



Agonist

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



UPDATE FROM DR. ABBRUSCATO

The Graduate Program in Pharmaceutical Sciences welcomes 6 new students this fall (profiles on page 4): **Kito Barrow** and **Debashish Basak** in the lab of Dr. Lu; **Neel Fofaria** in the lab of Dr. Srivastava; **Tanvirul Hye** in the lab of Dr. Liu; **Md. Kowser Miah** in the lab of Dr. Mehvar; and **Md. Jahidur Rashid** in the lab of Dr. Wang. We wish them a warm welcome as they begin their studies with us! We also had an active Amarillo Biomedical Internship (ABRI) program this summer with 9 student interns that completed the 10-week research program, culminating with a poster presentation and award ceremony (details on page 10). Also this summer was the first year that we hosted an annual "Homecoming Seminar", which was presented by **Prasad Chimalakonda** from Bristol Myers Squibb. Dr. Chimalakonda gave a superb research presentation related to drug development and provided his perspectives to graduate students on success in seeking employment with major pharmaceutical companies. In addition to this, GSAA hosted a seminar presented by Dean Nelson that covered many aspects of professional training and preparation for a career in science. We hope these activities enhance graduate student training, particularly to prepare and compete in an increasingly challenging academic and industrial job market. ■



Fall 2011 Issue 8

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First Annual Homecoming Alumni Presentation



Anjaneya Prasad Chimalakonda returned to Amarillo as the first alumni chosen by the Graduate Program Committee for our Homecoming Alumni Presentation which took place on Friday, August 26th. Dr. Chimalakonda graduated in Spring 2005 and is employed as a Senior Research Investigator in the department of Metabolism and Pharmacokinetics at Bristol-Myers Squibb in Pennington, New Jersey. He presented a seminar entitled

"Integrated PK-PD Models as Translational Research Tools in Drug Discovery and Development" followed by a luncheon and extended question and answer session with the graduate students. AAPS sponsor Dr. Fakhru Ahsan presented Dr. Chimalakonda with a plaque from the AAPS chapter acknowledging his successful career in industry post TTUHSC graduation. Look for more alumni in academia and industry to be showcased in future homecoming events. ■



Special Honors for 2011 GSBS Graduates



The Dean's Recognition Award for the Graduate School of Biomedical Sciences was awarded to **Sarah Renee Willis**, M.S. She carried the GSBS Banner leading the 2011 graduates into the Spirit Arena on Saturday, May 21st. The Outstanding Graduate Student, selected by students and faculty, was **Vivek Gupta**, Ph.D. Vivek had the honor of carrying the GSBS seal.



GPSS 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 (GPSS). For updates and new information, email Shari at shari.morris@ttuhsc.edu.

SPRING & SUMMER 2011 GRADUATES

A
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o
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t**Venkateswaran Chithambaram Pillai**

Lab of Dr. Reza Mehvar

Dissertation Presented

March 21, 2011

“Role of NADPH-Cytochrome P450 Reductase In Hepatic Ischemia-Reperfusion Injury”

Professional Information:

Postdoctoral Fellow
University of Pittsburgh, School of Pharmacy
Department of Pharmaceutical Sciences
Pittsburgh, PA
venki.c.pillai@gmail.com

**Satyanarayana Goda**

Lab of Dr. Quentin Smith

Dissertation Presented

March 3, 2011

“Loop Diuretics as Potential CNS Therapeutic Agents: Limitations by Active Efflux Transport at the Blood-Brain Barrier”

Professional Information:

Postdoctoral Research Associate
University of the Pacific
Department of Pharmaceutics & Medicinal Chemistry
Stockton, CA
satyapharma@gmail.com

**Vinay Rudraraju**

Lab of Dr. Quentin Smith

Dissertation Presented

March 10, 2011

“Chemotherapeutic Drug Uptake and the Role of Blood-Tumor Barrier in Brain Metastases of Breast Cancer”

Professional Information:

Drug Safety Associate
Janssen Alzheimer Immunotherapy Research and Development
San Francisco, CA
virura@gmail.com

**Li Yang**

Lab of Dr. Thomas Abbruscato

Dissertation Presented

March 7, 2011

“Neuroprotective Role of Opioid Receptor Agonists in Stroke”

Professional Information:

Postdoctoral Research Asso
Harvard Medical School
Center for Cerebrovascular Biology
Boston, MA
ylwhzsd@gmail.com

**Kaci Bohn**

Lab of Dr. Paul Lockman

Dissertation Presented

June 17, 2011

“Vascular Remodeling is Associated with Increased Permeability of Experimental Brain Metastases of Breast Cancer”

Professional Information:

Assistant Professor
Harding University College of Pharmacy
Department of Pharmaceutical Sciences
Searcy, AR
kbohn@harding.edu

**Russell Snyder**

Lab of Dr. Thomas Thekkumkara

Dissertation Presented

June 9, 2011

“A Novel Role for 13-Cis Retinoic Acid in Angiotensin Type 1 Receptor Down-Regulation”

Professional Information:

Postdoctoral Research Associate
TTUHSC School of Pharmacy
Lab of Dr. Thomas Thekkumkara
Amarillo, TX
russell.snyder@ttuhsc.edu



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Continued from Page 2

Bhavna Verma

Lab of Dr. Jon Weidanz

Dissertation Presented

June 6, 2011

“Chemotherapeutic Drug Uptake and the Role of Blood-Tumor Barrier in Brain Metastases of Breast Cancer”

Professional Information:

