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The University of Mississippi

Interoffice Memorandum
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TO: All School of Pharmacy Personnel

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

DATE: June 15, 2007

SUBJECT: Research News (#2)

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

1. **Dr. Joseph Byrd** (P.I. – Pharmacy Practice). Mississippi State Hospital and University of Mississippi School of Pharmacy Agreement (FY 07-08) (Mississippi State Hospital), \$24,000, May 1, 2007-April 30, 2008.
2. **Dr. John Cleary** (P.I. – Pharmacy Practice). REO Award (Mary Hamilton Chestnut) (University of Southern Mississippi/ National Institutes of Health [NIH]/Mississippi Functional Genomics Network), \$1,000, May 2, 2007-June 15, 2007.
3. **Dr. Asok Dasmahapatra** (P.I. – NCNPR). Identification of Ethanol-Sensitive Gene in Japanese Medaka – REO Award (Jerrell Sims) (University of Southern Mississippi/NIH/Mississippi Functional Genomics Network), \$1,000, May 1, 2007-June 15, 2007.
4. **Dr. Mahmoud ElSohly** (P.I. – NCNPR) and **Dr. Ikhlas Khan** (Co-P.I. – NCNPR). Production, Analysis and Distribution of Cannabis, Marijuana Cigarettes and Related Materials (Year 3) (National Institute on Drug Abuse[NIDA]/NIH), \$1,019,428, March 16, 2007-March 15, 2008.
5. **Dr. Mahmoud ElSohly** (P.I. – NCNPR) and **Dr. Ikhlas Khan** (Co-P.I. – NCNPR). Production, Analysis and Distribution of Cannabis, Marijuana Cigarettes and Related Materials (Year 3-Amendment 5) (NIDA/NIH), \$362,691, March 21, 2007-March 15, 2008.
6. **Dr. Daneel Ferreira** (P.I. – Pharmacognosy). Microbial Transformation of Pomegranate Constituents (POM Wonderful, LLC), \$47,000, June 7, 2007-June 6, 2008.
7. **Dr. Deborah Gochfeld** (P.I. – NCNPR). Development of Molecular Tools to Assess Disease Resistance in Corals and Sponges (U.S. Dept. of Commerce/National Oceanic & Atmospheric Administration [NOAA]), \$63,128, October 1, 2006 – September 30, 2007.
8. **Dr. Thomas Harrell** (P.I. – Pharmacy Practice) and **Dean Barbara Wells** (Co-P.I. – School of Pharmacy). Pharmacy Education Management System (CVS Pharmacy), \$9,500, January 1, 2007-December 31, 2007.
9. **Dr. Rae Matsumoto** (P.I. – Pharmacology). Synthesis and Evaluation of Sigma-Active Cocaine Antagonists (NIH/NIDA), \$336,617, June 1, 2007-March 31, 2008.
10. **Dr. Christopher McCurdy** (P.I. – Medicinal Chemistry) and **Dr. Rae Matsumoto** (Co-P.I. – Pharmacology). Novel Pharmacologic Interventions for Drugs of Abuse (NIH/NIDA), \$356,198, April 15, 2007-March 31, 2008.

11. **Dr. Dale Nagle** (P.I. – Pharmacognosy) and **Dr. Yu-Dong Zhou** (Co-P.I. – Pharmacognosy). Anticancer Drug Discovery that Targets Tumor Hypoxia (Year 4), (National Cancer Institute), \$257,080, May 1, 2007-April 30, 2008.
12. **Dr. Nirmal Pugh** (P.I. – NCNPR) and **Dr. David Pasco** (P.I. – NCNPR). Mannatech Phase I (Mannatech), \$28,935, May 1, 2007-August 31, 2007.
13. **Dr. Michael Repka** (P.I. – Pharmaceutics). Transmucosal Matrix Patch System for Delivery of Prochlorperazine (Wraser Pharmaceuticals), \$38,940, February 1, 2007-January 31, 2008.
14. **Dr. Nisaratana Sangasubana** (P.I. – Pharmacy Administration). The Elderly and OTC Labeling Information: A Randomized Controlled Experiment Testing a Perceived Risk Model on OTC Perceptions and Choice of Information Source (DHHS/Agency for Health Care Research and Quality), \$54,059, March 1, 2007-February 29, 2008.
15. **Dr. Marc Slattery** (P.I. – Pharmacognosy). Coastal Mississippi Ecosystem Management in Response to Hurricane Katrina (University of Southern Mississippi/Mississippi Research Consortium/NOAA), \$63,788, January 11, 2007-January 10, 2008.
16. **Dr. Robert Speth** (P.I. – Pharmacology). Inhibition of Angiotensin II – Induced Cardiac Fibrosis (Phase III) (University of Florida), \$1,050, June 1, 2007-May 31, 2008.
17. **Dr. Kristine Willett** (P.I. – Pharmacology). Roles of CYP1 & 19 in Fundulus Steroids & PAH Metabolism (National Institute of Environmental Health Sciences/NIH), \$224,672, May 1, 2007-April 30, 2008.
18. **Dr. Kristine Willett** (P.I. – Pharmacology). Roles of CYP1 & 19 in Fundulus Steroids & PAH Metabolism – Supplement (National Institute of Environmental Health Sciences/NIH), \$7,632, June 1, 2007-September 1, 2007.
19. **Dr. Sean Wilson** (P.I. – Pharmacology). Summer Research Opportunities for Undergraduates (Matthew Loftin) (Mississippi Functional Genomics Network/NIH), \$1,000, May 14, 2007-Aug. 10, 2007.
20. **Dr. Sean Wilson** (P.I. – Pharmacology). Summer Research Opportunities for Undergraduates (Allison Derrick) (Mississippi Functional Genomics Network/NIH), \$1,000, May 14, 2007-Aug. 10, 2007.

