

UNIVERSITY OF ALASKA FAIRBANKS
Student Learning Outcomes Assessment Plan
PhD Biochemistry and Neuroscience
 CNSM
 May 12, 2021

Expanded Statement of Institutional Purpose	Intended Objectives/Outcomes	Assessment Criteria and Procedures	Implementation (what, when, who)
MISSION STATEMENT: Mission: The PhD graduate program in Biochemistry and Neuroscience supports training and research excellence in core areas including cellular and molecular neuroscience, drug discovery and bioanalytical chemistry. The program contributes to the Biomedical and One Health Science community at the University of Alaska and seeks to better understand and develop technologies related to the Arctic. GOAL STATEMENT: To prepare students for careers in biochemistry and neuroscience to meet workforce demand within academia, industry, government and legal services.	Strong written communication skills to communicate significance and innovation as well as technical details of biochemistry and neuroscience research	Writing assigned in the B&N graduate colloquium (Chem 688) is evaluated according to a standard rubric. The written comprehensive exam (proposal) and thesis are evaluated according to professional proposal and manuscript review criteria and written documents are revised until expected standards are met.	The graduate advisory committee will recommend revisions to written comprehensive exam and the thesis and evaluate drafts until the student demonstrates mastery of written communication.
	Ability to formulate hypotheses and articulate methods for testing hypotheses, and ability to perform technical tasks and quantitative analyses needed to test hypotheses and interpret results	Skills demonstrated during regular laboratory meetings, annual graduate committee meetings, and during thesis defense are evaluated according to professional standards. Laboratory records are evaluated according to professional standards. Number of first authored student or alumni peer-reviewed publications in professional journals. Number of successful student authored fellowship applications such as Alaska INBRE and other competitive funding mechanisms supporting graduate student research assistantships.	The thesis advisor reviews laboratory work and notebooks at regular lab meetings and during one on one meetings with students. The student shares a current laboratory notebook for comments at committee meetings and presents a summary of research progress. The graduate committee completes a presentation rubric and provides additional feedback to develop skills at annual meetings and the thesis defense and when reviewing drafts of manuscripts and the thesis. To improve quantitative skills we will dedicate one semester of our B&N colloquium to biostatistics, data visualization and quantitative aspects of rigor.
	General and specific knowledge of field and peer-reviewed	Knowledge demonstrated during regular laboratory meetings, annual graduate committee meetings, oral	List of first-authored, peer-reviewed publications (including impact factors), abstracts, talks and poster

Submitted by:

	literature. Ability to critically analyze literature	comprehensive exam and during thesis defense are evaluated according to state-of-the art in the field.	presentations included on annual report.
	Strong presentation skills	Ability to communicate significance, innovation, application, theory, hypothesis, experimental design, and interpretation of results demonstrated during laboratory meetings, annual graduate committee meetings, oral comprehensive exam and during thesis defense are evaluated according to professional standards.	Graduate committee evaluates oral presentation according to an established rubric at each annual committee meeting, oral comprehensive exam and thesis defense.
	Strong professional skills	Establish a continuous training addressing accurate note taking, short succinct communication pitches, mentoring of undergraduate students to enhance team work, foster leadership qualities, enhancing skills regarding logistic and management of projects, and networking activities. Modify the program performance rubric to include Professional Skills and complete the rubric again when the student exists the program.	Lab meetings and day to day operations in the research laboratory of individual PIs resting on a previously agreed upon approach. Professional development activities offered through INBRE and ITHS. Chem 688 Biochemistry Colloquium