

MS/CHEMISTRY

ASSESSMENT REPORT ACADEMIC YEAR 2018 – 2019 REPORT DUE DATE: 11/01/2019

- Who should submit the report? – All majors, minors (including interdisciplinary minors), graduate and non-degree granting certificate programs of the College of Arts and Sciences.
- Programs can combine assessment reports for a major and a minor program into one aggregate report as long as the mission statements, program learning outcome(s) evaluated, methodology applied to each, and the results are clearly delineated in separate sections
- Undergraduate, Graduate and Certificate Programs must submit separate reports
- It is recommended that assessment report not exceed 10 pages. Additional materials (optional) can be added as appendices
- Curriculum Map should be submitted along with Assessment Report

Some useful contacts:

1. Prof. Alexandra Amati, FDCD, Arts – adamati@usfca.edu
2. Prof. John Lendvay, FDCD, Sciences – lendvay@usfca.edu
3. Prof. Mark Meritt, FDCD, Humanities – meritt@usfca.edu
4. Prof. Michael Jonas, FDCD, Social Sciences – mrjonas@usfca.edu
5. Prof. Suparna Chakraborty, AD Academic Effectiveness – schakraborty2@usfca.edu

Academic Effectiveness Annual Assessment Resource Page:

<https://myusf.usfca.edu/arts-sciences/faculty-resources/academic-effectiveness/assessment>

Email to submit the report: assessment_cas@usfca.edu

Important: Please write the name of your program or department in the subject line.

For example: FineArts_Major (if you decide to submit a separate report for major and minor);
FineArts_Aggregate (when submitting an aggregate report)

I. LOGISTICS

1. Please indicate the name and email of the program contact person to whom feedback should be sent (usually Chair, Program Director, or Faculty Assessment Coordinator).

Ryan West – Director Chemistry Graduate Program (rmwest2@usfca.edu)

2. Please indicate if you are submitting report for (a) a Major, (b) a Minor, (c) an aggregate report for a Major & Minor (in which case, each should be explained in a separate paragraph as in this template), (d) a Graduate or (e) a Certificate Program

(d) Graduate Program

3. Please note that a Curricular Map should accompany every assessment report. Has there been any revisions to the Curricular Map?

NO

II. MISSION STATEMENT & PROGRAM LEARNING OUTCOMES

1. Were any changes made to the program mission statement since the last assessment cycle in October 2018? Kindly state “Yes” or “No.” Please provide the current mission statement below. If you are submitting an aggregate report, please provide the current mission statements of both the major and the minor program

Mission Statement (Major/Graduate/Certificate):

No.

To deliver a broad-based, challenging research experience that will train students to participate effectively as PhD researchers, health professionals, government and industry professionals, or as teachers. The program will foster a culture that: values strong researcher-faculty-staff interactions and strives to help researchers become self-learners and to discover the excitement and creativity of chemical research. We strive to instill values of social responsibility with ethical behavior as part of a chemical research community culminating in the writing of a research thesis.

Mission Statement (Minor):

n/a

2. Were any changes made to the program learning outcomes (PLOs) since the last assessment cycle in October 2017? Kindly state “Yes” or “No.” Please provide the current PLOs below. If you are submitting an aggregate report, please provide the current PLOs for both the major and the minor programs.

Note: Major revisions in the program learning outcomes need to go through the College Curriculum Committee (contact: Professor Joshua Gamson, gamson@usfca.edu). Minor editorial changes are not required to go through the College Curriculum Committee.

PLOs (Major/Graduate/Certificate):

No.

- demonstrate broad knowledge in areas of chemistry relevant to research interests
- become safe and proficient in laboratory practice and instrumental techniques necessary for research
- communicate the subject of chemistry in written and oral forms including: correspondence, reports and short presentations that may utilize multimedia tools

- develop critical thinking skills with the ability to judge scientific arguments and make arguments based on experiments conducted during research project
- prepared to pursue further graduate studies or employment in chemistry or related scientific fields

PLOs (Minor):

n/a

3. State the particular Program Learning Outcome(s) you assessed for the academic year 2018-2019.

PLO(s) being assessed (Major/Graduate/Certificate):

communicate the subject of chemistry in written and oral forms including: correspondence, reports and short presentations that may utilize multimedia tools

PLO(s) being assessed (Minor):

n/a

III. METHODOLOGY

Describe the methodology that you used to assess the PLO(s).

For example, “the department used questions that were inputted in the final examination pertaining directly to the <said PLO>. An independent group of faculty (not teaching the course) then evaluated the responses to the questions and gave the students a grade for responses to those questions.”

Important Note – WSCUC advises us to use “direct methods” which relate to a direct evaluation of a student work product. “Indirect methods” like exit interviews or student surveys can be used only as additional complements to a direct method.

