

College of Arts and Sciences (CAS) 2016 - 2017 Yearly Assessment Report

If you would like to preview this form before you begin submitting, please follow this link:
https://myusf.usfca.edu/sites/default/files/2017_Yearly_Assessment_Report_preview.pdf

NOTES:

- *2016-2017 Yearly Assessment Reports* for all CAS Majors, Minors, Graduate Programs, and Non-Degree Seeking Programs are due by 10/28/17; early submissions are welcome.
- Reports, including Curriculum Map(s) should be submitted to the Program Assistant; he/she will upload documents to Gnosis.
 - Undergraduate programs (majors and minors) must include two curricular maps – one showing how courses map onto Program Learning Outcomes (PLOs) and one showing how PLOs map onto Institutional Learning Outcomes (ILOs).
 - Graduate programs must include one curricular map showing how courses map onto PLOs.
 - Non-degree seeking programs must include one curricular map showing how PLOs map onto ILOs.
- This form **cannot be saved** once it is in-progress. If you close out of the form before submission, responses will be **discarded**. Please ensure you are ready to fill out the full form once you begin, and/or keep a backup copy of your responses.
- If you encounter any issues while utilizing this form, please contact Corie Schwabenland Garcia, Academic Data and Assessment Analyst, at x4285 or ceschwabenland@usfca.edu

Identifying Information 

Name of Program *

Masters of Science in Biology

Type of Program *

Graduate Program ▼

College of Arts and Sciences Division *

Sciences ▼

Name/Title/E-mail Address of Submitter *

James Sikes / Asst Prof / jsikes@usfca.edu

Name(s)/E-mail Address(es) of Additional Individual(s) Who Should Receive Feedback

jspencer@usfca.edu

Submissions via the following Google form are strongly encouraged. However, if your department/program wishes to upload its assessment report in lieu of completing this form, you can do so here. Would you like to upload a PDF version of your Yearly Assessment Report?

Yes

No

Yearly Assessment Report PDF Upload

If you wish to submit a separate PDF report, please be sure to include all the components listed in this google form (screen shots of the google form are available at

https://myusf.usfca.edu/sites/default/files/2017_Yearly_Assessment_Report_preview.pdf)

Please upload a PDF version of your Yearly Assessment Report here: *

Please upload your program's PLO x Courses Curriculum map here (all file types allowed) *

Please upload your program's PLO x ILO Curriculum map here (all file types allowed)

If you would like to upload any other files (i.e. rubrics used to evaluate student work products, scripts/surveys/other indirect methods used to evaluate student work), you may upload them here. Please use descriptive file names (i.e. "SociologyAssessmentRubric").

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Mission Statement

Please type and/or copy-and-paste directly into the space below:

*

The MS graduate program in biology offers a research-intensive experience for post-baccalaureate students in a focused field of biology. The program seeks to prepare students for further postgraduate work or a technical research profession by developing proficiency in scientific research through critical thinking, inquiry, analysis, teaching, and communication.

Program Learning Outcomes (PLOs)



Please type and/or copy-and-paste directly into the space below:

*

PL01. Critically evaluate concepts and techniques in the current literature within a specific research area

PL02. Develop effective pedagogical strategies to teach concepts in the biological sciences

PL03. Conduct original research within a specified research area

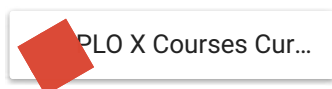
PL04. Effectively communicate scientific data and conclusions

Curriculum Maps

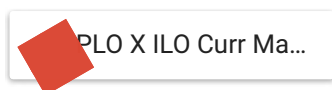


Please upload your Curriculum Maps below. All file types (Excel, PDF, etc.) are allowed.

Please upload your PLOs to Courses Curriculum map here *



Please upload your PLOs to ILOs Curriculum map here *



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Assessment Methods



Which of your Program Learning Outcomes did you assess during 2016-2017? *

PL03—Conduct original research within a specified research area.
.....

