DEPARTMENTAL SCHOLARSHIP

BOOKS

Domino and Rearrangement Reaction in Carbohydrate Chemistry: New Developments and Strategies in Glycoscience, edited by **Z. J. Witczak** and R. Bielski, John Wiley & Sons, New York, **2016**.

BOOK CHAPTERS

"Pederin, Psymberin and the Structurally Related Mycalamides: Synthetic Aspects and Biological Activities," **Z. J. Witczak, A. Bommareddy, A. L. VanWert**, in *Handbook of Anticancer Drugs from Marine Origin* edited by Se-Kwon Kim, Springer, Heidelberg, pg. 683-700, **2015**.

"Introduction to Rearrangement Reactions in Carbohydrate Chemistry" **Z. J. Witczak, R. Bielski,** in *Domino and Rearrangement Reactions in Carbohydrate Chemistry: New Developments and Strategies in Glycoscience* edited by **Z. J. Witczak**, R. Bielski, John Wiley & Sons, New York, pg. 209-218, **2016**.

"Thio-Click and Domino Approach to Carbohydrate Heterocycles" **Z. J. Witczak, R. Bielski** in *Domino and Rearrangement Reactions in Carbohydrate Chemistry: New Developments and Strategies in Glycoscience* edited by **Z. J. Witczak**, R. Bielski, John Wiley & Sons, New York, pg. 116-120, **2016**.

"Levoglucosenone Derivatives with Amino and Thiol groups via Allylic Rearrangements," **Z. J. Witczak, R. Bielski** in *Domino and Rearrangement Reactions in Carbohydrate Chemistry: New Developments and Strategies in Glycoscience* edited by **Z. J. Witczak, R. Bielski**, John Wiley & Sons, New York, pg. 240-247, **2016**.

"The Role of Organosulfur Compounds Derived from Allium Vegetables in Cancer Prevention and Therapy," **A. Bommareddy, A. L. VanWert**, D. F. McCune, **S. L. Brozena**, **Z. J. Witczak**, S. V. Singh, in *Critical Dietary Factors in Cancer Chemoprevention* edited by M.F. Ullah and A. Ahmad, Springer International Publishing, Switzerland, pg. 111-152, **2016**.

PEER-REVIEWED MANUSCRIPTS

"A novel carbohydrate derived compound FCP5 causes DNA strand breaks and oxidative modifications of DNA bases in cancer cells." A. Czubatka, J. Sarnik, D. Lucent, J. Blasiak, **Z. J. Witczak**, T. Poplawski, Chemico-Biological Interaction, **2015**, 227, 77-88 .

"Survivin Down-regulation by a-Santalol Is Not Mediated Through PI3K–AKT Pathway in Human Breast Cancer Cells" **Ajay Bommareddy**, **Karryn Crisamore, Sarah Fillman, Sarah Brozena, James Steigerwalt, Terra Landis**, **Adam L. VanWert** and Chandradhar Dwivedi. Anticancer Research (35), **2015** (in press).

PEER REVIEWED ABSTRACTS/POSTERS

"Modification of Glucose for Targeted Cellular Delivery," **H. Jacobs, Z. J. Witczak**, presented at 249th ACS National Meeting, March 22-26, **2015**, Denver, Colo., Abstract CARB-56.

"Thio-sugars Can Sensitize Human Cervix Adenocarcinoma (Hela) Cancer Cells to Bleomycin and ROS Generator," J. Sarnik, A. Czubatka, T. Poplawski, **Z. J. Witczak**, presented at 249th ACS National Meeting, March 22-26, **2015**, Denver, Colo., Abstract MEDI-308

"Low Glucose Level Enhances the Cytotoxicity of CARB-pharmacophores to Cancel Cells," A. Czubatka, J. Sarnik, T. Poplawski, **Z. J. Witczak**, presented at 249th ACS National Meeting, March 22-26, **2015**, Denver, Colo., Abstract MEDI-309.

"Thio-click and Domino Approaches to Carbohydrate Heterocycles," **Z. J. Witczak, R. Bielski, T. Grove**, presented at 18th European Carbohydrate Symposium, Aug. 2-7, **2015**, Moscow, Russia Abstract # 1A-3

"The first Synthesis of 2-acetamido-2,3-dideoxy-D-Glucose," **T. Grove, Z. J. Witczak, R. Bielski**, presented at 250th ACS National Meeting, Aug. 16-20, **2015**, Boston, Mass. , Abstract CARB-98.

