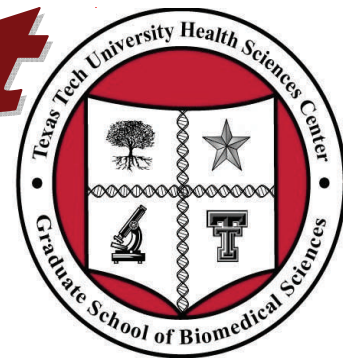




Agonist

The Official Newsletter for the
Graduate Program of
Pharmaceutical Sciences
Amarillo, Texas



UPDATE FROM DR. ABRUSCATO

The Graduate Program in Pharmaceutical Sciences continues to be active in all segments of research. In Fall 2009, GPPS graduate students participated in a total of 24 presentations at national meetings including the Society for Neuroscience in Chicago, American Association of Pharmaceutical Sciences in Los Angeles, American Epilepsy Society in Boston and the American Association for Cancer Research in San Antonio. Additionally in fall of 2009, GPPS students authored a total of 11 peer reviewed publications. We are fortunate that the faculty and graduate students work so hard for the research mission of the School of Pharmacy and continue to publish and present their research findings. I urge faculty and lab staff to attend our Graduate Program in Pharmaceutical Sciences Seminar Program, which occurs every **Wednesday at 4:00 PM in SOP 208 (new room)**. This is a great opportunity to see the latest research of graduate students. Please consider attending the Student Research Week 2010 "Demystifying the Brain: Aging and Addiction" March 2-5th. This year's keynote address will be given by Dr. Henry Lester from California Institute of Technology. Also, March 9-10th will be the 13th Annual Wendy and Stanley Marsh 3rd Endowed Lectureship which will sponsor Dr. Peter Kalivas to present his work on "The Glutamate Homeostasis of Addiction". These are great opportunities to see and interact with some leading scientists here in West Texas. ■



Spring 2010 Issue 5

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WINNER OF YOUNG RESEARCHER AWARD



Prabodh Kandala, Graduate Student/Research Assistant, was awarded the "**Professional A. R. Rao Memorial Young Researcher Award**" at the "International Symposium on Cancer Chemoprevention and Translational Research" held at School of Life Sciences, Jawaharlal Nehru University, New Delhi, India on December 21st, 2009. His presentation was entitled "Chemotherapeutic Effects of Diindolylmethane against Ovarian Cancer". He works in the lab of Dr. Sanjay Srivastava. Congratulations, Prabodh! ■

2009 CH Foundation Scholarship Winners

1st Year Students:
**Md. Shahriarul (Abir) Absar; Parul Gupta;
Jun Liu; Pooja Naik; Ameya Paranjpe;
Shuangling Zhang.**
2nd - 5th Year Students:
**Md. Mamunur (Moon) Rashid; Kaushik
Shah; Venki Chithambaram Pillai**

GSBS Course Evaluation Scholarship Winner

**Venki Chithambaram Pillai;
Ameya Paranjpe**

**Best Poster Award - Epilepsy Society
Australia 24th Annual Scientific Meeting -
Perth, Australia**

Sarah Seth Willis

GPPS OFFICE - 806-356-4015; Fax 356-4021

**Dr. Tom Abruscato, Associate Dean for GSBS,
Graduate Program Advisor, Associate Professor, Pharmaceutical Sciences
Teresa Carlisle, Graduate Program Coordinator
Shari Morris, Graduate Student Advisor**

Agonist is published every fall and spring semester by the Graduate Program of Pharmaceutical Sciences (GPPS). For updates and new information, email Shari at shari.morris@ttuhsc.edu.

