

Pharmacology & Toxicology Center for Addiction Research

Name Me!
February 2009 No. 1

Chair's Message



Dear Faculty, Staff, Postdoctoral and Graduate Fellows:

Welcome to the first edition of the new Pharmacology and Toxicology and Center for Addiction Research newsletter. It is my hope this newsletter will help promote our research and highlight our successes, not only within the department and center, but to other areas of UTMB and the nation.

The waning months of 2008 seriously challenged the spirit in all of us. Despite (or maybe in spite of!) the recent unpleasantness of Hurricane Ike, we have been a highly productive group. We have submitted many new research publications and grant proposals, and funded quite a few new projects. We propose to highlight our individual and collective progress each month and also spotlight a feature success in a separate section. In addition, we will keep you informed of the latest Graduate Program News and student organization news.

Please help us keep apprised of your activities, and submit your successes as they happen. In addition, if you would like to contribute a piece or make an announcement in an upcoming newsletter, please send that information to our editor Caley Satterfield at casatter@utmb.edu by the 15th of each month. We also welcome your comments and suggestions. Our goal is to more widely disseminate Pharmacology and CAR research and news, and to promote our faculty and trainee research on the iUTMB website, local media, and through the School of Medicine.

Cheers,

Kathryn A. Cunningham, Ph.D.
Interim Chairman

NAME THAT NEWSLETTER!!!

Submit your suggestion for a name for our newsletter and WIN! Please submit your suggestion to Caley Satterfield by email at casatter@utmb.edu by February 15th. The winner and newsletter will be named for the March 2009 edition!

ASPET Assists Trainees

The American Society for Pharmacology and Experimental Therapeutics (ASPET) generously donated \$5,000 to be divided among Pharmacology and Toxicology trainees who suffered great personal loss during Hurricane Ike. Interim Department Chair, Dr. Kathryn Cunningham, worked closely with ASPET board members to secure the donation for trainees. Dr. Cornelis (Kees) Elferink, departmental Director for the Summer Undergraduate Research Program grant supported by ASPET, took the lead to disburse the donation to trainees with the most need. In all, four students received \$500 each, five post-doctoral fellows received \$400 each, and two non-tenure-track, assistant professors received \$500 each. The Department of Pharmacology and Toxicology wishes to thank ASPET for its generosity.

"The American Society for Pharmacology and Experimental Therapeutics (ASPET) is a 4,800 member scientific society whose members conduct basic and clinical pharmacological research in academia, industry and the government. Our members research efforts help develop new medicines and therapeutic agents to fight existing and emerging diseases." www.aspet.org

Current Events



February 13	Yijin Yan, Ph.D. Seminar
February 27	Derek Radisky, Ph.D. Seminar
March 06	Noelle Anastasion Dissertation Seminar
March 13	Jin Jianping, Ph.D. Seminar
March 17	Maria Fe Lanfranco Dissertation Seminar
March 20	Jeff Conn, Ph.D. Chauncey Leake Lecturer
April 03	David Wong, Ph.D. Seminar
May 01	Andrew McCreary Seminar

For more information on seminars, please visit the Pharm/Tox website: <http://www.utmb.edu/phtox/events.asp>

Behavior, Biology and Chemistry: Translational Research in Addiction

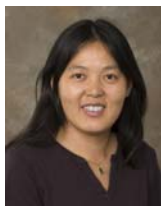
March 20-22, 2009

University of Texas Health Science Center
San Antonio, TX

More Information: <http://pharmacology.uthscsa.edu/BBC.asp>

SPOTLIGHT!

Gao Announced January Researcher of the Month



Dr. Tianyan Gao was announced Researcher of the Month by Research Services at UTMB. An excerpt from yellow sheet reads "The past 10 years have been full of discovery for Dr. Tianyan Gao, a native of China. Dr. Gao earned her BS in Pharmaceutical Sciences from Beijing Medical University in 1991. She worked for a while at the Cardiovascular Institute and Fu Wai Hospital, Chinese Academy of Medical Sciences, Beijing, before coming to the United States. She received her PhD in Molecular Pharmacology from Northwestern University, Chicago in 1998. In 2000, with fellowships from the Leukemia Research Foundation and American Heart Association, she moved to the University of California at San Diego (UC San Diego), where she turned her attention from cardiac systems to cancer research. She completed her postdoctoral training there with the aid of a K01 Mentored Research Scientist Development Award (2003-2008). She was recruited by UTMB in 2006 to complete the final phase of the career award and was appointed Assistant Professor in the Department of Pharmacology and Toxicology and in the Sealy Center for Cancer Cell Biology.

For the full story and interview with Dr. Gao please visit the January 2009 yellow sheet :

<http://research.utmb.edu/research/yellowsheet/ys090114.pdf>

ACNP promotes Dr. Kathryn A. Cunningham



The American College of Neuropharmacology (ACNP) has promoted Dr. Kathryn A. Cunningham to Fellow status. The promotion is based both on her expanding scientific reputation and contributions to the College through committee work and involvement in the Annual Meeting program.