"Quality of Life Outcomes After Bariatric Surgery," **Michael Brabander, AeRee Choi, Meribeth Derkach, Catherine Knapp, Trina Patel, Paige Pientka, Christine Trusky, Tyler Young**, Pharm.D. Candidates, Gary Neale, M.D., Clark Gerhart, M.D., **Marie Roke-Thomas Ph.D.,** presented at APhA **2015**, San Diego, Calif.

"Measuring Outomes Following Bariatric Surgery: Bmi, A1c, Cholesterol Level, Blood Pressure," **Michael Brabander, AeRee Choi, Meribeth Derkach, Catherine Knapp, Trina Patel, Paige Pientka, Christine Trusky, Tyler Young,** Pharm.D. Candidates, Gary Neale, M.D., **Marie Roke-Thomas Ph.D.**, presented at APhA **2015**, San Diego, Calif.

"Outcomes Following Laparoscopic or Robotic Assisted Ventral Hernia Surgery," **Aakash Dheri, Richard Harth, David Marr, Darren Mensch**, Pharm.D. Candidates, Clark Gerhart M.D., **Marie Roke-Thomas, Ph.D.**, presented at the First International Hernia Conference, Milan, Italy, May **2015**.

*** Student authors are boldfaced and underlined** *** Department faculty authors are boldfaced**

ISSUE 6 FEBRUARY 2016

PHARM SCI @ WILKES UNIVERSITY

MESSAGE FROM THE CHAIR

It is my pleasure to write to you again. The fall semester has been busy and productive. Let me summarize some of the high points.

The faculty members were intensively involved in research projects with undergraduate students. These well designed projects lead to the recognition that would not be possible without state-of-the-art labs, classrooms and other facilities. I am committed to continuing to maintain and expand all our laboratories. We will try to help promote this research and will commit necessary resources to earn federal funding. This will assist us to improve our growing publication record and recognize our significant accomplishments.

Our teaching performance as evaluated by our students is excellent, and we continuously deliver curricular requirements at a highly satisfactory level.

Our departmental seminar program that started two years ago has developed quite nicely. This new educational activity is well recognized and attended not only by our faculty and students, but also by faculty members from other departments.

I would like to express my most sincere appreciation to the faculty and staff of the department for their excellent work, which contributed to the overall success.

Last but not least, your new ideas and suggestions for continuous improvement of the departmental day by day activities are most welcome. Please share them with us, as well as your accomplishments. We look forward to hearing from you!

- Dr. Zbigniew Witczak

FACULTY MEMBERS BRANCHING OUT

Adam L. VanWert, Pharm.D., Ph.D.
Associate Professor, Pharmaceutical Sciences

Dr. VanWert was invited to present at the Osteopathic Symposium at Reading Hospital, Reading, Pa., on Nov. 21, 2015. He presented to physicians, nurses, and other health care professionals on the hot topic of "Pharmacogenomics: Basics, Relevance, & Application." As an alumnus of Wilkes' Nesbitt School of Pharmacy and a bearer of a Ph.D. in pharmacology and toxicology, Dr. VanWert was able to bridge the science and practice of pharmacogenomics for effective delivery to his audience.

Mary McManus, Ph.D.
Associate Professor, Pharmaceutical Sciences

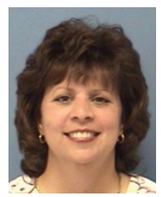
The department enthusiastically reports that Dr. McManus has been awarded a sabbatical for this spring.

She'll be spending her time in Alaska working with the Alaskan Native Tribal Health Consortium. Her aims are to alleviate health care disparities in collaboration with the National Healthcare for the Homeless Council (Nashville, Tenn.), and the Health Care for the Homeless Program (Baltimore, Md.).

Her sabbatical training will fulfill the residency requirement for a master's of public health degree at the George Washington University School of Public Health. Dr. McManus aspires to capitalize on her training by developing an educational center to support health care for vulnerable individuals in northeast Pa.

