

# Creating and Inspiring New Ideas in Practice and Science

ANNUAL REPORT 2014-15



### Academic year 2014- 2015 was a year of growth and discovery.

Our research and scholarly pursuits brought us considerable success and our faculty, staff, students and alumni were recognized in many diverse professional and academic arenas.

The accomplishments of our faculty were truly outstanding. Gene Morse was recognized as a SUNY Distinguished Professor, the highest academic rank in the State University of New York system. William Prescott received the University at Buffalo Teaching Innovation Award, Dhaval Shah received the American Association of Pharmaceutical Scientists Outstanding Young Investigator Award, Ying Xu received the American Association of Colleges of Pharmacy New Investigator Award, Marilyn Morris received the American Association of Pharmaceutical Scientists Innovation in Biotechnology Award and Kathleen Tornatore was appointed a Fellow of the American Society of Transplantation.

Also noteworthy was the scholarly and research productivity of our faculty. The school's collaboration on UB's first NIH Clinical and Translational Science Award positions the school and the university to continue strong leadership in this critical area of research. Gene Morse had an exceptional year— he received a \$12M NIH grant for a quality assurance program in clinical pharmacology for HIV/AIDS and related infectious diseases and a \$3.85M NIH grant to support his Translational Pharmacology Research Core and the HIV Clinical Pharmacology Research Program. Javier Blanco received a \$1.2M renewal of his NIH R01 grant "Contribution of CBRs and AKRs to the Pharmacodynamics of Anthracycline Drugs." Dhaval Shah received his first NIH R01 with an award of \$1.4M to study "Translational Systems Pharmacokinetic Models of Novel Anticancer Biologics."

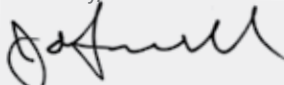
Student recognition was similarly impressive. Elizabeth Lakota, '15, received the SUNY Chancellors Award for Student Excellence, and Maya Holsen, '17, earned a national appointment to the American Society of Health-System Pharmacists (ASHP) Pharmacy Student Forum Student Society Development Advisory Group. Olivia Dioguardi, '18, Stacy Fredrick, '18, and Adam Heiermann, '16, represented the school at the American Pharmacists' Association Academy of Student Pharmacists (APhA-ASP) Summer Leadership Institute in Washington, DC.

Our students and faculty continuously support our mission via service learning and global health outreach. In 2014-2015, they conducted medical mission trips to the Dominican Republic and Honduras, and organized rotations in Zimbabwe, Taiwan and India. Outreach occurred regionally in Chicago and locally throughout the City of Buffalo at various medical clinics and community centers. Our student-driven organization, Student Pharmacists for Global Outreach, has been instrumental in making these endeavors possible.

I am incredibly proud of the establishment of University Pharmacy Residency Services Corporation (UPRS) that is fully operational after years of planning. UPRS offers our pharmacy post-graduate training office the flexibility and autonomy to offer a consistent benefit structure and support services to the various resident opportunities we and our regional partners maintain, allowing the school to strategically grow its post-graduate programs and train pharmacy leaders.

2014-15 helped set a clear pathway for future success, further enhancing our mission of educating the next generation of leaders in pharmacy and pharmaceutical sciences. I look forward to building upon this impressive foundation as we continue to pursue our strategic initiatives.

Sincerely,



James M. O'Donnell, PhD  
Professor and Dean



## OUR MISSION

To improve health through innovation and leadership in pharmacy education, clinical practice and research.

## OUR VISION


- To maintain our ranking as one of the top 20 Schools of Pharmacy and Pharmaceutical Sciences in the United States
- To provide quality education to pharmacy practice and pharmaceutical sciences students at all academic levels, using best-practices and evidence-based educational approaches, enabling our graduates to advance their professions
- To be a leader in education, research, practice and service
- To be a respected institution that advances basic, clinical and translational research
- To meet and improve society's health, wellness, and health care
- To advance pharmacy practice, including interprofessional team-based models
- To provide an academic environment that promotes effective mentoring, professional growth and development and life-long learning

## OUR VALUES

- Excellence and integrity in teaching, research, practice and service
- Embodiment of the highest ethical standards in our education, research, practice and service activities with the expectation our graduates will do the same as the next generation of leaders in their professions
- Establishment of a learning environment that embraces diversity, inclusiveness, equity and respect for all persons
- Organizational values that promote and reward critical thinking and continuous quality improvement

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At the bench, Dr. Nguyen is creating a novel intercellular 'zip coding' approach for cancer and heart disease treatment.

## BENCH TO BEDSIDE, BEDSIDE TO BENCH

SPPS junior faculty members with planetary vision are piloting pharmaceutical science and clinical pharmacy toward healthcare horizons to come.

**WITH JUST THREE YEARS EACH AT UB,** Juliane Nguyen, PharmD, PhD and Christopher Daly, PharmD, MBA, are leading novel research and practice innovation that is redefining the interdisciplinary scope of their individual areas of focus, as well as the collective disciplines of the entire pharmacy field.

In pharmacy practice, clinical assistant professor Daly is leading partnerships in pre-study, study and post-study clinical pharmacy research that will help patients better manage chronic and acute medical conditions; assistant professor Nguyen is at the bench in pharmaceutical sciences, providing hope and new insight into treatments for cancer and heart disease.