Postdoctoral Research Associate
USC/Norris Comprehensive Cancer Center
Los Angeles, CA
ursbhavna@gmail.com



Yan Xu

Lab of Dr. Ulrich Bickel

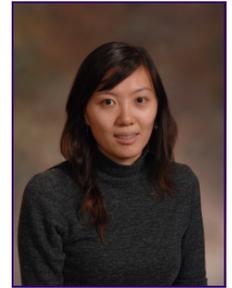
Dissertation Presented

May 31, 2011

“A Novel Vascular Targeting Strategy to the Blood Brain Barrier Using a TCR Mimic Antibody”

Professional Information:

Research Investigator I
Bristol-Myers Squibb Co.
New Brunswick, NJ 08901
yannxu@gmail.com



CONVOCAION MAY 20, 2011



Dr. Abbruscato (for Dr. Mehvar) & Venki Chithambaram Pillai



Dr. Smith & Satya Goda



Dr. Ahsan & Vivek Gupta



Drs. Ahsan & Bickel (for Dr. Wang) hood Sunny Guin



Dr. Lockman hoods Vamshi Manda



Dr. Lockman & Raj Mittapalli



Dr. Rao hoods Arun Satelli



Dr. Bickel hoods Rachita Sumbria



Dr. Smith & Vinay Rudraraju



Dr. Smith & Kunal Taskar



Dr. Stoll hoods Sarah Willis



Dr. Abbruscato & Li Yang



Naomi Wangler, GSAA President, tells about Amarillo activities.

Graduates listen intently to remarks by Dr. Dennis Paulson from Midwestern University.



All PhD & Masters Graduates



Amarillo GPPS graduates In front – Shari Morris (left) and Teresa Carlisle

The Greater Picture

FALL 2011 DISSERTATIONS

Shashi Kudugunti - Lab of Dr. Majid Moridani
Monday, September 26, 2011 - 10:00 – 11:00 am
AMA SOP 107/ABI 2200/LUB ACB 260D

R.K. Samala - Lab of Dr. Quentin Smith
Monday, October 17, 2011 - 1:00 - 2:00 pm
AMA SOP 107/ABI 1130/LUB HSC 1C100

GRADUATE STUDENT SEMINAR PROGRAM - SPRING 2011

1/12/2011 - Russell Snyder - “A Proposed Cellular Mechanism for MAP Kinase Dependent Down-Regulation of AT1R by 13-cis Retinoic Acid” (Thekkumkara)

1/19/2011 - Md. Mamunur (Moon) Rashid - “Upregulation mechanism(s) of the novel non-AT1, non-AT2 angiotensin binding site during neuronal cell death” (Karamyan)

1/26/2011 - Bhavna Verma - “TCRm antibodies against peptide HLA complexes Concept to Reality” (Weidanz)

2/2/2011 - Shuangling Zhang - “ α 1-acid Glycoprotein Induced Effects on Rat Brain Microvessel Endothelial Cells” (Mark)

2/16/2011 - Naomi Wangler - “Isolation and Identification of the Non-AT1, non-AT2 binding site for angiotensins” (Karamyan)

2/16/2011 - Snehal Padhye - “Sustained Expression of RON Receptor Tyrosine Kinase by Pancreatic Cancer Stem Like Cells as a Potential Target for Antibody Directed Chemotherapeutics” (Wang)

2/23/2011 - Md. Shahriarul (Abir) Absar - “Heparin

Triggered Delivery of Tissue Plasminogen Activator (tPA) for Targeted Thrombolysis” (Kwon/Ahsan)

3/9/2011 - Chris Adkins - “Prevention of Preclinical Breast Cancer Brain Metastases (Lockman)

3/16/2011 - Harinath Kotte - “A novel glutathione disulfide mimetic to perturb cellular redox and enhance anticancer therapies” (Srivenugopal)

3/30/2011 - Hussaini Syed Sha Qhattal - “Characterization of CD44-Mediated Cancer Cell Uptake and Intracellular Distribution of Hyaluronan-Grafted Liposomes” (Liu)

4/20/2011 - Vindhya Edpuganti - “Quantitative analysis of cytochrome P450 metabolites of arachidonic acid in ischemic rat liver” (Mehvar)

4/27/2011 - Nilesh Gupta - “Shape Engineered Erythrocytes to deliver anti-PAH drug, Fasudil” (Ahsan)

4/27/2011 - Rajiv Balyan - “Bioactivation of Luteolin as a Prodrug by Tyrosinase Inhibits Human Glutathione S-Transferase and Induces Toxicity in SK-MEL-28 Melanoma Cells” (Smith) ■

Kito Barrow, M.S. in Biology
Lab: Dr. Junxuan Lu
University of Texas
Dallas, Texas

Debasish Basak, M.Pharm.
Lab: Dr. Junxuan Lu
University of Dhaka
Bangladesh

Neel Fofaria, B.Pharm.
Lab: Dr. Sanjay Srivastava
University of Mumbai
India

NEW STUDENTS FOR FALL 2011



L to R: Suresh Voruganti (Sp11); Neel Foraria; Amit Bansal (Sp11); Tanvirul Hye; Kito Barrow; Kowser Miah; Debasish Basak; Jahidur Rashid

Tanvirul Hye, M.Pharm.
Lab: Dr. Xinli Liu
University of Dhaka
Bangladesh

Md. Kowser Miah, B.Pharm.
Lab: Dr. Reza Mehvar
University of Dhaka
Bangladesh

Md. Jahidur Rashid, M.Pharm.
Lab: Dr. Ming-Hai Wang
Jahangirnagar University
Bangladesh

