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9-5-2007

## Research News: 2007, no. 3

University of Mississippi. School of Pharmacy

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## *The University of Mississippi*

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*Interoffice Memorandum*  
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**TO:** All School of Pharmacy Personnel

**FROM:** Charles D. Hufford, Associate Dean for Research and Graduate Programs

**DATE:** September 5, 2007

**SUBJECT:** Research News (#3)

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The following **GRANTS/CONTRACTS** have recently been awarded:

1. **Dr. Mitchell Avery** (P.I. – Medicinal Chemistry). Development and Testing of New Antimalarial Drugs (Year 4) (Centers for Disease Control and Prevention), \$3,000,000, August 1, 2007-July 31, 2008.
2. **Dr. Joseph Byrd** (P.I. – Pharmacy Practice). University of Mississippi Medical Center/University of Mississippi School of Pharmacy/Department of Pharmacy Practice – Contract for Residency Training Program Support (2007) (University of Mississippi Medical Center), \$25,000, July 1, 2007-June 30, 2008.
3. **Dr. Joseph Byrd** (P.I. – Pharmacy Practice). University of Mississippi School of Pharmacy/Department of Pharmacy Practice/University of Mississippi Medical Center Department of Medicine/Division of Infectious Diseases Agreement (2007-2008) (University of Mississippi Medical Center), \$13,945, July 1, 2007-June 30, 2008.
4. **Dr. Joseph Byrd** (P.I. – Pharmacy Practice). Delta Diabetes Project (2006-2010) (University of Mississippi Medical Center), \$38,973, August 1, 2007-July 31, 2010.
5. **Dr. Joseph Byrd** (P.I. – Pharmacy Practice). University of Mississippi School of Pharmacy and Baptist Memorial Hospital – North Mississippi Agreement (FY 2008) (Baptist Memorial Hospital – North Mississippi), \$56,250, August 9, 2007-August 8, 2008.
6. **Dr. Joseph Byrd** (P.I. – Pharmacy Practice). University of Mississippi School of Pharmacy/Department of Pharmacy Practice/University of Mississippi Medical Center Department of Pediatrics Agreement (2007-2008) (University of Mississippi Medical Center), \$23,575, July 1, 2007-June 30, 2008.
7. **Dr. Alice Clark** (P.I. – NCNPR/ORSP) and **Dr. Ameeta Agarwal** (P.I. – NCNPR). New Drugs for Opportunistic Infections (Year 18) (National Institute of Allergy and Infectious Diseases) \$303,465, July 1, 2007-June 30, 2008.
8. **Dr. Asok Dasmahapatra** (P.I. – NCNPR) and **Dr. Kristine Willett** (Co-P.I. – Environmental Toxicology Research Program/Pharmacology). Ethanol Action in Japanese Medaka: Alteration in Specific Gene Methylation (National Institutes of Health – National Institute on Alcohol Abuse and Alcoholism), \$69,974, July 15, 2007-June 30, 2008.
9. **Dr. Deborah Gochfeld** (P.I. – NCNPR). Collaborative Research: Aplysina Red Band Syndrome: Investigating the Etiology, Pathogenesis, and Ecology of an Emerging Marine Disease (National Science Foundation), \$231,103, November 1, 2007-October 31, 2010.