**Click here for
deadlines of
Current
Awards and
Scholarships**



FALL 2009 PH.D. GRADUATE

Imam Shaik
Lab of Dr. Reza Mehvar

**Dissertation Presented
August 31, 2009**

Role of Cytochrome
P450 in Hepatic Ischemia-
Reperfusion Injury in Rats

Professional Information:

Postdoctoral Fellow
TTUHSC School of Pharmacy
1300 Coulter
Amarillo, Texas 79106
imam.shaik@ttuhsc.edu

PRESENTATIONS



**39th Annual Meeting
Society for Neuroscience
Chicago, Illinois
October 17-21, 2009**

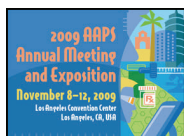
M. M. Rashid, T. V. Arumugam, V. T. Karamyan.
Preliminary characterization of the novel, non-AT1, non-
AT2 angiotensin binding site in mouse primary cortical
neurons.

Sarah Willis, Larry Sweetman, James Stoll and Karin
Borges. The Effect of Anaplerotic Diet in Mouse
Epilepsy Models.

**Epilepsy Society Australia
24th Annual Scientific Meeting
Perth, Australia
November 2-4, 2009**



Seth S, Stoll J, Sweetman L and Borges, K. Anti-
epileptic Effects of Triheptanoin in Two Chronic Mouse
Epilepsy Models. Presented by Dr. Karin Borges.



**American Association of
Pharmaceutical Sciences
Los Angeles, California
November 8-12, 2009**

Pillai VC, Yesudas R, Shaik IH, Thekkumkara T,
Bickel U, Mehvar R. Delivery of Cytochrome P450
Reductase Antisense Oligos Using Avidin-Biotin
Approach.

S. Guin, S. Padhye, M-H. Wang. Anti-RON Antibody-
Directed Immunoliposomes Enhance Doxorubicin
Cytotoxicity in Colon Cancer Cells under Chronic
Hypoxia.

Satyanarayana Goda, Helen Thorsheim, Thomas J.
Abbruscato, and Quentin R. Smith. Quantification of
Loop Diuretic Permeability at the Blood-Brain Barrier by
in situ Perfusion and Liquid Chromatography - Tandem
Mass Spectrometry.

V. Gupta, F. Ahsan. Respirable PLGA Microspheres of
Prostaglandin E1-hydroxypropyl- β -cyclodextrin (PGE1-
HP- β -CD) Complex for Pulmonary Arterial Hypertension
(PAH) Treatment.

S. Kudugunti, N. Vad, M. Moridani. In-vitro and in-
vivo investigation of Caffeic acid Phenyl Ethyl Ester
(CAPE) prodrug as an anti-melanoma agent.

V. Manda, R. Mittapalli, C. Adkins, P. R. Lockman.
Nicotine increases the brain endothelial cell permeability
of saquinavir leading to blood brain barrier disruption.

Mittapalli RK, Bohn KA, Taskar KS, Rudraraju V,
Adkins CE, Palmieri D, Steeg PS, Smith QR, Lockman
PR. Tumor vascular permeability in breast cancer metas-
tasis to brain tumor models.

Mittapalli RK, Manda VK, Hussaini SSQ, Bohn KA,
Liu X, Lockman PR. Relative Expression of CD44 and
CD133 in breast cancer cell lines.

Mittapalli RK, Werner J. Geldenhuys, Vamshi K.
Manda, Cornelis J. Van der Schyf, Peter A. Crooks,
Linda P. Dwoskin, David D. Allen and Paul R. Lockman.
Predictive Screening Model For Potential Vector-
Mediated Transport of Cationic Substrates at the Blood-
Brain Barrier Choline Transporter.

R. Parasrampur, R. Mehvar. Mechanisms of
Divergent Effects of Nitric Oxide Donors Sodium Nitro-
prusside and Isosorbide Dinitrate on the P-glycoprotein
and Mrp2 Functions in Isolated Perfused Rat Livers.

R. Parasrampur, R. Mehvar. Effects of P-
Glycoprotein and Mrp2 Inhibitors on the Hepatobiliary
Disposition of Rhodamine 123 and Its Glucuronidated
Metabolite in Isolated Perfused Rat Livers.

V. Rudraraju, K. Taskar, R. Mittapalli, K. Bohn, C.
Adkins, P. Lockman, D. Palmieri, P. Steeg, Q. Smith.
Doxorubicin Distribution to Brain Metastases of Breast
Cancer.