"Outcomes Following Laparoscopic or Robotic Assisted Ventral Hernia Surgery"

Marie Roke-Thomas, PhD[1], Aakash Dheri[1], Richard Harth[1], David Marr[1], Darren Mensch[1], and Clark Gerhart MD[2]
[1]Wilkes University, Nesbitt School of Pharmacy; [2]Surgical Specialists, Pennsylvania, USA



Roke-Thomas

Gerhart

Drs. Roke-Thomas and Gerhart recently presented their research at the First International Hernia Conference in Milan, Italy. The research focuses on outcomes following ventral hernia surgery performed by using a traditional laparoscope versus robotic surgery using the da Vinci S/Si Surgical System developed by Intuitive Surgical. Comparative data was collected by pharmacy students from the Nesbitt School of Pharmacy on procedure time, anesthesia time, discharge time, pain medications in recovery, cost of surgery and recurrence rates.

PHARM SCI @ WILKES UNIVERSITY

PROFESSOR EMERITUS COLLABORATING INTERNATIONALLY

Blessed

Kibbe

The department is pleased to announce that Ms. Pamela Blessed, from Uganda in East Africa, has joined us to work on research associated with her Ph.D. project at Mbarara University of Science and Technology. Her visit is funded by PIBID, a government organization with the mission to economically develop matooke as a cash crop. Her bachelor's and master's degrees are from China Pharmaceutical University. She expects to obtain her Ph.D. in June 2016.

She is a pharmacist and lecturer in pharmaceutics in the Department of Pharmacy, Makerere University College of Health Sciences, Uganda.

She serves on the National Medical Stores Committee that procures, stores and distributes medical logistics to public health facilities in the country; and the National Drug Authority, which is the regulatory body that assures the safety and efficacy of medicines, public health products and (soon) food products in the country. She is the current chair of the Pharmacovigilance and Clinical Trials Working Group.

Her research interests are novel excipients, nutraceuticals, nutritional therapy and pharmacokinetics, and cosmeceuticals. While here at Wilkes University, she will continue work on her Ph.D. project, "Novel Application of Native/Modified PIBID starch as a Pharmaceutical Excipient in Selected Medicinal Formulations." Her work will comprehensively evaluate and present PIBID starch as a high functionality pharmaceutical excipient (HFE) through adequate characterization and modification where applicable.

Matooke is a Ugandan green cooking banana and staple food crop. PIBID starch is a native starch extracted from the Ugandan matooke using simple extraction processes and has been studied by Muranga (Muranga F.I., 1998), who is the current executive director of PIBID. Her study revealed that the starch had unique physicochemical characteristics that intrigued Blessed as good excipient potential. These include such as a high purity easily obtainable (97-100 percent), good crystallinity (39 percent), relatively small particle size (6-60 mic.m.), and a low amylose content.

Blessed's work will build on this information. She will be directed in her work by Dr. Arthur H. Kibbe, emeritus professor in the department.

ALUMNA HIGHLIGHT

Lindsey M. Roke, Pharm.D.

If you had asked me where I would be 6 years after pharmacy school, I would never have guessed I would end up where I am today! After graduating from Wilkes University in 2009, I quickly moved north to New Haven, Conn., where I completed my PGY-1 residency at Yale-New Haven Hospital.

I remained at Yale-New Haven for my PGY-2, where I specialized in pediatrics and neonatology. My residency proved to me that Wilkes had more than prepared me for a career as a clinical pharmacist. My ability to research drug information questions quickly and thoroughly was a clear reflection of the skills I was taught in care lab. Journal clubs were much more manageable thanks to all of the statistics I was taught in Dr. Marie Roke-Thomas' class. Challenging rotations though my P4 year ensured my clinical skills were refined prior to leaving Wilkes and entering the "real world."

Upon completion of my PGY-2, I was hired to be an advanced-practice pharmacist in pediatrics and neonatology at Thomas Jefferson University Hospital in Philadelphia, Pa. In four years at TJUH, I was able to greatly advance the pharmacy practice in the neonatal ICU and the pediatric unit through projects such as creating neonatal code carts, weight-based code sheets, expanding the neonatal syringe pump library, and creating a safer process for ordering neonatal TPN.