The following **PUBLICATIONS** have appeared:

1. **Kim Adcock**, P.B. Kyle, J.S. Deaton, J.H. Olivier, and **Shirley Hogan**, “Pharmacokinetics of Intranasal and Intratracheal Pentoxifylline in Rabbits”, *Pharmacotherapy*, 27, 200-206 (2007).
2. **Zulfiqar Ali, Shabana Khan, Rahul Pawar, Daneel Ferreira and Ikhlas Khan**, “9,19-Cyclolanostane Derivatives from the Roots of *Actaea pachypoda*”, *Journal of Natural Products*, 70, 107-110 (2007).
3. **Zulfiqar Ali, Shabana Khan, F.R. Fronczek, and Ikhlas Khan**, “9,10-*seco*-9,19-Cyclolanostane Arabinosides from the Roots of *Actaea podocarpa*”, *Phytochemistry*, 68, 373-382 (2007).
4. **Zulfiqar Ali, Shabana Khan, and Ikhlas Khan**, “Phytochemical Study of *Actae rubra* and Biological Screenings of Isolates”, *Planta Medica*, 72, 1350-1352 (2006).
5. **Zulfiqar Ali, Ikhlas Khan, and F.R. Fronczek**, “Revision of the Structure of Podocarpaside *E*, from *Actaea podocarpa*”, *Acta Crystallographica*, 63, 2101-2103 (2007).
6. **Zulfiqar Ali, Shabana Khan, Daneel Ferreira and Ikhlas Khan**, “Podocarpaside, a Triterpenoid Possessing a New Backbone from *Actaea podocarpa*”, *Organic Letters*, 8, 5529-5532 (2006).
7. **Premalatha Balachandran, Nirmal Pugh, Guoyi Ma and David Pasco**, “Toll-like Receptor 2-Dependent Activation of Monocytes by *Spirulina* Polysaccharide and Its Immune Enhancing Action in Mice”, *International Immunopharmacology*, 6, 1808-1814 (2006).
8. O. Bawardi, **John Rimoldi** and D. Schlenk, “Impacts of Hypersaline Water on the Biotransformation and Toxicity of Fenthion on Rainbow Trout (*Oncorhynchus mykiss*), Striped Bass (*Morone saxatilis X Morone chrysops*) and Tilapia (*Oreochromis mossambicus*)”, *Pesticide Biochemistry & Physiology*, 88, 321-327 (2007).
9. R.V. Bikbulatov, F. Yan, B.L. Roth and **Jordan Zjawiony**, “Convenient Synthesis and *In Vitro* Pharmacological Activity of 2-Thioanalogs of Salvinorins A and B”, *Bioorganic & Medicinal Chemistry Letters*, 17, 2229-2232 (2007).
10. **Amit Chaudhary**, T. Pechan and **Kristine Willett**, “Differential Protein Expression of Peroxiredoxin I and II by Benzo(a)pyrene and Quercetin Treatment in 22Rv1 and PrEC Prostate Cell Lines”, *Toxicology and Applied Pharmacology*, 220, 197-210 (2007).

