Translating Scientific Discovery Into Innovative Healthcare



ANNUAL REPORT 2013-14



School of Pharmacy and Pharmaceutical Sciences University at Buffalo The State University of New York Academic year 2013-2014 was a year of accomplishments, where our faculty, students and staff were recognized for numerous academic and research achievements.

2013-2014, The Year of Accomplishments

Our school continued forward with strong partnerships with research colleagues as well as solidified our partnerships with our local and regional health care associates.

Our faculty were recognized for their scholarly work through advancements in rank: Marilyn Morris was named a University at Buffalo Distinguished Professor. Karl Fiebelkorn was recognized nationally by his receipt of the American Pharmacist Association Foundation, Bowl of Hygeia Award, one of the most prestigious awards in the profession, recognizing outstanding leadership and service. The SPPS garnered national attention again, via the outstanding research work of Brian Tsuji and his receipt of a \$4.4M National Institute of Health grant to study *Novel PK/PD Strategies for Polymyxin Combinations against Gram-negative Superbugs.* This grant will allow the school to develop one of the strongest clinical and translational antibacterial PK/PD groups in the United States.

SPPS students were equally as active. Kayla Maxwell, PharmD '14 and now a PhD student in our pharmaceutical sciences department was recognized by the State University of New York with the 2014 SUNY Chancellor's Award for Student Excellence, which recognizes leadership and career achievement. Tara Castleman '14 was elected Chair of the American Pharmacists Association Academy of Student Pharmacists New Business Review Committee. Jennifer Murray '15 attended the 15th Annual Cardinal Health Student Leadership Conference where top pharmacy students in the country prepare for future leadership roles in health-systems pharmacy. On the scholarly side, Erik Hefti, PharmD '14 and also now a student in our pharmaceutical sciences department, published in the Journal, Mitochondrial DNA, *Analysis of mtDNA, miR-155 and BACH1 expression in hearts from donors with- and without- Down syndrome.*



This past academic year created many opportunities for the school which we are eager to build upon in the coming year. The creation of new partnerships and the strengthening of existing ones will help us to continue our mission 'To improve health through innovation and leadership in pharmacy education, clinical practice and research.' I remain focused and enthusiastic about our dynamic future and look forward to working with all members of the school on the opportunities ahead.

Warm regards,

James M. O'Donnell, PhD

Professor and Dean

I remain focused and enthusiastic about our dynamic future and look forward to working with all members of the school on the opportunities ahead.

OF PHARMACY AND PHARMACEUTICAL SCIENCES SCHOO

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University at Buffalo School of Pharmacy and **Pharmaceutical Sciences Mission Statement:** *To improve health through* innovation and leadership in pharmacy education, clinical practice, and research.





At bedside, Alice Ceacareanu's research has been groundbreaking, leading to the use of novel insulin pathways for the treatment of cancer and diabetes.

with Edition



BENCH TO BEDSIDE, BEDSIDE TO BENCH

Translating Molecules and Algorithms to Optimal Patient Care

ALICE CEACAREANU, PHARMD., PHD, AND WOJCIECH KRZYZANSKI, PHD, have each charted a professional course from home in Eastern Europe to bench and beside excellence with calculated precision.

At SPPS, their focused scientific and clinical research is defining new methodologies for drug development and therapeutics, and measurable protocols for optimizing patient outcomes. As Dean of the School of Pharmacy and Pharmaceutical Sciences, James O'Donnell, PhD, recognizes the advances in translational knowledge both faculty members have made within their specialty areas.

"Dr. Krzyzanski has made notable contributions to the field of pharmacometrics, which models the manner in which patient characteristics influence the response to medications," he says.

Dean O'Donnell also sees the powerful potential of their bench and bedside research for improving health outcomes: "As a clinician-scientist, Dr. Ceacareanu has carried out novel research on the link between glucose and cholesterol management in patients with type 2 diabetes and cancer risk."

Passionate about empowering people, Ceacareanu looked through her first microscope as a child in Romania – at

the Central Institute for Chemistry where her mother was employed as an accountant: She was five.

"When the researchers there realized how curious I really was, they would bring me into the lab and let me see more," she recalls. "I was a very curious child. I think it was exciting for them to see my eyes sparkling."

After earning undergraduate degrees in pharmacy and biochemistry and a doctoral degree in molecular genetics in Bucharest, Ceacareanu was recruited for a fellowship at the University of Tennessee. While talking with her pharmacology students at the College of Medicine there, she realized the U.S. offered a more diverse medical and pharmacy training than the higher education system in Europe.

"I was a pharmacist already. I had a biochemistry degree. But as a research fellow in Tennessee I learned how the

At the bench, Wojciech Krzyzanski uses mathematical modeling to create PK/PD profiles of anti-cancer agents and other drugs affecting the circulatory system.

students are trained, and what they do. I realized that, 'wow, I want some of that cake too!'"

So she enrolled in the University of Tennessee PharmD program.

"My family said, 'Alice is student again!' It used to be the favorite joke. I had been a student since 1992, and was finally approaching a real job in 2005, and decided to go back to school," she laughs.

"It was fantastic. I really got to a point where I could approach

If you look at how serious this problem is, you really need to do something right away. any research technique in the lab. I could approach any clinical strategy to evaluate the patient, and I could envision the craziest, most complex treatment, which I quess is very unique."

Ceacareanu's professional path is definitively unique: During post-doc work at Baptist Memorial Hospital in Memphis, she was administering sliding scale insulin doses to a patient with diabetes and cancer when she connected insulin therapy to the incidence of cancer in individuals with diabetes.

"As a researcher you visualize everything. There is an animation cartoon in your mind. You can see the drug in the blood. You can see the molecules touching each other," she explains of her scientific process.

"So I am looking at the patient and see there is a tumor growing, and I am giving a growth factor. Insulin is a growth factor. That tumor is going to thrive if I give this insulin. Forget about the sugar level, whatever the sugar level is. The tumor is going to kill this patient."

The precocity that defined Ceacareanu as a child ultimately led to her discovery of unprecedented insulin signaling. During her pharmacy practice fellowship at the University of Tennessee, she mounted an in vitro study of smooth muscle cells isolated from a mouse aorta, and discovered that the cells moved and grew faster when administered insulin.

"We envisioned that in a living human being it happens the same way. If a tumor is already there and has insulin receptors, if it has locks that my key can open, the door will open. The insulin is not only going to get rid of the glucose, it's going to make those tumors grow. If cancer is already there, you are literally killing that patient faster."

"I'm a pharmacist. I am supposed to ensure drug safety," she continues. "So I am thinking, 'is there a higher rate of cancer in diabetes patients treated with insulin? Do we need to translate all this research knowledge to keep this from happening?'"

Ceacareanu's groundbreaking discovery of novel insulin pathways was published extensively, earning her permanent U.S. residence as an outstanding scientist. Recruited to SPPS in February of 2008, she settled in at the New York State Center of Excellence in Bioinformatics and Life Sciences to develop the Oncology Translational Research Group in partnership with Roswell Park Cancer Institute.

Bench to Bedside, Bedside to Bench

"Our risk for cancer right now is one in two. If you look at the U.S., two thirds of the population is obese which means that half of that number has diabetes, and the other half may be on its way," she explains.

"The other population has already had cancer and luckily survived. Their need for care is different than for other patients. You need to be very careful about what type of treatment you give them so they stay as stable as possible."

Using the Roswell patient database, Ceacareanu led teams of SPPS PharmD students in a clinical research study of about 500 individuals with diabetes and different forms of cancer to define alternatives to insulin therapy: They found efficacy in the established, inexpensive drug metformin.

"It's a category of drug that works not by stimulating cell production, but by stimulating the body's ability to produce insulin. We realized that those who were treated with insulin got more metastasis, and those treated with metformin did much better," Ceacareanu says.

"In fact, they did better than patients that had cancer but no diabetes at all. At that point we realized, that, 'wait a minute, pharmacists can make a world of difference in this population.'" Like Ceacareanu, Krzyzanski is also focused on the translation of scientific knowledge to optimal bedside practice. His pharmacometrics bench work uses mathematical modeling to create pharmacokinetic/ pharmacodynamic (PK/PD) profiles of anti-cancer agents and other drugs that affect the blood system.

"From a mathematical point of view, if you have a model that describes the behavior of a drug, you can actually predict what will happen if you change dosing regimens, if you switch from an adult to an elderly patient, or if you have healthy volunteers versus a patient with a co-occurring disease," he explains.

"It only makes sense if what you do eventually ends up at the bedside for the patient, but it's kind of a long pathway from a molecule to the clinician to the patient. I am somewhat halfway in between."

Krzyzanski came to the University at Buffalo from Poland in 1994 to pursue a PhD in applied mathematics. While working on his dissertation, his wife was hired as a technician by William Jusko, PhD, chair of the SPPS pharmaceutical sciences department and internationally recognized as a pioneer of the PK/PD field.

"Jusko learned I was a mathematics student who was good with equations and invited me for an interview and offered me some projects. I was working with him from one project to another when he suggested that I combine my PhD in applied math with a doctorate degree in pharmacokinetics," he recalls.

Krzyzanski opted to continue on his original career path to becoming an applied mathematician, completed his PhD and went home to Poland to fulfill previously made teaching commitments. He returned to SPPS the following year to work with Jusko as a post-doc fellow, which led to a faculty position as a research assistant.

"My skill set was very useful in pharmacodynamics because it's a field that describes the drug effects. Mathematical modeling is essential for it, and I was good at it. Jusko saw this immediately. I was happy he wanted me to work with him as a research assistant, and decided to continue with my career in the area of pharmacometrics, not exactly as a pharmaceutical scientist, but as a modeler."

At the time, pharmacometrics was a nascent discipline.

"It's a combination of pharmacokinetics, pharmacodynamics, statistics, mathematics, and computer sciences," Krzyzanski explains, adding that pharmacometrics is still a relatively new field. "It is about quantifying things in a statistically rigorous manner for use in clinical studies and drug development."

Krzyzanski worked as Jusko's research assistant for eight years, publishing prolifically, jointly and independently,

on the application of mathematical modeling as a tool for exploring complex biological systems that can be controlled pharmacologically. He is now considered a forerunner of pharmacometrics, whose intellectual contributions have helped to set scientific and scholarly cornerstones for the new field.

When he decided to pursue his own research path, Krzyzanski returned to school and earned a master's degree in pharmacology to complement his comprehensive mathematical skills and knowledge.

As he was completing his graduate work, SPPS received a generous \$5M grant from Pfizer, which specified support for the advancement of pharmacometrics: Krzyzanski was able to open his own lab and continue research on the red blood stimulating agent erythropoietin, and other drug modeling he began while working with Jusko.

Ceacareanu and Krzyzanski are both also isolating methodologies to optimize therapeutic cancer management.

"Many anti-cancer agents are very toxic. They don't just kill the cancer cell they also kill blood cells. That's what I am interested in; hematopoietic growth factors affecting drug efficacy and blood toxicity. That is the core of my research, "he says.

At Kapoor Hall, Krzyzanski uses various dosing in rat models to mathematically map PK/PD responses to a drug. His lab contains basic hematology equipment, and is staffed by a research fellow, a doctoral student, a graduate student and a lab technician.

"There are many ways of suggesting better treatments, better selection of the drugs for anti-cancer therapies," Krzyzanski says, explaining that pharmacometrics significantly reduces the high expense of clinical trials that take a drug from bench to bedside.

"If you have some approved regimens for the drugs or you have technical data to support optimization based on simulation, there's still work to be done in communicating those results to the clinicians. Practically, patients do not yet really benefit from the full extent of what this discipline offers."