What student work products did you use to assess your PLO(s)? Pick one or more direct methods from the list below and briefly describe below what specific work product(s) you used. *

- Published (Standardized) Test (e.g., Major Field Test)
- Class Tests & Quizzes with Embedded Questions
- Class Presentations
- Off-Campus Presentations (NGOs, clients, agencies, etc.)
- Research Projects Reports
- Case Studies
- Term Papers
- Portfolio
- Artistic Performances, Recitals & Products
- Capstone Projects
- Poster Presentations
- Comprehensive Exams
- Thesis, Dissertation
- Pass Rates on Certification or Licensure Exams
- Group Projects
- In-/Out-of Class Presentations
- Competency Interviews (e.g., oral exams)
- Simulations
- Juried Presentations



Other:


Brief description of student work products used to assess PLOs: *

All Masters theses submitted in 2016-17 were used in evaluating PLO3. Students submit a final thesis to their graduate committee of 3 faculty and/or experts in the field of study that detail the objectives of their research activities, methods of data collection, analyses of data, and final conclusions made through research.

What tools did you use to evaluate the student work product(s) (e.g. rubric, test score)? *

A rubric

Please upload any tools used to evaluate student work product(s) here in PDF format only. Please use descriptive file names (e.g. "SociologyAssessmentRubric.PDF").

 Thesis Rubric - Ja...

Who evaluated the student work product? Check all that apply. *

- FT faculty members who were not instructor(s) of the course(s)
- FT faculty members who were instructor(s) of the course(s)
- PT faculty members who were not instructor(s) of the course(s)
- PT faculty members who were instructor(s) of the course(s)
- Other:

Describe the calibration procedure you employed, if any (i.e., how did you assure that faculty raters were consistent with each other in how they rated the student work products):

No calibration procedure was specifically used.

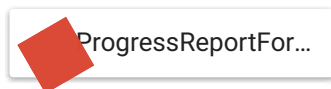
What indirect methods did you employ, if any?

- Student Survey
- Student Interview
- Focus Groups
- Reflection Sessions
- Reflection Essays
- Faculty Survey
- Exit (end of program) Survey
- Exit (end of program) Interview
- Alumni Survey
- Employer Survey
- Diaries or Journals
- Data from Institutional Surveys
- Curriculum/Syllabus Analysis
- Other:

Please indicate and briefly describe what indirect methods you used (and/or attach the survey/script/interview below).

Surveys were developed and distributed to all Masters students and their research advisors at the conclusion of each semester to assess research activities and progress to completing thesis research

Attach survey/script/interview here as needed



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Results 

What were the direct data results? *

Only 2 students completed their Masters thesis in 2016-17. Both were assessed using the developed rubric and both examples of student work were evaluated as adequate to excellent by all faculty members. Graduate committee members for both students agreed that the students had gained valuable experience in research and had effectively conducted original research in the fields of molecular biology and behavioral ecology.

What were the indirect data results? (If applicable)

Indirect results were not consistent and difficult to measure given that all faculty mentors never submitted progress reports for students—even after email requests from the Graduate Director. Student responses were vague and did not effectively allow for assessment of student progress. From those faculty responses received, the student assessment was also vague and did not effectively assess student performance in conducting original research and/or learning research skills.

How do you interpret these results? What do they mean? *

It appears that at the conclusion of the Masters of Science program in biology, students have effectively gained the ability to develop research questions within a specified field of study, to conduct research methods and experiments, and to make valid conclusions from their data. While we have a valid means of assessment of outcomes at the conclusion of the MS program, we need to develop more effective means to evaluate student progress during the 2 years leading up to the preparation of the final thesis. Current use of progress reports only provides a vague personal assessment of progress and does not allow for assessment of student progress in research during the times in which research skills are being developed.

Closing the Loop

"Assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change: Assessment alone changes little. Its greatest contribution comes on campuses where the quality of teaching and learning is visibly valued and worked at. On such campuses, the push to improve educational performance is a visible and primary goal of leadership; improving the quality of undergraduate education is central to the institution's planning, budgeting, and personnel decisions. On such campuses, information about learning outcomes is seen as an integral part of decision making, and avidly sought."

--9 Principles of Good Practice for Assessing Student Learning: American Association for Higher Education

Purpose: In the current field of higher education today, Assessment of student learning is seen as a critical tool to assist in the mission of student centered education. It is a way for faculty and the other university constituents involved in learning to use data driven results to bring about needed curricular or programmatic changes to improve student outcomes.

