**Our Mission**

To develop solutions for the prevention and cure of alcoholism and related illnesses.

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**Center Welcomes New Faculty Members**

**Dr. Michela Marinelli**, associate professor of Pharmacology and Toxicology, and **Dr. Kimberly Raab-Graham**, assistant professor of Neuroscience, recently joined the Waggoner Center faculty.

Marinelli was an associate professor at Rosalind Franklin University of Medicine and Science in North Chicago from 2003 to 2013. Her appointment with the College of Pharmacy at The University of Texas at Austin began in October. Raab-Graham was a postdoctoral fellow at the University of California, San Francisco, before coming to the university in 2007.

Associate Director Robert Messing said Marinelli’s research focus is on understanding brain circuits that underlie addiction to cocaine and other abused drugs, with an emphasis on adolescent risk for addiction. Her expertise in behavioral and systems neuroscience will be a great asset to the center. Marinelli uses a combination of models associated with increased addiction liability, the potential to develop an addiction, in her research. Factors related to addiction liability include age (i.e., adolescence), prior exposure to drugs of abuse, and stress. A systems approach, including molecular (protein expression), cellular (neuronal activity and synaptic transmission), anatomical (optogenetics and functional neuroanatomy), and behavioral (self-administration) techniques, measures addiction liability. Such an approach allows better characterization of this complex disease, which will lead to more effective treatment strategies.

Raab-Graham investigates the molecular mechanisms involved in synaptic plasticity. This plasticity, or adaptability, underpins neuronal circuitry in the brain, which reinforces behavior. Neuronal communication occurs through transmission of chemicals (transmitters) that are released by the axon (presynaptically) and received by neighboring dendritic spines (postsynaptically). Raab-Graham is particularly interested in the molecular mechanisms that regulate local synaptic protein synthesis: translation of messenger RNA or mRNA (which code for protein) in response to neuronal activity, the signaling pathways involved, and the distribution of mRNA along dendrites and axons. Her work “brings new expertise in molecular biology to the Waggoner Center,” said Director R. Adron Harris. “This mechanism of synaptic plasticity is a new area for addiction research and will likely prove critical for understanding the molecular remodeling of the synapse in addiction.”
Fellowship Honors Gregory Frayne

The Waggoner Center’s newly established Frayne Graduate Fellowship honors Gregory Frayne, who died March 13, 2013, at age 27. A graduate of The University of Texas at Austin, he received a bachelor’s degree in Chemistry in 2008 and was accepted for admission to the doctoral program at The University of Texas at Arlington for the 2013 fall semester. Frayne is pictured at right with Stephen F. Martin, professor of Chemistry. During his undergraduate career, Frayne co-authored an article published in *Tetrahedron Letters* and received two internships from GlaxoSmithKline in Raleigh, N.C. His parents, Laurence and Marion Frayne of Flower Mound, Texas, said their son had “a deep respect for the scientific community and a passion for research and discovery. He wanted to be a part of it” and “wanted to make a difference, to have a positive impact on the world.” By funding a fellowship in support of graduate studies at the university, the Fraynes wish to honor their son’s dreams, unfulfilled goals, and love of Austin. They believe a gift advancing addiction research at the Waggoner Center will allow those affected by alcoholism to reach their full potential.

The 2013-2014 recipient of the Frayne Graduate Fellowship is doctoral candidate Garrett Cornelison (Mihic Lab). Cornelison, along with Director R. Adron Harris, graduate student Laura Ferguson, and postdoctoral fellow Sean Farris, met with Mr. and Mrs. Frayne at the end of August to discuss current addiction research.

Long-time Research Manager Retires

Research Manager Debra James (left) retired in August after 15 years at the Waggoner Center and 26 years at the university. With Director R. Adron Harris, James was instrumental in establishing the Waggoner Center in 1999. She helped recruit the center’s faculty fellows, researchers, and trainees and hosted scores of visiting scientists, potential donors, congressional staffers, and visitors from the public-at-large. In addition, she managed grants resulting in approximately $50 million in funding. Harris said the center “could never have achieved its success without Debbie.” She “is one of those very, very special people who is responsible for the success of the University of Texas at Austin.” Jayna Dixon succeeded James as research manager in September. Dixon can be reached at jaynadixon@austin.utexas.edu.

NEWS

The Integrated Neuroscience Initiative Consortium on Alcoholism awarded a pilot project grant to Dr. Kimberly Raab-Graham to study the role of the mammalian target of rapamycin (mTOR), a protein involved in protein synthesis, in response to ethanol exposure. The study will test two hypotheses: 1) ethanol changes the function of a specific GABA receptor, which leads to increased mTOR activity, and 2) ethanol promotes local protein synthesis in the dendrites. The study will help elucidate the connection between molecular sites of ethanol action and changes in gene expression.

A recent paper published in *Molecular Pharmacology*, “Functional Validation of Virtual Screening for Novel Agents with General Anesthetic Action at Ligand-gated Ion Channels,” by collaborators in the lab of R. Adron Harris, was selected for F1000Prime, a curated list of significant publications about biology and medicine.

Dr. Armando Salinas (Morrisett Lab) began a postdoctoral fellow position this fall at The National Institutes of Health. Collaborating with Drs. Kim Blackwell (George Mason University) and David Lovinger (National Institute of Alcohol Abuse and Alcoholism), he studies post-synaptic calcium dynamics in brain.

HONORS & AWARDS

Patrick Quinn (Fromme Lab) won the 2013 Lee Willerman Award for Excellence in Research at the annual “PsychFest” hosted by the Psychology Department. The award recognizes the outstanding student publication. Quinn’s paper, “An Event-level Examination of Sex Differences and Subjective Intoxication in Alcohol-related Aggression,” was published in *Experimental and Clinical Psychopharmacology*.

Dana Most (Harris Lab) received the International Behavioural and Neural Genetics Society Young Investigator Travel Award to attend the 2013 Genes, Brain and Behavior Meeting in Leuven, Belgium. Her presentation was titled “The Synaptoneurosome Transcriptome: A Model for Profiling the Molecular Effects of Alcohol.”

Recipient of the National Science Foundation Minority Postdoctoral Fellowship in Biology:

Farr Niere, Ph.D. (Raab-Graham Lab), “Defining the Mechanism that Regulates the Insertion of the Voltage-dependent Potassium Channel 1.1 into the Surface Membrane of Neuronal Dendrites”

Recipients of the National Research Service Award from The National Institutes of Health:

Dana Most (Harris Lab), “Synaptic mRNA and microRNA: Regulation by Chronic Alcohol Consumption”

Patrick Quinn (Fromme Lab), “Alcohol Response, Cognitive Impairment, and Alcohol-related Negative Consequences”

John Valenta (Gonzales Lab), “Monocyte Chemotactic Protein-1 (MCP-1) Modulation of Ethanol Self-Administration”

Doctoral degrees awarded:

Armando Salinas, Ph.D. (Morrisett Lab), Aug. 13, 2013 “Central Amygdala CART modulates Ethanol Withdrawal-induced Anxiety”
PUBLICATIONS


(Publications continued next page.)
The Waggoner Center for Alcohol and Addiction Research was established in 1999 at The University of Texas at Austin. The center was made possible by a donation from M. June and J. Virgil Waggoner and matching funds from the university. The mission of the center is to create a premier research center for alcohol and addiction research, thereby developing solutions for the prevention and cure of these diseases.

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**PUBLICATIONS (continued)**


