

Authentic Research Experiences in Introductory Biology Laboratory Courses



As a part of REIL Biology -- a Research Coordination Network in Undergraduate Biology Education on Research Experiences in Introductory Laboratories (REIL), we are conducting a national survey to assess the current state of authentic research experiences in introductory biology laboratory courses.

The survey is anonymous and should take approximately 15 minutes to complete.

For information about REIL Biology, please visit rcn.ableweb.org.

If you have questions about this survey, please contact us.

Thank you for participating in the survey.

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There are 89 questions in this survey

Defining Authentic Research

In our discussions, we have found that faculty have divergent views on the essential components of an authentic research experience. We are interested in your perspective on authentic research experiences.

1 [Q1] In your opinion, what are the essential components of an authentic research experience in a laboratory class? *

Please write your answer here:

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Introductory Biology Laboratory Courses at Your Institution

We are interested in the types of Introductory Biology laboratory courses taught at your institution and the degree to which those courses incorporate authentic research experiences as you have defined them.

2 [Q2] Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution.

For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course.

If you do not teach a particular type of course at your institution, select "0".

By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course. *

Please enter a number between 0 and 4 for each item:

	Number of distinct courses
Non-majors introductory biology	<input type="text"/>
Science Majors introductory biology	<input type="text"/>
Mixed majors and non-majors introductory biology	<input type="text"/>
Pre-health introductory biology	<input type="text"/>
Other introductory biology	<input type="text"/>

3 [Q2a] Please describe the other introductory biology laboratory course(s) taught at your institution.

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please write your answer here:

Non-majors Introductory Biology Laboratory Courses at Your Institution

We are interested in the degree to which the non-majors introductory biology laboratory courses incorporate authentic research experiences as you have defined them. For each course separately, we ask about your role in the course and basic demographic information about the course.

4 [Q3]What is your role in the non-majors introductory biology laboratory course (course #1) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

5 [Q3other]Please describe your role in the non-majors introductory biology laboratory course (course #1)?

Only answer this question if the following conditions are met:

° Answer was at question '4 [Q3]' (What is your role in the non-majors introductory biology laboratory course (course #1) at your institution?) *and* Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please write your answer here:

6 [Q3a]What percentage of your non-majors introductory biology laboratory course (course #1) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was 'Train the instructors for the laboratory' or 'Prep for the laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' at question '4 [Q3]' (What is your role in the non-majors introductory biology laboratory course (course #1) at your institution?) *and* Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please write your answer here:

7 [Q3b] Please provide the following demographic information for your non-majors introductory biology laboratory course (course #1). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '4 [Q3]' (What is your role in the non-majors introductory biology laboratory course (course #1) at your institution?) *and* Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

8 [Q4] What is your role in the non-majors introductory biology laboratory course (course #2) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

9 [Q4other] Please describe your role in the non-majors introductory biology laboratory course (course #2)?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each

type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '8 [Q4]' (What is your role in the non-majors introductory biology laboratory course (course #2) at your institution?)

Please write your answer here:

10 [Q4a]What percentage of your non-majors introductory biology laboratory course (course #2) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' at question '8 [Q4]' (What is your role in the non-majors introductory biology laboratory course (course #2) at your institution?)

Please write your answer here:

11 [Q4b]Please provide the following demographic information for your non-majors introductory biology laboratory course (course #2). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Prep for the laboratory' or 'Direct the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '8 [Q4]' (What is your role in the non-majors introductory biology laboratory course (course #2) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

12 [q5]What is your role in the non-majors introductory biology laboratory course (course #3) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each

type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

13 [q5other] Please describe your role in the non-majors introductory biology laboratory course (course #3)?

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '12 [q5]' (What is your role in the non-majors introductory biology laboratory course (course #3) at your institution?)

Please write your answer here:

14 [Q5a] What percentage of your non-majors introductory biology laboratory course (course #3) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '12 [q5]' (What is your role in the non-majors introductory biology laboratory course (course #3) at your institution?)

Please write your answer here:

15 [Q5b] Please provide the following demographic information for your non-majors introductory biology laboratory course (course #3). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic

based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '12 [q5]' (What is your role in the non-majors introductory biology laboratory course (course #3) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

16 [q6]What is your role in the non-majors introductory biology laboratory course (course #4) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

17 [q6other]Please describe your role in the non-majors introductory biology laboratory course (course #4)?

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '16 [q6]' (What is your role in the non-majors introductory biology laboratory course (course #4) at your institution?)

Please write your answer here:

18 [Q6a]What percentage of your non-majors introductory biology laboratory course (course #4) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '16 [q6]' (What is your role in the non-majors introductory biology laboratory course (course #4) at your institution?)