AWARDS & SCHOLARSHIPS

Prabodh Kandala and Shashi Kudugunti - Mary Lou Clements-Mann Scholarship - \$500

Kaushik Shah - “Young Investigator’s Educational Enhancement” travel award from American Society for Neurochemistry - \$500

Kaci Bohn, Siva Koganti and Naomi Wangler - 2010-2011 Phonathon/Thankathon Scholarship

Prabodh Kandala - AACR travel scholarship - \$1000

**For research presentation awards, please see the respective events. ■



**WATCH FOR EMAILS ABOUT THE
2011 ANNUAL ALUMNI & FRIENDS RECEPTION**
Monday, October 24, 2011
La Tasca DC, 722 7th St NW, Wash DC
6:30-8:30 PM Downstairs Dining Area

**41st Annual Meeting of Society
for Neuroscience 2011**
November 12-16, 2011
Washington, DC



PUBLICATIONS

≈**Absar S**, Choi S, Yang VC, Kwon YM. Heparin-triggered release of camouflaged tissue plasminogen activator for targeted thrombolysis. *J Control Release*. 2011 Sep 10. [Epub ahead of print]

≈**Raktima Bhattacharya, Yan Xu**, Md. Ashequr Rahman, Pierre-Olivier Couraud, Ignacio A. Romero, Babette B. Weksler, Jon A. Weidanz, Ulrich Bickel. A novel vascular targeting strategy for brain-derived endothelial cells using a TCR mimic antibody. *J Cell Physiol*. 2010 Nov;225(3):664-72.

≈**Pillai VC**, Mehvar R. Inhibition of NADPH-cytochrome P450 reductase by tannic acid in rat liver microsomes and primary hepatocytes: Methodological artifacts and application to ischemia-reperfusion injury. *J Pharm Sci*. 2011 Aug;100(8):3495-505. Epub 2011 Mar 8.

≈**Gupta V**, Davis M, Hope-Weeks LJ, Ahsan F. PLGA Microparticles Encapsulating Prostaglandin E1-Hydroxypropyl- β -cyclodextrin (PGE1-HP β CD) Complex for the Treatment of Pulmonary Arterial Hypertension (PAH). *Pharm Res*. 2011 Jul;28(7):1733-49. Epub 2011 Apr 6.

≈**Srinivasan Marimuthu, Raghavender S.V. Chivukula**, Lloyd F. Alfonso, Majid Moridani, Fred K. Hagen and G. Jayarama Bhat. Aspirin acetylates multiple cellular proteins in HCT-116 colon cancer cells: Identification of novel targets. *Int J Oncol*. Nov;39(5):1273-83. Epub 2011 Jul 4.

≈**Gupta V**, Ahsan F. Influence of PEI as a core modifying agent on PLGA microspheres of PGE(1), a pulmonary selective vasodilator. *Int J Pharm*. Jul 15;413(1-2):51-62. Epub 2011 Apr 16.

≈**Kudugunti SK**, Thorsheim H, Yousef MS, Guan L, Moridani MY. The metabolic bioactivation of caffeic acid phenethyl ester (CAPE) mediated by tyrosinase selectively inhibits glutathione S-transferase. *Chem Biol Interact*. 2011 Jul 15;192(3):243-56. Epub 2011 Mar 31.

≈**Bennett KM, Liu J**, Hoelting C, Stoll J. Expression and analysis of two novel rat organic cation transporter homologs, SLC22A17 and SLC22A23. *Mol Cell Biochem*. 2011 Jun;352(1-2):143-54. Epub 2011 Feb 27.

≈**Mittapalli RK**, Manda VK, Geldenhuys WJ, Lockman PR. Exploiting Nutrient Transporters at Blood-Brain Barrier to Improve Brain Distribution of Small Molecules. *Therapeutic Delivery*, December 2010, Vol. 1, No. 6, Pages 775-784.

≈**Qi Ma**, Sunny Guin, **Snehal S Padhye**, Yong-Qing Zhou, Rui-Wen Zhang, Ming-Hai Wang. Ribosomal Protein S6 Kinase (RSK)-2 as a Central Effector Molecule in RON Receptor Tyrosine Kinase Mediated Epithelial to Mesenchymal Transition Induced by Macrophage-Stimulating Protein. *Mol Cancer*. 2011 May 28;10(1):66. [Epub ahead of print]

≈**Hang-Ping Yao**, Yong-Qing Zhou, Qi Ma, Sunny Guin, **Snehal S Padhye**, Rui-Wen Zhang and Ming-Hai Wang. The monoclonal antibody Zt/f2 targeting RON receptor tyrosine kinase as potential therapeutics against tumor growth-mediated by colon cancer cells. *Mol Cancer*. 2011 Jul 12;10(1):82. [Epub ahead of print]

≈**Qhattal HS**, Liu X. Characterization of CD44-Mediated Cancer Cell Uptake and Intracellular Distribution of Hyaluronan-Grafted Liposomes. *Mol Pharm*. Aug 1;8(4):1233-46. Epub 2011 Jul 5.

≈**Rao PS, Satelli A**, Moridani M, Jenkins M, Rao, US. Luteolin induces apoptosis in multidrug resistant cancer cells without affecting the drug transporter function: involvement of cell line-specific apoptotic mechanisms. *Int J Cancer*. 2011 Jul 25. [Epub ahead of print]

≈**Bungay PM, Sumbria RK**, Bickel U. Unifying the mathematical modeling of in vivo and in vitro microdialysis. *J Pharm Biomed Anal*. 2011 Apr 28;55(1):54-63. Epub 2011 Jan 19.