In the previous section, you have analyzed the data to get some critical insights into student learning. This section is for our way forward, and touches upon a few core areas:

What might you do as a result of these assessment results? What curricular or programmatic changes might you implement? *

- Revision of PLOs
- Changes in pedagogical practices
- Revision of program course sequence
- Revision of course(s) content
- Curriculum Changes (e.g. addition and/or deletion of courses)
- Modified program policies or procedures
- Designed measurement tools more aptly suited for the task
- Improved within and across school/college collaboration
- Improved within and across school/college communication
- Revised student learning outcomes in one or more courses
- Modified rubric
- Developed new rubric
- Developed more stringent measures (key assessments)
- Modified course offering schedules
- Changes to faculty and/or staff
- Changes in program modality of delivery
- Other:

Description of the Proposed Changes (as checked above): *

The graduate program plans for continued use of the thesis rubric evaluation for all students completing Masters theses in future semesters. The rubric will be distributed to all current students and their research advisors as well as to all incoming students and will be a permanent part of the Graduate Student Handbook beginning in 2018. The MS graduate faculty committee has formed a sub-committee to develop a more effective survey and progress report mechanism that will provide more specific guidelines in assessing the development of skills necessary for effective student research within the program. We plan for these more effective indirect measures to be supplemented by direct measures of student progress at the conclusion of the first year of study at USF—this will include a formal evaluation of research proposals submitted by each student to their graduate committees before the conclusion of their second semesters in residence at USF.

Amendments to your assessment plan: If, in course of conducting current assessment, you felt a need to amend the assessment plan itself for future assessments, please discuss it here in a few sentences: *

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Google Forms

Biology Masters Thesis Assessment Rubric:

	Inadequate	Adequate	Excellent
Is the writing appropriate for the target audience?	The thesis is written with excessive jargon or is greatly lacking in definitions and explanations, making the research inaccessible to non-specialist readers.	The thesis includes some useful definitions or explanations, but some key terms or concepts are still challenging for the non-specialist reader. Non-specialist readers are able to follow the main themes of the thesis, but the writer has not made this task easy.	The thesis has sufficient definitions and explanations to make the research accessible and engaging to non-specialist readers.
Does the thesis make a compelling argument for the significance of the student's research within the context of the current literature?	The thesis does not present an adequate review of the literature OR the thesis does not make sufficient connections between the published literature and the student's own research project to explain its significance.	The thesis presents a literature review, but either does not place the student's research within the context of current or past scientific research, or does not explicitly present an argument for the broader significance and/or scientific value of the student's research.	The thesis reviews the literature, demonstrates how the student's research fills a gap, and presents a compelling argument for the broader significance or scientific value of the student's research.
Does the thesis clearly articulate the student's research goals?	The student does not explicitly articulate a research question or the goals of the project.	The student articulates a research question or the goals of the project, but at times in an unclear, inconsistent, or disorganized manner.	The students clearly and explicitly articulates a research question or the goals of the project.
Does the thesis skillfully interpret the results?	There is no interpretation of the results (e.g., a simple restatement of the results) or the interpretation is superficial OR there is little or no attempt to explain the reasons underlying the lack of clear results.	The thesis presents a reasonable interpretation of the results, and mentions inconsistencies, uncertainties, alternative explanations, counterintuitive evidence, and/or limitations of the results, but does not explain the implications of these potential problems OR the thesis provides a reasonably thorough explanation of the reasons underlying the lack of clear results, and includes a reasonable attempt at interpreting whatever results were obtained.	The interpretation of results is insightful, and the thesis explains the implications of plausible inconsistencies, uncertainties, alternative explanations, counterintuitive evidence, and/or limitations of the results OR the thesis provides an insightful explanation of the reasons underlying the lack of clear results.

