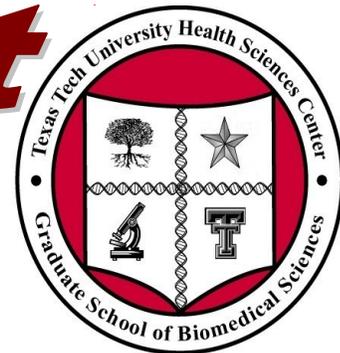




Agonist

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



UPDATE FROM DR. ABBRUSCATO

The Graduate Program in Pharmaceutical Sciences welcomes two new graduate students this spring (Profiles on Page 2). **Shanal DeSilva** will begin work in **Dr. Abbruscato's lab**, and **Shikha Shikha** will begin work in **Dr. Cucullo's lab**. We wish them a warm welcome as they join our graduate program! Last fall we had impressive representation at the 2011 American Association of Pharmaceutical Sciences Meeting with 12 GPPS students presenting their research as first author. This meeting in Washington, DC also included a "2011 ANNUAL AAPS ALUMNI & FRIENDS RECEPTION", organized by Dr. Smith. Please look forward to some wonderful scientific exchange opportunities in our own backyard with **GSBS STUDENT RESEARCH WEEK on March 20-22 in Lubbock, 2nd ANNUAL GPPS HOMECOMING SEMINAR on April 6th and SOP RESEARCH DAYS on June 12-13, 2012.** These are great opportunities for new and old graduate students to showcase their work and exchange ideas with fellow students, post-docs and faculty. Best of luck in your research! ▣



Spring 2012 Issue 9

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MEET THE GEEKS

The School of Pharmacy was the venue on December 8th for "Meet the Geeks", hosted by the American Heart Association. Graduate students and postdoctoral research associates as well as faculty represented TTUHSC in this kickoff charity event for the local "Go Red for Women" fundraising event, which is to be held February 1, 2012, in Amarillo. A catered dinner was provided for Geeks and Guests followed by a tour of the School of Pharmacy Museum. Amarillo Mayor Paul Harpole addressed the attendees during the tour. Multiple posters were on display to present research being done on behalf of heart disease. See page 6 for more pictures. ▣



Guests and Dr. Weis



F Ahsan, R Mehvar,
T Thekkumkara, T Abbruscato

Second Annual Alumni Homecoming Presentation



Mark your calendars for Friday, April 6th, for a special visit from Haritha Mandula, our second alumni to showcase what she has been doing since her graduation from the GPPS in Fall 2005. She is employed as a Senior Staff Fellow with the Food and Drug Administration (FDA) in Rockville, MD. Watch your email for further details. ▣

GPPS OFFICE - Suite 217 - 806-356-4015; Fax 356-4021

Dr. Tom Abbruscato, Associate Dean for GSBS,

Graduate Program Advisor, Associate Professor, Pharmaceutical Sciences, x 320

Teresa Carlisle, Graduate Program Coordinator, x287

Shari Morris, Graduate Student Advisor, x227

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.

FALL 2011 GRADUATES

Shashi Kudugunti

Lab of Dr. Majid Moridani

Dissertation Presented

September 26, 2011

“Caffeic Acid Phenethyl Ester as an Anti-melanoma Agent: A Selective Tyrosinase and GST Dual Targeted Approach”

Professional Information:

Research Associate
Repligen Corporation
Waltham, MA
SKudugunti@repligen.com

**Ramakrishna Samala**

Lab of Dr. Quentin Smith

Dissertation Presented

October 17, 2011

“Vinorelbine Distribution to Brain Metastases of Breast Cancer and Factors Limiting *In Vivo* Efficacy”

Professional Information:

Postdoctoral Fellow
Lab of Quentin Smith, Ph.D.
TTUHSC School of Pharmacy
Amarillo, TX
ramakrishna.samala@ttuhsc.edu



← SPRING 2012 DISSERTATIONS →

Snehal Padhye - Lab of Dr. Ming-Hai Wang

Friday, March 2, 2011 - 1:00 - 2:00 pm
AMA SOP 107/ABI 1130/LUB HSC 1C111

Prabodh Kandala - Lab of Dr. Sanjay Srivastava

Friday, March 9, 2011 - 1:00 - 2:00 pm
AMA SOP 100/AB 2601/LUB HSC ACB 260D

Sivaramakrishna Koganti

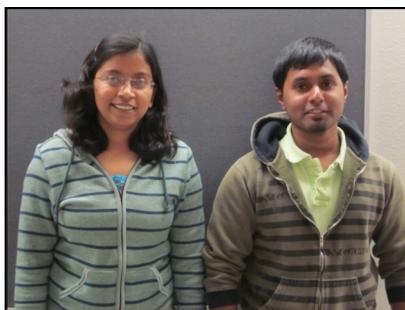
Lab of Dr. Thomas Thekkumkara

Monday, March 26, 2011 - 1:00 - 2:00 pm
AMA SOP 107/ABI 2601/LUB HSC 1C111

← NEW STUDENTS FOR SPRING 2012 →

Shikha Shikha, B.Pharm.