≈**Hawkins O, Verma B**, Lightfoot S, Jain R, Rawat A, McNair S, Caseltine S, Mojsilovic A, Gupta P, Neethling F, Almanza O, Dooley W, Hildebrand W, Weidanz J. An HLA-Presented Fragment of Macrophage Migration Inhibitory Factor Is a Therapeutic Target for Invasive Breast Cancer. *J Immunol*. 2011 Jun 1;186(11):6607-16. Epub 2011 Apr 22.

≈**Verma B**, Jain R, Caseltine S, Rennels A, **Bhattacharya R**, Markiewski MM, Rawat A, Neethling F, Bickel U, Weidanz JA. TCR Mimic Monoclonal Antibodies Induce Apoptosis of Tumor Cells via Immune Effector-Independent Mechanisms. *J Immunol*. 2011 Mar 1;186(5):3265-76. Epub 2011 Jan 31.

≈**Yang L**, Wang H, **Shah K**, Karamyan VT, Abbruscato TJ. Opioid receptor agonists reduce brain edema in stroke. *Brain Res*. 2011 Apr 6;1383:307-16. Epub 2011 Jan 31.

≈**Yang L, Shah K**, Wang H, Karamyan VT, Abbruscato TJ. Characterization of Neuroprotective Effects of Biphalin, an Opioid Receptor Agonist, in a Model of Focal Brain Ischemia. *J Pharmacol Exp Ther*. 2011 Aug 19. [Epub ahead of print]■

WAY TO GO AWARD!



Our very own Dr. Thomas Abbruscato completed the prestigious 40K 2011 Boston Marathon with a time of 3:15:46, maintaining a pace of 0:07:28. He placed #4060 out of 26,907 runners!

He is pictured on the right with his 26.2 crew after finishing his 24th (out of 50) state run in Oregon.



Texas Tech University Health Science Center
STUDENT RESEARCH WEEK
 March 2-4, 2011 * Lubbock, Texas



"Vaccine Development - A Shot in the Dark"

At SRW 2011 sponsored by the Graduate School of Biomedical Sciences in Lubbock, there were 36 poster entries in the categories of basic science, junior and senior researchers, 10 of which represented our GPPS students.

2nd place, Senior Researcher - Snehal Padhye. Snehal S. Padhye, Hang-Ping Yao and Ming-Hai Wang. "Sustained Expression of RON Receptor Tyrosine Kinase by Pancreatic Cancer Stem-like Cells as a Potential Target for Antibody-Directed Cytotoxicity"

3rd place, Junior Researcher - Md. Shahriarul (Abir) Absar. Mohammad S Absar, Suna Choi, Nolan Toups, Victor C Yang, Young Min Kwon. "Albumin-camouflaged and Heparin Triggered Delivery of Tissue Plasminogen Activator for Safer Thrombolytic Therapy"

GPPS PRESENTERS

- Raghavender Chivukula**, Srinivasan Marimuthu, Lloyd F. Alfonso, Fred Hagen, Jayarama B. Gunaje. "Identification of Aspirin Acetylated Sites on rp53"
- Parul Gupta** and Sanjay Srivastava. "Cleavage of HER2 by Phenethyl isothiocyanate mediates apoptosis in breast cancer cells"
- Prabodh K. Kandala**, Stephen E. Wright and Sanjay K. Srivastava. "Diindolylmethane potentiates the effects of cisplatin in ovarian cancer by inhibiting STAT-3 and VEGF"
- Prabodh K. Kandala** and Sanjay K. Srivastava. "Diindolylmethane (DIM) induces ER stress mediated autophagy in ovarian cancer cells"
- Shashi Kudugunti**, Nikhil Vad, Helen Thorsheim, Mohammad Yousef, Lan Guan, Majid Moridani. "In-vitro and in-vivo investigation of Caffeic Acid Phenethyl Ester (CAPE) as a selective anti-melanoma agent: a selective tyrosinase and glutathione S-transferase dual targeted prodrug approach"
- Pooja Naik** and Karen S. Mark. "The Effects of Alpha-1 Acid Glycoprotein in P Glycoprotein Expression and Function at Blood Brain Barrier"
- Md. Mamunur Rashid**, Thiruma V. Arumugam, Vardan T. Karamyan. "Mechanism(s) of upregulation of the novel non-AT1, non-AT2 angiotensin binding site during neuronal cell death"
- Naomi J. Wangler**, Emanuel Escher, Robert C. Speth, Vardan T. Karamyan. "Photolabeling, purification and identification of the non-AT1, non-AT2 angiotensin binding site" ■

