

# Molecular Physiology and Biophysics

## Chair

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**Faculty:** <https://physiology.medicine.uiowa.edu/profile/>

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The Department of Molecular Physiology and Biophysics participates in interdisciplinary graduate programs, including the Medical Scientist Training Program, a combined MD/PhD program offered by the Graduate College and the Carver College of Medicine, and it provides instruction in molecular physiology and biophysics for MD, DDS, and other health professions students. The department also conducts a co-op exchange, a vigorous training program that gives undergraduate students the opportunity to develop as independent researchers in preparation for graduate studies.

The department's principal research areas include cell biology, genetics, endocrinology, neuroscience, and membrane physiology and biophysics. The unifying theme is the understanding of signal transduction mechanisms involved in regulating function at the cellular and molecular levels.

## Research

Faculty research interests in the Department of Molecular Physiology and Biophysics encompass molecular and cellular endocrinology, cellular and developmental neurophysiology, and membrane structure and function. Within these, there are multiple areas of interest, including hormone receptors, reproductive endocrinology, signal transduction, regulation of gene expression, synaptic transmission, neuronal differentiation, membrane ion channels, regulation of excitability, and cardiovascular electrophysiology and regulation. Experimental models currently being investigated include rodents, yeast, *Drosophila*, and cultured cell lines from a variety of species.