Lab: Dr. Luca Cucullo
Birla Institute of Technology
Mesra, Ranchi, India

**Shanal DeSilva, B.S. in**

Chemistry/Biotechnology
Lab: Dr. Thomas Abbruscato
West Texas A&M University
Canyon, Texas

Student Recruitment Event in Lubbock

Graduate Students **Prabodh Kandala and Kaushik Shah**, **Dr. Sanjay Srivastava and Teresa Carlisle** represented the Graduate Program in Pharmaceutical Sciences at the Annual Graduate School of Biomedical Sciences (GSBS) TTU Student Recruitment Event and Dinner on January 17th in Lubbock. The GSBS uses this time to extend an invitation to TTU science majors who are juniors and seniors with a 3.25 or higher GPA. The goal is to promote GSBS at TTUHSC and highlight the research labs and what is offered to potential students. Kandala presented a poster entitled “Regulation of macroautophagy in ovarian cancer cells in vitro and in vivo by controlling Glucose regulatory protein 78 and AMPK” and Shah presented “Function of Sodium Dependent Glucose Transporter (SGLT1) at the Blood Brain Barrier in the Diabetes”. Dr. Srivastava gave a talk entitled “Research Opportunities in the Graduate Program in Pharmaceutical Sciences at School of Pharmacy, TTUHSC, Amarillo”. After the afternoon poster presentations and tours of the Lubbock GSBS labs, attendees enjoyed the recruitment dinner. ■

GRADUATE STUDENT SEMINAR PROGRAM - FALL 2011

8/24/2011 - Shashi Kudugunti - "Tyrosinase Mediated Bioactivation of Caffeic Acid Phenethyl Ester Selectively Inhibits Glutathione S-transferase"

8/31/2011 - Sivaramakrishna Koganti - "Functional Role for 2-Methoxyestradiol in Angiotensin Type 1 Receptor Down-regulation"

9/7/2011 - Kaushik Shah - "Function of sodium dependent glucose co-transporter (SGLT1) at the blood-brain barrier (BBB): Diabetes"

9/14/2011 - Manoj Banjara - "Induction of Lipocalin-2 Expression by Damaged Cells"

9/21/2011 - Prabodh Kandala - "Diindolylmethane induces endoplasmic reticulum stress mediated autophagy in ovarian cancer cells"

10/5/2011 - Sharad Sharma - "BMS-777607, a Small Molecule RON Kinase Inhibitor Induces Polyploidy in Breast Cancer Cells"

10/5/2011 - Alejandra Fernandez - "Modulating Epilepsy through Manipulation of Metabolic Pathways"

10/12/2011 - Kamrun Nahar - "Magnetic Liposomes for Targeted Drug Delivery: Preparation and Characterization"

10/12/2011 - Md. Rashedul Islam - "Evaluating Neuroprotective Function of Biphalin and Its Analogs in Stroke Induced Neurotoxicity"

10/19/2011 - Brijeshkumar Patel - "Feasibility of Inhaled Montelukast as an Alternative to Oral Form of the Drug in the Treatment of Asthma"

10/19/2011 - Snehal Padhye - "Combined Inhibition of RON and c-Kit Chemosensitizes Pancreatic Cancer Stem Cells to Gemcitabine"

11/2/2011 - Raghavender Chivukula - "HLA-G Molecule: A Potential Target for Cancer Immunotherapy"

11/9/2011 - Parul Gupta - "HER2 Expression Sensitizes Breast Cancer Cells to Apoptosis In Vitro and In Vivo"

11/23/2011 - Nina Blakeman - "Is Triacsin C a potential modulator of NOS function in hyperlipidemia?"