TTUHSC 2011 Annual Cancer Symposium



School of Pharmacy, Amarillo, Texas
 April 29 - May 1, 2011

- Rajiv Balyan**, Shashi Kudugunti, Nikhil Vad and Majid Moridani. "Bioactivation of Luteolin as a Prodrug by Tyrosinase Inhibits Human Glutathione S-Transferase and Induces Toxicity in SK-MEL-28 Melanoma Cells"
- Raghavender Chivukula**, Srinivasan Marimuthu, Lloyd F. Alfonso, Fred Hagen, Jayarama B. Gunaje. "Identification of Aspirin Acetylated Sites on rp53"
- Parul Gupta** and Sanjay K. Srivastava. "HER2 Sensitizes Breast Cancer Cells to Phenethylisothiocyanate Induced Apoptosis"
- Prabodh K. Kandala**, Stephen E. Wright and Sanjay K. Srivastava. "Diindolylmethane Potentiates the Effects of Cisplatin in Ovarian Cancer by Inhibiting STAT-3 and VEGF"
- Prabodh K. Kandala** and Sanjay K. Srivastava. "Diindolylmethane (DIM) Induces ER Stress Mediated Autophagy in Ovarian Cancer Cells"
- Shashi Kudugunti**, Nikhil Vad, Helen Thorsheim, Mohammad Yousef, Lan Guan, Majid Moridani. "In-vitro and in-vivo Investigation of Caffeic Acid Phenethyl Ester (CAPE) as a Selective Anti-melanoma Agent: a Selective Tyrosinase and Glutathione S-transferase Dual Targeted Prodrug Approach"
- Snehal S. Padhye**, Sunny Guin, Hang-Ping Yao and Ming-Hai Wang. "Sustained Expression of RON Receptor Tyrosine Kinase by Pancreatic Cancer Stem-like Cells as a Potential Target for Antibody-Directed Chemotherapeutics"
- Ameya Paranjpe** and Kalkunte S. Srivenugopal. "Potent Redox-Based Inhibition of Human MGMT for Improving the Efficacy of Anticancer Alkylating Agents"
- Vinay Rudraraju**, Kunal Taskar, Rajendar Mittapalli, Kaci Bohn, Amanda Roberts, Helen R. Thorsheim, Paul R. Lockman, and Quentin R. Smith. "Blood-Tumor Barrier Permeability and Drug Uptake of Brain Micrometastases"
- Hussaini Syed Sha Qhattal** and Xinli Liu. "Characterization of CD44-Mediated Cancer Cell Uptake and Intracellular Distribution of Hyaluronan- Grafted Liposomes"
- Bhavna Verma**, Rinki Jain, Francisca Neethling, and Jon A. Weidanz. "TCRm Antibodies against Peptide/HLA Complexes Induce Direct Tumor Cell Death Independent of Secondary Effector Mechanisms" (Author was not present.) ■

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**Tenth Annual School of Pharmacy Research Days
June 14 - 15, 2011**



Seventy-five faculty members, graduate students and residents converged on the TTUHSC Campus to showcase their research during the Tenth Annual SOP Research Days, held Tuesday, June 14th and Wednesday, June 15th. The keynote speaker was TTUHSC Executive Vice-President for Research, Douglas M. Stocco, Ph.D. Ten podium presentations were given by selected individuals. The annual dinner and social that followed was held at the Amarillo Museum of Art.

Oral Presentations:

- **Raghavender Chivukula** representing Biomedical Sciences. “Identification of Aspirin Acetylated Sites on rp53”
- **Satya Goda** representing Pharmaceutical Sciences. “Limited Brain Distribution of Bumetanide in Brain Limits Therapeutic Efficacy in Stroke”

The results of the presentation judging is as follows:

≈Department of Biomedical Sciences≈



Prabodh Kandala
1st Place



Parul Gupta
3rd Place

≈Department of Pharmaceutical Sciences≈



Md. Shahriarul Absar
1st Place



Nilesh Gupta
2nd Place

The Gallery



Research Days Continued from Page 7

*Indicates Award Winners

- ***Shahriar Absar**, Suna Choi and Young Min Kwon. "Heparin Triggered Release of Thrombus-targeted Camouflaged Tissue Plasminogen Activator for Localized Thrombolysis"
- Chris E. Akins**, Rajendar K. Mittapalli, Vinay K. Venishetty, Kaci A. Bohn, Amit Bansal, Quentin R. Smith and Paul R. Lockman. "TGF- β Inhibition Reduces Blood-Brain Barrier Invasion of Brain Seeking MDA-MB-231 Br Cells"
- Rajiv Balyan**, Shashi Kudugunti, Nikhil Vad and Majid Moridani. "Bioactivation of Luteolin as a Prodrug by Tyrosinase Inhibits Human Glutathione S-Transferase and Induces Toxicity in SK-MEL-28 Melanoma Cells"
- Manoj Banjara** and James Stoll. "Danger Associated Molecular Patterns Released from Necrotic Cells Enhance the Expression of Lipocalin-2"
- Vindhya Edpuganti** and Reza Mehvar. "Quantitative analysis of cytochrome P450 metabolites"
- ***Nilesh Gupta** and Fakhrul Ahsan. "Engineered Erythrocytes as Natural Micro-Reservoirs of a Rho-kinase Inhibitor, Fasudil: Preparation and Characterization"
- ***Parul Gupta** and Sanjay Srivastava. "HER2 Sensitizes Breast Cancer Cells to Phenethyl Isothiocyanate Induced Apoptosis"
- Mohammad R. Islam**, Kaushik Shah, Anatoliy Koval and Thomas J. Abbruscato. "Investigations into the Effects of Basolateral Human Astrocytes and Conditioned Media on bEnd5 and HH8 Cell Blood Brain Characteristics"
- ***Prabodh K. Kandala**, Stephen E. Wright and Sanjay K. Srivastava. "Diindolylmethane Potentiates the Effect of Cisplatin in Ovarian Cancer by Inhibiting STAT-3 and VEGF "
- ***Prabodh K. Kandala** and Sanjay K. Srivastava. "Diindolylmethane Induces ER stress Mediated Autophagy in Ovarian Cancer Cells"
- Harinath Kotte** and Kalkunte S. Srivenugopal. "Stabilized Homoglutathione Disulfide: Design of an Efficient Nontoxic Redox Perturbing Agent for Chemoprevention and Increasing Anticancer Drug Efficacy"
- Shashi Kudugunti**, Nikhil Vad, Mohd Yusuf Aslam, Kalkunte Srivenugopal, Helen Thorsheim, Mohammad Yousef, Lan Guan and Majid Moridani. "In-vitro and in-vivo Investigation of Caffeic Acid Phenethyl Ester (CAPE) as a Selective Anti-melanoma Agent: a Selective Tyrosinase and Glutathione S-transferase Dual Targeted Prodrug Approach"
- Kamrun Nahar** and Fakhrul Ahsan. "Magnetic Nanoparticles for Targeted Delivery of Fasudil, an Investigational Drug for the Treatment of Pulmonary Arterial Hypertension (PAH)"
- Snehal S. Padhye**, Sunny Guin, Hang-Ping Yao and Ming-Hai Wang. "Sustained Expression of RON Receptor Tyrosine Kinase by Pancreatic Cancer Stem-like Cells as a Potential Target for Antibody-Directed Chemotherapeutics"
- Ameya Paranjpe** and Kalkunte S. Srivenugopal. "Potent Redox-Based Inhibition of Human MGMT for Improving the Efficacy of Anticancer Alkylating Agents"
- Mamoon Rashid**, Thiruma V. Arumugam and Vardan T. Karamyan. "Upregulation Mechanism(s) of the Novel non-AT1, non-AT2 Angiotensin Binding Site in Neuronal Cell Death"
- Ramakrishna Samala**, Vinay Rudraraju, Kunal Taskar and Quentin R. Smith. "Critical Role of Multidrug Resistance Protein-7 (ABCC10) at the Blood-Brain Barrier in Limiting Brain Distribution of Vinorelbine and Doxorubicin"
- Ramakrishna Samala**, Kunal Taskar, Vinay Rudraraju, Helen Thorsheim, Paul R. Lockman and Quentin R. Smith. "Free Drug Concentration in Metastatic Brain Tumors"
- Kaushik Shah**, Li Yang, Satyanarayana Goda, Quentin R. Smith and Thomas J. Abbruscato. "Function of Sodium/Glucose co-transporter (SGLT1) at the Blood-Brain Barrier (BBB): Diabetes and Stroke"
- Russell Snyder**, Upendra Gumaste and Thomas Thekkumkara. "Retinoic Acid Mediated Downregulation of Angiotensin Type 1 Receptor Requires Mitogen Activated Protein Kinase p42/p44 and Early Growth Response Protein 1"
- Hussaini Syed Sha Qhattal** and Xinli Liu. "Characterization of CD44-Mediated Cancer Cell Uptake and Intracellular Distribution of Hyaluronan-Grafted Liposomes"
- Naomi J. Wangler**, Emanuel Escher, Robert C. Speth and Vardan T. Karamyan. "Photolabeling, Purification and Identification of the non-AT1, non-AT2 Angiotensin Binding Site"
- Yan Xu**, Raktima Bhattacharya, Jon Weidanz and Ulrich Bickel. "Evidence of Specific Brain Uptake of Antibodies Targeted at MHC Class I"

New Department Contacts

Department of Pharmaceutical Sciences -
Assistant Professor - **Luca Cucullo, Ph.D.**
Office - SOP Suite 405; 806-356-4015 x293

Omitted from Agonist Issue 7

•**Mittapalli RK**, Taskar KS, Rudraraju V, Bohn KA, Adkins CE, Palmieri D, Steeg PS, Smith QR, Lockman PR. Brain Metastases have Heterogeneous Permeability which Correlates with Chemotherapeutic Failure. Presented at the National Graduate Student Research Festival, NIH, Bethesda, MD held October 25-26, 2010.

CONFERENCE PRESENTATIONS

2nd Annual Graduate School of Biomedical Sciences Graduate Student & Faculty Mentor Retreat * Lubbock * January 11, 2011

- **Prabodh K. Kandala** and Sanjay K. Srivastava. "Diindolylmethane suppresses ovarian cancer and potentiates the effect of cisplatin in tumor mouse model by targeting STAT3"
- **Shashi Kudugunti**, Nikhil Vad, Mohd Yusef, Kalkunte Srivenugopal, Helen Thorsheim, Mohammad Yousef, Lan Guan, Majid Moridani. "In-vitro and in-vivo investigation of Caffeic Acid Phenethyl Ester (CAPE) as a selective anti-melanoma agent: a selective tyrosinase and glutathione S-transferase dual targeted prodrug approach" ■

42nd Annual ASN Meeting, St. Louis, Missouri
March 19 - 23, 2011

Shah, K. (Kaushik), Goda, S., Koval, A., Smith, Q., Abbrucato, T. "Increased Sodium/Glucose Co-Transporter (SGLT1) Function at the Blood-Brain Barrier (BBB) in Diabetes" ■



15th International Symposium on Recent Advances in Drug Delivery Systems
2/13-16/11 * Salt Lake City, Utah

Brijeshkumar Patel, Hezhen Wang and Fakhru Ahsan. Modification of Heparin Reduces the Incidences of Heparin-Induced Thrombocytopenia. Presented by Dr. Ahsan