10. **Dr. Mark Hamann** (P.I. – Pharmacognosy), **Dr. Larry Walker** (Co-P.I. – NCNPR) and **Dr. Mitchell Avery** (Co-P.I. – Medicinal Chemistry), Anti-AIDS Agents from Marine Organisms (FY 2007-08) (National Institute of Allergy and Infectious Diseases) \$336,448, June 1, 2007-May 31, 2008.
11. **Dr. Muhammad Ilias** (P.I. – NCNPR), **Dr. Babu Tekwani** (Co-P.I. – NCNPR), and **Dr. Ikhlas Khan** (Co-P.I. – NCNPR). Standardization of *Banisteriopsis caapi* for Chemical and Biological Markers (National Institutes of Health), \$180,000, August 1, 2007-April 30, 2008.
12. **Dr. Melissa Jacob** (P.I. – NCNPR). Anti-Fungal Testing of New Drugs (Florida A&M University/National Institutes of Health), \$20,473, June 1, 2007-May 31, 2008.
13. **Dr. Soumyajit Majumdar** (P.I. – Pharmaceutics). Localized Modulation of RPE P-gp/MRP Activity for Back-of-the-Eye Drug Delivery (National Institutes of Health/National Eye Institute), \$105,974, September 1, 2007-August 31, 2008.
14. **Dr. Rae Matsumoto** (P.I. – Pharmacology). Center for Research Excellence in Natural Products Neuroscience (Year 2) (National Center for Research Resources), \$2,008,518, July 1, 2007-June 30, 2008.
15. **Dr. S. Narasimha Murthy** (P.I. – Pharmaceutics). Electrically Mediated Trans-Nail Delivery of Drugs (Transport Pharmaceuticals, Inc.), \$128,187.60, September 1, 2007-August 31, 2008.
16. **Dr. Dale Nagle** (P.I. – Pharmacognosy), and **Dr. Yu-Dong Zhou** (P.I. – Pharmacognosy). Neosergiolide – The First Potent Bi-Functional Natural Product that Simultaneously Targets STAT3-Dependent Breast Tumors and Tumor Hypoxia (U.S. Army Medical Research and Materiel Command), \$108,000, September 15, 2007-October 14, 2008.
17. **Dr. Zia Shariat-Madar** (P.I. – Pharmacology). Summer Research Opportunities for Undergraduates (Brian LeBaron) (University of Southern Mississippi/Mississippi Functional Genomics Network/National Institutes of Health), \$1,000, June 1, 2007-August 25, 2007.
18. **Dr. Marc Slattery** (P.I. – Pharmacognosy), and **Dr. Deborah Gochfeld** (Co-P.I. – NCNPR). New Ocean Resources: Exploration and Drug Discovery in the “Twilight Zone” (Year 2) (U.S. Department of Commerce/National Oceanic and Atmospheric Administration), \$156,000, May 1, 2007-April 30, 2008.
19. **Dr. Larry Walker** (P.I. – NCNPR). Development of Natural Products from Plants and Microbes for Replacement of Synthetic Pesticides (Year 2) (U.S. Department of Agriculture/Agricultural Research Service), \$2,411,643, September 6, 2006-July 31, 2011.
20. **Dr. Larry Walker** (P.I. – NCNPR), **Dr. Ikhlas Khan** (Co-P.I. – NCNPR), **Dr. Babu Tekwani** (Co-P.I. – NCNPR), **Dr. Dhammika Nanayakkara** (Co-P.I. – NCNPR), and **Dr. Muhammad Ilias** (P.I. – NCNPR). A Longer View of the Antimalarial Drug Pipeline: Natural Products as New Prototypes (Medicines for Malaria Venture), \$180,579.19, July 1, 2007-December 31, 2007.
21. **Dr. Barbara Wells** (P.I. – Dean’s Office), and **Dr. Charles Hufford** (Co-P.I. – Dean’s Office). Health Care Facilities and Other Construction: Equipment for Phase II – NCNPR Program (Health Resources and Services Administration), \$639,917, August 1, 2007-September 30, 2007.
22. **Dr. Noel Wilkin** (P.I. – Pharmacy Administration). 8<sup>th</sup> Statement of Work 1d3 Quality Improvement Organization Intervention and Support Using Integrated Data (Information and Quality Healthcare/Centers for Medicare and Medicaid Services), \$1,500,000, January 1, 2007-July 31, 2008.
23. **Dr. John Williamson** (P.I. – Medicinal Chemistry). Mississippi Functional Genomics Network (University of Southern Mississippi/National Institutes of Health), \$98,431, May 1, 2007-April 30, 2008.