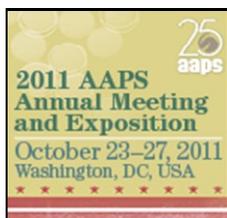
11/30/2011 - Ameya Paranjpe - "Discovery and Characterization of Nitrospirin (NCX4016) as a Powerful and Clinically Relevant Inhibitor of Human MGMT for Increasing the Efficacy of Alkylating Agents"

11/30/2011 - Subhasree Nag - "Novel Mechanism of Action for Newly Discovered Ginsenosides"

12/7/2011 - Pooja Naik - "The Effect of Tobacco Smoke on the Blood Brain Barrier"

12/14/2011 - Jun Liu - "Choline Transporter: Activity Assay and Photolabeling" ■

CONFERENCE PRESENTATIONS



- **Mohammad S. Absar**, Suna Choi, Kamrun Nahar, Fakhrul Ahsan, Young Min Kwon. "Serum Albumin-Protamine Conjugate: a Novel Carrier for Delivery of Therapeutic Macromolecules"
- **Chris E Adkins**, Rajendar K Mittapalli, Vinay Venishetty, Kaci Bohn, Amit Bansal, Paul R Lockman. "TGF- β Inhibition Reduces Blood-Brain Barrier Invasion of Brain Seeking MDA-MB-231Br Cells"
- **Rajiv Balyan**, Shashi Kudugunti, Nikhil Vad and Majid Moridani. "Bioactivation of Luteolin as a ProDrug by Tyrosinase Inhibits Human Glutathione S-Transferase in SK-MEL-28 Melanoma Cells" (Presented by S. Kudugunti)
- **Nilesh Gupta** and Fakhrul Ahsan. "Shape Engineered Erythrocytes as Micro-Reservoirs of Fasudil, a Novel Rho-kinase Inhibitor"
- **Mohammad R Islam**, Kaushik Shah, Anatoliy Koval and Thomas J. Abbruscato. "The Effects of Basolateral Astrocyte Components on Human Blood Brain Barrier Characteristics"
- **Prabodh K. Kandala** and Sanjay K. Srivastava. "Diindolylmethane induces macroautophagy by regulating ER stress and AMPK"
- **Shashi Kudugunti**, Rajiv Balyan, Majid Moridani. "In-vitro and In-vivo Investigation of Luteolin as an Anti-Melanoma Agent"
- **Kamrun Nahar** and Fakhrul Ahsan. "Magnetic Liposomes for Targeting to Pulmonary Arterial Hypertension"
- **Snehal Padhye** and Ming-Hai Wang. "Combined Inhibition of RON and c-Kit Signaling Chemosensitizes Pancreatic Cancer Stem Cells to Gemcitabine"
- **Brijeshkumar Patel** and Fakhrul Ahsan. "PLA and PLGA Microparticulate Systems for Pulmonary Delivery of Montelukast, a Cysteinyl-leukotriene Receptor Antagonist"
- **Ramakrishna Samala**, Kunal S Taskar, Helen R Thorsheim, Quentin R Smith. "Limited Vinorelbine Distribution to Brain Metastases of Breast Cancer and Critical Roles of Blood-Brain Barrier P-Glycoprotein and MRP7 Active Efflux Transport"
- **Hussaini Syed Sha Qhattal**, Xinli Liu. "Optimization of Hyaluronan-Conjugated Liposomes for Enhanced CD44 Receptor Mediated Endocytosis and Cytotoxicity" ■

Continued from Page 3

2011 ANNUAL AAPS ALUMNI & FRIENDS RECEPTION

Monday, October 24, 2011

La Tasca DC Restaurant, Wash DC



S. Goda, RK Samala, V. C-Pillai, K. Bohn, R. Mittapalli, K. Taskar



R. Islam, M. Rashid



S. Padhye, K. Bohn



C. Thomas, R. Mittapalli

[View the AAPS Video prepared for the special 25th AAPS anniversary.](#)



Mohammad Nutan, Q. Smith, Monsoor Khan, P. Lockman, F. Ahsan



K. Taskar, S. Kudugunti, K. Bohn, S. Bai, S. Padhye, Monsoor Khan, Vikas Agarwal, Q. Smith, **Robert Thorne**, P. Lockman, P. Kandala, **Patrick Ronaldson**, H. Qhattal, C. Adkins

Dr. Smith invited Dr. Thorne (Asst Professor, Univ of Wisconsin School of Pharmacy) and Dr. Ronaldson (Asst Professor of Medical Pharmacology, Univ of Arizona) to speak about serving as a new faculty member in a biomedical university.