Arun Satelli, Prema S. Rao, Sheshadri Thirumala, Amit
Trehan and U.S. Rao. Galectin-4 is a prognostic marker
of colorectal cancer.

K. K. Shah, L. Yang, T. J. Abbruscato. Effect of High
Glucose on Sodium Dependent Glucose Cotransporter
(SGLT1) at the Blood Brain Barrier (BBB) in Stroke.

Imam Shaik and Reza Mehvar. Role of Cytochrome
P450 in Hepatic Ischemia-Reperfusion Injury: Effects of
P450 Induction by Phenobarbital.

Rachita K. Sumbria, Peter M. Bungay and Ulrich
Bickel. Microdialysis as a tool to study the dynamics of
blood-brain barrier opening. (Continued on Page 3)

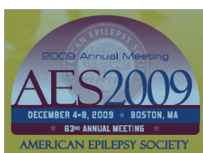
(AAPS continued from page 2)

Kunal Taskar, Vinay Rudraraju, Amanda Roberts, Satyanarayana Goda, Helen Thorsheim, Rajendar Mittapalli, Chris Adkins, Kaci Bohn, Patricia Steeg, Brunhilde Gril, Dianne Palmieri, Paul Lockman, Quentin Smith. Blood-Brain Barrier Permeability and Active Efflux Transport of Paclitaxel in Treatment of Brain Metastases of Metastatic Breast Cancer.

Yan Xu, Jon Weidanz and Ulrich Bickel. In vivo model for vascular targeting to peptide-HLA complexes.

L. Yang, K. K. Shah, T. J. Abbruscato. Dimeric Mu and Delta Opioid Receptor Agonist, Biphalin, Reduces Brain Edema and Infarct Size in a Model of Focal Brain Ischemia. ■

**63rd Annual Meeting
American Epilepsy Society
Boston, Massachusetts
December 4-8, 2009**



Karin Borges, **S. Willis**, L. Sweetman and J. Stoll. Anti-Epileptic Effects of an Anaplerotic Diet in Two Chronic Mouse Epilepsy Models. Presented by S. Willis. ■



**Cancer Therapy &
Research Center -
American Association
for Cancer Research
San Antonio, Texas
December 9-13, 2009**

Verma B, Weidanz J. TCR mimic monoclonal antibody generated from a directly discovered epitope of p68 RNA helicase dramatically debulks large established tumors through recognition of a specific HLA/peptide complex. ■

GRADUATE STUDENT PUBLICATIONS

Delivery of Cytochrome P450 Reductase Antisense Oligos Using Avidin-Biotin Approach. **Pillai VC**, Yesudas R, **Shaik IH**, Thekkumkara T, Bickel U, Mehvar R. *Bioconjug Chem*. 2010 Jan 11. [Epub ahead of print]

Uptake of ANG1005, A Novel Paclitaxel Derivative, Through the Blood-Brain Barrier into Brain and Experimental Brain Metastases of Breast Cancer. Thomas FC, **Taskar K**, **Rudraraju V**, **Goda S**, Thorsheim HR, Gaasch JA, **Mittapalli RK**, Palmieri D, Steeg PS, Lockman PR, Smith QR. *Pharm Res*. 2009 Sep 23. [Epub ahead of print]

RON Receptor Tyrosine Kinase as a Target for Delivery of Chemodrugs by Antibody Directed Pathway for Cancer Cell Cytotoxicity. **Sunny Guin**, Hang-Ping Yao and Ming-Hai Wang. *Mol Pharm*. 2009 Dec 29. [Epub ahead of print]

Feasibility Study of Aerosolized Prostaglandin E1 Microspheres as a Non-Invasive Therapy for Pulmonary Arterial Hypertension. **Gupta V**, Rawat A, Ahsan F. *J Pharm Sci*. 2009 Nov 5. [Epub ahead of print].