Dr. Cunningham is the Chauncey Leake Distinguished Professor of Pharmacology, Interim Chair of the Department of Pharmacology and Toxicology, and Director of the UTMB Center for Addiction Research. Focused on understanding the neuroscience of drug abuse and addiction, her collaborative group has linked human, animal and cellular model systems with target and drug discovery initiatives to achieve breakthrough therapeutic advances for stimulant addiction. The goal is to employ new protocols and paradigms to investigate neuronal remodeling in serotonin systems that could lead to behavioral recovery in addicts, and jumpstart a new generation of discovery for anti-addiction therapeutics.

"The American College of Neuropsychopharmacology (ACNP), founded in 1961, is the nation's premier professional society in brain, behavior, and psychopharmacology research. The field of neuropsychopharmacology involves the evaluation of the effects of natural and synthetic compounds upon the brain, mind, and human behavior" (www.acnp.org).

Grant Awards

Pharmacology and Toxicology and Center for Addiction Research faculty members have been very busy the past few months. The hard work has paid off with two new grants for Dr. Xiaodong Cheng and Dr. Jose Moron-Concepcion.

Dr. Xiaodong Cheng was awarded a Sealy Memorial Endowment to fund his project for *A Novel Intracellular cAMP Receptor*. cAMP-mediated signaling regulates a myriad of important biological processes under physiological conditions and disease states, including diabetes, heart failure and cancer. In eukaryotic cells, the effects of cAMP are mediated by two ubiquitously expressed intracellular cAMP receptors, the classic protein kinase A/cAMP-dependent protein kinase (PKA/cAPK) and the recently discovered exchange protein directly activated by cAMP/cAMP-regulated guanine nucleotide exchange factor (Epac/cAMP-GEF). The long-term goals of our research are to understand the physiological functions and mechanisms of Epac activation and regulation. A better understanding of cAMP-mediated signal transduction could potentially lead to the identification of novel mechanism-based therapeutic strategies specifically targeting the cAMP-signaling components.



Dr. Jose Moron-Concepcion was awarded an R01 from the National Institute on Drug Abuse (NIDA) to fund his project *Mechanisms Underlying Opiate-induced Neuroplasticity at the Synapse*. The proposed studies will improve our knowledge about the adaptive changes that occur in the brain upon repeated drug exposure. In particular, we are planning to study neuroplastic changes induced by repeated morphine administration. The results obtained may lead to new pharmatherapeutic approaches in the treatment of opioid addiction.



Graduate Program News



Kang Defends Dissertation



Pharmacology and Toxicology graduate student, Chang Won Kang successfully defended his dissertation project on December 3, 2008. Dr. Kang's dissertation project is entitled *A General Scaffold for the Synthesis of Dysiherbaine and its Analogs*. Dr. Kang's committee includes Chair, Dr. Scott R. Gilbertson (UTMB), Dr. Amarnath Natarajan (UTMB), Dr. Joel P. Gallagher (Retired—UTMB), Dr. Geoffrey Swanson (Northwestern), and Dr. Vincent Hisler (UTMB). Dr. Kang will continue to work Dr. Gilbertson's lab as a postdoctoral trainee.

Shashack Enters Candidacy



Matthew Shashack defended his dissertation proposal entitled *Synthesis of Bivalent Serotonin Receptor Ligands to Treat Cocaine Addiction*, on January 8, 2009. Mr. Shashack's committee includes Chair, Dr. Scott Gilbertson (UTMB), Dr. Kathryn Cunningham (UTMB), Dr. Amarnath Natarajan (UTMB), Dr. Cheryl Watson (UTMB), and Dr. F. Gerald Moeller (UTHSC-Houston).

Upcoming Student Dissertation Defenses



March 6th

Noelle Anastasio Dissertation Defense, 2:30-3:30, BSB Auditorium (2.212)

Mentor: Kenneth M. Johnson, Ph.D.

Committee: Kenneth M. Johnson (Chair—UTMB), Kathryn A. Cunningham (UTMB), Joel P. Gallagher (Retired—UTMB), Kelly T. Dineley (UTMB), and Geoffrey Swanson (Northwestern)



March 17th

Maria Fe Lanfranco Dissertation Defense, 12-1, Levin Hall 3.320

Mentor: Kathryn A. Cunningham, Ph.D.

