex problems.

Academic Year 2020-2021: **Medical Sciences (B.S.)**

Term: **Spring 2021**

No Results

Summary of Student Learning:

Students are performing well and meeting expectations.

Summary of Faculty Discussion:

Faculty discussions indicate satisfaction with assessments in this major.

Summary of Changes/Improvements Being Considered:

No changes are being considered.

Inter-rater Reliability:

Learning outcomes are developed and discussed by the faculty.

Closing the Loop:

This major has high student success. The curriculum is well-balanced.

Biochemistry BS

Assessment Report Contact: James J. Nagler

Program Changes in Past Year:

None.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment: Not applicable.

Import Outcomes Data (from Anthology Outcomes):

Need to increase the number of upper-division required biochemistry courses to strengthen this major. Propose to make a current elective, BIOL 482 (Protein Structure and Function) a required course.

1.

Application Skills

Upon completion of the program, the student will be able to apply mathematical and chemical principles to solve biological problems with a focus on the molecular scale.

Academic Year 2020-2021: Biochemistry (B.A., B.S., B.S.Biochem.)

Term: Overview

No Results

Summary of Student Learning:

Some students are performing below expectations.

Summary of Faculty Discussion:

There has been faculty consideration of additional, required coursework to address weakness.

Summary of Changes/Improvements Being Considered:

The addition of an upper division, required course.

Inter-rater Reliability:

Learning outcomes have been discussed by faculty with teaching expertise in this major.

Closing the Loop:

Adjustments to course content and the addition of another, required course on protein function are being discussed by faculty.

Student Achievement

Student Achievement

Student Retention:

Student retention (first year loss) is monitored through UI Institutional Research and was 66% for fall 2020 (latest semester for data). One important visible minority, Hispanics, was 64%.

Student Persistence:

Student persistence is monitored through UI Institutional Research. The fall 2020 data showing the lowest persistence was juniors at 88%. All other years were better than this.

Student Completion:

Student completion is monitored through UI Institutional Research. Graduation rates have been good, ranging between 51 and 62% for the years 2013-14 to 2015-2016 (latest available data).

Student Postgraduate Success:

Student postgraduate success has been difficult to assess, as we have no mechanism to collect this data. The only students (a few) that we have reliable data for are those that go on to a graduate program. Occasionally, we receive information on their graduate school progress.

Identify Equity Gaps:

No equity gaps noted.

Effective Learning Environment and Closing Equity Gaps:

An effective learning environment is discussed at faculty meetings.

New Student Achievement Item

Student Retention:

Student Persistence:

Student Completion:

Student Postgraduate Success:

Identify Equity Gaps:

Effective Learning Environment and Closing Equity Gaps:

Demand and Productivity

Demand and Productivity

External Demand:

External demand is difficult to quantify.

Internal Demand:

There is very high internal demand for many courses in the Biological Sciences curriculum.

Credit Productivity:

Credit productivity, for fall 2019 (latest semester) was 5,780. This data is available on the UI Institutional Research website.

Financial Health and Resources

Financial Health and Resources

Financial Health:

The financial health of the program is adequate.

Efficient Use of Resources:

The department ensures efficient use of its fiscal resources by careful forward planning.

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