In the classroom, Krzyzanski prepares his students to meet the growing demand for pharmacometricians, a direct translation of demand from the pharmaceutical industry for greater assistance with novel drug development. Pharmacometrics is a relatively new field. Its about quantifying things in a statistically rigorous manner for use in clinical studies and drug development.

> "For a person who knows mathematics and pharmacokinetics, pharmacometrics is a perfect choice."

Since 2003, he has instructed "Computational Basis of Pharmacometrics", which began as lectures within Jusko's pharmacokinetics class, and is now an independent, credited course.

He also organizes three, two-day workshops each semester that teach students to master the computer applications that drive the discipline. Funded by the pharmaceutical sciences department, they are presented by experts from global mathematical modeling software companies. Students receive one credit for completing one.

"Pharmacometrics is heavily computer science-based, so it's important to understand the software. A student thinking of a career in modeling has to learn one or two of these programs," he says.

"The presenters are paid for accommodation and travel, but not an instructor's fee. They come in a purely academic spirit, and we have established some good collaborations," Krzyzanski says.

As clinicians and physicians better understand and appreciate the power of mathematical modeling, Krzyzanski believes the discipline will become central to optimizing health care delivery.

"We need more pharmacometricians on the pharmacy practice, hospital side. . . people who work with the doctors or the doctors themselves. They appreciate undoubtedly the importance of statistics. But they still don't see the potential and the impact that can be made by pharmacometrics," he says.

"Pharmacometrics actually starts the moment a drug candidate is discovered, with a molecule, and ends up way past clinical trials because once the drug is on the market, it's still being evaluated."

Ceacareanu and her Oncology Translational Research Group are teaching community pharmacists to closely evaluate the drugs prescribed to their patients who have diabetes and have survived cancers.

"With the launch of her Online Certificate Program for Community Pharmacists, she is directly influencing patient care by enabling pharmacists in the community to better serve patients who have undergone cancer treatment," says Dean O'Donnell.

In September 2014, in collaboration with the American Cancer Society Buffalo Hope Lodge, Ceacareanu and her colleagues brought together SPPS and Roswell faculty members, research and clinical professionals, pharmacy students, cancer patients, caregivers and volunteers to discuss specialized pharmacy care needs.

"It's not the oncology pharmacist that dispenses insulin and metformin, it's the community pharmacist that will help manage therapeutic care. If a cancer patient leaves the hospital and goes into the community and is prescribed insulin, the oncologist is not going to know but the pharmacist is going to know right



away," she says."We wanted to hear what the patient needs, what their challenges were with their pharmacists."

The outcomes of the conversation helped to fine-tune the curriculum for CanceRxCE online certificate training program, a massive Healthcare Workforce Retraining Initiative funded by the New York State Department of Health.

Launched in late February, it is being offered free to licensed community pharmacists in the New York City area, which has the highest population density for both cancer survivors and community pharmacists. CanceRxCE is intended to improve their ability to accommodate the shift of cancer care from the hospitals to the community – and to meet health care demands of the future.

"Knowing that we don't have enough cancer-trained pharmacists, we asked the Department of Health to let us teach them cancer knowledge. Let us teach them what the population needs," says Ceacareanu, a recipient of the Faculty Teaching Award in 2010 and CSTEP Recognition for Research and Scholarship Award in 2011, among numerous others.

"If that pharmacist is trained to recognize a red flag and pick up the phone and call the oncologist at that moment, it's going to save the life of that patient. Six months of wait may just be too late."

CanceRxCE will run 12 times in five-week modules through June of 2016. The curriculum uses innovative online learning tools to cultivate problem-solving and clinical decision-making skills, and cancer-related awareness.

Interactive "Let's Talk" components allow participants to discuss mock case examples: "Let's Learn" videos filmed by Ceacareanu and her students are teaching trainees - a total of 3000 anticipated in the next 18 months – to analytically respond to changing requirements in cancer care, make use of relevant research findings, and apply pharmacotherapy concepts to optimize the health and quality of life of people at high risk for cancer.

"If you look at how serious this problem is, you really need to do something right away," says Ceacareanu.

At beside and bench, Ceacareanu and Krzyzanski are translating scientific research and clinical practice to the summum bonum of pharmaceutical sciences, pharmacy practice and patient outcomes. And while their pursuit of excellence in the field is multi-focal, the core of their work is advancing knowledge as it relates to the therapeutic treatment and optimal management of cancer. J. Thorpe



Education

The SPPS educates students in pharmacy and the pharmaceutical sciences, providing the critical thinking skills to allow them to achieve the desired outcomes of drug-related therapy and disease management through research and clinical intervention.

Admissions and Advisement

The Office of Admissions and Advisement streamlined many activities and processes resulting in improved and enhanced interactions with prospective students.

The Office of Admissions and Advisement moved forward with many new programs and activities to attract and accept the most competitive applicants. A major new recruitment activity was the creation of new student outreach videos with the theme of 'Why Choose Us.' Funded by UB's Graduate Enrollment Management Services office, student leaders in our pharmaceutical sciences department as well as in the PharmD program were profiled and discussed why UB SPPS was the best decision they made for education and career paths. Their exciting opportunities in research, clinical outreach and service to the underserved provided further strength and focus to outreach materials.

To increase and enhance outreach to our undergraduate and pre-pharmacy pipeline, the office implemented a resource section on the SPPS website for pre-health undergraduate advisors at colleges and universities. This information helps advisors counsel prospective students on SPPS academic programs and learn more about pharmacy and pharmaceutical sciences. We also have increased the number of 3+4 Educational Affiliation Agreements we have with a number of colleges and universities. These agreements allow students to fulfill the requirements for the Bachelor's of Science and Doctor of Pharmacy (PharmD) degrees in a shorter amount of time.

Our Orientation in Pharmacy course (PHM 201) has been significantly enhanced via the leadership of Sara Robinson, SPPS undergraduate advisor for pre-pharmacy and prepharmaceutical sciences. Students now receive strong preparation for their PharmD application including personal statement development and interview practice. Select presentations are facilitated by SPPS faculty, alumni, and Dean's Student Ambassadors and meetings with student peer mentors serve to round out the learning experience.

The recent upgrade of the school's website: pharmacy.buffalo.edu gave our office many opportunities to restrategize and enhance messaging to all prospective student groups. We look forward to further capitalizing on our web-based outreach to ensure the best and most competitive students for our programs.



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Meet the Class of 2017			
Interviewed	266		
Accepted	130		
Middle 50th Percentile Science & Math			
GPA (Biology, Chemistry, Physics, Math)	3.1 – 3.5*		
Middle 50th Percentile of Sum PCAT			
Percentile Score (excluding composite)	355 – 410*		
In-State	88%		
Out-of-State	12%		
Foreign Citizen	2%		
Females	55%		
Males	45%		
2 years or less of college	49%		
Bachelor's degree or higher	33%		
Average Age	22		
Number of States/Provinces Represented:	8		
*The middle 50th perceptile reflects those between			

*The middle 50th percentile reflects those between the 25th and 75th percentiles.

Degrees Granted (2013–14)	
PharmD	111
BS in Pharmaceutical Sciences	11
BS/MS in Pharmaceutical Sciences	9
PhD in Pharmaceutical Sciences	1
Total	132
Degree Program Enrollment (2013–14)	
P1 Year	133
P2 Year	115
P3 Year	117
P4 Year	134
PharmD Subtotal	499
BS in Pharmaceutical Sciences	35
BS/MS and MS in Pharmaceutical Sciences	27
PhD in Pharmaceutical Sciences	45
Pharmaceutical Sciences Subtotal	107
Total Enrollment	606



The Office of Continuing Pharmacy Education Steering Committee:

Front Row (L-R) Nicholas Norgard, Andrew DiLuca, Julie Kopfer, Kimberly Zammit, Karen Mlodozeniec, Marsha Nelson, Robert Wahler.

Back Row (L-R) Karl Fiebelkorn, Edward Bednarczyk, Randy Gerwitz, Joshua Sawyer, Juliet Warrick, and Brian Huckle.

OUR MISSION

The Office of Continuing Pharmacy Education provides continuing pharmacy education activities to pharmacists in all practice settings designed to maintain competence and strive to bridge identified gaps in knowledge and skills.

Office of Continuing Pharmacy Education

Develop educational activities incorporating active learning methods assisting in the continuing professional development of pharmacists

OUR GOAL

- Provide educational activities to address health issues and changing scope of practice in NY State
- Partner to provide inter-professional health care team programming opportunities

During this academic year the Office of Continuing Pharmacy Education has awarded ACPE Pharmacy credit to over 2,000 pharmacists participating in programs offered as live seminars, distance delivered webinars, multiday symposia and cosponsored designed educational offerings

Fiscal Year 2013-2014 Cosponsored Home Study Programs UB Programs Total with pharmacists across all settings. Accreditation was provided for the cosponsored programming of our alumni, affiliated institutions, pharmaceutical societies and the New York State Department of Health, just to name a few.

Wegmans Food Markets and the Office of Continuing Pharmacy Education teamed-up to provide Wegmans

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5

24

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OUR STEERING COMMITTEE

 The role of this committee is to identify educational needs in such areas as changes in therapy and guidelines, treatment plans, and new legislation.
The committee will assist in the design of educational activities to bridge the gaps in knowledge or skills.

Pharmacists with an evidence-based educational vascular prevention training program in an effort to fight cardiovascular disease.

Expansion of the Office of Continuing Pharmacy Education webpage includes a survey tool to collect requests by pharmacists for future educational topics. The webpage also now offers pharmacists updated ACPE information regarding items such as credit deadlines for the CPE Monitor. This continuing pharmacy education tracking system was developed by ACPE and the National Association of Boards of Pharmacy (NABP) and will authenticate and store data for completed CPE units received by pharmacists and pharmacy technicians from ACPE-accredited providers.

Future educational activities in development include a "Transition of Care" inter-professional offering, as well as accreditation of an online practice-based certificate program "CanceRxCE: Oncology Certificate program," for Community Pharmacists in partnership with UB's Oncology Translational Research Laboratory.