Last spring, I was presented with the opportunity to join the pharmacy informatics team and assist in the implementation of TJUH's new electronic health record, Epic. Over the past nine months, I have completed multiple Epic certifications and have begun building and customizing the pharmacy application to ensure we are able to safely and effectively administer medications when we implement the new system in April 2017. I have enjoyed every challenge being a clinical informatics pharmacist has presented me, and I look forward to the challenges ahead!

FALL DEPARTMENTAL SEMINAR SERIES

The department continued its new seminar series this past fall with presentations on medicinal chemistry, new approaches to cancer pharmacology, and clinical approaches to management of diabetes. See the presentation topics and speaker bios below.

"RECENT PROGRESS IN THE SYNTHESIS OF CARBOHYDRATE COMPONENTS OF ANTIBIOTICS, FUNCTIONALIZED GRAPHITE NANOFIBERS, AND FUNGAL TOXINS"
Robert Giuliano, Ph.D.
Villanova University, Department of Chemistry

Robert M. Giuliano was born in Altoona, Pa. and attended the Pennsylvania State University (B.S. in chemistry, 1976) and the University of Virginia (Ph.D. 1981, under the direction of Francis Carey). Following postdoctoral studies with Bert Fraser-Reid at the University of Maryland, he joined the chemistry department faculty of Villanova University in 1982, where he is currently professor. He has held sabbatical appointments at Brown University, Cephalon and Temple University. His research interests are in synthetic organic and carbohydrate chemistry, and in functionalized carbon nanomaterials. He served as regional editor of the Journal of Carbohydrate Chemistry and is currently on the editorial board of Current Topics in Medicinal Chemistry. He was the 2015 recipient of the Outstanding Faculty Mentor Award given by Villanova University for the direction of students in research.

"THE SYNTHESIS OF HETEROCYCLES FROM CARBOHYDRATE PRECURSORS"
Cecilia H. Marzabadi, Ph.D.
Seton Hall University, Department of Chemistry and Biochemistry

Dr. Marzabadi received her Ph.D. from the University of Missouri-St. Louis under the direction of Professor Christopher Spilling. Her doctoral work examined the formation of glycal epoxides from sugar halohydrins. She conducted post-doctoral research in New York City at Hunter College-CUNY with Professor Richard Franck. Her post-doc work was the development of a cycloaddition-based approach to the synthesis of 2-deoxy-b-glycosides. She started her academic career at Seton Hall University in the Department of Chemistry and Biochemistry in 1999 as a Clare Boothe Luce Assistant Professor of Chemistry. She was promoted to associate professor in 2005 and to full professor in 2012. She currently serves as associate chair and director of graduate studies for the Department of Chemistry & Biochemistry. She is an alternate councilor for the North Jersey Section of the ACS and is an associate member on the ACS Women Chemists Committee. She is a Member at large for the Carbohydrate Division of the ACS. Her research interests are in synthetic carbohydrate and medicinal chemistry.

"GLYCOMIMETIC LEADS TO ANTI-CANCER THERAPEUTICS"
David R. Mootoo, Ph.D.
Hunter College, Department of Chemistry

Dr. Mootoo is a professor of organic chemistry at Hunter College. His work focuses on molecular applications, including antitumor agents, selectin antagonists, HIV entry inhibitors, insulin mimetics and immunostimulants. He has received research funding for more than 25 years from the National Institutes of Health and the National Science Foundation.

"The elucidation of carbohydrate-mediated mechanisms in a variety of cellular pathways has inspired new targets in drug development. This is particularly relevant to the treatment of cancer, which remains a health challenge because of its diverse pathology across individual cancer types and patients. Our investigations on the design, synthesis and bioactivity of cytotoxic glycomimetics that may selectively target tumors and glycolipids that stimulate the immune system against cancer will be presented."

"DIABETES: CLINICAL TREATMENT OPTIONS"
Recaredo Berbano, M.D.

Dr. Recaredo Berbano is a physician in Kingston, Pa., specializing in diabetes, thyroid diseases and weight management. He also serves as an adjunct professor of pharmacy at Wilkes, an assistant professor for the physician assistant program at King's College, and an endocrinology clinical preceptor for Wilkes-Barre General Hospital. Dr. Berbano is a member of various professional societies, including the American Association of Clinical Endocrinology, the Endocrine Society, and the American Diabetes Association.