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



American Association for Cancer Research
April 2-6, 2011
Orlando, FL

- **Rajiv Balyan**, Shashi Kudugunti, Nikhil Vad and Majid Moridani. "Bioactivation of Luteolin as a Prodrug by Tyrosinase Inhibits Human Glutathione S- Transferase and Induces Toxicity in SK-MEL-28 Melanoma Cells"
- **Raghavender Chivukula**, Srinivasan Marimuthu, Lloyd F. Alfonso, Fred Hagen, Jayarama B. Gunaje. "Identification of Aspirin Acetylated Sites on rp53"
- **Parul Gupta** and Sanjay K. Srivastava. "HER2 sensitizes breast cancer cells to phenethyl isothiocyanate induced apoptosis"
- **Prabodh K. Kandala**, Stephen E. Wright and Sanjay K. Srivastava. "Diindolylmethane potentiates the effects of cisplatin in ovarian cancer by inhibiting STAT-3 and VEGF"
- **Prabodh K. Kandala** and Sanjay K. Srivastava. "Diindolylmethane (DIM) induces ER stress mediated autophagy in ovarian cancer cells"
- **Shashi Kudugunti**, Majid Moridani. "The cytotoxicity mechanism of 5,4'-Dihydroxyflavone in melanoma cell lines"
- **Shashi Kudugunti**, Helen Thorsheim, Mohammad Yousef, Lan Guan, Majid Moridani. "The selective inhibition of GST by CAPE enhances the cytotoxicity of doxorubicin and camptothecin in SK-MEL-28 melanoma cells"
- **Snehal S. Padhye**, Hang-Ping Yao and Ming-Hai Wang. "Sustained Expression of RON Receptor Tyrosine Kinase by Pancreatic Cancer Stem-like Cells as a Potential Target for Antibody-Directed Cytotoxicity" ■



38th Annual Meeting and Exposition of the Controlled Release Society
July 30 - August 3, 2011

- **Mohammad S. Absar**, Suna Choi, Victor C. Yang, Young Min Kwon. Heparin-triggered release of tissue plasminogen activator for targeted thrombolysis.
- **Podium Presentation. Nilesh Gupta**, Vivek Gupta and Fakhru Ahsan. "Prolonged Pulmonary Vasodilation by Inhaled Liposomes of Fasudil in Monocrotaline (MCT) Induced Rat Model of PAH"
- **Brijeshkumar Patel**, Hezhen Wang and Fakhru Ahsan. Modified Heparin Reduces HIT as a Function of the Chain Length of Chemical Moieties Conjugated to Native Heparin ■

April 9 - 13, 2011
Washington DC



- **Nina Blakeman**, Qian Chen, Lindon Young and Margaret T. Weis. "Evidence that Fatty Acyl CoA Synthetase is a Mediator of Ischemia/Reperfusion (I/R) Injury in the Rat"
- **Russell Snyder**, Upendra Gumaste, Thomas Thekkumkara. "Retinoic Acid Mediated Downregulation of Angiotensin Type 1 Receptor Requires Mitogen Activated Protein Kinase p42/p44 and Early Growth Response Protein 1"
- **Naomi J. Wangler**, Emanuel Escher, Fred K. Hagen, Robert C. Speth, Vardan T. Karamyan. "Photolabeling, Purification and Identification of the Non-AT1, Non-AT2 Angiotensin Binding Site" ■

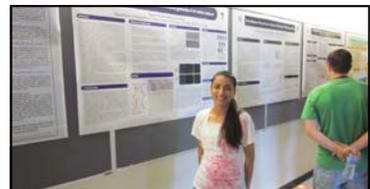
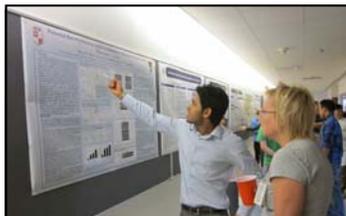
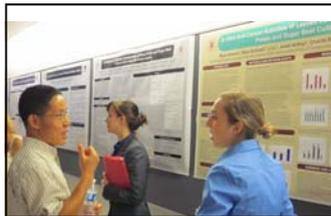
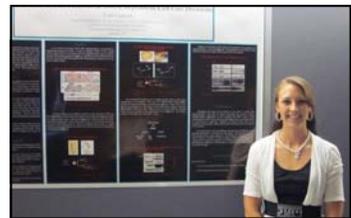
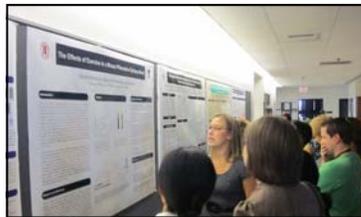
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The 10-week 2011 Amarillo Biomedical Research Internship Program concluded Wednesday, August 3rd, with the movie “Naturally Obsessed - The Making of a Scientist” followed by a presentation about the Graduate Program by Dr. Abbruscato. At the conclusion of a luncheon, awards were presented followed by poster presentations from the nine students. Below are the ABRI students with mentors and their poster presentations:



Left to Right:

- »**Nicholle Nicholson - Dr. James Stoll** -
Nicolle Nicholson, Alejandra Fernandez, James Stoll. “The Effects of Exercise in a Mouse Pilocarpine Epilepsy Model”
- »**Alexander Weis - Dr. Karen Mark** -
Alexander Weis, Jill Roberts and Karen S. Mark. “Effects of Chronic Inflammation on Novel Object Recognition in Males and Females”
- »**Saru Pahari - Dr. U.S. Rao** -
Saru Pahari and U.S. Rao. “Functional Analysis of Surface-Bound Galectin-4 in Colon Cancer”
- »**Manoj Pant - Dr. Sanjay Srivastava** -
Manoj K. Pant, Srinivas R. Boreddy, Sanjay K. Srivastava. “Potential Anti-proliferative and Anti-metastasis Effects of Panobinostat in Pancreatic Cancer”
- »**Gina Graham - Dr. Li Li** -
Graham, Gina; Batson, Ryan; Zhang, Jinjui; Arthur, Jewel; Rush, Charlie; Lu, Junxuan; Li, Li. “Investigation of Chemical Characteristics of Sweet Potato and Sugar Beet Cultivars with in-vitro Anti-Cancer Activity”
- »**Gavin Ybarra - Dr. Irene La-Beck (Abilene)** -
Gavin Ybarra, Ninh M. La-Beck. “Development of Solid Phase Extraction Methods for Evaluating Liposome Encapsulated + Released Doxorubicin in Plasma”
- »**Ryan Batson - Dr. Junhui Zhang** -
Ryan Batson, Gina Graham, Li Li, Jewel Arthur, Charlie Rush, Junxuan Lu, Jinhui Zhang. “In Vitro Anti-Cancer Activities of Leaves from Texas-Grown Sweet Potato and Sugar Beet Cultivars”
- »**Toni Cowan - Drs. Magdalena and Maciej Markiewski (Abilene)** -
Toni Cowan. “The role of TSC proteins in Notch-dependent cell fate decisions”
- »**Shanal DeSilva - Dr. Paul Lockman** -
Shanal F. DeSilva, Chris E. Adkins, Yasemin Celik, Paul R. Lockman, Julie A. Lockman. “Albumin Toxicity in Experimental Brain Metastasis of Breast Cancer: Differential Responses of Astrocytes and Metastatic Cancer”



ABRI students gain valuable experience and learn the art of pointing while presenting the results of their summer research in poster form.

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From the GSAA President, Abir Absar. On September 22nd Dr. Arthur Nelson, Dean of the School of Pharmacy, had a special session with the graduate students of both the Pharmaceutical and Biomedical Sciences departments. The session was focused on how the graduate students should prepare themselves for their upcoming professional life. GSAA organized the event considering the fact that graduate students, although getting intensive training in science, do not get to talk about their professional career often. From his long experience, the Dean outlined his guidance on how the students should look at things, starting from the beginning day until the end of their professional journey. He agreed that science alone is not enough to prove someone in this competitive world and pointed out some other critical issues that should be considered when someone wants to establish himself in the scientific field. The session was well received, and the students grasped a lot from his speech. Dr. Abbruscato, the Graduate Program Advisor, was also present in the session and shared his thoughts with the students. It was agreed by all that this type session is beneficial for the students as a part of their training to become successful. ■

GSAA SPECIAL SESSION



**SCHOOL OF PHARMACY
RECOGNIZING EXCELLENCE
Honors for Students, Faculty & Staff**

**April 29, 2011
Graduate Student Association at Amarillo
Award Ceremony**



President Naomi Wangler stands with the “**Graduate Teaching Team of the Year**”. L to R: Dr. Paul Lockman; Dr. Quentin Smith; Dr. Ming-Hai Wang; Dr. Jayarama Gunaje



Dr. Gunaje is presented with the “**Graduate Faculty Mentor for All 2010-2011**”. He also was named “**Graduate Teacher of the Year.**”



Chris Adkins, Student Senate Representative, presents Naomi Wangler with the award for “**Outstanding GSAA Student of the Year 2010-2011.**”

Other special recognitions were given to **Vivek Gupta** for GSBS Outstanding Graduate Student; **Sarah Willis** for Dean’s Recognition Award; **Venkateswaran (Venki) Chithambaram Pillai** for Dean’s Scholar 2010; and first author on publications for **R. Bhattacharya; V. Gupta; S. Kudugunti; M. Rashid; A. Satelli; R. Sumbria; L. Yang; VC Pillai; P. Kandala; R. Mittapalli; R. Samala; K. Shah; and B. Verma.**■



AAPS Officers 2011-2012

LtoR: Sec/Treas - Raghavender Chivukula; Chair-Elect - Prabodh Kandala; Chair - Hussaini SS Qhattal; Vice-Chair - Rashed Islam

[View the video for AAPS Amarillo Chapter here!](#)



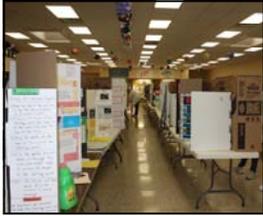
GSAA Officers 2010-2011

LtoR: Treasurer - Vindhya Edpuganti; Int’l Officer - Rajiv Balyan; Secretary - Alejandra Fernandez; Historian - Rashed Islam; Vice-President - Pooja Naik; President - Abir Absar; Student Senate Officer - Naomi Wangler

GSAA General Meetings:
Friday, October 14 - 12 pm
Tues, November 15 - 12 pm

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COMMUNITY SERVICE OPPORTUNITIES



- GPPS students participated in:
- *Highland Park High School Science Fair poster judging—February
 - *Help for Fire Victims—March
 - *AAPS Blood Drive—March
 - *TTUHSC School of Pharmacy Medication Clean Out—April
 - *PharmD & Student Senate clothing drive
 - *Casino Night fundraiser for St. Jude's Children's Research Hospital—May
 - *Back to School Picnic—SOP—August



- Coming up:**
- *October 8 - bowling at Western Bowl @ 8 pm
 - *October 17 - fundraising dinner for American Heart Association
 - *October 15 - Heart Walk



Fire Safety Training



CRAZY FUN WITH GSAA



International Banquet March



Skate Night April



Ski Trip to Santa Fe March



Camping August



Sports Plex June