Medical Physiology (MS) Learning Objectives

Physiology is the study of the functions and activities of life and living matter at all levels within an organism. While physiology research is frequently at the molecular level, the tradition of the discipline challenges the researcher to consider all the homeostatic and developmental functions of the organism. This perspective is particularly valuable in medical research. First, it helps identify critical organism functions with therapeutic and health-promoting opportunities. Second, it helps recognize how the modification of one function may lead to subsequent changes that are either beneficial or harmful. Thus, the overarching objective of the MS Program in Medical Physiology is to imbue in its graduates this perspective to help them translate basic science discoveries into treatments of disease and strategies to promote health. Key to these translational efforts is another objective of the program: training students to communicate effectively both orally and in writing in the field of medical physiology. Specific objectives include demonstration of:

1. Mastery of core information in cell biology, molecular biology, and statistics.
   Assessment: satisfactory performance in relevant graduate courses.

2. Broad comprehension of major functions of the human organism, including how they interact and how examples of dysfunction are diagnosed and are either treated or represent an unmet medical need.
   Assessment: satisfactory performance in the two-term graduate course "Medical Physiology."

3. The ability to orally communicate the rationale underlying a research project and provide a critique of results of relevant research efforts.
   Assessment: satisfactory performance in a course involving oral presentations of a student's research efforts or journal articles.

4. The ability to complete a research project and both orally and in writing communicate the rationale underlying the research project, provide a critique of results of the student's research efforts, and give recommendations regarding future research efforts.