Inhalable Lactose-based Dry Powder Formulations of Low Molecular Weight Heparin. Bai S, **Gupta V**, Ahsan F. *J Aerosol Med Pulm Drug Deliv*. 2009 Sep 24. [Epub ahead of print]

Structure-toxicity relationship of phenolic analogs as anti-melanoma agents: An enzyme directed prodrug approach. Vad NM, **Kandala PK**, Srivastava SK, Moridani MY. *Chem Biol Interact*. 2009 Nov 26. [Epub ahead of print]

Efficacy of Caffeic Acid Phenethyl Ester (CAPE) in skin B16-F0 melanoma tumor bearing C57BL/6 mice. **Shashi K. Kudugunti**, Nikhil M. Vad, Ehi Ekogbo, Majid Y. Moridani. *Invest New Drugs*. 2009 Oct 21. [Epub ahead of print]

Predictive screening model for potential vector-mediated transport of cationic substrates at the blood-brain barrier choline transporter. Geldenhuys WJ, **Manda VK**, **Mittapalli RK**, Van der Schyf CJ, Crooks PA, Dwoskin LP, Allen DD, Lockman PR. *Bioorg Med Chem Lett*. 2009 Dec 28. [Epub ahead of print]

Effects of P-glycoprotein and Mrp2 inhibitors on the hepatobiliary disposition of Rhodamine 123 and its glucuronidated metabolite in isolated perfused rat livers.

Parasrampur R, Mehvar R. *J Pharm Sci*. 2010 Jan;99(1):455-66.

Direct discovery and validation of a peptide/MHC epitope expressed in primary human breast cancer cells using a TCRm monoclonal antibody with profound antitumor properties. **Verma B**, Hawkins OE, Neethling FA, Caseltine SL, Largo SR, Hildebrand WH, Weidanz JA. *Cancer Immunol Immunother*, 2009 Sep 25 [Epub ahead of print]

TCR Mimic Monoclonal Antibody Targets a Specific Peptide/HLA Class I Complex and Significantly Impedes Tumor Growth In Vivo Using Breast Cancer Models. **Bhavna Verma**, Francisca A. Neethling, Shannon Caseltine, Ginger Fabrizio, Sherly Largo, J. Andrew Duty, Piotr Tabaczewski, and Jon A. Weidanz. Published January 11, 2010, doi:10.4049/jimmunol.0902414 ■



**TTUHC AAPS Student Chapter Featured in
NOVEMBER AAPS Student/Postdoc Focus**

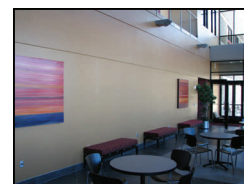
Read all about it right here: [AAPS Student News](#). There will be an update of this article in the AAPS News Magazine in the March 2010 issue. ■

GRADUATE STUDENT SEMINAR PROGRAM - FALL 2009

9/2/09 - Shuangling Zhang - What I learned at the Integrative and Organ Systems Pharmacology (IOSP) Short Course
9/16/09 - Shashi Kudugunti - Efficacy of Caffeic Acid Phenethyl Ester (CAPE) in Skin B16-F0 Melanoma Tumor Bearing C57BL/6 Mice
9/23/09 - Prabodh Kandala - Activation of Chk2 by DIM is required for causing G2/M cell cycle arrest in human ovarian cancer cells
9/30/09 - Li Yang - Potential Application of Opioid Agonists in the Treatment of Stroke
10/7/09 - Satyanarayana Goda - Distribution and Efflux of Bumetanide across the BBB
10/14/09 - Rajendar Mittapalli -Vascular Permeability In Brain Metastasis of Breast Cancer
10/28/09 - Kaushik Shah - Effect of High Glucose on Glucose Transporters At Blood Brain Barrier

10/28/09 - Siva Koganti - Estradiol Mediated Transcriptional Repression of Angiotensin Type 1 Receptor
11/4/09 - Sarah Willis - Anaplerosis as a new treatment for epilepsy
12/2/09 - Vivek Gupta - Prolonged Release of Inhaled Anti-PAH Drugs for Pulmonary Selective Vasodilation
12/2/09 - Vamshi Manda - Nicotine Potentiates Saquinavir Induced Brain Endothelial Cell Toxicity
12/9/09 - Vinay Rudraraju - Doxorubicin Distribution to Brain Metastases of Breast Cancer
12/9/09 - Yan Xu - In vivo model for vascular targeting to peptide-HLA complexes
12/16/09 - Gregory Bix, M.D., Ph.D., Texas A&M UHSC - Invited Speaker - Matrix Revolutions: Perlecan Domain V as a Novel Stroke Therapy ■

WHAT'S NEW?