The following **PUBLICATIONS** have appeared:

1. J.D. Bauer, J.A. Sunman, M.S. Foster, J.R. Thompson, A.A. Ogonowski, **Stephen Cutler**, S.W. May and S.H. Pollock, “The Anti-inflammatory Effects and Mechanisms of 4-Phenyl-3-butenoic Acid and 5-(Acetylamino)-4-oxo-6-phenyl-2-hexenoic Acid Methyl Ester, Potential Inhibitors of Neuropeptide Bioactivation”, *Journal of Experimental and Pharmacological Therapeutics*, 320, 1171-1177 (2007).
2. **Charles Cantrell**, D.D. Cook, **Franck Dayan** and **Daneel Ferreira**, “Phytochemical Society of North America 2006 Annual Meeting Scientific Highlights”, *Phytochemistry*, 68, 1826-829 (2007).
3. K.M. Dale, C.M. White, **Nickole Henyan**, J. Kluger and C.I. Coleman, “Impact of Statin Dosing Intensity on Transaminase and Creatine Kinase”, *The American Journal of Medicine*, 120, 706-712 (2007).
4. D. Grigore, N.B. Ojeda, E.B. Robertson, A.S. Dawson, C.A. Huffman, **Erick Bourassa**, **Robert Speth**, K.B. Brosnihan and B.T. Alexander, “Placental Insufficiency Results in Temporal Alterations in the Renin