Continuing Education Programs and Symposia

Date	Name	Program_Type
7/26/13	HIV Pharmacotherapy Update Symposium 2013	UB Programs
9/26/13	Medical Marijuana: An Evidenced-based Review	UB Programs
10/19/13	Treating Cancer Pain: Opioids, Adjuvants, and Beyond	Cosponsored
10/19/13	Update in Controlled Substance Regulations in NYS	Cosponsored
10/19/13	Tricks of the Trade: Optimizing Side Effects and Effective Use of Mold - Active Antifungal Agents	Cosponsored
10/19/13	Is it Worth a Shot? Vaccinations in Cancer Patients	Cosponsored
10/19/13	New Developments in Immunomodulatory and Targeted Therapies for Metastatic Melanoma	Cosponsored
10/23/13	When Nerves Hurt: Common Neuropathies and their Treatment	UB Programs
11/5/13	Core Skills for Effective Precepting from a Systems Perspective	UB Programs
12/7/13	Pain Medicine for Non-Pain Specialists: Risk Management in the 21st Century: Focus on Appropriate	_
	Opioid Uses for Chronic, Non-Cancer Pain	Cosponsored
1/8/14	HIV/HCV Co-infection: C the Difference	UB Programs
1/22/14	Adherence: Simple Strategies for Sticking to it	UB Programs
1/29/14	Pharmacy Law Update 2014	UB Programs
1/30/14	Pharmacy Law Update 2014	UB Programs
2/9/14	Update on Medication Errors & Patient Safety 2014	UB Programs
2/12/14	Self-Monitoring Blood Glucose: A Practical Guide for Pharmacists	UB Programs
2/23/14	Update on Medication Errors & Patient Safety 2014	UB Programs
2/26/14	For LifeBut For Who? A Pharmacist's Guide to Recommending Probiotics	UB Programs
3/5/14	UB/Wegmans Vascular Prevention Program	UB Programs
3/19/14	Aiming Without a Target: The ACC/AHA 2013 Cholesterol Guideline	UB Programs
3/20/14	APhA's Delivering Medication Therapy Management Services	UB Programs
3/23/14		
3/26/14	UB/Wegmans Vascular Prevention Program Pharmacists Make House Calls? A Discussion of Innovations in Community Pharmacy	UB Programs
		UB Programs
4/5/14	New dyslipidemia and hypertension guidelines: impact on the kidney disease patient	Cosponsored
4/22/14	The pharmacy practice model initiative: implementation within NCI-designated comprehensive cancer centers	Cosponsored
5/3/14	Clinical practice changes in front-line management of ineligible MM patients: the evolving role maintenance	
	programs	Cosponsored
5/3/14	Leukemia: Progress in the management of MDS	Cosponsored
5/3/14	Lymphoma clinical practice case study	Cosponsored
5/3/14	Emerging approaches in the management of patients w/chronic lymphocytic leukemia (CLL)	Cosponsored
5/3/14	Clinical practice changes in the management of T-cell lymphoma patients	Cosponsored
5/3/14	Optimizing the clinical outcome of diffuse large B-cell lymphoma	Cosponsored
5/3/14	Clinical practice changes in the management of mantle cell lymphoma (MCL)	Cosponsored
5/3/14	Managing relapsed/refractory multiple myeloma: how to optimize recently approved targeted agents	Cosponsored
5/3/14	Clinical practice changes in front-line management of transplant eligible MM patients: the evolving role of post-	•
	transplant maintenance programs	Cosponsored
5/3/14	Leukemia clinical practice case study	Cosponsored
5/3/14	Clinical practice changes in the management of acute lymphoid leukemia (ALL)	Cosponsored
5/3/14	Emerging approaches in the management of patients with chronic myeloid leukemia (CML)	Cosponsored
5/3/14	Myeloma clinical practice case study	Cosponsored
5/14/14	Common Infectious Diseases in the Hospital and Community: Treatment and Resistance Concerns	UB Programs
5/29/14	19th Annual Comprehensive Pharmacy Law Review	UB Programs
5/30/14	19th Annual Comprehensive Pharmacy Law Review	UB Programs
6/2/14	Acute myeloid leukemia induction regimens for patients with low ejection	Cosponsored
6/5/14	UB/Wegmans Lipid Management Program	Home Study
6/11/14	Current and Emerging Therapies in the Management of HCV Viral Infection	Home Study
6/18/14	APhA Pharmacy-Based Immunization Delivery	UB Programs
6/19/14	UB/Wegmans Lipid Management Program	UB Programs
6/26/14	Current and Emerging Therapies in the Management of HCV Viral Infection	UB Programs
6/29/14	UB/Wegmans Lipid Management Program	UB Programs
Ongoing	HIV Pharmacotherapy Annual Update	UB Programs
Ongoing	HIV Pharmacotherapy Community Pharmacy CE	UB Programs
	HIV Pharmacotherapy Practiced-Based Program	UB Programs
Ongoing :		

Pharmaceutical Sciences Postdoctoral Associates/Fellows

Supriya Deepak

Development of Bio-Nanomaterials for the Treatment of Myocardial Infarction Using Drug Delivery and Nucleic Acid Delivery

Narayana Garimella Mathematical Modeling of Hepatitis C Virus (HCV) Dynamics

Tao Ji

Use of Accelerator Mass Spectrometry for Investigating Target Ligand Turnover kinetics

Gilbert Koch

Mechanistic PK/PD Modeling of Anti-cancer Drugs; Modeling of Lifespans and Delays Jun Li

Proteomic Investigation of Drug Therapy Responsive Proteins and their Post-translational Modifications (PTMs)

Zhi Lin (Gary) Mo

Lifespan PKPD modeling of tumor growth inhibition by anti-cancer drugs, and mechanistic PKPD modeling of chemotherapy-induced thrombocytopenia

Eslam Nouri Nigjeh Label-free and Biomarker-discoverybased Quantitative Proteomics Ayse Meric Ovacik Algorithmic Study Design for Identification of Target Expression from Data Systems Pharmacology Modeling of Therapeutic Proteins in Signaling Networks

Adolfo Quiñones-Lombraña Molecular and Functional Characterization of Human Anthracyclinemetabolizing Enzymes

Weiyan Zhang General Platform for Understanding the Subcutaneous Absorption of mAbs

Residency Training Program Summary 2013-14

The Department of Pharmacy Practice maintained its commitment to providing postgraduate education via general (PGY-1) and specialty (PGY-2) residency training.

During the 2013-14 academic year, the residency program consisted of 7 PGY-1 residents and 1 PGY-2 resident training at the following practice sites:

- Buffalo Medical Group
- Erie County Medical Center
- Erie County Medical Center HIV/AIDS Immunodeficiency Center
- Lifetime Health Medical Group
- Mobile Pharmacy Solutions
- Middleport Family Health

Our mission remains the same: to educate pharmacy residents in pharmacy practice, clinical precepting, didactic teaching, clinical research and manuscript writing; to provide patient care; and to provide services to the community at large based upon this knowledge, with the goal of training pharmacy residents to practice autonomously in a variety of settings.

As outlined in our mission, In addition to a focus on patient care, our residents participated in teaching, research and community service. Each year, UB SPPS sponsors a Residency Teaching Certificate program which was attended this year by nearly 20 residents from across western and central New York. The program consists of a 2-day seminar on topics relevant to both didactic and clinical/experiential teaching and learning. The UB SPPS residents are also required to hone their teaching skills by participating in a small group teaching experience, a large group lecture, a precepting experience at their practice site and an ACPE-accredited continuing education program.

Each of our residents is required to complete at least one residency project and present the results of their research over the course of their residency. This year, our residents presented at a variety of forums, including the ASHP Midyear Clinical Meeting (Orlando, FL), the APhA Annual Meeting (Orlando, FL), UB SPPS Residency Project Presentation Day (Buffalo, NY), and the Eastern States Residency Conference (Hershey, PA).

Residents also served the community by volunteering their pharmacy services at the Good Neighbors Clinic, which offers basic primary care for uninsured and underinsured adults in Buffalo. While at Good Neighbors, residents may assist providers with patient care, provide medication counseling to patients and assist patients with obtaining affordable prescription medications.

Pharmacy Practice Residents/Fellows

Residents

Angela Borton, PharmD *Resident PGY 1- Erie County Medical Center*

Ryan Fillis, PharmD Community Resident PGY-1Middleport Family Health Center

Anne Jeyarajah, PharmD Community Resident PGY-1Mobile Pharmacy Solutions

Jane Kwon, PharmD Resident PGY-1Buffalo Medical Group

Sarah Passafiume, PharmD Community Resident PGY-1 Mobile Pharmacy Solutions

Jonathan Rabey, PharmD Community Resident PGY-1 Middleport Family Health Center

Elisabeth Schulte, PharmD Resident PGY-1 Lifetime Health Medical Center

Rebecca Sumner, PharmD HIV/Pharmacotherapeutics Resident PGY-2 Erie County Medical Center

Fellows:

Rajindar Bhardwaj, PharmD *Roche*

Mohammed Elmeliegy, PhD Drug Development/Novartis

Calvin Meaney, PharmD Immunosuppressive Pharmacology

Vidya Perera, PhD Drug Development/Novartis

Yan Qin, PharmD Drug Development/Novartis

Gauri Rao, PharmD *Roche*

Michael Trang, PharmD ICPD Pharmacometrics





Commencement Awards

SUNY Chancellor's Award for Student Excellence Kayla Maxwell

Lilly Achievement Award Kristen Fodero

Michael E. Crawford Award Nazli Soltani

Eino Nelson Award Katherine Manou

David E. Guttman Award Sophia Elie

Renee A. Dederich Award Elizabeth Dahl

Francis P. Taylor Award Katherine Manou

UB School of Pharmacy & Pharmaceutical Sciences Professionalism Award Sarah Farr

Robert H. Ritz Award Justin Lenhard

National Community Pharmacists Association Outstanding Student Member Award Lindsey Feuz

Lori Esch Memorial Award Aubrey Gawron

Merck Award

1st Sohee Chang, 2nd Katherine Manou, 3rd Nazli Soltani

Robert M. Cooper Memorial Award Stefanie Wiegand Mylan Pharmaceutical Excellence in **Pharmacy Award** Christina Matthews Facts and Comparisons Award of **Excellence in Clinical Communication** Lauren Stuczynski Roy M. Barr Award Justin Lenhard Western New York Society of Health-system **Pharmacists Award** Jessica Beyer Samuel J. Bauda Award Lindsey Feuz Pharmacists' Society of the State of New York Sarah Farr Natural Medicines Comprehensive Database **Recognition Award Bethany Woods McKesson Leadership Award** Tara Castleman **TEVA Pharmaceuticals USA Outstanding** Student Award Kristen Mazurkiewicz A.B. Lemon Memorial Award

Nicholas Hopwood

The Inpatient Advanced Pharmacy Practice **Experience Award Bethany Woods** The Outpatient Advanced Pharmacy **Practice Experience Award Keith Prouty** Pharmacists' Association of Western **New York Student Leadership Award** Yi Yang **Excellence in Pharmacogenomics Award** Georgia DiFiore **Katherine Doyle Memorial Award** Jordan Boardman Kelli Jordan Memorial Award Kayla Maxwell The Outstanding Graduating Senior Award in Pharmaceutical Sciences Van Anh Nguyen Margaret C. Swisher Memorial Award Margaret Miklich **APhA-ASP Senior Recognition Award** Tara Castleman **Excellence in Teaching Award**

Nicole Paolini Albanese, PharmD Clinical Assistant Professor

Who's Who Among Students in American Universities and Colleges

Femi Adesina Zubair Afzal Brittany Andruszko Brian Baur Clare Carroll Tara Castleman Elizabeth Dahl Georgia Di Fiore Sarah Farr Lindsey Feuz Kristen Fodero Aubrey Gawron Erik Hefti Melanie Ho Nicholas Hopwood April Huang Hyewon Im Gregory Koopman Ryan Kucharski Julia Kuroski Justin Lenhard Hai-Xin Lin Katherine Manou Christina Matthews Samantha Mattison Kayla Maxwell Kristen Mazurkiewicz Dana Munn Michael Rinere Jaimie Rogemoser Mahsa Salsabili Sarah Sckena Lauren Stucznyski Amy Suen Cody Vandervort Stefanie Wiegand Yi Yang Olesya Yaremko Danyan Yu

Student Supporters

The following supporters have provided generous funding for the educational training of pharmacy postgraduate residents and fellows, as well as trainees in all levels for pharmaceutical sciences programming.

Pharmaceutical Sciences

PHD STUDENTS

John and Editha Kapoor Fund Veena Thomas

Center for Protein Therapeutics Gurkishan Chadha Frank Engler Patrick Glassman Tommy Li Xin Miao Charvi Nanavati Xu Zhu

POSTDOCTORAL FELLOWS

Johnson and Johnson Narayana Garimella Center for Protein Therapeutics

Yanguang Cao Tao Ji Eslam-Nouri-Nigjeh Weiyan Zhang

Pharmacy Practice

POST GRADUATE RESIDENTS AND FELLOWS

Lifetime Health Medical Group Elisabeth Schulte

Buffalo Medical Group Jane Kwon

Novartis Pharmaceuticals

Corporation Mohamed Elmeliegy Vidya Perera Yan Qin

Roche Pharmaceuticals Rajinder Bhardwaj





Student Achievements

SPPS Students Highlight 2014 UB Center of Excellence Awards

Kayla Maxwell '14, PharmD-PhD program: SUNY Chancellor's Awards for Student Excellence. Xiaochen Zhao, PHC PhD program: Sigma Xi Graduate Research Poster: Cellular pharmacodynamic model of Rituximab and Doxorubicin in non-Hodgkin's lymphoma.

