Impact Statement

The ***Program in Biochemistry and Molecular Biology (BMB)*** is an interdepartmental and intercampus graduate program (UAF, UAA, UAS) administered through the Department of Chemistry and Biochemistry. Consistent with the mission and vision of the University of Alaska Fairbanks, contributes to the biomedical community at the University of Alaska in the core areas of excellence in Native Health, Infectious Diseases, and Neuroscience. BMB supports these biomedical research areas through graduate student training as well as basic and translational research efforts in its function as one of two principal pillars to support biomedicine development at the University of Alaska (UA). BMB provides strong foundation courses for graduate students and expertise in molecular technologies related to cellular communication specifically protein structure/function and membrane microdomain dynamics. BMB's strategic plan aims at strengthening and expanding the contributions of BMB in graduate education, basic and translational research, and professional skill training emphasizing the vital role of biochemistry in biomedicine.

Mission

The Program in Biochemistry and Molecular Biology will support and foster the development of biomedical science at the University of Alaska Fairbanks through basic research, translational research, and academics focusing on molecular mechanisms of cellular communication relevant to human development and disease.

Vision

The Program in Biochemistry and Molecular Biology will establish basic and translational research excellence related to the molecular underpinnings of inter- and intracellular signaling, provide educational resources in molecular biomedicine, and support the biomedical community at the University of Alaska emphasizing Alaska Native Health, Infectious Disease, and Neuroscience.

Current BMB Curriculum

Three courses, designated as core courses, establish the foundation of BMB's graduate education supplemented by emphasis courses in neuroscience, pharmacology, and toxicology with the latter two areas resting on collaborative efforts. The core courses address *Protein Structure and Function* (Chem 654), *Membrane Biochemistry and Biophysics* (Chem 674), and *Molecular Foundations of Gene Expression* (Chem 657). The proposed course *Chem 675 Cellular Signaling* will complement and synergize with the existing core and provide fundamental missing concepts in biochemical, biomolecular, and biomedical education. The need for this course was identified by the BMB graduate faculty of the Biochemistry and Molecular Biology Program through our stringent comprehensive exam, which represents a primary program assessment tool, and was dedicated as course of highest priority. The vast majority of drug discovery and pharmacology in today world is indeed targeting cellular signaling networks.