- Angiotensin System in Male Hypertensive Growth Restricted Offspring”, *The American Journal of Physiology – Regulatory, Integrative and Comparative Physiology*, 293, 804-811 (2007).
5. J.L. Grobe, A.P. Mecca, M. Lingis, V. Shenoy, T.A. Bolton, J.M. Machado, **Robert Speth**, M.K. Raizada and M.J. Katovich, “Prevention of Angiotensin II-induced Cardiac Remodeling by Angiotensin-(1-7), *American Journal of Physiology – Heart and Circulatory Physiology*, 292, 736-742 (2007).
  6. S.P. Haris, Y. Zhang, B. Le Bourdonnec, **Christopher McCurdy** and P.S. Portoghesi, “o-Naphthalenedicarboxaldehyde Derivative of 7'-Aminonaltrindole as a Selective  $\delta$ -Opioid Receptor Affinity Label”, *Journal of Medicinal Chemistry*, 50, 3392-3396 (2007).
  7. **Wimal Herath, Daneel Ferreira and Ikhlas Khan**, “Microbial Metabolism. Part 7: Curcumin”, *Natural Product Research*, 21, 444-450 (2007).
  8. **Vardan Karamyan and Robert Speth**, “Enzymatic Pathways of the Brain Renin-Angiotensin System: Unsolved Problems and Continuing Challenges”, *Regulatory Peptides*, 143, 15-27 (2007).
  9. **Vardan Karamyan and Robert Speth**, “Identification of a Novel non-AT1, non-AT2 Angiotensin Binding Site in the Rat Brain”, *Brain Research*, 1143, 83-91 (2007).
  10. R.J. Kokje, W.L. Wilson, T.E. Brown, **Vardan Karamyan**, J.W. Wright and **Robert Speth**, “Central Pressor Actions of Aminopeptidase-Resistant Angiotensin II Analogs”, *Hypertension (Journal of the American Heart Association)*, 49, 1328-1335 (2007).
  11. **Guoyi Ma**, S.A. Bavadekar, Y.M. Davis, S.G. Lalchandani, R. Nagmani, B.T. Schaneberg, **Ikhlas Khan** and D.R. Feller, “Pharmacological Effects of Ephedrine Alkaloids on Human  $\alpha_1$ - and  $\alpha_2$ -Adrenergic Receptor Subtypes”, *The Journal of Pharmacology and Experimental Therapeutics*, 322, 214-221 (2007).
  12. D.F. Matesic, K.N. Villio, S.L. Folse, E.L. Garcia, **Stephen Cutler** and H.G. Cutler, “Inhibition of Cytokinesis and Akt Phosphorylation by Chaetoglobosin K in *ras*-transformed Epithelial Cells”, *Cancer Chemotherapy and Pharmacology*, 57, 709-718 (2006).
  13. P.K. Mididoddi and **Michael Repka**, “Characterization of Hot-Melt Extruded Drug Delivery Systems for Onychomycosis”, *European Journal of Pharmaceutics and Biopharmaceutics*, 66, 95-105 (2007).
  14. Q.C. Moore III, L. Johnson, **Michael Repka** and L.S. McDaniel, “Immunization with PspA Incorporated into a Poly(Ethylene Oxide) Matrix Elicits Protective Immunity against *Streptococcus pneumoniae*”, *Clinical and Vaccine Immunology*, 789-791 (2007).
  15. **Ilias Muhammad and Volodymyr Samoylenko**, “Antimalarial Quassinoids: Past, Present and Future”, *Expert Opinion on Drug Discovery*, 2, 1065-1084 (2007).
  16. J. Mustafa, **Shabana Khan, Daneel Ferreira and Ikhlas Khan**, “Synthesis, Spectroscopic and Anti-tumor Studies of Polyphenol-linoleates Derived from Natural Polyphenols”, *European Journal of Lipid Science and Technology*, 109, 552-559 (2007).
  17. A.E. Philip, J.H. Poupaert, G. Cheve, G. Muccioli, D. Lambert and **Christopher McCurdy**, “Structure-Activity Relationships of Phenytoinergic Antiepileptic Drugs Related to Ameltolide”, *Medicinal Chemistry Research* (2007).
  18. S. Prodduturi, K.L. Urman, J.U. Otaigbe and **Michael Repka**, “Stabilization of Hot-Melt Extrusion Formulations Containing Solid Solutions Using Polymer Blends”, *AAPS PharmSciTech*, 8 (2007).
  19. **Mohamed Radwan, Susan Manly and Samir Ross**, “Two New Sulfated Sterols from the Marine Sponge *Lendenfeldia dendyi*”, *Natural Product Communications*, 2, 901-904 (2007).
  20. **Muntha Reddy, Sashi Gupta, Melissa Jacob, Shabana Khan and Daneel Ferreira**, “Antioxidant, Antimalarial and Antimicrobial Activities of Tannin-Rich Fractions, Ellagitannins and Phenolic Acids from *Punica granatum L.*”, *Planta Medica*, 73, 461-467 (2007).
  21. **Daniel Riche**, “Alternative Viewpoints – Impracticality of Cinnamon Supplements in Diabetes”, *Pharmacotherapy*, 27, 48-50 (2007).
  22. **Daniel Riche and Katie McClendon**, “Role of Statins for the Primary Prevention of Cardiovascular Disease in Patients with Type 2 Diabetes Mellitus”, *American Journal of Health-System Pharmacists*, 64, 1603-1610 (2007).
  23. D.E. Stec, C. Bishop, **John Rimoldi**, S.R. Poreddy, T. Vera and A.K. Salahudeen, “Carbon Monoxide (CO) Protects Renal Tubular Epithelial Cells Against Cold-Rewarm Apoptosis”, *Renal Failure*, 29, 543-548 (2007).

24. S.M. Trey, D.A. Wicks, P.K. Mididoddi and **Michael Repka**, "Delivery of Itraconazole from Extruded HPC Films", *Drug Development and Industrial Pharmacy*, 33, 727-735 (2007).
25. C.B. Willmore-Fordham, D.M. Krall, Christopher McCurdy and D.H. Kinder, "The Hallucinogen Derived from *Salvia divinorum*, Salvinorin A, Has  $\kappa$ -opioid Agonist Discriminative Stimulus Effects in Rats", *Neuropharmacology* (2007).
26. DA Wright, R Dawson, **Stephen Cutler**, HG Cutler, CE Orano-Dawson, "Screening of Natural Product Biocides for Control of Non-indigenous Species", *Environmental Technology*, 28, 309-319 (2007).
27. D.A. Wright, R. Dawson, **Stephen Cutler**, H.G. Cutler, C. Orano-Dawson and E. Graneli, "Naphthoquinones as Broad Spectrum Biocides for Treatment of Ship's Ballast Water: Toxicity to Phytoplankton and Bacteria", *Water Research*, 41, 1294-1302 (2007).