Sara Di Tursi '16, PharmD P2 student: Sigma Xi Poster Competition: Poly(lactic-co-glycolic) Acid-Chitosan Lamivudine/Nevirapine-Loaded Nanoparticle Formulations for Sustained Release Antiretroviral Therapy for HIV.

Robert Dingman, PHC BS program: UB Undergraduate Excellence in Research, Scholarship and Creativity.

Clinical Research Program 2014

The following Class of 2014 students participated in the Clinical Research Program 2014 Presentations.

Michelle Amsler: Validation of an Assay to Determine Pharmacokinetic and Pharmacodynamic Resistance to Aspirin in DMSO by in vitro Analysis.

Brittany Andruszko: The Effect of Antibiotic Use on Length of Hospitalization in Acute Pancreatitis *Jeff Baron:* Effect of Primidone on Platelet Responsiveness in Patients Determined to be Clopidogrel Resistant.

Michael Bear: Novel double and triple antibiotic combinations at clinically relevant concentrations against polymyxin B resistant Pseudomonas aeruginosa.

Jessica Beyer: Adapting to Obstacles in Research. Amy Suen: Vancomycin Pharmacodynamics against Heterogeneous Vancomycin-Intermediate Staphylococcus aureus bloodstream isolates with accessory gene regulator dysfunction: Challenging the AUC/MIC Paradigm Project. Arthur Fyles: A Comparison of In Vitro Platelet Inhibition of Ticagrelor Pre- and Post-Bariatric Surgery.

Justin Lenhard: Tracking the Evolution of Vancomycin Resistance in Staphylococcus aureus Populations Containing the Small Colony Variant Phenotype.

Melissa Rozek: Development and Validation of an Enzyme- linked Immunosorbent Assay (ELISA) To Detect Treponema Denticola Virulence Factors in Saliva Samples. Sarah Sckena: Pharmacist Use of Face-to-Face and Electronic Encounters to Improve A1C in a Patient-centered Medical Home. *Lindsey Feuz:* Drug Interaction Review: Evaluation of Concomitant Medications in a Psychiatric Population.

SNPhA Clinical Skills Competition Winners

Congratulations to Jacob Reaser '15 and Joseph Sperber '15 for winning second place in the 2014 Clinical Skills Competition at the Student National Pharmaceutical Association (SNPhA) regional conference in Richmond, Virginia. The meeting involved students from more than 40 schools of pharmacy.

The Department of Pharmaceutical Sciences Recognizes Exceptional Class of 2014 BS Seniors

Van Anh Nguyen: The Outstanding Graduating Senior Award In Pharmaceutical Sciences Award. Presented to the most outstanding BS graduate based on overall performance, including GPA and leadership.

Robert Dingman: The Robert H. Gumtow Undergraduate Research Award in Pharmaceutical Sciences. Presented to a graduating BS student who has performed the most outstanding research.

Prosperity Scholarship at UB Includes SPPS Students

UB's 2014 Prosperity Scholarship program, assisting undergraduate and graduate students who are actively preparing for careers that further economic development and growth, especially in the Western New York region, has chosen the following SPPS students- congratulations! Brian Bowman, Peter Fendt, David Huoh.

Students Support National Drug Take Back Day September 2014

Students, faculty and staff assisted with National Prescription Drug Take Back Day, a safe, convenient, and responsible means of disposing prescription drugs, while also educating the public regarding medication abuse. Teams worked at Millard Fillmore Suburban Hospital, DeGraff Memorial Hospital, Kenmore Mercy Hospital, St. Joseph's Hospital and other locations throughout Western New York cataloging over the counter medications as well as prescription drugs.

UB Local 2014 Student Pharmacist Compounding Competition

Christina Wang '15, Colleen Gardon '15, Sophia Min '15, Nicholas Filk '14 (alternate) were first place winners at the local 2014 Student Pharmacists Competition. Nicholas Filk was recognized at the national meeting as most 'congenial student' at the competition.

Individual Achievements

Kayla Maxwell '14, PharmD-PhD program: SUNY Chancellor's Awards for Student Excellence

Kayla Maxwell '14 received the 2014 State University of New York Student Excellence Award, given to SUNY students who have best demonstrated and been recognized for academic excellence, leadership, athletics, career achievement, community service or creative and performing arts. Kayla was recognized by SUNY at a reception in Albany and was also recognized by the university during the Celebration of Academic Excellence, Spring 2014.

Robert Dingman '15 Present at Audiology Meetings

Robert Dingman '15, pharmaceutical sciences senior, presented abstracts at the Association for Research in Otolaryngology 2014 Midwinter Meeting and UB Audiology Research Day

- Acoustic Trauma Upregulates Pain Associated Proteins in Rat Cochlear Nucleus, S. Manohar, F. Yoshie Russo, R. Dingman, R. Salvii, 9/2013.
- Acute and Chronic Changes in Synaptic Plasticity Gene Expression in Rat Inferior Colliculus following Unilateral Noise Induced Hearing Loss, F. Yoshie Russo, S. Manohar, R. Dingman, R. Salvi, 9/2013.

Sara DiTursi '16 Interns in Taiwan

Sara DiTursi '16 was chosen by the American Pharmacists Association Academy of Student Pharmacists (APhA-ASP) International Pharmaceutical Students' Federation (IPSF) Student Exchange Program to spend six weeks in Taiwan at the Taipei Medical University as an intern in a community pharmacy. Sara spent over 100 hours shadowing the pharmacy manager of Pu Chen Pharmacy, an independent pharmacy in Taipei as well as attended pharmacotherapy classes and field trips to the National Health Insurance Administration, Taipei Veterans General Hospital and Taipei Medical University Hospital. She was also elected to the IPSF Pan American Office Subcommittee where she will be promoting communication, membership and pharmacyrelated campaigns among the nations of North, South and Central America.

Tara Castleman '14 New APhA-ASP Business Committee Chair

Tara Castleman '14 selected to serve as the Chair of the American Pharmacists Association Academy of Student Pharmacists New Business Review Committee at the APhA 2014 Annual Meeting.



P1 Poster Presentation



Erik Hefti '14 Publishes in Journal, Mitochondrial DNA

Erik Hefti '14: Published his scientific manuscript, Journal, Mitochondrial DNA. Authors are: E. Hefti A., Quiñones-Lombraña, A. Redzematovic, J. Hui, and J. Blanco. Javier Blanco, associate professor, pharmaceutical sciences.

Jennifer Murray '15 Attends Cardinal Leadership Conference

Jennifer Murray '15: Attended the 15th Annual Cardinal Health Student Leadership Conference. This all-expense-paid conference joins top pharmacy students in the country for a special two-day program to better prepare them for assuming future leadership roles in health-systems pharmacy.

Mahsa Salsabili '14 Presents Poster at ASHP Mid-Year

Mahsa Salsabili '14: Poster presentation PharmD Student Awareness of Managed Care Pharmacy: a Single Site Survey of Professional Preparedness, at the 2013 ASHP Mid-Year Clinical Meeting.

2013-2014 Degree Recipients

Bachelor of Science in Pharmaceutical Sciences

February 2014 Kyle Burke

June 2014

Jyothi Abraham Sheril Alexander Anthony Chen Franklin Ilogho Yun Jeong Jang Andy Lalka Yong Hee Lee Benjamin Luft Shabkhaiz Masih Van Anh Nguyen Adam Parker Ankit Senjalia

Bachelor of Science/Master of Science in Pharmaceutical Sciences

September 2013 Andrew Davidowitz Daniel Ferguson

June 2014 Sophia Elie Kelly Marco Brittany Walker Yanlin Wang

Master of Science in Pharmaceutical Sciences

February 2014 Kuan-ju Lin

June 2014 Manting Chiang Martin Kozicki Anita Moein

Doctor of Pharmacy June 2014

Femi Adesina Zubair Afzal Michelle Amsler Brittany Andruszko Risikat Balogun Christopher Barbour Jeffrey Baron Brian Baur Michael Bear Jessica Beyer Jordan Boardman Matt Brennan Lindsey Bruss Clare Carroll

Tara Castleman Sohee Chang Fanny Chen Tao Chen Matthew Chestoski Christina Cieri Elizabeth Dahl Jacqueline Deiley Georgia Di Fiore Sarah Farr Lindsey Feuz Nicholas Filk Kristen Fodero Jamie Frazier Minna Fung Arthur Fyles Alexandra Galbo Katherine Gancasz Aubrev Gawron Julie Graham Jie Gu Jing Jing He Erik Hefti Katherine Hempling Melanie Ho Nicholas Hopwood April Huang Ka Lun Hung Jenna Hurd Tracy Huynh Hyewon Im Jessica Isaac Courtney Jones **Courtney Kelchlin** Gregory Koopman Ryan Kucharski Julia Kuroski Jason Kwok Donald Ladd Michael Landgren Carmen Lee Justin Lenhard Stephanie Li Xu Guang Li Amanda Liang Hai-Xin Lin Nicholas Lombardo Tsz On Lui Katherine Manou **Kristin Martinez** Christina Matthews Samantha Mattison Kavla Maxwell Kristen Mazurkiewicz

Cara McGurry Brendan McManus Margaret Miklich Nicole Morabito Steven Mrzygut Dana Munn Dane Munzek Long Nguyen **Rikesh Patel** Maria Piddoubny Vadryn Pierre **Matthew Pretorius** Keith Prouty Roshan Rao Yakov Ratner Michael Rinere Jaimie Rogemoser Melissa Rozek Khadeeja Saleh Mahsa Salsabili Alexander Schepart Sarah Sckena Brenna Shannon Lauren Stuczynski Amy Suen Gina Sutedja John Tang Christopher Tanski Melek Turgut Cody VanDervort Vanessa Vanzo Stefanie Wiegand Betty Wong **Bethany Woods** Jianle Xie Yi Yang Olesya Yaremko Esther Yi Danvan Yu Gavin Zhang Qi Bing Zheng Zhi Yuan Zheng Bo Zhou

Doctor of Philosophy in Pharmaceutical Sciences

February 2014 Jonathan Knights

Hoi Kei Lon June 2014 Vaishali Chudasama

Vaishali Chudasam Brenda Cirincione Anas Fathallah Neang Ly Nisha Vijay



Research and Training

Create cutting edge research that enhances the body of knowledge needed for professional education, healthcare delivery, and advancement of sciences that will improve the health and wellness of the global community.

Department of Pharmaceutical Sciences

Our Department has a well established, international reputation for a tradition of excellence in teaching and research and is well positioned to expand its prowess in Pharmacokinetics, Pharmacodynamics, and Protein Therapeutics. Moreover, the Department is a leading academic institute for cutting edge research and teaching in Pharmacogenomics.



The department strengths lie in biological applications of pharmaceutical sciences for traditional small molecules as well as biotechnology products, particularly in the areas of systems pharmacology (pharmacokinetics, pharmacodynamics, pharmacogenomics), drug delivery, and development of new therapeutic approaches utilizing mechanistic studies with tools of genomics, proteomics, computation, and bioinformatics.

We have an excellent group of 14.5 tenure-track and 5 research faculty members over a range of academic levels with highly productive, largely NIH-funded research programs and some corporate support. Our total amount of outside funding was about \$6 million. Our BSc undergraduate program, directed by Vice-Chair, Dr. Kathleen Boje, included 33 junior and senior students, while our graduate program, headed by Dr. Murali Ramanathan, consisted of 27 BS/MS, MS, and PharmD/MS students and 42 PhD and PharmD/PhD students. We also hosted 10 post-doctoral fellows and visiting scientists. We began conducting searches for two new faculty members, one in the area of pharmacometrics and one in molecular pharmaceutics.