Please write your answer here:

19 [Q6b]Please provide the following demographic information for your non-majors introductory biology laboratory course (course #4). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '16 [q6]' (What is your role in the non-majors introductory biology laboratory course (course #4) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

Science Majors Introductory Biology Laboratory Courses at Your Institution

We are interested in the degree to which the science majors introductory biology laboratory courses incorporate authentic research experiences as you have defined them. For each course separately, we ask about your role in the course and basic demographic information about the course.

20 [Q3]What is your role in the science majors introductory biology laboratory course (course #1) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

21 [Q3other]Please describe your role in the science majors introductory biology laboratory course (course #1)?

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Other' at question '20 [Q3]' (What is your role in the science majors introductory biology laboratory course (course #1) at your institution?)

Please write your answer here:

22 [Q3a]What percentage of your science majors introductory biology laboratory course (course #1) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Train the instructors for the laboratory' or 'Prep for the laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' at question '20 [Q3]' (What is your role in the science majors introductory biology laboratory course (course #1) at your institution?)

Please write your answer here:

23 [Q3b] Please provide the following demographic information for your science majors introductory biology laboratory course (course #1). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Prep for the laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' or 'Train the instructors for the laboratory' at question '20 [Q3]' (What is your role in the science majors introductory biology laboratory course (course #1) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

24 [Q4] What is your role in the science majors introductory biology laboratory course (course #2) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

25 [Q4other] Please describe your role in the science majors introductory biology laboratory course (course #2)?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each

type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '24 [Q4]' (What is your role in the science majors introductory biology laboratory course (course #2) at your institution?)

Please write your answer here:

26 [Q4a]What percentage of your science majors introductory biology laboratory course (course #2) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Other' or 'Prep for the laboratory' or 'Teach in the laboratory' or 'Direct the laboratory' or 'Train the instructors for the laboratory' at question '24 [Q4]' (What is your role in the science majors introductory biology laboratory course (course #2) at your institution?)

Please write your answer here:

27 [Q4b]Please provide the following demographic information for your science majors introductory biology laboratory course (course #2). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Train the instructors for the laboratory' or 'Prep for the laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' at question '24 [Q4]' (What is your role in the science majors introductory biology laboratory course (course #2) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

28 [Q5]What is your role in the science majors introductory biology laboratory course (course #3) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each

type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

29 [Q5other] Please describe your role in the science majors introductory biology laboratory course (course #3)?

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please write your answer here:

30 [Q5a] What percentage of your science majors introductory biology laboratory course (course #3) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '28 [Q5]' (What is your role in the science majors introductory biology laboratory course (course #3) at your institution?)

Please write your answer here:

31 [Q5b] Please provide the following demographic information for your science majors introductory biology laboratory course (course #3). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type

of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '28 [Q5]' (What is your role in the science majors introductory biology laboratory course (course #3) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

32 [Q6]What is your role in the science majors introductory biology laboratory course (course #4) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

33 [Q6other]Please describe your role in the science majors introductory biology laboratory course (course #4)?

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '32 [Q6]' (What is your role in the science majors introductory biology laboratory course (course #4) at your institution?)

Please write your answer here:

34 [Q6a]What percentage of your science majors introductory biology laboratory course

(course #4) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '32 [Q6]' (What is your role in the science majors introductory biology laboratory course (course #4) at your institution?)

Please write your answer here:

35 [Q6b] Please provide the following demographic information for your science majors introductory biology laboratory course (course #4). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '32 [Q6]' (What is your role in the science majors introductory biology laboratory course (course #4) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

Mixed Majors and Non-majors Introductory Biology Laboratory Courses at Your Institution

We are interested in the degree to which the mixed majors and majors introductory biology laboratory courses incorporate authentic research experiences as you have defined them. For each course separately, we ask about your role in the course and basic demographic information about the course.

36 [Q3]What is your role in the mixed majors and non-majors introductory biology laboratory course (course #1) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

37 [Q3other]Please describe your role in the mixed majors and non-majors introductory biology laboratory course (course #1)?

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '36 [Q3]' (What is your role in the mixed majors and non-majors introductory biology laboratory course (course #1) at your institution?)

Please write your answer here:

38 [Q3a]What percentage of your mixed majors and non-majors introductory biology laboratory course (course #1) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Train the instructors for the laboratory' or 'Prep for the

laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' at question '36 [Q3]' (What is your role in the mixed majors and non-majors introductory biology laboratory course (course #1) at your institution?)