11. S.R. Choi, A.B. Beeler, **Arupam Pradhan**, E.B. Watkins, **John Rimoldi**, **Babu Tekwni**, and **Mitchell Avery**, "Generation of Oxamic Acid Libraries: Antimalarials and Inhibitors of *Plasmodium falciparum* Lactate Dehydrogenase", *Journal of Combinatorial Chemistry*, 9, 292-300 (2007).
12. **Jingqiu Dai**, **Yang Liu**, **Yu-Dong Zhou** and **Dale Nagle**, "Hypoxia-Selective Antitumor Agents: Norsesquiterpene Peroxides from the Marine Sponge *Diacarnus levii* Preferentially Suppress the Growth of Tumor Cells under Hypoxic Conditions", *Journal of Natural Products*, 70, 130-133 (2007).
13. J.C. de Barros, J.F.M. da Silva, A.R. Calazans, A. Tanuri, R. de Moraes Brindeiro, **John Williamson**, and O.A.C. Antunes, "Synthesis of Pseudopeptides Derived from (R,R)-Tartaric Acid as Potential Inhibitors of HIV-Protease", *Letters in Organic Chemistry*, 3, 882-886 (2006).
14. **Franck Dayan**, **Stephen Duke**, A. Sauldubois, N. Singh, **Christopher McCurdy**, and **Charles Cantrell**, "*p*-Hydroxyphenylpyruvate Dioxygenase is a Herbicidal Target Site for β -Triketones from *Leptospermum scoparium*", *Phytochemistry* (2007).
15. **Hala ElSohly** and **Mahmoud ElSohly**, "Marijuana Smoke Condensate: Chemistry and Pharmacology", *Marijuana and the Cannabinoids*, M.A. ElSohly editor, Humana Press Inc., Totowa, New Jersey (2007).
16. **Mahmoud ElSohly**, **Don Stanford**, and T. Murphy, "Chemical Fingerprinting of Cannabis as a Means of Source Identification", *Marijuana and the Cannabinoids*, M.A. ElSohly editor, Humana Press Inc., Totowa, New Jersey (2007).
17. **Mahmoud ElSohly**, editor, *Marijuana and the Cannabinoids*, Humana Press Inc., Totowa, New Jersey (2007).
18. **Rama Sarma V.S. Gadepalli**, **John Rimoldi**, F.R. Fronczek, M. Nillos, J. Gan, X. Deng, G. Rodriguez-Fuentes, and D. Schlenk, "Synthesis of Fenthion Sulfoxide and Fenoxon Sulfoxide Enantiomers: Effect of Sulfur Chirality on Acetylcholinesterase Activity", *Chem. Res. Toxicol.*, 20, 257-262 (2007).
19. J.L. Giner, D.J. Kiemle, **Lukasz Kutrzeba**, and **Jordan Zjawiony**, "Unambiguous NMR Spectral Assignments of Salvinorin A", *Magn. Reson. Chem.*, 45, 351-354 (2007).
20. R. Grzanna, A. Polotsky, P.V. Phan, **Nirmal Pugh**, **David Pasco**, and C.G. Frondoza, "Immolina, a High-Molecular-Weight Polysaccharide Fraction of Spirulina, Enhances Chemokine Expression in Human Monocytic THP-1 Cells", *The Journal of Alternative and Complementary Medicine*, 12, 429-435 (2006).
21. **Nickole Henyan**, C.M. White, E.L. Gillespie, K. Smith, C.I. Coleman, and J. Kluger, "The Impact of Gender on Survival Amongst Patients with Implantable Cardioverter Defibrillators for Primary Prevention Against Sudden Cardiac Death", *Journal of Internal Medicine*, 260, 467-473 (2006).
22. N. Jalnawala, and **Noel Wilkin**, "The Effect of DTC Advertisement Content on Belief Tenacity: A Study of Appeals and Argument Types", *Research in Social and Administrative Pharmacy*, 3, 28-46 (2007).
23. B.E. Kane, M.J. Nieto, **Christopher McCurdy**, and D.M. Ferguson, "A Unique Binding Epitope for Salvinorin A, a Non-nitrogenous Kappa Opioid Receptor Agonist", *The FEBS Journal* (2006).
24. **William Lobb**, **Noel Wilkin**, **David McCaffrey**, **Marvin Wilson** and **John Bentley**, "The Predictive Utility of Nontraditional Test Scores for First-Year Pharmacy Student Academic Performance", *American Journal of Pharmaceutical Education*, 70 (2007).
25. **Guoyi Ma**, **Shabana Khan**, G. Benavides, W. Schuhly, N.H. Fischer, **Ikhlas Khan** and **David Pasco**, "Inhibition of NF- κ B-mediated Transcription and Induction of Apoptosis by Melampolides and Repandolides", *Cancer Chemotherapy Pharmacology*, 60, 35-43 (2007).
26. **Narasimha Murthy**, D.E. Wiskirchen, and C.P. Bowers, "Iontophoretic Drug Delivery Across Human Nail", *Journal of Pharmaceutical Sciences*, 96, 305-311 (2007).
27. **Narasimha Murthy**, D.C. Waddell, H.N. Shivakumar, A. Balaji, and C.P. Bowers, "Iontophoretic Permeable Property of Human Nail", *Journal of Dermatological Science*, 46, 150-152 (2007).
28. S. Nakamura, M. Wada, **Brian Crabtree**, P.M. Reeves, J.H. Montgomery, **Joseph Byrd**, S. Harada, N. Kuroda, and K. Nakashima, "A Sensitive Semi-Micro Column HPLC Method with Peroxyoxalate Chemiluminescence Detection and Column Switching for Determination of MDMA-Related Compounds in Hair", *Anal. Bioanal. Chem.*, (2006).
29. K.J. O'Malley, M.J. Bouldin, and **Daniel Riche**, "Differences in Glucose Tolerance Between Fixed-Dose Antihypertensive Drug Combinations in People With Metabolic Syndrome", *Diabetes Care*, 30, 23 (2007).