SCHOOL OF PHARMACY ACADEMIC CENTER

By November 2009, the move from the School of Pharmacy building to the new "PAC" was well underway. Departments that moved into the PAC included Student Services, Professional Affairs and CTLT. Currently the two classrooms with 120 seating capacity are being used for testing but will be fully operational by Fall 2010. ■

2009 ANNUAL ALUMNI & FRIENDS RECEPTION

AAPS Texas Tech Student Chapter, Office of Sciences and the School of Pharmacy hosted the "Texas Tech School of Pharmacy Alumni and Friends Reception" at the AAPS Annual Meeting in Los Angeles, CA. It was held in the La Brea Room at the Westin Bonaventure Hotel on Monday, November 9th. Current faculty and graduate students who attended the conference joined with alumni in having a good time catching up on life events and research. ■



Bi-Botti Youan



S.Guin, V. Gupta, Y. Kwon, M. Nutan, P. Chimalakonda



A. Palamakula, P. Lockman, R. Shah



C. Chimalakonda, V. Manda



Li Yang, Shuhua Bai, Yan Xu



M. Moridani, L. Alfonso



N. Motlekar, R. Parasrampuriah



R. Sumbria, Q. Smith, U. Bickel

Upcoming Events and Conferences



Texas Tech University Health Sciences Center Student Research Week 2010

Lubbock Campus

March 2-5, 2010



DEMYSTIFYING THE BRAIN: AGING AND ADDICTION

The dinner and keynote speaker for SRW 2010 will be Dr. Henry A. Lester from California Institute of Technology. Additional speakers include Dr. Weidong Le of Baylor College of Medicine, Dr. Carol A. Miller of Keck School of Medicine of USC and Dr. Rajesh K. Mishra, Vice-President, R&D Alli Future Team at GlaxoSmithKline. Hotel and travel expenses will be provided for SOP participants. For more details click here: [SRW 2010 Information](#) ■

13th Annual Wendy & Stanley March 3 Endowed Lectureship in Pharmacology & Neurochemistry of Substance Abuse/Addiction

The Amarillo Regional Dean's Office has announced that the 13th Annual Wendy & Stanley Marsh 3 Endowed Lectureship will be held March 9-10, 2010. Dr. Peter Kalivas, Professor in the Department of Neurosciences at the Medical University of South Carolina will be delivering the endowed lectureship on March 9th at 4p.m. titled "The Glutamate Homeostasis Hypothesis of Addiction." On March 10th at 12:00p.m., Dr. Kalivas will present the Grand Round titled "Using Neuroplasticity to Treat Addiction."

This endowment is funded by the Marshes in an effort to give the Texas Tech School of Pharmacy national recognition in the pharmacologic area of substance abuse and the neurochemistry that precipitates this addictive behavior. For more information email [Logan Larue](#) or contact the Office of the Regional Dean at 806-356-4000 x 326. ■

Amarillo Biomedical Research Internships

Preparations are underway for the ABRI 2010 summer internship program. Faculty members interested in advising summer interns may contact the Graduate Program Office. Application deadline is March 23, 2010. ■

2010 Research Days

The Amarillo TTUHSC-SOP Campus will host the 2010 Research Days, which will be held June 15-16, 2010. Students, faculty and residents from each TTUHSC-SOP campus will join together to present research activities from the pharmacy school and the departments of Pharmaceutical and Biomedical Sciences. More details will be forthcoming. ■



American Association for
Cancer Research 101st
Annual Meeting 2010
Washington, DC
April 17-21, 2010

37th Annual Meeting &
Exposition of the Controlled
Release Society.
Portland, OR
July 10-14, 2010



Experimental Biology 2010
Anaheim, CA — April 24-28, 2010



Abstracts can be submitted through
5:00 pm EST on February 24, 2010



The Graduate Program Offices have moved to SOP Suite 217.