Please write your answer here:

39 [Q3b] Please provide the following demographic information for your mixed majors and non-majors introductory biology laboratory course (course #1). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Prep for the laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' or 'Train the instructors for the laboratory' at question '36 [Q3]' (What is your role in the mixed majors and non-majors introductory biology laboratory course (course #1) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

40 [Q4] What is your role in the mixed majors and non-majors introductory biology laboratory course (course #2) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

41 [Q4other] Please describe your role in the mixed majors and non-majors introductory biology laboratory course (course #2)?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '40 [Q4]' (What is your role in the mixed majors and non-majors introductory biology laboratory course (course #2) at your institution?)

Please write your answer here:

42 [Q4a]What percentage of your mixed majors and non-majors introductory biology laboratory course (course #2) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Other' or 'Prep for the laboratory' or 'Teach in the laboratory' or 'Direct the laboratory' or 'Train the instructors for the laboratory' at question '40 [Q4]' (What is your role in the mixed majors and non-majors introductory biology laboratory course (course #2) at your institution?)

Please write your answer here:

43 [Q4b]Please provide the following demographic information for your mixed majors and non-majors introductory biology laboratory course (course #2). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Train the instructors for the laboratory' or 'Prep for the laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' at question '40 [Q4]' (What is your role in the mixed majors and non-majors introductory biology laboratory course (course #2) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

44 [Q5]What is your role in the mixed majors and non-majors introductory biology laboratory course (course #3) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

45 [Q5other] Please describe your role in the mixed majors and non-majors introductory biology laboratory course (course #3)?**Only answer this question if the following conditions are met:**

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '44 [Q5]' (What is your role in the mixed majors and non-majors introductory biology laboratory course (course #3) at your institution?)

Please write your answer here:

46 [Q5a] What percentage of your mixed majors and non-majors introductory biology laboratory course (course #3) involves authentic research experiences (as you have defined them)?**Only answer this question if the following conditions are met:**

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '44 [Q5]' (What is your role in the mixed majors and non-majors introductory biology laboratory course (course #3) at your institution?)

Please write your answer here:

47 [Q5b] Please provide the following demographic information for your mixed majors and non-majors introductory biology laboratory course (course #3). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '44 [Q5]' (What is your role in the mixed majors and non-majors introductory biology laboratory course (course #3) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

48 [Q6]What is your role in the mixed majors and non-majors introductory biology laboratory course (course #4) at your institution?**Only answer this question if the following conditions are met:**

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

49 [Q6other] Please describe your role in the mixed majors and non-majors introductory biology laboratory course (course #4)?

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '48 [Q6]' (What is your role in the mixed majors and non-majors introductory biology laboratory course (course #4) at your institution?)

Please write your answer here:

50 [Q6a] What percentage of your mixed majors and non-majors introductory biology laboratory course (course #4) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '48 [Q6]' (What is your role in the mixed majors and non-majors introductory biology laboratory course (course #4) at your institution?)

Please write your answer here:

51 [Q6b] Please provide the following demographic information for your mixed majors and non-majors introductory biology laboratory course (course #4). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '48 [Q6]' (What is your role in the mixed majors and non-majors introductory biology laboratory course (course #4) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

Pre-health Majors Introductory Biology Laboratory Courses at Your Institution

We are interested in the degree to which the pre-health majors introductory biology laboratory courses incorporate authentic research experiences as you have defined them. For each course separately, we ask about your role in the course and basic demographic information about the course.

52 [Q3]What is your role in the pre-health majors introductory biology laboratory course (course #1) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

53 [Q3other]Please describe your role in the pre-health majors introductory biology laboratory course (course #1)?

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '52 [Q3]' (What is your role in the pre-health majors introductory biology laboratory course (course #1) at your institution?)

Please write your answer here:

54 [Q3a]What percentage of your pre-health majors introductory biology laboratory course (course #1) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Train the instructors for the laboratory' or 'Prep for the

laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' at question '52 [Q3]' (What is your role in the pre-health majors introductory biology laboratory course (course #1) at your institution?)

Please write your answer here:

55 [Q3b] Please provide the following demographic information for your pre-health majors introductory biology laboratory course (course #1). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Prep for the laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' or 'Train the instructors for the laboratory' at question '52 [Q3]' (What is your role in the pre-health majors introductory biology laboratory course (course #1) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

56 [Q4] What is your role in the pre-health majors introductory biology laboratory course (course #2) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

57 [Q4other] Please describe your role in the pre-health majors introductory biology laboratory course (course #2)?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '56 [Q4]' (What is your role in the pre-health majors introductory biology laboratory course (course #2) at your institution?)