Our Center for Protein Therapeutics, directed by Dr. Joseph Balthasar, Associate Dean for Research, was established by the department in 2008 to promote the application of pharmaceutical sciences to the development of protein drugs. Emphasis is on numerous PK/PD issues, protein engineering, and bioanalysis/proteomics. Sponsors of the *Center* in 2013-14 included: Abbvie, Amgen, Eli Lilly, Genentech/Roche, Janssen, Merck, Sanofi-Aventis, and UCB. To date, the Center has provided funding (~\$100,000 per project) for 73 research projects, with 11 projects funded in 2013-14. Our industry sponsors gather with our faculty and trainees in July for our Annual CPT Symposium to review project results and select new projects for the next year. In many cases, study results (e.g., mathematical models, new methodologies) have been quickly implemented by the industry sponsors.

A highly active Lecture and Seminar Program was offered with 54 presentations by local and visiting scientists. Dr. Wayne Anderson, recently retired as Dean of the School, provided the 2013 *Gerhard Levy Distinguished Lectureship in Pharmaceutical Sciences*. His presentation was entitled, "Professional Practice, Research, and Education: 50 Years in Pharmacy". Dr. Wolfgang Sadee, Professor at Ohio State University as well as Dr. A. Douglas Kinghorn, also Professor at Ohio State University, gave the David C. K. Chu Lectures in Drug Development (on different occasions). Dr. Steven Hansel from Pfizer Pharmaceuticals provided the Pharmaceutics *GSA Alumnus Lecture*. Other notable speakers during the academic year were: Dr. Johannes Schropp from the University of Konstanz, Dr. Jonathan Lovell from the UB Department of Biomedical Engineering, Dr. Yun Wu from the UB Department of Biomedical Engineering, Dr. Bart Hendricks from Merrimack Pharmaceuticals, Dr. Reina Bendayan from the University of Toronto, Drs. Nuria Buil and Zinnia Parra-Guillen from the University of Navarra, Dr. Joanne Wang from the University of Washington, Dr. Lee Vermeulen from the University of Wisconsin, Dr. Peter Elkin from the UB Department of Biomedical Informatics, Dr. John M. L. Ebos from Roswell Park Cancer Institute, Dr. Masoud Jamei from Simcyp Inc., Dr. Mark Gurney from Tetra Discovery Partners Inc., Dr. Robert R. Bies from Indiana University, Dr. Coen van Hasselt from Leiden University, Dr. Nicholas Holford from the University of Auckland, and Dr. C. J. Musante from Pfizer Pharmaceuticals.

Our department faculty members were strongly productive in dissemination of our scientific accomplishments and knowledge. We had 109 research articles and book chapters published and gave over 170 seminars, lectures, and research posters at various scientific meetings, universities, and industrial venues. Many faculty and students routinely attend and make presentations at the meeting of the American Association of Pharmaceutical Scientists (*AAPS*) where we host an annual Buffalo Alumni Reception. Dr. Murali Ramanathan was designated the honor of *AAPS* Fellow. Also, Nisha Vijay received the *AAPS* Graduate Student Award in PPDM at this meeting.

The department offers annual courses in Pharmacokinetic-Pharmacodynamic (PK/PD) Modeling, Antibody PK/PD, Adapt for Biologics, and Population Pharmacokinetic Modeling for visiting scientists from the pharmaceutical industry, academia, and the FDA in June, which included our 22nd session of the PK/PD Modeling course. Four of our faculty (Drs. Mager, Balu-Iyer, Straubinger, and Jusko) participated in a Systems Pharmacology Workshop in Dublin in June. This event was organized by Drs. Mager, Straubinger, and Robert O'Connor of Dublin City University. Following that, Drs. Mager, Krzyzanski, and Jusko presented a PK/PD Modeling course in Gdansk, Poland. This event was organized by alumnus Pawel Wiczling. Dr. Javier Blanco organized a post-graduate course in Clinical Pharmacogenetics at the University of Cordoba and gave

Department of Pharmaceutical Sciences

Continued from page 14

several lectures at Barcelo University. Dr. Wojciech Krzyzanski coordinated the presentation of eight 2-3 day workshops in use of pharmacometric software, most kindly donated for our use by companies such as Certera and Simcyp.

Dr. Marilyn Morris served as President of the American Association of Pharmaceutical Scientists (AAPS). She also received the 2013 Alumni of Distinction Award, Faculty of Pharmacy, University of Manitoba. Dr. Donald E. Mager served as President of the International Society for Pharmacometrics. Dr. Matthew Kosloski was selected for the Buffalo Pharmaceutics Graduate Scholar Award at our Annual Awards Banquet in December. Dr. Ho-Leung Fung serves as Editor-in-Chief of The AAPS Journal, while Dr. Jusko has the same capacity for the Journal of Pharmacokinetics and Pharmacodvnamics. Several other faculty are active in publishing as Associate Editors and on Editorial Advisory Boards for other journals.

The department is poised for invigoration of its research and training programs. We are maintaining strong capabilities in the areas of Protein Therapeutics and Cancer Therapeutics and continuing our prominence in Pharmacokinetics, Pharmacodynamics, and Pharmacometrics.

Department of Pharmacy Practice

The 2013-2014 year brought a number of new initiatives to the Department of Pharmacy Practice, including the reinvigoration of the Research Pharmacy.

The Research Pharmacy of the University at Buffalo School of Pharmacy and Pharmaceutical Sciences (UB SPPS) is a fully licensed outpatient pharmacy. Since 1995, the Research Pharmacy has been assisting clinicians and investigators manage and execute their research. Its main objective is to help manage and coordinate investigational drug services via the specifications of clinical researchers at the University at Buffalo. It provides many services for clinicians and researchers, helping throughout the prestudy, study and post-study phases of research, focusing on the medication utilization aspects of study protocols. Along with helping direct investigational drug studies, the Research Pharmacy also serves as a resource for investigators and their staff. This commitment has always been extended to the patients served in these studies, addressing the pharmaceutical needs of the individual patient through research collaborations.

Faculty Changes

The Department of Pharmacy Practice welcomed Christopher Daly, PharmD, Clinical Assistant Professor, Nicholas Fusco, PharmD, Clinical Assistant Professor, Carolyn Hempel, PharmD, Clinical Assistant Professor, Qing Ma, PhD, Assistant Professor, Gauri Rao, PharmD, Assistant Professor, and Ashley Woodruff, PharmD, BCPS, Clinical Assistant Professor as new hires this year. The department also bid a fond farewell to Patty Havard, who left to take a Vice-Chair and Associate Dean for Professional Development, California Health Sciences University.

Special recognition to Nicole Paolini Albanese, PharmD, CDE, BCACP who was recognized as the UB SPPS Teacher of the Year and to Ashley Woodruff, PharmD, BCPS who was the recipient of the 2013 Educator/Preceptor of the Year New York State Chapter of the American College of Clinical Pharmacy. Gina Prescott, PharmD, BCPS received the Faith in Healthcare Award given by the Christina Medical and Dental Association of WNY. Karl Fiebelkorn received the 2014 Bowl of Hygeia Award from the American Pharmacists Association and Pharmacists Society of the State of New York. The Bowl of Hygeia recognizes pharmacists who possess outstanding records of civic leadership in their communities.

Congratulations to Brian Tsuji, associate professor, pharmacy

practice for his receipt of National Institute of Health NIAID RO1 grant entitled "Novel PK/PD Strategies for Polymyxin Combinations against Gram-negative Superbugs". This \$4.4M five year grant is a highly interdisciplinary, collaborative, multicenter project involving world leaders in anti-bacterial pharmacology including physician scientists at Cornell University School of Medicine (led by subcontract PI Thomas Walsh and Co-I Vidmantas Petraitis), PhD pharmaceutical scientists at Monash University, Australia (led by Co-PI Jian Li, Co-Is Roger Nation, John Boyce and Juergen Bulitta, a former UB SPPS post-doc) along with Co-I Alan Forrest, UB SPPS research professor and Dr. Tsuji as PI.

The Office of Experiential Education is excited to have finalized international activities with Taipei Veterans General Hospital in Taiwan and with Project Hope at Asram Hospital in Eluru, India. These mark the first international experiential rotations in school history. We look toward expanding upon these unique opportunities for our students in the future. We were also proud to recognize the following preceptors at our annual awards social on June 24, 2014 at Pearl Street Grill:

- IPPE Outstanding Contribution Award William Barclay (Kenmore Rx Center) Professional Practice Elective Preceptor of the Year – Kelly Verrall (Independent Health)
- J. Fred Bennes Outpatient Care Preceptor of the Year Award - Joe Khan (Walgreens Pharmacy)
- Inpatient Care Preceptor of the Year Brian Wetzel (Catholic Health System – Kenmore Mercy Hospital)
- Pharmacy Practice Faculty Preceptor of the Year William A. Prescott, Jr. (SUNY Buffalo / Kaleida Health – Women and Children's Hospital of Buffalo)

Lastly, the Experiential Education Office will be working on transitioning all current IPPE-3 paperwork into eValue in the upcoming year.

The Office of Continuing Pharmacy Education (OCPE) provided ACPE pharmacy accreditation to many of our health care partners, increasing interprofessional programming opportunities. The OCPE online platform will soon provide a library of enduring educational activities for our alumni and preceptors in the local, regional and national settings.

The department is proud of its continued collaboration with the New York State Department of Health where faculty continue to provide support for medication therapy management oversight and outreach for the Prescriber Education Program.

July 1, 2013 - June 30, 2014

Pharmaceutical Sciences

Joseph Balthasar Multiple Sponsors Protein Therapeutics Consortium

Joseph Balthasar Regents of the University of Michigan PTD-Mediated Protein or Drug Delivery for Cancer Therapy

Joseph Balthasar

American Foundation Pharmaceutical Education AFPE Pre-Doctoral Fellowship for Frank Engler

Sathy Balu-Iyer National Heart Lung and Blood Institute Development and pharmacology of novel lipidic rAHF

Javier Blanco National Institute of General Medical Sciences Pharmacogenetics of Human Carbonyl Reductases

Javier Blanco Eunice Kennedy Shriver National Institute of Child Health & Human Dev Characterization of Cardiac Mitochondrial DNA in Donors

with Down Syndrome William Jusko National Institute of General Medical Sciences

Corticosteroid Pharmacokinetics and Pharmacodynamics

William Jusko National Institute of General Medical Sciences *Mathematical Models in Pharmacodynamics*

William Jusko Fonds National de la Recherche Mathematical Models for Drug Response in Pharmacodynamics

William Jusko

Duke University Pharmacokinetics and Relative Bioavailability of a Liquid Formulation of Hydroxyurea in Pediatric Patients with Sickle Cell Anemia

William Jusko

SUNY Downstate Molecular and Clinical Pharmacology of Retinopathy or Prematurity

Wojciech Krzyzanski

AstraZeneca Pharmaceuticals LP Integration of lifespan modeling for predicting chemotherapeutically-mediated cytotoxic outcomes in tumor growth inhibition models and hematopoietic systems

Donald Mager

University of Iowa Neonatal Anemia and Thrombocytopenia: Pathophysiology and Treatment

Donald Mager

Daiichi Sankyo Pharma Development PKIPD Modeling and Systems Analysis

Donald Mager

SUNY Downstate Molecular and Clinical Pharmacology of Retinopathy or Prematurity

Donald Mager Roswell Park Alliance Foundation *Down Syndrome: Causative Genes and Therapeutic Strategies*

Donald Mager EMD Serono Research and Development Institute Incorporated *PBPK model development for antibodies and nanobodies displaying pH-dependent target binding*