30. A.A. Patel, C.A. Clyne, **Nickole Henyan**, C.M. White, B.F. Zembrowski, M. Migeed, R. Yarlagadda, J. Kluger, and C.I. Coleman, "The Use of Protamine After Radiofrequency Catheter Ablation: A Pilot Study", *J. Interv. Card. Electrophysiol* (2007).
31. **Rahul Pawar, Shabana Khan, and Ikhlas Khan**, "Glycosides of 20-Deoxy Derivatives of Jujubogenin and Pseudojujubogenin from *Bacopa monniera*", *Planta Medica*, 73, 380-383 (2007).
32. **Rahul Pawar, Premalatha Balachandran, David Pasco, and Ikhlas Khan**, "Cytotoxicity Studies of Triterpenoids from *Akebia trifoliata* and *Clematis ligusticifolia*", *Acta. Hort.*, 720, 171-178 (2006).
33. **Rahul Pawar**, Y.J. Shukla, **Shabana Khan, Bharathi Avula, and Ikhlas Khan**, "New Oxypregnane Glycosides from Appetite Suppressant Herbal Supplement *Hoodia gordonii*", *Steroids*, 72, 524-534 (2007).
34. A.M. Rhoades, D.A. Wicks, **John Williamson**, and B. Miriyala, "Impact of Surfactant Structure on the Efficacy and Solubility of Antimicrobial Peptide Salts", *Proceedings of the International Waterborne, High-Solids, and Powder Coatings Symposium*, 327-337 (2006).
35. **Daniel Riche**, R. Valderrama, and **Nickole Henyan**, "Thiazolidinediones and Risk of Repeat Target Vessel Revascularization Following Percutaneous Coronary Intervention", *Diabetes Care*, 30, 384-388 (2007).
36. N. Singh, G. Cheve, D.M. Ferguson, and **Christopher McCurdy**, "A Combined Ligand-based and Target-based Drug Design Approach for G-protein Coupled Receptors: Application to Salvinorin A, a Selective Kappa Opioid Receptor Agonist", *J. Comput. Aided Mol. Des.*, 20, 471-493 (2006).
37. **Prasanna Sivaprakasam, Aihua Xie and Robert Doerksen**, "Probing the Physicochemical and Structural Requirements for Glycogen Synthase Kinase-3 α Inhibition: 2D-QSAR for 3-anilino-4-phenylmaleimides", *Bioorganic & Medicinal Chemistry*, 14, 8210-8218 (2006).
38. R. Stanikunaite, J.M. Trappe, **Shabana Khan**, and **Samir Ross**, "Evaluation of Therapeutic Activity of Hypogeous Ascomycetes and Basidiomycetes from North America", *International Journal of Medicinal Mushrooms*, 9, 7-14 (2007).
39. X. Wang, **Shiqian Zhu, Ikhlas Khan, and Asok Dasmahapatra**, "Ethanol Attenuates Aldh9 mRNA Expression in Japanese Medaka (*Oryzias latipes*) Embryogenesis", *Comparative Biochemistry and Physiology*, 146, 357-363 (2007).
40. X. Wang, **Ikhlas Khan and Asok Dasmahapatra**, "Developmental Regulation of Ethanol Metabolizing Enzyme mRNA Expression in Japanese Medaka (*Oryzias latipes*)", *Leading-Edge Messenger RNA Research Communications* (2007).
41. C.M. White, S. Sander, C.I. Coleman, R. Gallagher, H. Takata, C. Humphrey, **Nickole Henyan**, E.L. Gillespie, and J. Kluger, "Impact of Epicardial Anterior Fat Pad Retention on Postcardiothoracic Surgery Atrial Fibrillation Incidence", *Journal of the American College of Cardiology*, 49, 298-303 (2007).
42. D.A. Wicks, A.M. Rhoades, **John Williamson**, and B. Miriyala, "Investigation of Antimicrobial Peptide Salts: Efficacy and Solubility in Surfactant Solutions for Latex Systems", *Combinatorial Methods and Informatics in Materials Science*, 139-146 (2006).
43. **John Williamson**, I.A. Parshkov, and **Mitchell Avery**, "Biotransformations of Artemisinin in Recent Progress in Medicinal Plants", *Phytochemistry and Pharmacology*, 17, 115-138 (2007).
44. **Aihua Xie, Prasanna Sivaprakasam, and Robert Doerksen**, "3D-QSAR Analysis of Antimalarial Farnesyltransferase Inhibitors Based on a 2,5-Diaminobenzophenone Scaffold," *Bioorganic & Medicinal Chemistry*, 14, 7311-7323 (2006).
45. **Jianping Zhao, Rahul Pawar, Zulficar Ali, and Ikhlas Khan**, "Phytochemical Investigation of *Turnera diffusa*", *Journal of Natural Products*, 70, 289-292 (2007).
46. **Jordan Zjawiony**, "Antitubercular Activity of Mushrooms (Basidiomycetes) and their Metabolites", *Natural Product Communications*, 2, 315-318 (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 FY2006-2007:	10
U. S. Patent Applications Pending:	33
Recent U. S. Patents Granted:	2