**TECHNOLOGY TRANSFER** transactions:

*(In the interest of protecting confidential information, the names and titles associated with School of Pharmacy invention disclosures and patent applications will no longer be published until after a patent has issued.)*

Research Disclosures Filed in FY2007-2008: 3

U. S. Patent Applications Pending: 29

Recent U. S. Patents Granted: *Enzymatic method to produce 7-dehydropregnenolone, vitamin D like compounds and derivatives thereof.* Slominski, Andrzej; Tuckey, Robert; **Zjawiony, Jordan**; Stewart, D. Jeremy; Wortsman, Jacobo. US Patent #7,253,393.

The following **SPECIAL ANNOUNCEMENTS** are also listed:

- **Mr. Sanju Narayanan** (Medicinal Chemistry Graduate Student) has been selected to participate in the 2007 American Association of Pharmaceutical Scientists Graduate Student Symposium in Drug Design and Discovery, sponsored by Bristol-Myers Squibb, to be held in November in San Diego, California. This is the second year in a row that a graduate student from the University of Mississippi has been selected for this prestigious recognition.
- **Mr. Srinivasa Murthy Sammeta** (Pharmaceutics Graduate Student) received a Graduate Student Council Research Grant for 2007-08 funded by the Graduate Student Council of the University of Mississippi for his project entitled, "Needle Free Method of Measuring Blood Glucose".
- **Mr. Sridhar Thumma** (Pharmaceutics Graduate Student) was presented with an outstanding podium presentation award for his podium entitled, "Transmucosal Delivery of a Pro-drug  $V^9$ -Tetrahydrocannabinol" at the Pharmforum 2007 conference, hosted by the University of Tennessee Student Chapter of the American Association of Pharmaceutical Scientists (AAPS) in May 2007. **Mr. Thumma** also received the Natural Products Neuroscience (CORE-NPN) Fellowship funded by the National Institutes of Health for 2006-07.
- **Ms. Sanpada Upadhye** (Pharmaceutics Graduate Student) was presented with the Best Poster Award in Health Sciences II category for her poster entitled, "Wound Healing Potential of Chlorophyllin Gel" at the University of Mississippi Sigma Xi Poster Symposium in March 2007. **Ms. Upadhye** also won the outstanding poster award during the AAPS Pharmforum 2007 conference.
- **Mr. Siva Ram Kiran Vaka** (Pharmaceutics Graduate Student) also received a UM Graduate Student Council Research Grant for 2007-08 for his project entitled, "Enhancement of Brain Uptake of Intranasally Administered Macromolecular Therapeutics".
- **Ms. Jiajia Wang** (Pharmacology Graduate Student) and **Ms. Lu Wang** (Pharmacology Graduate Student) became the inaugural recipients of the Marvin Davis Award for the best pre-candidacy graduate student in the Department of Pharmacology Awards ceremony on August 24, 2007. The award is named in honor of Dr. Marvin Davis, who was the founding Chair of the Department, and is awarded for "outstanding performance as a graduate student in research, scholarship and service to the Department". **Jiajia Wang** is a graduate student in the laboratory of **Dr. Rae Matsumoto** and **Lu Wang** is a graduate student in the laboratory of **Dr. Kristine Willett**.

Please continue to send me important research and graduate information so that I might share it with your faculty colleagues. **This information is now being posted on the School of Pharmacy web page ([www.pharmacy.olemiss.edu](http://www.pharmacy.olemiss.edu)).**

cc: Dean Barbara G. Wells  
Ms. Dabney Weems  
Ms. Julie Edgington, Office of Research