Marilyn Morris National Institute on Drug Abuse Gamma-Hydroxybutyrate: Toxicokinetics, Toxicodynamics and Treatment Strategies

James O'Donnell Tetra Discovery Partners SBIR: PDE4B Inhibitors for Treating Major Depression

James O'Donnell Tetra Discovery Partners PDE4D Allosteric Modulators for Treating Cognitive Impairment

Jun Qu (Co-I) National Institute of Neurological Disorders and Stroke Laminin Receptors and Signals in Schwann Cells

Jun Qu American Heart Association Founders Affiliate Biomarker Release after Reversible Ischemia

Jun Qu

SUNY Downstate Molecular and Clinical Pharmacology of Retinopathy or Prematurity

Jun Qu (Co-l)

National Institute of Dental & Craniofacial Research Regulation of Skeletal Development and Homeostasis by IFT Protein

Murali Ramanathan

National Multiple Sclerosis Society Lipoprotein and Lipid Metabolism in Multiple Sclerosis Disease Progression

Dhavalkumar Shah

F Hoffmann La Roche Limited Distribution of Antibodies and its Fragments

Robert Straubinger Trustees of Columbia University *Optical Imaging of Chemotherapy for Brain Tumors*

Robert Straubinger National Cancer Institute Pancreas cancer combination therapy based on stromal modulators and nano-carriers

Robert Straubinger Merrimack Pharmaceuticals Incorporated *M398/M310 Testing Services*

Pharmacy Practice

Alice Ceacareanu Health Research Inc Epidemiology of Breast Cancer Subtypes in African American Women: A Consortium-Project 4

Alan Forrest Hoffmann Laroche Incorporated Pharmacy Roche Fellowship

Alan Forrest Monash University New Tricks for `Old' Drugs: PK/PD of Polymyxin Nonantibiotic Combinations

Qing Ma

National Institute of Mental Health Antiretroviral pharmacogenomics, pharmacokinetics and toxicity in neuroAIDS

Gene Morse

National Institute of Allergy & Infectious Disease Clinical Pharmacology Quality Assurance and Quality Control

Gene Morse Brigham and Womens Hospital ACTG Pharmacology Specialty Laboratory

Gene Morse

Brigham and Womens Hospital AIDS Clinical Trials Group: Precautionary and Prohibited Medications Database

Gene Morse

Social and Scientific Systems Incorporated A Prospective, Phase III, Open-Label Study of Boceprevir, Pegylated-Interferon Alfa 2b and Ribavirin in HCV/HIV Coinfected Subjects: Boceprevir, Interferon, Ribavirin to Treat HCV/HIV Coinfected Subjects (BIRTH)

Gene Morse

Brigham and Womens Hospital AIDS Clinical Trials Group Executive Committee

Gene Morse

Social and Scientific Systems Incorporated Pharmacokinetics and Drug Intervention Potential of Boceprevir in HIV/HCV Coinfected Subjects: A Substudy of A5294

Gene Morse

Erie County Medical Center Adherence Program

Gene Morse University of Rochester Chronic Exposure to cART Predispose Older HIV Infected Individuals to CNS Injury?

Gene Morse University of Rochester UNYTE Translational Research Network

Gene Morse Brigham and Womens Hospital ACTG Pharmacology Specialty Lab

Gene Morse Brigham and Womens Hospital AIDS Clinical Trial Group (ACTG)-Executive Committee

Gene Morse Erie County Medical Center Women, Infants, Children and Youth Healthcare

Gene Morse University of Rochester University of Rochester HIV/AIDS Clinical Trials Unit

Gene Morse Brigham and Womens Hospital AIDS Clinical Trial Group Administrative Supplemnt (Task Order 4)

Gene Morse Brigham and Womens Hospital *AIDS Clinical Trial Group (ACTG) - Novel Formulations*

Scott Monte

National Assoc. of Chain Drug Stores Foundation UBSPPS & VascuScript Community Pharmacy Residency Expansion Project

Scott Monte

VascuScript Pharmacy Incorporated UBSPPS & VascuScript Community Pharmacy Residency Expansion Project

Brian Tsuji

National Institute of Allergy & Infectious Disease Novel PK/PD Strategies for Polymyxin Combinations against Gram-negative Superbugs

Brian Tsuji (Co-I)

National Institute of Allergy & Infectious Disease Persistent H. influenzae in COPD - virulence, vaccines and antibiotic resistance



New Technology

Invention Disclosure	Faculty Member
Gastrointestinal Site-specific Oral Vaccination Formulations Active on the Ileum and Appendix	Schentag, Jerome J.
Targeted Delivery of Enhanced Probiotics	Schentag, Jerome J.
Preparation of Curcumin Softgel and its Anti-Tumor Activity	Havard, Patty
Cholestome Vesicles for Incorporation of Molecules into Chylomicrons	Schentag, Jerome J.



Scholarship

Pursue innovation, identify solutions and present results to enhance the local, national and international leadership of SUNY, UB and the SPPS.

Intellectual Contributions July 1, 2013 - June 30, 2014

Pharmaceutical Sciences

Balthasar, Joseph P.

Engler, F. A., Zheng, B., & Balthasar, J. P. (2014). Investigation of the influence of nephropathy on monoclonal antibody disposition: a pharmacokinetic study in a mouse model of diabetic nephropathy. Pharm Res, 31(5), 1185-1193. doi: 10.1007/s11095-013-1241-y

Shah, D. K., & Balthasar, J. P. (2014). Predicting the effects of 8C2, a monoclonal anti-topotecan antibody, on plasma and tissue disposition of topotecan. J Pharmacokinet Pharmacodyn, 41(1), 55-69. doi: 10.1007/s10928 -013-9346-9

Nouri-Nigjeh, E., Zhang, M., Ji, T., Yu, H., An, B., Duan, X., Qu, J., Balthasar, J. P. (2014). Effects of calibration approaches on the accuracy for LC-MS targeted quantification of therapeutic protein. Anal Chem, 86(7), 3575-3584. doi: 10.1021/ac5001477

Shah, D. K., & Balthasar, J. P. (2014). PK/TD modeling for prediction of the effects of 8C2, an anti-topotecan mAb, on topotecan-induced toxicity in mice. Int J Pharm, 465(1-2), 228-238. doi: 10.1016/j.ijpharm.2014.01.038

Glassman, P. M., & Balthasar, J. P. (2014). Mechanistic considerations for the use of monoclonal antibodies for cancer therapy. Cancer Biol Med, 11(1), 20-33. doi: 10.7497/j. issn.2095-3941.2014.01.002

Cao, Y., Balthasar, J. P., & Jusko, W. J. (2013). Secondgeneration minimal physiologically-based pharmacokineticmodel for monoclonal antibodies. J Pharmacokinet Pharmacodyn, 40(5), 597-607. doi: 10.1007/s10928-013-9332-2

Balu-Iyer, Sathy V.

Shetty, K. A., Kosloski, M. P., Mager, D. E., & Balu-Iyer, S. V. (2015). Soy Phosphatidylinositol Containing Nanoparticle Prolongs Hemostatic Activity of B-Domain Deleted Factor VIII in Hemophilia A Mice. J Pharm Sci, 104(2), 388-395. doi: 10.1002/jps.23963

The Department of Pharmaceutical

Sciences had 109 research articles and

book chapters published.

Kosloski, M. P., Pisal, D. S., Mager, D. E., & Balu-Iyer, S. V. (2014). Nonlinear pharmacokinetics of factor VIII and its phosphatidylinositol lipidic complex in hemophilia A mice. Biopharm Drug Dispos, 35(3), 154-163. doi: 10.1002/bdd.1880

Fathallah, A. M., Bankert, R. B., & Balu-Iyer, S. V. (2013). Immunogenicity of subcutaneously administered therapeutic proteins--a mechanistic perspective. Aaps j, 15(4), 897-900. doi: 10.1208/s12248-013-9510-6

Kosloski, M. P., Pisal, D. S., Mager, D. E., & Balu-Iyer, S. V. (2013). Allometry of factor VIII and informed scaling of next-generation therapeutic proteins. J Pharm Sci, 102(7), 2380-2394. doi: 10.1002/jps.23566

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Special Honors for Faculty and Staff

Nicole Albanese, clinical assistant professor, pharmacy practice, recipient, 2014 SPPS Excellence in Teaching Award.

Peter Brody, clinical assistant professor, pharmacy practice and Sarah Passafiume, PGY1 residency graduate, recipients of a \$1000 travel scholarship from the American Association of Colleges of Pharmacy Walmart Scholars Program. The scholarship allowed them to attend the 2014 AACP Annual Meeting with the goal of strengthening trainee skills and commitment to a career in academic pharmacy.

Alice Ceacareanu, assistant professor, pharmacy practice, received a \$530,000 award from the New York State Health Workforce Retraining Initiative. This award will allow the establishment of a certificate program for all community pharmacists practicing within, or laid off, from the New York City region to provide them with the necessary cancer knowledge to partner in cancer patient care during and after forecasted oncologist shortages.

Robin DiFrancesco, research assistant professor, pharmacy practice, appointed as Chair of the Society for Quality Assurance Bioanalytic Quality Section.

Karl Fiebelkorn, clinical associate professor, pharmacy practice, recipient, American Pharmacists Association Foundation Bowl of Hygeia Award. The award recognizes pharmacists who possess outstanding records of civic leadership in their communities and encourages pharmacists to take active roles in the affairs of their respective communities. In appreciation of his tireless support of community pharmacists, Fiebelkorn was recognized by Rochester Drug Cooperative with the *Professor Karl D. Fiebelkorn Award in Independent Pharmacy*, given to students interested in independent community practice.

Caroline Hempel, clinical assistant professor, pharmacy practice, recipient of the 2014 Rho Chi Outstanding Alumni Award.

Marilyn Morris, professor, pharmaceutical sciences, named a UB Distinguished Professor. The UB Distinguished Professor designation recognizes full professors who have achieved true distinction and who are leaders in their fields.



Gene Morse, professor, pharmacy practice, as Co-PI was awarded a SUNY 4E Planning Grant for their proposal, "Conference to lay groundwork for SUNY Global Health Institute." This award supported a two-day forum for developing integration, a longterm vision and a business plan to mentor faculty for highly competitive applications that will foster technology innovation and promote regional and global economic opportunities. Kathleen Tornatore, professor, pharmacy practice, selected as Vice-Chair of the Organ Dysfunction Scientific Group within American Society of Pharmacology and Therapeutics.

Joshua Sawyer, clinical assistant professor, pharmacy practice, recipient of the 2014 Rho Chi Excellence in Teaching Award.

Dhavalkumar Shah, assistant professor, pharmaceutical sciences, recipient of the 2014 Outstanding Manuscript Award in Modeling and Simulation by the American Association of Pharmaceutical Scientists. Dhaval co-authored the manuscript: Bench to Bedside Translation of Antibody Drug Conjugates Using a Multiscale Mechanistic PK/PD Model: A Case Study with Brentuximab-Vedotin

Kelly Tooley, recipient, 2014 SPPS Staff Member of the Year Award.



Drs. Prescott and Albanese 2014 Award Ceremony





Thanks to You

It takes generosity and commitment to build a community of discovery and care. We are grateful to our alumni, friends, faculty and staff whose support is critical to our school's continued success.



From left: DeAnna Nigro, Jovin Panthapattu, Rebecca Nazaro, Peter Fendt, Dean James O'Donnell, Amanda Mogul, Brian Bowman, Spinel Karas, Tyler Mullen, Angeline Walker and Corey Wells.

Do your gifts to our school really make a difference?

Yes! Every gift, no matter the dollar amount, helps us improve the school.

Your generosity provides support in so many areas: special programs, faculty research, lecture series, student travel funds and equipment upgrades.