**Cancer Prevention & Research Institute of Texas
11/15-27/11 - Austin, Texas**

Chris Adkins, Ph.D. candidate, along with members of Dr. Paul Lockman's lab, attended the second annual **Innovations in Cancer Prevention and Research Conference**, in Austin,

Texas. There were many opportunities to meet and exchange ideas with CPRIT grantees as well as attend plenary sessions with preeminent speakers from Texas and across the country who presented pioneering cancer research and prevention program findings. Speakers included Ronald A. DePinho, M.D. Anderson Cancer Center; Harvey Fineberg, M.D., Ph.D., Institute of Medicine, Harvard School of Public Health; and Tyler Jacks, Ph.D., MIT's Institute for Integrative Cancer Research. ■

**Texas Tech University Health Science Center
24th ANNUAL STUDENT RESEARCH WEEK
March 20-22, 2012 * Lubbock, Texas**



"CURE DIABETES"

Student Research Week is an annual interdisciplinary forum sponsored by the Graduate Student Association, Graduate School of Biomedical Sciences. It is designed to highlight exceptional research performed by students through poster presentation sessions; provide research seminars presented by distinguished biomedical scientists; and recruit regional students into GSBS degree programs.

Keynote speakers will be **Dr. Gerald Shulman**, Yale University School of Medicine, and **Dr. Luis Fernandez**, University of Wisconsin School of Medicine.

GPPS students will present posters Wednesday afternoon (21st). Deadline to [submit posters](#) is February 12, 2012. ■

**Eleventh Annual School of Pharmacy
Research Days**

**School of Pharmacy, Amarillo, Texas
June 12-13, 2012**



Taken by Chris Adkins from the 2nd floor of the Amarillo Research Building.

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PUBLICATIONS

≈**Kandala PK**, Wright SE, Srivastava SK. Blocking EGFR activation suppresses ovarian tumor growth in vitro and in vivo. *J Pharmacol Exp Ther*. 2011 Dec 28. [Epub ahead of print]

≈**Pooja Naik**, Cucullo L. In Vitro Blood-Brain Barrier Models: Current and Perspective Technologies. *J Pharm Sci*. 2011 Dec 27. doi: 10.1002/jps.23022. [Epub ahead of print]

≈**Padhye SS**, Guin S, Yao HP, Zhou YQ, Zhang R, Wang MH. Sustained Expression of the RON Receptor Tyrosine Kinase by Pancreatic Cancer Stem Cells as a Potential Targeting Moiety for Antibody-Directed Chemotherapeutics. *Mol Pharm*. 2011 Dec 5;8(6):2310-9. Epub 2011 Nov 1.

≈**Qhattal HS**, Wang S, Salihima T, Srivastava SK, Liu X. Nanoemulsions of Cancer Chemopreventive Agent Benzyl Isothiocyanate Display Enhanced Solubility, Dissolution, and Permeability. *J Agric Food Chem*. Dec 14;59(23):12396-404. Epub 2011 Nov 11.

≈**Taskar KS**, Rudraraju V, Mittapalli RK, **Samala R**, Thorsheim HR, Lockman J, Gril B, Hua E, Palmieri D, Polli JW, Castellino S, Rubin SD, Lockman PR, Steeg PS, Smith QR. Lapatinib Distribution in HER2 Overexpressing Experimental Brain Metastases of

Breast Cancer. *Pharm Res*. 2011 Oct 20. [Epub ahead of print]

≈**Pillai VC**, **Snyder RO**, Gumaste U, Thekkumkara TJ, Mehvar R. Effects of transient overexpression or knockdown of cytochrome P450 reductase on reactive oxygen species generation and hypoxia-reoxygenation injury in liver cells. *Clin Exp Pharmacol Physiol*. 2011 Oct 4. [Epub ahead of print]

≈**Snyder R**, Thekkumkara TJ. 1.13-Cis Retinoic Acid Specific Down-Regulation of Angiotensin Type 1 Receptor in Rat Liver Epithelial and Aortic Smooth Muscle Cells. *J Mol Endocrinol*. 2011 Dec 16. [Epub ahead of print]

≈**Weidanz JA**, Hawkins O, **Verma B**, Hildebrand WH. TCR-like Biomolecules Target Peptide/MHC Class I Complexes on the Surface of Infected and Cancerous Cells. *Int Rev Immunol*. 2011 Oct;30(5-6):328-40.

