Biochemistry - MS and PhD Program
Assessment Summary October 2021

The College of Science has standardized expectations for annual review of graduate students. The annual review includes the following components:

1. Completion or update of an Individual Development Plan (IDP) by the student.
2. A self-evaluation by the student, submitted to the major professor and thesis/dissertation committee.
3. A committee meeting that includes the student and major professor.
4. A written response following the committee meeting addressing student academic progress, including specific feedback on the student self-evaluation. A copy of the document should be provided to the student and placed in the student file.

Implementation of these expectations and evaluation for 2021 is described below for the Biochemistry MS and PhD program.

Assessment Committee
Each graduate student in the Biochemistry PhD program has a Graduate Mentoring Committee composed of the Major Professor and four additional faculty members, including one member from outside the department. For MS students, the committee is composed of the Major Professor and two additional faculty members.

Assessment Frequency
The Graduate Mentoring Committee meets with the graduate student each spring semester.

Learning Objectives
The Department of Chemistry and Biochemistry has established the following learning objectives as part of the training in the biochemistry PhD and MS programs. Each learning objective is assessed yearly as noted in the next sections.

- Coursework and Cumulative Exams: The student should be making expected progress in coursework and any required cumulative exams.
- General Research Progress: The student should be making progress in research, as expected for a student at the same place in the program.
- Publications: The student should be publishing in peer reviewed journals appropriate to the level in the program.
- Literature: The student should be reading and up to date with the literature in the field.
- Writing Skills: Writing skills should be appropriate for the student program level.
- Professional Connections: The student should be networking and making professional connections appropriate for their level in the program.
- Meetings: The student should be participating in regular meetings in the group and with the major professor.

- Presentations Skills: The student should be at the expected level in making scientific presentations.
- Curriculum vitae: The student should be progressing in building a compelling CV.
- Professionalism: The student should demonstrate the professional skills expected for a graduate student at the program level.
- Service: The student should demonstrate service to the community, department, or university.
- Teamwork: The student should be effectively working in a team.
- Professional Meetings: The student should attend professional meetings.

Assessment of Individual Graduate Students

In accordance with College of Science guidelines, each student completes an Individual Development Plan and submits a progress report on his/her research to the mentoring committee in advance of the committee meeting. The student also completes the student component of the skills assessment matrix shown below. (The skills assessment matrix was developed by the Department Graduate Studies Committee and was approved by the faculty of the Department.) In this self-assessment, they mark “below”, “at”, or “above” expectations at their stage in the program for each of the assessed skills and progress.

At the annual meeting, the Committee reviews the progress report and self-assessment with the student, marks the committee assessment for each item, and discusses any differences with the student. Following the committee meeting, the Committee completes the form and provides a letter to the student that includes an individualized plan to address deficiencies. After all committee members approve, the document is sent to the student and to the graduate program coordinator (GPC) for inclusion in the student file.

Progress Evaluation in the USU Chemistry and Biochemistry Graduate Program

Student Name		**Year in Program (1st, 2nd, etc.)**	
Date Completed		**MS or PhD**	

Major Professor		
Committee Members		

Expectation for Your Level

	Student Assessment				Committee Assessment		
	Below	**At**	**Above**		**Below**	**At**	**Above**
Coursework and Cumulative Exams							
General Research Progress							
Publications: Are you publishing your work or making progress towards it?							
Literature: Do you read the literature regularly? Are you familiar with important developments in your field?							
Writing Skills: Are your writing skills appropriate to your level?							
Professional Connections: Are you networking with people who can help you achieve current and future research and career goals?							
Meetings: Do you meet with your supervisor and/or research group regularly**?**							
Presentation Skills: Have you had opportunities to present in your research group, in the Department, at Conferences? Are your presentation skills appropriate for your level?							
Curriculum Vitae: Are you developing content and format that will land your dream job?							
Professionalism: Do you demonstrate responsibility, dependability, honesty, integrity, and good ethics?							
Service: Have you contributed service to the Department, University, or other organizations?							
Teamwork: Are you a good team member? Will your advisor be able to speak highly of you in a reference letter?							
Professional Meetings: Have you attended conferences or other professional meetings?							

Notes, Action Items, and Additional Discussion Topics: See page 2 of this form.

Committee Meeting Discussion: Impact of COVID-19 on performance.

Notes/Action Items:

Department Review and Adjustments

Individual student assessments are reviewed by the Department Graduate Studies Committee to ensure compliance with the expectations stated above. Additionally, the GPC collates the assessment results from all students and provides the results to the Department Graduate Studies Committee and to the Department Head. The Graduate Studies Committee reviews the consolidated data, and recommends specific actions to address any deficiencies identified across the program. These recommendations are presented to the Faculty of the Department, and implemented as agreed upon by the Faculty.

College of Science Review

A summary of the department assessment is submitted to the College of Science Dean's office for review. Deficiencies identified across multiple programs may be addressed at a College level as determined by the leadership team.

Assessment Results for 2020 and 2021

The consolidated 2020 and 2021 assessment data for MS and PhD Biochemistry program is summarized below:

2021 Skills Assessment	Student Assessment			Committee Assessment		
	Below	At	Above	Below	At	Above
Coursework/Cumulative Exams	0	12	0	0	12	0
General Research Progress	1	11	0	1	11	0
Publications	1	11	0	1	11	0
Literature	3	9	0	1	11	0
Writing Skills	2	10	0	2	10	0
Professional Connections	4	7	1	0	11	1
Meetings	0	11	1	0	12	0
Presentation Skills	1	11	0	1	11	0
Curriculum Vitae	4	7	1	0	12	0
Professionalism	0	12	0	0	12	0
Service	3	7	2	0	9	3
Team Work	0	12	0	0	12	0
Professional Meetings	3	8	1	0	12	0
Total:	**22**	**128**	**6**	**6**	**146**	**4**
Percentage:	**14.0%**	**82.0%**	**4.0%**	**4.0%**	**93.5%**	**2.5%**

2020 Skills Assessment	Student Assessment			Committee Assessment		
	Below	At	Above	Below	At	Above
Coursework/Cumulative Exams	2	12	2	2	13	1
General Research Progress	2	13	1	1	15	0
Publications	4	11	1	0	16	0
Literature	2	14	0	0	16	0
Writing Skills	2	14	0	1	14	1
Professional Connections	4	8	4	1	11	4
Meetings	0	15	1	0	15	1
Presentation Skills	1	12	3	1	14	1
Curriculum Vitae	0	13	3	2	14	0
Professionalism	0	14	2	0	15	1
Service	4	8	4	0	13	3
Team Work	0	14	2	0	13	3
Professional Meetings	5	11	0	0	16	0
Total:	**26**	**159**	**23**	**8**	**185**	**15**
Percentage:	**13%**	**76%**	**11%**	**4%**	**89%**	**7%**

Action Plans and Follow Up

These data indicate that a majority of the graduate students are performing well in all aspects of the program. The department notes that several students exhibit writing skills that are below expectation, and this trend is observed over both years. These deficiencies are being addressed through individual mentoring with the student's Major Professor. Additionally, the Department is recommending a self-paced, online technical writing course to students.

The Graduate Studies Committee will review the skills matrix results next year to determine if the current actions are working. If an area remains of concern, a new plan of action will be brought to the Faculty for refinement and implementation.