Is there a compelling discussion of the implications of findings?	The thesis makes little or no attempt to discuss the implications of the findings or does not describe future directions for the project OR the thesis makes little or no mention of future directions or alternative approaches for the project	The thesis makes some attempt to discuss the implications of the findings, but does not explain their significance OR the thesis mentions possible future studies without explaining how they would contribute significant new knowledge to the field.	The thesis provides a compelling discussion of the implications of the findings, including a thorough consideration of possible future studies
Is the thesis clearly organized?	The thesis does not adhere to the IMRaD organization, or the writing within paragraphs is frequently difficult to follow.	The thesis adheres to the IMRaD organization, and the writing within paragraphs is usually easy to follow.	The thesis adheres to the IMRaD organization, and writing within paragraphs is easy to follow in almost all cases.
Are the tables and figures clear, effective, and informative?	Many of the tables or figures are misleading, incorrect, unclear, or inappropriate, or the captions are incomplete or unclear.	In general, the tables, figures and captions are clear and appropriate.	The tables and figures are exceptionally well constructed, and the captions clearly describe the visual elements.

Rationale for assessment measures:

1. Is the writing appropriate for the target audience?

Rationale: Masters theses should address non-specialist readers with an understanding of basic biology — specifically, all faculty in biology regardless of sub-discipline. Students should assume their readers understand basic biological processes, but they should not assume that readers readily remember all the details. Students should limit their use of jargon, and should explain or define all key terms and concepts that are specific to their sub-field.

2. Does the thesis make a compelling argument for the significance of the student’s research within the context of the current literature?

Rationale: The thesis should contain a substantive literature review that places the student’s research within its appropriate scientific context. This literature review should not only describe what is known about the student’s topic, but should also identify the specific gaps in knowledge that the student’s project intends to address. The student should make an argument for the broader significance of his/her research when addressing these gaps.

3. Does the thesis clearly articulate the student’s research goals?

Rationale: The student's research statement should include a research question or the goals of the project, and may also include a hypothesis (if applicable) and an overview of the methodological approach.

4. Does the thesis skillfully interpret the results?

Rationale: Student should interpret their results within the scientific context constructed in the Introduction (this should be done in relation to a hypothesis, if applicable). Student should acknowledge the fact that scientific data has complexities that often defy a single interpretation. The student should acknowledge this complexity, as well as discuss plausible inconsistencies, uncertainties, alternative explanations, counterintuitive evidence, and/or limitations of his/her results.

5. Is there a compelling discussion of the implications of findings?

Rationale: Students should explicitly explain the implications of their research findings within the scientific context constructed in the Introduction. Students should make the connections between their results and other published results or indicate how their projects could lead to future research within their field of inquiry, which could include suggestions for additional experiments and/or alternative approaches. Students should demonstrate understanding of the big picture.

6. Is the thesis clearly organized?

Rationale: The thesis should be organized in the standard IMRaD fashion (Introduction, Methods, Results, and Discussion) that reflects the nature of scientific research investigations. Within paragraphs, sentences should be cohesive and logically organized.

7. Are the tables and figures clear, effective, and informative?

Rationale: Tables and figures should be consecutively numbered, cited in consecutive order, and the captions should be in the appropriate location (above tables, below figures). The thesis should refer explicitly to each table or figure (e.g., "...reveals an upward trend (Figure 1).") and the visual elements of all tables and figures (including photographs) should be clear and easy to read or interpret. The captions should provide a clear description of the table or figure.



UNIVERSITY OF
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USF BIOLOGY DEPARTMENT GRADUATE STUDENT PROGRESS REPORT

- To be completed by Graduate Student each semester

NAME _____ DATE _____

SEMESTER _____

DATE ADMITTED TO PROGRAM _____

EXPECTED DATE OF GRADUATION _____

ADVISOR _____

THESIS COMMITTEE MEMBERS

1. _____

2. _____

3. _____

UNITS COMPLETED: _____

List teaching assistantship experience to date:

<u>Course</u>	<u>Semester</u>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____

Presentations have been made at the following conferences/programs:

<u>Date</u>	<u>Conference/Meeting/Campus Program</u>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

Please indicate the appropriate answer for the questions below:

- | | | | |
|---|-----|----|----|
| 1. My research has progressed well this year. | YES | NO | NA |
| 2. My thesis writing has progressed well. | YES | NO | NA |
| 3. I have met with my committee members. | YES | NO | NA |
| 4. I meet regularly with my advisor. | YES | NO | NA |

If you responded NO to any of the above, please explain below:

Please summarize your progress so far (if you feel as though you will not be able to graduate within the two year time frame please discuss):



**University of San Francisco – Biology Department
GRADUATE STUDENT EVALUATION FORM**

Student Name: _____ Student ID Number: _____

Major Professor: _____ Evaluation Date: _____

1) Research/lab performance

Has the student's rate of progress in the past semester been satisfactory?

YES NO

Comments:

Has the student's thesis-related research in the past semester been satisfactory?

YES NO

Comments:

2) Classroom performance

Has the student's coursework/directed studies performance in the past semester been satisfactory?

YES NO

Comments:

3) Assistantship performance

Assistantship Assignment: Research Teaching N/A

Supervisor: _____

Performance: Outstanding Acceptable Poor

4) Scholarship eligibility

Based on performance to date, should the student continue to receive scholarship units?

YES NO

Comments:

	PLO1	PLO2	PLO3	PLO4
Program Learning Outcomes X Courses	Critically evaluate concepts and techniques in the current literature in a specific research area	Develop effective pedagogical strategies to teach concepts in the biological sciences	Conduct original research within a specified research area	Effectively communicate scientific data and conclusions
Courses or Program Requirement				
Directed Reading (BIOL 695)				
CLO1--Develop critical abilities to read primary literature & interpret figures and conclusions.	X			
CLO2--Evaluate current understanding of the chosen field of biological research while determining areas of the discipline that remain understudied.	X		X	X
CLO3--Gain skills in critical analysis of primary literature and oral communication.	X			X
Graduate Seminar (BIOL 600)				
CLO1--Evaluate methodologies, data, and conclusions from novel biological research.			X	
CLO2--Critically assess scientific research in a range of biological disciplines.	X		X	
CLO3--Evaluate the role of scientific ethics in how research is conducted and communicated.	X		X	
CLO4--Develop skills in presenting results of scientific inquiry through seminar presentations.				X
Directed Research (BIOL 698)				
CLO1--Complete independent research projects under the direction of a research professor			X	
CLO2--Develop skills in laboratory techniques that allow for the successful completion of research.	X		X	
Writing & Research Methods (BIOL 697)				
CLO1--Develop critical ability to read primary literature and develop research projects based on current knowledge in the field	X			
CLO2--Gain skills in critical analysis of the literature and oral communication	X			X
CLO3--Develop skills in written discourse through abstract, poster, and proposal preparation		X		X
Thesis Writing (BIOL 699)				
CLO1--Communicate results of independent laboratory research by completing a formal written thesis.				X
CLO2--Communicate results of independent laboratory research by orally presenting data and conclusions.				X
Teaching Assistant Requirement				
LO1--Develop efficient strategies to instruct students in an academic laboratory environment.		X		X
LO1--Develop mastery of basic biological concepts taught in lower division biology courses.		X		

Institutional Learning Outcomes X Program Learning Outcomes	PLO1	PLO2	PLO3	PLO4
Institutional Learning Outcomes	Critically evaluate concepts and techniques in the current literature in a specific research area	Develop effective pedagogical strategies to teach concepts in the biological sciences	Conduct original research within a specified research area	Effectively communicate scientific data and conclusions
1. Students reflect on and analyze their attitudes, beliefs, values, and assumptions about diverse communities and cultures and contribute to the common good.	X	X		
2. Students explain and apply disciplinary concepts, practices, and ethics of their chosen academic discipline in diverse communities.	X	X	X	X
3. Students construct, interpret, analyze, and evaluate information and ideas derived from a multitude of sources.	X		X	X
4. Students communicate effectively in written and oral forms to interact within their personal and professional communities.				X
5. Students use technology to access and communicate information in their personal and professional lives.		X	X	X
6. Students use multiple methods of inquiry and research processes to answer questions and solve problems.		X	X	
7. Students describe, analyze, and evaluate global interconnectedness in social, economic, environmental and political systems that shape diverse groups within the San Francisco Bay Area and the world.	X			X