≈**Wangler NJ**, Santos KL, Schadock I, Hagen FK, Escher E, Bader M, Speth RC, Karamyan VT. Identification of membrane-bound variant of metalloendopeptidase neurolysin (EC 3.4.24.16) as the non-AT1, non-AT2 angiotensin binding site. *J Biol Chem*. 2011 Jan 2;287(1):114-22. Epub 2011 Oct 28. □

The 10-week 2012 Amarillo Biomedical Research Internship Program will begin the end of May and run through the beginning of August. Applications will be accepted until Thursday, **March 15, 2012**. Interested undergrad students are encouraged to apply [online](#), in person to the Graduate Program Office or by email to teresa.carlisle@ttuhsc.edu. □



UPCOMING CONFERENCES

 43rd Annual Meeting of the American Society for Neurochemistry
March 03 - 07, 2012
Baltimore, MD



American Association for Cancer Research Annual Meeting 2012
March 31 - April 4, 2012
Chicago, IL

 **EB 2012** Experimental Biology 2012
April 21 - 25
San Diego Convention Center,
San Diego, CA

39th Annual Meeting and Exposition of the
Controlled Release Society
July 15-18, 2012
Centre des Congrès de Québec
Québec City, Canada



CRS
Controlled Release Society

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WISE - WOMEN IN SCIENCE ENDEAVORS

By Naomi Wangler



Alejandra Fernandez and Naomi Wangler represented the TTUHSC graduate students at the 2011 WiSE event, which was held at the Amarillo Area Center for Advanced Learning on Saturday, November 5th. Mandy Whiteside, SOP P1, helped. They worked with 12 middle school girls at a time, three sessions in all, and demonstrated endothermic and exothermic

reactions in which gas was released in both cases. In doing this, they made bath salts, scented and dried them, and let the girls take them home in a plastic baggie. By the end of the day, everybody's hands were dyed all different colors. The girls were respectful and eager to get their hands dirty but also didn't mind sitting and learning the chemistry behind the hands-on activities. ■



L to R - Fernandez, Wangler, and Whiteside are watching bubbles form by adding baker's yeast, warm water, soap, hydrogen peroxide and food coloring.



B Patel, U Gumaste, R Islam, N Gupta



"MEET THE GEEKS"



Guest, Q Smith, J Lu, V Karamyan, M Weis



Dr. P Katz and guests



F Ahsan, R Mehvar, T Thekkumkara, T Abbruscato

Dr. Weis speaks to guests and geeks.



Mayor Harpole speaks to attendees.

Visiting Scientist and Student

October 31st the Graduate Program faculty and graduate students had the chance to meet the newest highly credentialed faculty candidate, **Ima Smahta-Nyu**, PhD, MD, PharmD, BVSc, MPH, PCP, etc., and her almost as equally credentialed graduate student, **Dee Mented**, BM, BS, BPharm, MPharm, MD. At an afternoon reception, guests were encouraged to "vote" which department Dr. Smahta-Nyu would be associated with and which lab Ms. Mented would work in. It was decided that the prestigious doctor would be part of the Biomedical Sciences Department, and her almost as equally prestigious student would be split between the labs of Dr. Ahsan and Dr. Zhang. Unfortunately due to their world-wide popularity, this highly regarded, but overrated duo accepted positions elsewhere. ■



Dr. Smahta-Nyu and her grad student Dee Mented.

Being an innovative and thrifty grad student, Ms. Mented built her own vivarium.



ALUMNI UPDATES

Kunal Taskar (F10) - New Position
Research Investigator II
Bristol-Myers Squibb Biocon
Research Center
Bangalore, India
kunal.taskar@gmail.com

Born to **Russell (Su11)** and Lauren Snyder
Oliver Ripley Snyder
6 lb 5.5 oz - 18¾ inches
10/8/11



[Click here for deadlines of Current Awards and Scholarships](#)

COMMUNITY SERVICE OPPORTUNITIES

GPSS students participated in:

- *October 15 - Heart Walk & Luncheon (\$650 raised!)
- *November 5 - WiSE
- *December 8 - Fundraising Dinner for American Heart Association

GSAA General Meetings:
 Thurs, February 16 - 12 pm
 Mon, March 12 - 12 pm
 Thurs, April 12 - 12 pm
 Thurs, May 17 - 12 pm

Coming up:
*Taos Ski trip - March 16th

CRAZY FUN WITH GSAA



Festivus Celebration



Halloween Party

Graduate Program Coordinator, **Teresa Carlisle**, participated in a C.O.P.E. (Challenging Outdoor Personal Experience) course sponsored by Boy Scouts of America on November 20, 2011. The C.O.P.E. course covers seven basic goals: teamwork, communication, trust, leadership, decision making, problem solving and self-esteem. Teresa will be able to utilize some of skills covered in the basic goals such as communication, decision making and problem solving in her job.