Please write your answer here:

58 [Q4a]What percentage of your pre-health majors introductory biology laboratory course (course #2) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Other' or 'Prep for the laboratory' or 'Teach in the laboratory' or 'Direct the laboratory' or 'Train the instructors for the laboratory' at question '56 [Q4]' (What is your role in the pre-health majors introductory biology laboratory course (course #2) at your institution?)

Please write your answer here:

59 [Q4b]Please provide the following demographic information for your pre-health majors introductory biology laboratory course (course #2). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Train the instructors for the laboratory' or 'Prep for the laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' at question '56 [Q4]' (What is your role in the pre-health majors introductory biology laboratory course (course #2) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

60 [Q5]What is your role in the pre-health majors introductory biology laboratory course (course #3) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

61 [Q5other]Please describe your role in the pre-health majors introductory biology laboratory course (course #3)?**Only answer this question if the following conditions are met:**

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '60 [Q5]' (What is your role in the pre-health majors introductory biology laboratory course (course #3) at your institution?)

Please write your answer here:

62 [Q5a]What percentage of your pre-health majors introductory biology laboratory course (course #3) involves authentic research experiences (as you have defined them)?**Only answer this question if the following conditions are met:**

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '60 [Q5]' (What is your role in the pre-health majors introductory biology laboratory course (course #3) at your institution?)

Please write your answer here:

63 [Q5b]Please provide the following demographic information for your pre-health majors introductory biology laboratory course (course #3). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '60 [Q5]' (What is your role in the pre-health majors introductory biology laboratory course (course #3) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

64 [Q6]What is your role in the pre-health majors introductory biology laboratory course (course #4) at your institution?**Only answer this question if the following conditions are met:**

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

65 [Q6other] Please describe your role in the pre-health majors introductory biology laboratory course (course #4)?

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '64 [Q6]' (What is your role in the pre-health majors introductory biology laboratory course (course #4) at your institution?)

Please write your answer here:

66 [Q6a] What percentage of your pre-health majors introductory biology laboratory course (course #4) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '64 [Q6]' (What is your role in the pre-health majors introductory biology laboratory course (course #4) at your institution?)

Please write your answer here:

67 [Q6b] Please provide the following demographic information for your pre-health majors introductory biology laboratory course (course #4). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '64 [Q6]' (What is your role in the pre-health majors introductory biology laboratory course (course #4) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

Other Introductory Biology Laboratory Courses at Your Institution

We are interested in the degree to which the other introductory biology laboratory courses incorporate authentic research experiences as you have defined them. For each course separately, we ask about your role in the course and basic demographic information about the course.

68 [Q3]What is your role in the other introductory biology laboratory course (course #1) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

69 [Q3other]Please describe your role in the other introductory biology laboratory course (course #1)?

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Other' at question '68 [Q3]' (What is your role in the other introductory biology laboratory course (course #1) at your institution?)

Please write your answer here:

70 [Q3a]What percentage of your other introductory biology laboratory course (course #1) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Train the instructors for the laboratory' or 'Prep for the laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' at question '68 [Q3]' (What is your role in the other introductory biology laboratory course (course #1) at your institution?)

Please write your answer here:

71 [Q3b] Please provide the following demographic information for your other introductory biology laboratory course (course #1). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '0' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Prep for the laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' or 'Train the instructors for the laboratory' at question '68 [Q3]' (What is your role in the other introductory biology laboratory course (course #1) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

72 [Q4] What is your role in the other introductory biology laboratory course (course #2) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

73 [Q4other] Please describe your role in the other introductory biology laboratory course (course #2)?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each

type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '72 [Q4]' (What is your role in the other introductory biology laboratory course (course #2) at your institution?)

Please write your answer here:

74 [Q4a]What percentage of your other introductory biology laboratory course (course #2) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Other' or 'Prep for the laboratory' or 'Teach in the laboratory' or 'Direct the laboratory' or 'Train the instructors for the laboratory' at question '72 [Q4]' (What is your role in the other introductory biology laboratory course (course #2) at your institution?)

Please write your answer here:

75 [Q4b]Please provide the following demographic information for your other introductory biology laboratory course (course #2). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '1' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Train the instructors for the laboratory' or 'Prep for the laboratory' or 'Direct the laboratory' or 'Teach in the laboratory' or 'Other' at question '72 [Q4]' (What is your role in the other introductory biology laboratory course (course #2) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

76 [Q5]What is your role in the other introductory biology laboratory course (course #3) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each

type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

77 [Q5other] Please describe your role in the other introductory biology laboratory course (course #3)?

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was at question '76 [Q5]' (What is your role in the other introductory biology laboratory course (course #3) at your institution?)