Committee: Kathryn A. Cunningham (Chair—UTMB), Kenneth M. Johnson (UTMB), Xiaodong Cheng (UTMB), Cheryl Watson (UTMB), William Clarke (UTHSC-San Antonio)

Important Dates

February 16th
February 26th-28th
March 19th-21st
March 20th
April 3rd
May 2nd

No Class—President's Day Holiday
GSBS Recruitment Visit
GSBS Recruitment Visit
Deadline for Electronic Dissertation Submission for May Graduation
Deadline for all final paperwork for May Graduation
Commencement (10am)



Recent Publications

Anastasio NC and **Johnson KM** (2008b) Atypical Antischizophrenic Drugs Prevent Changes in Cortical N-methyl-D-Aspartate Receptors and Behavior Following Sub-Chronic Phencyclidine Administration in Developing Rats. *Pharmacology, Biochemistry and Behavior*. 2008 Oct;90(4):569-77.

Agarkov A and **Gilbertson SR** (2008) Preparation of a library of unsymmetrical ureas based on 8-azabicyclo[3.2.1]octane scaffold. *Journal Comb. Chem*. 2008 Sep-Oct;10(5):655-7. Epub 2008 Jul 9.

Billa SK, Sinha N, **Rudrabhatla SR** and **Morón JA** (2009) Extinction of morphine-dependent conditioned behavior is associated with increased phosphorylation of the GluR1 subunit of AMPA receptors at hippocampal synapses. *European Journal of Neuroscience*. 2009 Jan;29(1):55-64. Epub 2008 Dec 11.

Bubar MJ and **Cunningham KA** (2008) Prospects for serotonin 5-HT_{2R} pharmacotherapy in psychostimulant abuse. *Prog Brain Res*. 2008;172:319-46.

Nic Dhonnchadha BA and **Cunningham KA** (2008) Serotonergic mechanisms in addiction-related memories. *Behavior Brain Research*. 2008 Dec;195(1):39-53. Epub 2008 Jul 1.

Berg KA, Clarke WP, **Cunningham, KA** and Spampinato U (2008) Fine-tuning serotonin_{2c} receptor function in the brain: Molecular and functional implications. *Neuropharmacology*. 2008 Nov;55(6):969-76. Epub 2008 Jun 17.

Leggio GM, Cathala A, Moison D, **Cunningham KA**, Piazza PV, Spampinato U. (2008). Serotonin (2C) receptors in the medial prefrontal cortex facilitate cocaine-induced dopamine release in the rat nucleus accumbens. *Neuropharmacology*. 2008 Oct;Epub ahead of print

Mitchell KA and **Elferink CJ** (2008) timing is everything: Consequences of transient and sustained AhR activity. *Biochem Pharmacology*. 2008 Nov 6. [Epub ahead of print].

Cai Q, Li J, **Gao T**, **Xie J** and Evers BM (2008) PKC(δ) negatively regulates hedgehog signaling by inhibition of Gli1 activity. *Journal Biol Chem*. 2008 Nov 17 [Epub ahead of print]

Lanfranco MF, **Seitz PK**, Emeson RB, Sanders-Bush E and **Cunningham KA** (2009) "An Innovative Real-Time PCR Method to Measure Changes in RNA Editing of the Serotonin 2C Receptor (5-HT_{2cR}) in Brain" – submitted to *Journal of Neuroscience Methods*.

Reilly, MT, **Cunningham KA** and **Natarajan A** (2009) Protein-protein interactions as therapeutic targets in neuropsychopharmacology. *Neuropsychopharmacology*. 2009 Jan;34(1):247-8

Sell SL, Craft RM, **Seitz PK**, **Stutz SJ**, **Cunningham KA** and **Thomas ML** (2008) Estradiol-sertraline synergy in ovariectomized rats. *Psychoneuroendocrinology*, 2008 Sep;33(8):1051-60 Epub 2008 Jul 22.

Wang CZ, Yang SF, **Xia Y** and **Johnson KM** (2008) Postnatal phencyclidine administration selectively reduces adult cortical parvalbumin-containing interneurons. *Neuropsychopharmacology*. 2008 Sep;33(10):2442-55. Epub 2007 Dec 5.

Xia Y, **Wang CZ**, **Liu J**, **Anastasio NC**, **Johnson KM**. Lithium protection of phencyclidine-induced neurotoxicity in developing brain: the role of phosphatidylinositol-3 kinase/Akt and mitogen-activated protein kinase/extracellular signal-regulated kinase signaling pathways. *J Pharmacol Exp Ther*. 2008 Sep; 326(3):838-48.

Wu Y, Evers BM and **Zhou BP** (2009) Small C-terminal domain phosphatase enhances snail activity through dephosphorylation. *J Biol Chem*. 2009 Jan;284(1):640-8. Epub 2008 Nov. 12.

Zhu J, **Viñas, R** and Smith, EE (2008) In vitro evaluation of human liver cancer cells and the potential cytotoxicity of *Tecoma stans* (Bignoniaceae) and *Brickellia cavanillesi* (Asteraceae) both single and in combination, *Toxicological & Environmental Chemistry*, 90:4,801 — 808