806-356-4015/Fax 356-4021

Teresa Carlisle - x287

Shari Morris - x227

Dr. Abbruscato - Room 214 x320

Department of Pharmaceutical Sciences - SOP Suite 400; 806-356-4015

Unit Supervisor - Cinnamon Copeland, x245. Coordinator - Rachel Barron, x247

Department of Biomedical Sciences - SOP Suite 309; 806-356-4015

Unit Supervisor - Marty Stephens, x241. Coordinator - Janie Rogers, x271

Office of Regional Dean - SOP Room 112L; 806-356-4000

Dr. Thomas Thekkumkara, x341. Administrator - Logan Larue, x326

Office of Sciences - ARB 2103; 806-356-4750

Senior Associate Dean for Sciences - Dr. Quentin Smith, x250.

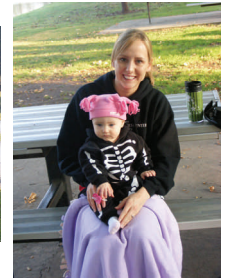
Unit Supervisor - Lynn Finkenbinder, x251





COMMUNITY SERVICE OPPORTUNITIES

**September 19th
Thompson Park**

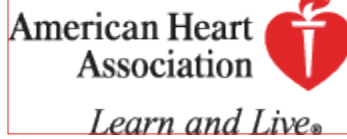


WiSE—Women in Science Endeavors



Sarah & Naomi

Naomi Wangler and Sarah Willis represented TTUHSC at the WiSE conference that took place November 14th at Amarillo Area Center for Advanced Learning (AACAL). Girls in the 6th-8th grades were taught about purifying DNA from strawberries, crushing candy pills with a mortar and pestle, and compounding lip balm and lozenges. ▣



**October 17th
Medi-Park
Raised \$2000**



**September 26th
Downtown Amarillo
Shari Morris, Student Advisor (center)
with friends walking with
Princess Warriors Team (support group
for gynecological cancer)**



CRAZY FUN WITH GSAA



Camping in September

Diwali in October

Halloween in October

Imam Shaik presented with Graduation Accomplishment Certificate from Dr. Abbruscato.

Christmas Party in December

See your foot?

Alumni Updates

Paul Lockman, Ph.D.
1406 Coulter, Room 1106
Amarillo, TX 79106
806-356-4750 x 227
Graduated Summer 2003

Shuhua Bai, Ph.D.
Assistant Professor
Department of Basic Pharmaceutical Sciences, School of Pharmacy
Husson University
One College Circle
Bangor, ME 04401-2999
bais@husson.edu
Graduated Fall 2008

Sharanya Vemula, Ph.D.
Scientist I
Vertex Pharmaceuticals Inc.
130 Waverly St.
Cambridge, MA 02139
sharanyavemula@gmail.com
Graduated Fall 2008

Fancy Thomas
A-139, Vivek Vihar, Phase 2
First Floor, Delhi 95
India
thomasfancy@gmail.com
Graduated Fall 2008

Married Fall 2009:

Sunny Guin & Indrani Nayak

Fancy Thomas & Manu Purushotam

GSAA EVENTS COMING UP

General Body Meetings
Room 336, 12:00 -1:00 pm
2/11/10; 3/11/10; 4/8/10

Fun Stuff:
2/20/10 - Indoor rock climbing
3/19-21/10 - Ski trip
4/24/10 - March of Dimes Walk
5/15/10 - Paint ball
6/5/10 - Tascosa Drive In Theater

TTUHSC Amarillo has now a competitive men's indoor soccer team. GSAA is proud to have 4th year graduate students **Vamshi Manda** and **Vinay Rudraraju** represent our graduate school. We wish them all our good luck in future and hope this will influence many more graduate students to follow their path. ■



GSAA partners with Kappa Psi for T-shirt fundraiser.

GSAA made a profit of \$1200! Way to go!