University of Minnesota

Graduate Program in Pharmacology

student Success

Mike Underwood

I joined the Department of Pharmacology as a graduate student to work in a cancer lab, studying the role of translational regulation of protein synthesis and its effects on cancer onset. Outside of the lab, my studies focus on public health and epidemiology. I also am actively involved in mentoring undergraduate students and future scientists with the Life Sciences Summer Undergraduate Research Program (LSSURP) at the University of Minnesota. I founded the Association of Multicultural Scientists (AMS) student group, which aims to improve recruitment, retention and support for under-represented minority scientists here on campus.

NRSA Award from NIH
President's Leadership & Service Award

Nancy Castro

After being awarded an undergraduate degree in biology from the University of LaVerne in California, I attended California State Polytechnic University and was awarded a master's degree in biology.

I was attracted to the Department of Pharmacology because of the vast array of research options it offers. I always have had a passion for molecular and cell biology and chose to do rotations in labs that offered experience in these areas. Carol Lange accepted me as a student in her lab, which focuses on breast cancer research. My project involves studying a soluble tyrosine kinase known as breast tumor kinase (Brk), which has been shown to be overexpressed in more than 86% of breast cancer tumors and cell lines. My thesis project consists of understanding the role and regulation of Brk and how its overexpression contributes to the signaling pathways that influence tumor cell growth, survival, and/or migration. When I complete my Ph.D., I plan to move back to Los Angeles and start a career in industry.

student Success

Nien-Pei Tsai

Before joining the Pharmacology Graduate Program, I received my Master's degree from the Institute of Microbiology and Immunology at National Yang-Ming University in Taipei, Taiwan and an undergraduate degree in the Department of Agricultural Chemistry at the National Taiwan University also in Taipei, Taiwan.

Using molecular and cellular biology applications, my current research is being carried out in the laboratory of Li-Na Wei, which focuses on posttranscriptional gene regulation upon environmental stimuli or stress conditions. My interest is in using kappa opioid receptor mRNA as a model system to 1) search for novel RNA-binding (associated) proteins that regulate mRNA distribution; 2) understand the mechanisms by which mRNA transport and translational control are regulated through RNA-binding proteins or ribonucleoprotein complex; and 3) identify critical components that integrate signaling pathways with post-transcriptional gene control.

Netrin-1 signaling regulates de novo protein synthesis of kappa opioid receptor by facilitating polysomal partition of its mRNA.

***Tsai NP**, Bi J, Loh HH, Wei LN.*
J Neurosci. 2006 26(38):9743-9.

Milne Brandenberg Awardee
Veneziale-Steer Award

Garret Anderson

After receiving a B.S. degree, I began a journey exploring my broad research interests. Eventually, biological questions related to medicine became a focus and I worked as a research assistant at a toxicology lab at the University of Colorado. This experience let me to decide to continue my academic research career and I joined the pharmacology graduate program at the University of Minnesota.

After starting my program here, I became interested in neuronal signaling mechanisms. I joined Kirill Martemyanov's lab, where I am currently investigating G-protein coupled dopamine and opioid receptor signaling pathways. My work focuses on the role of Regulatory G-protein Signaling (RGS) proteins that control these receptor pathways and the proteolytic mechanisms that control their expression levels. These mechanisms, regulated by changes in stimuli, are neuronal adaptive processes, which interests me the most. I hope to build a career in academic research, studying these mechanisms.

I appreciate the highly supportive atmosphere in this department, which has permitted me the success I have had during my time here.

***Anderson GR**, Semenov A, Song JH, Martemyanov KA.*
J Biol Chem. 2007 (7):4772-81.

3M Science & Technology Fellow
Milne Brandenberg Awardee
NRSA Award from NIH