Your support for scholarships also makes an immediate difference to our students. Just take a look at the photo above – these smiling faces are just some of our deserving students who have received scholarships.

In their own words, they express their genuine gratitude and explain how these scholarships have helped them accomplish their academic goals:

DeAnna Nigro, recipient of the **Crimaldi-Madejski Scholarship**, says the award allowed her "to continue my studies and pursue my dreams. It is an honor to have been given this incredible gift! This scholarship has helped me with my tuition and allowed for opportunities that I would not have been able to participate in."

Peter Fendt, one of the students to receive the Henry A. Panasci Scholarship, said it is helping him complete his studies: "For years I have been looking forward to the opportunity to practice pharmacy and to impact the lives of many people. Thank you so much for your generosity, and for assisting me in achieving this goal."

And **Tyler Mullen**, recipient of the **David and Jane Chu Scholarship**, said the funds go "a long way toward alleviating not only the financial, but also the psychological burden of paying for my education. It means a great deal to me."

In the following pages, you'll read about two alumni who recently established funds to provide scholarships to our students, and about a company that is partnering with us to support groundbreaking research.

All your gifts are investments in the future of pharmacy and pharmaceutical sciences. So, thank you for giving. Your generous donations ensure we can continue to deliver excellence in academics and research in these fields.

It is an honor to have been given this incredible gift!

Carol Gloff marches to beat of giving back to UB

PHARMACY GRADUATE CAROL GLOFF '75 was one of those lucky students who was good at math and science, excelling in those subjects during high school in Little Valley, a small town in New York's Southern Tier.

Her luck continued when she enrolled at the University at Buffalo, where, coming from a small town, she was relieved to feel welcomed by fellow students and faculty.

"It was like a family for me," Gloff recalled. "My first two years, I was in the general population, taking pre-pharmacy classes with 400 students. In my third year, now in pharmacy school, there were 84 in my class. It was a smaller school within a big school."

She also made friends as a member of the UB marching band, for which she played clarinet in the fall of 1970, "the last year before UB dropped football for a few years," Gloff said.

After graduating, Gloff's propensity for hard work helped create more good luck as she built a varied and successful career. She spent brief stints as a hospital pharmacist – at the University of Rochester's Strong Memorial Hospital - and at a midsized pharmacy company - Pennwalt before moving west to earn a doctorate in pharmaceutical chemistry at the University of California in San Francisco.

From there, she began to have the most fun someone can have while working. She took a job with Triton Biosciences; as a small company, it allowed Gloff to try her hand at a variety of tasks.

"I learned a lot," she said. "My job description was to be involved in developing new therapeutic agents, and was I ever: I managed toxicity studies at contract labs, coordinated formulation development work, and wrote up studies for the U.S. Food and Drug Administration among other projects."

She moved east to Massachusetts and served as vice president of regulatory affairs for two more companies before forming her own consulting firm. For 18 years, Gloff has advised medical product companies and academic institutes on product development, regulatory affairs, guality, compliance and specific scientific topics such as pharmacokinetics.

What does she like best about being a consultant?

"I really like the flexibility; it enables me to continue my career and do a lot of other things," said Gloff, who works as hard as a volunteer as she does for her business. In addition to previously serving on the town board in Natick, Mass., and as adjunct assistant professor at Boston University, Gloff has been president of the UB Alumni Association since 2013.

Gloff is excited about changes in the UBAA for alumni.

"We voted to drop membership dues for the UBAA. Everyone who graduates from UB will automatically be a member," she said. "I'm hopeful that as the word gets out, alumni will start thinking more about UBAA and UB as sources of career support, for networking with other alumni and interacting with UB on a fun basis: at football and basketball games, fine arts and distinguished speaker events, even Hump Day Hangouts on Wednesdays."

The UBAA also is working to build pride in UB athletics – "That's something that brings all of us together" - to promote the outstanding research done at UB, and to celebrate renowned accomplishments of UB alumni through the Alumni Association Achievement Awards, she added.

Gloff credits her success to the education she received from UB and to the private scholarships and awards she received that helped her pay for college.

"They helped me to go to pharmacy school and get the education that

enabled me to take my career as far as it has gone," she said. "Without that financial support, I'm not certain I would have been able to do that."

As a result, Gloff has pledged – through a bequest commitment – to establish a scholarship fund for UB students, including those enrolled in pharmacy and pharmaceutical sciences. "I have had a successful career and I would like UB students to have the same opportunities that I had," she said.

Does she have any regrets?

None, except, perhaps, not continuing her music. "I haven't kept up with my clarinet playing, so don't ask me to play," she said, laughing.

If you'd like to learn more about establishing a scholarship endowment for UB Pharmacy students, please contact Leigh Yates at 716-645-3432 or ltvates@buffalo.edu.



UB's Marching Band, 1970



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ROFESSOR KARL D. FIEBELKORN AWARD IN INDEPENDENT PHARMACY (ROCHESTER DRUG COOPERATIVE) Brian Bowman Charles Hinton

LYLE A. GRAVES SCHOLARSHIP FUND Jessica Choi Keith Dolcy

Sara Kim Nicole Kostrzebski Wesley Kufel Eric Lenhard Karen Louie Bryan Mogle Andrew Newberg Tiffany Pan David Smith Thomas Steele Alexander Zach INDEPENDENT HEALTH SCHOLARSHIP FUND Ahmed Abd-elrahman Caitlin Hoar Cristina Kowalczyk Samsad Pavel Nahid Zaman PAUL JONES SCHOLARSHIP FUND Lin Feng Guan JOHN KAPOOR FELLOWSHIP IN PHARMACEUTICAL SCIENCES **GILBERT J. KULICK** SCHOLARSHIP FUND **Suo Karas**

LORREN LARWOOD SCHOLARSHIP FUND Hye Ji Kim Sonya Kim Hengxin Lin Sophia Min Esra Mustafa Hanh Nguyen Christina Wang

FRANCIS & EDWARD MAYER SCHOLARSHIP FUND Mario Beccari Alain Nguyen Quynh-Anh Pham Jacob Reaser Haihui Wu WILLIAM MCCOACH

SCHOLARSHIP FUND Mohamed Ismail KwanNok Leung Feng Lin Thanh Nguyen Minhh Nguyen Dang Alex Principino Ahmed Saeed **CECIL & VIOLET NEWTON** SCHOLARSHIP FUND Ahmed Abd-elrahman Kwadwo Baah Justin Bader Rayn Bailey Matthew Belair Brittany Boland Brian Bowman Zackery Bulman Hee Young Byun Rebecca Campbell Mariely Castaneda Esther Cha Man Ting Chan Yu Sun Chang Janet Chen **Brittany Giuga Heather Grove** Spinel Karas Eun Tae Kim Vincent Mark Jessica Meyers Amanda Mogul Tyler Mullen DeAnna Nigro Julie Obenauer Jovin Panthapattu Samsad Pavel Kyle Polanski Ayaj Porosh Kelly Ross

Nahid Zaman Cody Zhang **HENRY A. PANASCI** SCHOLARSHIP FUND Ahmed Abd-elrahman **Corey Wellskkk COPEL & MAX RUBENSTEIN** SCHOLARSHIP FUND Matthew Belair **UB SCHOOL OF PHARMACY AND** PHARMACEUTICAL SCIENCES ALUMNI ASSOCIATION SCHOLARSHIP FUND **UB SCHOOL OF PHARMACY AND** PHARMACEUTICAL SCIENCES GOLF **TOURNAMENT SCHOLARSHIP FUND** Bisi Aiyelabowo Megan Gee Tyler Mullen Alain Nguyen **Kelly Ross** Jennifer Wiafe WALGREENS SCHOLARSHIP FUND WALMART SCHOLARSHIP FUND WOMEN'S CLUB OF COLUMBIA

SCHOLARSHIP FUND Mario Beccari Vincent Mark Bethany Wattengel Victoria Wronski

Pharmacy alumnus knows the value of scholarships for UB students

Gerald (Jerry) Hooley '52 arrived at UB with no money to speak of, but a great deal of desire.

"I had no money,

no car, no clothes,

pharmacy school

treated me well,"

Hooley recalled.

"I was treated as an

equal. I respected

and liked all my

peers in my class,

and they felt the

same about me.

That was the thing

that impressed me

the most."

but everybody in the

Hooley, who graduated from UB wearing the sport coat he bought when he was 15 years old, recently made a pledge to establish a scholarship fund for UB pharmacy students. "I'm interested in providing scholarships for students with financial need because I've been there," he said. "I hope the scholarship will give recipients inner motivation."

Hooley worked fulltime for a year at Barger and Wright Pharmacy in North Buffalo, where co-owner Richard Wright was a positive influence on him and helped steer him toward studying pharmacy at UB.

What he lacked in funds, Hooley more than made up for in hard work during his academic and professional careers. "I've always been a worker and I learned quickly," said Hooley.

While serving in the U.S. Army following graduation, Hooley was stationed in Colorado, where a chance meeting with the president of the State Board of Pharmacy led to Hooley catching a ride with him to take the state boards and obtain a reciprocal license. "He asked me a question from the test in the car on the way home, and I answered it," Hooley said. "He then told me, 'If you'd gotten that right, you would have gotten 100 on the exam.'"

Eventually, Hooley saved enough to buy his own place – Dunne's Pharmacy in South Buffalo, which a friend encouraged him to purchase. "I went to see it, and I looked around the place for maybe 20 minutes. I noticed there was a church across the street from the pharmacy and a parking lot behind it. So I took it. Some people – like me – make decisions quickly like that," he said.

Hooley found working as a pharmacist highly satisfying

I'm interested in providing scholarships for students with financial need because I've been there. I hope the scholarship will give recipients inner motivation.



Dunne's Pharmacy, South Buffalo

- mostly because he appreciated the respect people showed him in his profession. "A pharmacist was not just filling the prescriptions. He was part of the community and was respected by the community," Hooley said. "He would go to your house and go over your medications with you. And pharmacists respected and helped their customers. I once lent a man money for a down payment on his house."

Hooley also liked conducting business face to face with his customers. "I liked the personal contact with people; I knew everybody. And in those days, if you filled 25 to 30 prescriptions, you thought you had a big day," he said. "You talked with the customers, you knew who they were," he said.

He owned and operated Dunne's for more than 30 years, selling the store and retiring in 1994. He spends his winters in Florida, playing bridge and golfing.

CCS Oncology supports UB research to promote safe medication use

Taking multiple medications together can be risky

Preventing drug interactions and adverse drug interactions is a primary focus for Gene D. Morse, PharmD '83, '81.

Morse, SUNY distinguished professor of pharmacy practice and associate director of the UB Center of Excellence in Bioinformatics and Life Sciences (CBLS), is working with UB colleagues in computer sciences on improved safeguards for cancer patients with a mix of health problems, prescriptions and non-prescription medicine.

Their approach to implementing research on safe dosing methods has turned heads. Now, some of that attention has translated into significant support.

Sam Yi, medical director of CCS Oncology, a comprehensive cancer services practice with nine locations throughout Western New York, took notice and sees many benefits to collaborating with UB. Cancer patients often are

Dr. Morse's vision offers a novel system that maximizes the likelihood of identifying preventable medication-related events. prescribed complex blends of medications for their treatments so preventing drug interactions and adverse reactions for them is of utmost importance.

"Dr. Morse's vision offers a novel system that maximizes the likelihood of identifying preventable medication-related events," Yi said. "I envision that UB will work with our oncologists and other medical specialists to design and investigate algorithms for maximizing the use of both cancer drugs as well as the prescription and

non-prescription medications and herbal remedies that our patients commonly use during their treatment period."



From left: Gene D. Morse (UB), Sam Yi (CCS medical director and CEO), Jeff C. Lombardo (UB-MMRN PSO), Satish Sharma (CCS president)

The partnership also offers CCS patients the chance to participate in "the new approaches that will use the latest in health care information technology to evaluate those with the greatest chance of promoting patient safety," Yi said.

CCS has pledged \$915,000 to ensure the groundbreaking approach to patient safety research can be established in Western New York and continue, Yi said, calling the gift "our way of contributing to new advances led by UB."

Morse is director of the Medication Management Research Network Patient Safety Organization (MMRN PSO) at UB, federally certified by the Department of Health and Human Services through the Agency for Health Research and Quality, and initiated as a UB2020 project under the Health and Wellness across the Lifespan Strategic Strength. PSOs examine patient safety events and strive to identify, analyze, prevent, reduce and eliminate risks and hazards associated with the delivery of patient care. These organizations approach patient safety mechanisms differently and UB's strategy has been focused on medication safety. The UB MMRN PSO collaborates with practices to enhance patient safety and quality of care through analysis of reports submitted by practices for high-risk patient populations.

"Dr. Yi was interested in trying to help us figure out basically how to do this," says Morse. "That's really where the support came from. My view is that the university has a role to do research and figure out the best methods to implement, and then, at some point, hand it off to companies to actually do this."

Jeffrey Lombardo, PharmD, '04, patient safety officer at the CBLS and research assistant professor in the SPPS, is a key member of Morse's team with 20 years of oncology experience. "With the movement toward oral medications in oncology, many are transported during absorption and metabolized primarily in the gastrointestinal tract and in the liver, a prime arena for drug-to-drug interactions to occur. These mechanisms are also under genetic regulation and will offer an opportunity to include an individual patient's genetic characteristics into the development of precision medicine approaches. The PSO reviews that information, formulates a patient safety medication review and sends the report back to the prescriber that certain items are for consideration and monitoring. It recognizes unsafe conditions and provides evidence-based recommendations so that the practice site can put a plan in place. I think this program is going to produce positive outcomes and better patient safety."



Alumni Relations

The support of our alumni is invaluable. Their efforts and assistance in student programming, community advocacy and advancement of research and practice carry on a proud tradition in the SPPS.

The 2014 Annual Awards Ceremony showcased the SPPS Alumni Association's premier alumni awards: the Willis G. Gregory Memorial Award and the Orville C. Baxter Memorial Professional Practice Award.

Academic year 2013-14 was a great year for alumni engagement. A record number of alumni turned out for the 2013 Student Scholarship Golf Tournament as well as supported various student activities at the school such as participating as speaker panelists, guest lecturing as well as precepting.

Top Corner Photo: Dean Emeritus, Wayne Anderson, Lorraine Anderson and Dr. Bill Jusko, Gerhard Levy Award Dinner

Bottom Photo: Class of 1988: 25th Reunion The Gregory Award, the association's premier award, bears the name of our 4th Dean and is given to an outstanding alumni pharmacist who personifies the ideals of service, integrity and is a consummate pharmacy professional. The Baxter Award, bears the name of a long standing faculty member, and is given to an outstanding alumni pharmacist who demonstrates high ideals of professionalism and genuine care for patients.

We were proud to recognize Joseph Voelkl '59 as our 2014 Willis G. Gregory Memorial Award recipient and Mark Sinnett '88 '87 as our 2014 Orville C. Baxter Memorial Professional Practice Award recipient. Joseph and Mark were recognized for their meritorious contributions to the profession of pharmacy.

Our 2013 Reunion brought alumni from near and far as they cheered on UB Bulls Football, toured Kapoor Hall and ended reunion festivities with a gala dinner, at the historic Lafayette Hotel, in honor of Dean Wayne Anderson's retirement. Alumni participated in tributes to Dean Anderson and all wished him well as he begins this new chapter in his career.

The 2013 American Society of Health Systems Pharmacists Mid-Year Alumni and Friends Reception was held in Orlando with great attendance from our alumni, faculty, students and friends. This was the first ASHP reception the new Dean, Dr. James O'Donnell, had the pleasure of officiating. Dean O'Donnell gave opening remarks about his direction for the school and had the opportunity to meet many pharmacy alums. We remind all alumni who attend the ASHP mid-year meeting to look for the association's annual reception at the 2015 meeting in New Orleans. It is a great way to reconnect with your alumni colleagues, faculty

and students from the school!

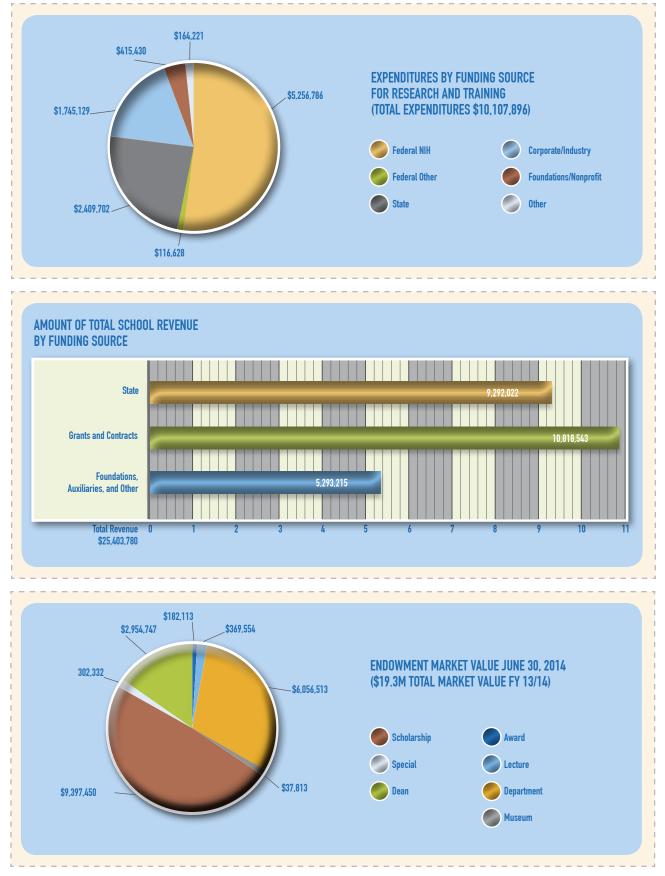
One of the primary missions of the association is support of students. The association organized a Farewell Celebration Reception for the PharmD graduates of the Class of 2014 at Banchetti's Restaurant. Introductory comments were given by Professor Fiebelkorn and Dean O'Donnell and the Class of 2015 Officers presented the 2015 Instructor Award to Vicki Rink, research technician. Students were also recognized for academic and philanthropic contributions to the school. The reception was well attended and a great success! Also in 2013, the association gave six 'grants-in-aid' awards to needy PharmD students as well as recognized Dana Munn '14 with the 2014 Pharmacy Student Alumni Award for her valuable contributions to the alumni association.

The alumni association values the support it gives to the school and students as well as the important role it plays in keeping our alumni informed and connected to each other and activities here at the school.



Financial Reports

The support to achieve our goals, the security to reach for the future, and the impetus for creativity are allowed through our well-positioned financial portfolio.



School-Wide Committees

Admissions Committee

Our school-wide

committees give

governance and

oversight to our

composition and

are prescribed in

the bylaws of the

School of Pharmacy

and Pharmaceutical

Sciences.

school. The structure,

charges of the school's

standing committees

Jennifer Hess (Chair), Javier Blanco, Holly Coe, Karl Fiebelkorn, Irene Hong Support: Sara Robinson, Mark Sauberan,

Christine Stumm

Assessment Committee

Fred Doloresco (*Chair*), Kathy Boje, Peter Brody (*nonvoting*), Jack Brown, Karl Fiebelkorn, Jennifer Hess, Wojciech Krzyzanski, Mohamed Mohamoud, Marsha Nelson, William Prescott, Mark Wrobel, Mary Wurm-Schaar

Rebecca Martin (P1), Jennifer Rafferty/ Brenda Basile (P2), Nicholas Ladziak (P3), Cara McGurry (P4)

Curriculum Committee

Nicole Albanese (Chair), Kathleen Boje (nonvoting), Karl Fiebelkorn, Peter Brody, Deborah Chiarella (nonvoting), Fred Doloresco, Patty Havard, Donald Mager, William Prescott (nonvoting), Murali Ramanathan, Christine Stumm (nonvoting), Erin Slazak, Robert Wahler, Mary Wurm-Schaar (nonvoting), Mark Wrobel, Kerry Archer (P1), Jennifer Rafferty/Brenda Basile (P2), Nicholas Ladziak (P3), Cara McGurry (P4)

Executive Committee

James O'Donnell (Chair), Nicole Albanese, Joseph Balthasar, Edward Bednarczyk, Kathleen Boje, Rebecca Brierley, Peter Brody, Karl Fiebelkorn, Jennifer Hess, William Jusko, Cindy Konovitz, Candise Morris, Marilyn Morris, Gene Morse, William Prescott, Mark Wrobel, Mary Wurm-Schaar, Leigh Yates

Jennifer Berryman (recording secretary)

Safety Committee

Cindy Konovitz *(Chair)*, Robert Chau, Vicki Rink, David Soda, Leona Zak

Student Academic Affairs Committee

Karl Fiebelkorn (*Chair*), Joseph Balthasar, Kathleen Boje, Nicole Albanese, William Prescott

Tenure and Promotion

Wayne Anderson (*ex officio*), James O'Donnell (*ex officio*), William Jusko (*Co-Chair*), Gene Morse (Co-Chair), Marilyn Morris, Robert Straubinger, Kathleen Tornatore-Morse

Dean's Advisory Council

Mario Rocci, Jr., '76 '81 DAC Chair President, IDS Division ICON Development Solutions, LLC

Allen Barnett, '65 President Emeritus Kinex Pharmaceuticals, LLC

James Baxter, '84, '90 Senior Vice President, Development Boehringer Ingelheim Pharmaceuticals, Inc.

Lisa Benincosa, '93 Vice President and Global Head, Drug Metabolism and Pharmacokinetics Hoffman-LaRoche, Inc.

James Daly, '84, '85 Executive Vice President, CCO Incyte Corporation

Karl Donn, '79 Vice President, Drug Development Parion Sciences

James Ermer, '83 Senior Director, Clinical Pharmacology & Pharmacokinetics Shire Pharmaceuticals

Ronald Evens, '69 President MAPS 4 Biotec, Inc.

Mark Gurney Chairman and CEO Tetra Discovery Partners

Steven Hansel, '93 Senior Director Pfizer, Inc. George Lasezkay, '74, '78 Retired, Corporate Vice President, Corporate Development Allergan Pharmaceuticals, Inc.

Margaret McGlynn, '82 President and CEO International AIDS Vaccine Initiative

Edward McNiff, '75, '76, '83 President EFM Consulting, LLC

Richard Morrison, '77, '83 *Principal* Morrison Pharmaceutical Consulting, LLC

David Panasci President DHP Consulting LLC

John Rodgers, '83 Executive Vice President and COO Independent Health Association, Inc.

Daniel Salazar, '89 Principal Drug Development Consulting, LLC

Michael Taylor, '81 President and CEO Deciphera Pharmaceuticals

Avi Yacobi, '75 President DOLE Pharma, LLC

School of Pharmacy and Pharmaceutical Sciences University at Buffalo The State University of New York



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2015 REUNION CELEBRATION WEEKEND OCT. 2-3, 2015

Join us for UB's 2015 Homecoming and SPPS 2015 Reunion

 Events will include: Speaker panels, tours, UB Bulls Football, All Alumni Cocktail Reception and other class specific reunion activities

 Reunion Events being planned for all 5th year classes: 1955 – 2010 Registration will begin August 2015

QUESTIONS OR HELP PLAN YOUR CLASS SPECIFIC EVENT: Office of External Affairs: phm-alumni@buffalo.edu or 716-645-3340