**Program Overview**

**Graduate Studies**

Success in research demands creativity, the ability to think critically and mastery of technical skills. Although it is often said that one "cannot teach creativity," it certainly can be encouraged and rewarded. As for critical thinking and technical skills, these are acquired through a carefully structured curriculum that emphasizes learning from original research papers and hands-on laboratory experience rather than summaries usually found in textbooks. In all cases, the training program at Minnesota is highly individualized so that each student has the freedom to pursue their own scientific interests with respect to their unique academic history. There is, however, a fundamental base of knowledge in the life sciences (cell biology, biochemistry, systems physiology and neuroscience) that provides a strong foundation for advanced study. Course work in these areas constitutes the core curriculum and demonstrated understanding of this material is required of all students. These courses are usually taken within the first two years of study. Beyond the core requirements, individualized programs are structured to address advanced work in the student's area of specialization.

Each student is encouraged to participate in laboratory rotations with faculty having research interests similar to that of the student. These rotations provide hands-on experience with state-of-the-art techniques and give the student an opportunity to explore a variety of specialization options available within the program.

**History**

The Department of Physiology has a long and distinguished tradition for excellence in research and graduate education. The Department was founded in 1889 and achieved national and international prominence in large part through the efforts of Dr. Maurice Visscher during his tenure as Chairman from 1936 to 1968. Dr. Visscher received both his MD and Ph.D. degrees from the University of Minnesota. His pioneering research on cardiac energy metabolism began in Starling's laboratory in Cambridge and eventually provided a foundation for the development of open heart surgery techniques at the University of Minnesota. He was a member of the National Academy of Sciences, served as president of the American Physiological Society and as president of the International Union of Physiological Scientists. In recognition of his scientific contributions and his service to the University, an endowed professorship was established in his honor.

Dr. Visscher also began another tradition at Minnesota: A tradition of collaboration between the departments of Physiology, Surgery and Medicine that emphasized the importance of understanding basic physiologic mechanisms and applying this knowledge to the development of new approaches in clinical medicine. This tradition continues today through an interdepartmental graduate program in Cellular and Integrative Physiology, which draws upon the expertise of physiologists in both basic science and clinical departments. This program provides a greater range of opportunities and experiences for graduate training than could otherwise be provided through a single department. It also increases access to state-of-the-art research facilities and equipment in each of these departments to support graduate student and faculty research activities within the program.

In 1999 the Physiology Department moved into new space in the completely renovated Jackson Hall, located in between the Hasselmo Hall and the new Cellular and Molecular Biology Building, which opened in 2002.

In 2008, Dr. Joseph Metzger became the new head of Physiology. The current name for the department is the Integrative Biology and Physiology (IBP) Department.