Please write your answer here:

78 [Q5a] What percentage of your other introductory biology laboratory course (course #3) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '76 [Q5]' (What is your role in the other introductory biology laboratory course (course #3) at your institution?)

Please write your answer here:

79 [Q5b] Please provide the following demographic information for your other introductory biology laboratory course (course #3). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '2' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic

based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '76 [Q5]' (What is your role in the other introductory biology laboratory course (course #3) at your institution?)*

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

80 [Q6]What is your role in the other introductory biology laboratory course (course #4) at your institution?

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.)

Please choose **all** that apply:

- Teach in the laboratory
- Direct the laboratory
- Prep for the laboratory
- Train the instructors for the laboratory
- I am not involved in the laboratory portion of this course
- Other

81 [Q6other]Please describe your role in the other introductory biology laboratory course (course #4)?

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and Answer was at question '80 [Q6]' (What is your role in the other introductory biology laboratory course (course #4) at your institution?)*

Please write your answer here:

82 [Q6a]What percentage of your other introductory biology laboratory course (course #4) involves authentic research experiences (as you have defined them)?

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '80 [Q6]' (What is your role in the other introductory biology laboratory course (course #4) at your institution?)

Please write your answer here:

83 [Q6b]Please provide the following demographic information for your other introductory biology laboratory course (course #3). If the course is not taught every semester, provide information for a typical semester in which it is taught.

Only answer this question if the following conditions are met:

° Answer was greater than '3' at question '2 [Q2]' (Please select the number of distinct introductory biology laboratory courses of each type that are taught at your institution. For a 2 semester introductory sequence, select "2". Introductory courses that change topic based on instructor, but that have the same course number, should be considered only 1 course. If you do not teach a particular type of course at your institution, select "0". By "Science majors introductory biology," we mean a course that is taught to pre-dominantly science majors, although might be taken by students in other majors if those students are planning on attending graduate or professional school in the sciences. By "Mixed majors and non-majors introductory biology," we mean that all students taking introductory biology at your institution take the same course.) *and* Answer was 'Teach in the laboratory' or 'Direct the laboratory' or 'Prep for the laboratory' or 'Train the instructors for the laboratory' or 'Other' at question '80 [Q6]' (What is your role in the other introductory biology laboratory course (course #4) at your institution?)

Please write your answer(s) here:

Approximately how many students enroll in course in a typical semester?

Approximately how many sections of the laboratory are taught in a typical semester?

How many hours per week does the laboratory itself (not lecture) meet?

How many class meetings are there for the laboratory itself (not lecture) during a typical semester?

Barriers to Implementing Authentic Research Experiences

We are interested in real and perceived barriers to the implementation of authentic research experiences in introductory biology laboratory courses.

84 [Q8]Based on your experiences, rate the degree to which each of the following factors is a real or perceived barrier to the implementation of authentic research experiences in introductory biology laboratory courses relative to a traditional laboratory course. *

Please choose the appropriate response for each item:

	NA/Don't know	Not a barrier	A minor barrier	Somewhat of a barrier	A major barrier
Cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of instructor preparation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instructor resistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of lab prep support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of administrator support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Effects on student evaluation of instructors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Loss of content coverage and breadth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Additional workload	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of time for faculty to develop new research experiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of ways to effectively assess students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Class size	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Number of sections	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of student preparation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

85 [Q9]List any additional barriers to the implementation of authentic research experiences in introductory biology laboratory courses that are not listed above.

Please write your answer here:

Demographic Information

The final part of the survey will ask you some basic questions about your institution.

86 [Q10] At which type of institution do you teach? *

Please choose **only one** of the following:

- Private
- Public
- For Profit

87 [Q11] What category best describes your institution? *

Please choose **only one** of the following:

- 2-year college
- Liberal Arts College
- Comprehensive or Masters Degree Granting University
- Research University

88 [Q12] Is your institution considered any of the following? *

Please choose **only one** of the following:

- Historically Black College or University (HBCU)
- Hispanic-serving Institution
- Native American or Tribal College or University
- Other minority-serving institution
- None of the above

89 [Q13] Which of the following organizations are you a member of?

Please choose **all** that apply:

- ABLE (Association for Biology Laboratory Education)
- CUR (Council on Undergraduate Research)
- NABT (National Association of Biology Teachers)
- NSTA (National Science Teachers Association)
- Other:



Thank you for your participation in this survey on authentic research experiences in introductory biology laboratory courses.

If you are interested in participating in future activities of REIL Biology, visit the [REIL Biology Participation Survey](#) to provide your contact information.

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31.12.1969 – 17:00

Submit your survey.
Thank you for completing this survey.