For any program with fewer than 10 students: If you currently have fewer than 10 students in your program (rendering your statistical analysis biased due to too few data points), it is fine to describe a multi-year data collection strategy here. It would be important to remember that every 3 years, we would expect you to have enough data to conduct a meaningful analysis.

Important: *Please attach, at the end of this report, a copy of the rubric used for assessment.*

Methodology used (Major/Graduate/Certificate):

As part of CHEM 698 in the Spring of 2019, our graduate students presented their research at the on campus CARD event. The students gave poster presentations. We used the CARD presentations as an opportunity to assess our students’ oral presentation skills using a common rubric (see attached). Each student (4) was evaluated by at least 2 instructors.

Methodology used (Minor):

n/a

IV. RESULTS & MAJOR FINDINGS

What are the major takeaways from your assessment exercise?

This section is for you to highlight the results of the exercise. Pertinent information here would include:

- how well students mastered the outcome at the level they were intended to,
- any trends noticed over the past few assessment cycles, and
- the levels at which students mastered the outcome based on the rubric used.

To address this, among many other options, one option is to use a table showing the distribution, for example:

Level	Percentage of Students
Complete Mastery of the outcome	100%
Mastered the outcome in most parts	0%
Mastered some parts of the outcome	0%
Did not master the outcome at the level intended	0%

Results (Major/Graduate/Certificate):

POSTER RUBRIC @ USF CARD (MAY 2019): MS students only: 2 or more faculty members scoring

Students gave practice posters in Chem 698											
Category on Rubric—>	1	2	3	4	5	6	7	8	9	10-Overall impression	
Student 1 average	5.0	4.5	4.0	5.0	4.5	5.0	4.0	3.5	4.5	4.5	
Student 2 average	4.0	4.0	4.0	4.0	4.0	4.5	3.0	4.5	4.5	4.0	
Student 3 average	5.0	4.5	4.0	5.0	4.0	5.0	4.0	4.5	5.0	4.5	
Student 4 average	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
AVERAGE	4.8	4.5	4.0	4.8	4.4	4.9	4.0	4.4	4.8	4.5	
Benchmark is 4 or higher											

As seen in the table above, overall our students did a good job of presenting their research at CARD. These students had high averages for this presentation, at or above previous years. Each student submitted an outline, sample slides, then full practice in front of CHEM 698 classmates before presenting in public. Research directors were

involved in content and planning. These students were a mix of 1st and 2nd year graduate students.

Results (Minor):

n/a

V. CLOSING THE LOOP

1. Based on your results, what changes/modifications are you planning in order to achieve the desired level of mastery in the assessed learning outcome? This section could also address more long-term planning that your department/program is considering and does not require that any changes need to be implemented in the next academic year itself.

Closing the Loop (Major/Graduate/Certificate):

The biggest additional comments on posters is cramming too much information into the tables/graphs and text. There should be a minimalist approach to posters and more practice explaining the results in <10 minutes. Most students get caught up in details and over-explain. Strive to act more like a tutorial, put on a timer on practice. It was taking too long to get to the main points.

Closing the Loop (Minor):

n/s

2. What were the most important suggestions/feedback from the FDCD on your last assessment report (for academic year 2016-2017, submitted in October 2017)? How did you incorporate or address the suggestion(s) in this report?

Suggestions (Major/Graduate/Certificate):

Suggestions (Minor):

ADDITIONAL MATERIALS

(Any rubrics used for assessment, relevant tables, charts and figures should be included here)

Department of Chemistry, USF

CARD Poster or Presentation Assessment, Spring 2018 (return to L. Margerum)

Course: Chem 397 or 698 Research Methods Student: _____

Evaluator _____

Key

1: Strongly Disagree

2: Disagree

3: Neither Agree or disagree

4: Agree

5: Strongly Agree

Overall the student's work shows that the student...:

1. demonstrates understanding of the problem and how problem was attacked and solved.

1 2 3 4 5

2. demonstrates effective organization of their project, poster, seminar.

1 2 3 4 5

3. demonstrates effective use of graphs and other visual aids.

1 2 3 4 5

4. uses effective writing and appropriate technical vocabulary (good grammar, spelling, coherent writing, clear exposition)

1 2 3 4 5

5. shows an ability to use instrumentation useful in solving the problem.

1 2 3 4 5

6. collected reasonable data useful in solving the problem.

1 2 3 4 5

7. uses literature properly in presentation.

1 2 3 4 5

8. supports their generalizations and conclusions with adequate and sound evidence.

1 2 3 4 5

9. demonstrates effective learning of several laboratory skills.

1 2 3 4 5

10. Overall impression of the project, poster, presentation, etc. Please rate your overall impression.

1 (poor) 2 (fair) 3 (average) 4 (good) 5 (outstanding)

Other Comments?: