

**Case Western Reserve University  
Department of Physiology and Biophysics  
Summer Undergraduate Research Program**

New discoveries that influence our health and life are being made in the biomedical sciences at an ever-increasing rate. To provide undergraduates interested in a biomedical research career with an opportunity for firsthand knowledge of how new hypothesis are formulated and new data are obtained and interpreted in major research laboratories, the Department of Physiology and Biophysics offers summer research traineeships to approximately 10-12 undergraduate students. The enrolled students select a laboratory and work together with a faculty member to obtain hands-on research experience in biomedical sciences.

The program is designed for outstanding students with majors in biology, chemistry, physics or related disciplines. Students will carry out a research project under the close guidance of a faculty member during the summer months (8 to 10 weeks). Stipends or national fellowships are provided, and on-campus housing is available. In general, the program accepts students who have finished their junior year. Exceptions are possible for advanced and talented sophomores.

*Application Deadline: March 31<sup>st</sup>.*

*Decisions on acceptance* into the program are made on a continuous basis, with the bulk of acceptances being made by April 15<sup>th</sup>. Pending withdrawal from the program, applications are accepted and decisions on acceptance are still possible after this date.

**Letters of inquiry** should be directed to:

SURP Coordinator, Department of Physiology and Biophysics  
School of Medicine, Case Western Reserve University  
10900 Euclid Avenue, Cleveland, Ohio 44106-4970  
Telephone: 216-368-2084  
e-mail: [Phol-Info@case.edu](mailto:Phol-Info@case.edu).

**The following is a list of faculty mentoring in the program, and their areas of research:**

**Walter F. Boron**, Professor and Chairman; M.D., Ph.D., Washington University (St. Louis), 1977 - Regulation of intracellular pH; molecular physiology, structural biology and regulation of renal HCO<sub>3</sub><sup>-</sup> transporters; gas channels

**Matthias Buck**, Associate Professor; Ph.D., Oxford, 1996 - Biophysical studies on protein-protein interaction; small GTPases in neuron signaling.

**Sudha Chakrapani**, Assistant Professor; Ph.D., University at Buffalo, 2004. Role of structural dynamics in ion channels functioning.

**George Dubyak**, Professor; Ph.D., Pennsylvania, 1979 - Biochemistry of purinergic receptors in inflammation and immunological processes; hormone receptors, transmembrane signaling and intracellular messengers.

**Christopher Ford**, Assistant Professor; Ph.D., University of Alberta, 2003: The effects of drug addiction on dopamine synaptic transmission

**Jeff Garvin**, Professor, PhD: Kidney physiopathology and hypertension

**Stephen Jones**, Professor; Ph.D., Cornell Univ., 1980. Neurophysiology, synaptic transmission and ion channels.

**Joseph Lamanna**, Professor, Ph.D., Duke Univ., 1975, Neurophysiology; brain metabolism, physiological adaptation to hypoxia; brain angioplasticity.

January 18, 2013

**TingWei Mu** Assistant Professor; Ph.D California Institute of Technology, 2005 – Endoplasmic Reticulum dysfunction in neurological disorders

**Xin Qi**, Assistant Professor; Ph.D., Hokkaido University (Japan) 2005 – Mitochondrial dysfunction in neurological disorders; Development of therapeutic way for the treatment of human diseases

**Rajesh Ramachandran**, Assistant Professor; Ph.D., Texas A&M University, 2004. Molecular neurobiology; mechanisms of membrane remodeling in synaptic vesicle exo-endocytosis and mitochondrial fission-fusion dynamics; neuromuscular diseases.

**Andrea Romani**, Associate Professor; M.D., Siena (Italy) 1984; Ph.D., Turin (Italy) 1990 - Hormonal regulation of magnesium transport and homeostasis in cardiac and liver cells; implication of hepatic Mg<sup>2+</sup> dysregulation in type-I diabetes and alcoholism.

**Corey Smith**, Associate Professor; Ph.D., UCHSC, 1996 - Regulation of exocytosis, endocytosis, and membrane trafficking in neuro-endocrine cells.

**Julian Stelzer**, Assistant Professor; Ph.D., Oregon State University, 2002 – Cellular and molecular mechanisms of cardiac muscle contraction in health and disease.

**Witold Surewicz**, Professor; Ph.D. Lodz, 1981 - Protein folding under physiological and pathological conditions.