Potent Immunostimulants from Microalgae. **Pasco, David; Pugh, Nirmal; ElSohly, Mahmoud, Ross, Samir, ElSohly, Hala.** US Patent #7,205,284

High Molecular Weight Polysaccharide from Aloe Vera with Immunostimulatory Activity. **Pasco, David; Pugh, Nirmal; ElSohly, Mahmoud, Ross, Samir.** US Patent #7,196,072

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

- **Mr. Nicholas Hammond** (Medicinal Chemistry Graduate Student) has been awarded a 2007 Pre-Doctoral Fellowship from the American Foundation for Pharmaceutical Education (AFPE) with a stipend of \$6000 for September 1, 2007 – August 31, 2008.
- **Mr. Sanju Narayanan** (Medicinal Chemistry Graduate Student) was presented with an award for his poster at the UM Sigma Xi Poster Symposium in March 2007. His poster was entitled “Design, Synthesis and Biological Evaluation of Novel Sigma Receptor Antagonists as Anti-cocaine Agents”. He won best in his class of Health Sciences and also won the Best Poster involving Natural Products research from the National Center for Natural Products Research.
- **Dr. John Williamson** was involved in presentations during the 232nd ACS National Meeting, San Francisco, California – Sept. 10-14, 2006: (a) D.A Wicks, L.J. Mathias, K. Malone, and **John Williamson** – “Entrepreneurship at the Interface of Medicinal and Polymer Sciences: An NSF IGERT Program to Prepare Students for an Uncertain Future”; and (b) A.M. Rhoades, D.A. Wicks, and **John Williamson** – “The Counterions of Arginine Amino Acids Impact Efficacy and Solution Properties of the Antimicrobial Peptide Ac-RRWWRF-NH₂”.
- **Dr. John Williamson** has also been selected as a 2007-2008 Phi Kappa Phi *Forum* columnist; has been elected Chair of the 2007-2008 University Senate of the Faculty; and has been appointed to the Editorial Advisory Board of *Current Medicinal Chemistry* (Impact Factor 4.90).
- The 2007 Graduate Student Achievement Awards in Pharmacy were presented to: **Nidhi Singh** and **Jianping Zhao**. Ms. Singh was a Medicinal Chemistry Ph.D. candidate who received her degree in May (Advisor is **Dr. Christopher McCurdy**). Mr. Zhao was a Pharmacognosy Ph.D. candidate who received his degree in May (Advisor is **Dr. Ikhlas Khan**).

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).

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