In the therapeutic biomaterials laboratory, Nguyen is investigating bio-inspired drug delivery methodologies to improve therapeutic efficacy.

"There are really good drugs out there. But there are diseases that can still not be treated. They are incurable. We are focusing on designing better biomaterials that are drug delivery carriers to address these shortcomings," she says.

As a high school student in her national Germany, Nguyen gravitated to the natural sciences and was fascinated by chemistry.

"At that time my understanding of chemistry was limited


to small molecules. I didn't know it could be used to engineer or synthesize biomaterials," she recalls.

Her parents' dream for her was of a career in retail pharmacy: She earned her PharmD and then a PhD in pharmaceutical sciences – with a focus on the design of biodegradable polymers for nucleic acid delivery – from Philipps University in Marburg.

Discovering a passion for research, Nguyen applied and was accepted as a post-doctoral fellow at the University of California at San Francisco with Francis Szoka, PhD.

"He is one of the pioneers in liposomal drug delivery and one of the first to bring a lipid formulated drug onto the market. He was also a founder of Sequus Pharmaceuticals that developed the Doxil anticancer formulation that is now sold by Johnson & Johnson," Nguyen says of her mentor.

"This post-doc position was invaluable in that it shaped the way I now think as a scientist." As a scientist, Nguyen's investigative vision is clear and profoundly galvanized by



At the bedside, Dr. Daly leads an innovative research pharmacy focusing on unique, outpatient, investigational drug studies.

her love and understanding of natural science – its sophisticated mechanisms orchestrate a myriad of complex tasks, and inspire hybrid paths for creating better synthetic or bio-inspired, drug delivery systems.

“We can learn from viruses, cells and bacteria. Synthetic polymers and lipid nanoparticles are good, but often not as efficient as the natural systems. Because the natural systems have evolved over millions and millions of years they are really good at what they do. So we can learn from them,” she says.

Nguyen’s research work is focused on the design of smaller biological carriers that are recognized by the biological system.

“We are particularly interested in molecular zip codes,” she explains, using a post office metaphor to explain her novel investigation into intercellular communication. “A city has a lot of buildings. Each has a name, an address and a zip code so the mailman knows exactly where to bring the mail. If the information is missing they don’t know where to deliver the mail.

“That’s the same way biomaterials or drug carriers work in cells. If you put something into a cell and the cell recognizes it as foreign, the cell either doesn’t know what to do with it or uses a mechanism to eliminate the foreign subject.”

Her “zip codes” are defined by experimental methodology – intensive library screening to identify sequences that act as zip codes. Using Polymerase Chain Reaction – a powerful scientific method performed with a small piece of equipment used in molecular biology to render precise biomaterials – Nguyen genetically reprograms cells to perform specific tasks.

“We treat cells with zip code-like materials and the cells know exactly how to process that nucleic acid or any other therapeutic drugs delivered by those materials. We’re really interested in having these nucleic acids sorted to exosomes.”

Exosomes play a critical role in cellular communication, and contain genetic information that allows them to manipulate or modulate

their environment. They can contribute to the progression of neurodegenerative disease, autoimmunity and cancer; once secreted by a parent cell, exosomes are captured by neighboring cells or released into systemic circulation for uptake by distant tissues and organs.

“We try to understand the natural systems better so that we can manipulate them to exert a specific function that will stop disease progression,” Nguyen says.

In cancer, the lipid, protein and nucleic acid content of exosomes are known to promote metastasis. So Nguyen is reprogramming cells with zip code-like materials that tell exosomes to target a specific site and perform very specific functions.

“By introducing the zip codes into the cells and attaching a therapeutic drug to them, the drug gets loaded into the exosomes because it knows not to go to the nucleus or other parts of the cell: This therapeutic cargo takes charge...” she explains.

## Bench to Bedside, Bedside to Bench

“I have very hard-working students in the lab,” she smiles. “What I learned during my post-doc was to think outside of the box. That’s what I try to teach them too, because that’s one of the best ways to discover better drug delivery vehicles, to advance the field.”

“We have lipid nanoparticles and we have these sequences that we encapsulate in them. We place them into the cells and the zip codes tell them where to go.”

Nguyen has theorized that this novel zip coding platform for sorting therapeutic cargo to exosomes will increase the efficacy of drug delivery and ultimately improve therapies for – or potentially cure – a range of difficult to treat disease states, including heart disease.

“We haven’t done this *in vivo* yet. We are planning to go in that direction, but just the discovery of these zip codes is potentially huge. We are in the process of filing a provisional patent,” she says.

In addition to targeting cancer, she is investigating the use of macrophages as biological drug carriers to treat myocardial infarction.

After a heart attack the cardiomyocytes in the area that is blocked from blood flow and oxygen die and are replaced with cells that don’t have the ability to contract. Nguyen wants her zip coding, exosome sorting technology to make cardiomyocytes self-renew and multiply.

“Our goal is to use inflammatory cells as drug carriers. After a heart attack the inflammatory cells go to the site of the infarction. We want to use them to secrete a protein that makes the cardiac cells divide or self-renew. In this case, the delivery vehicle is the cell that migrates there and the protein is the drug.”

Nguyen’s work with myocardial infarction is carried out in collaboration with SUNY Distinguished Professor John M. Canty Jr., MD. In Kapoor Hall, she directs an interdisciplinary team of two pharmaceutical sciences students, a chemistry

post-doctoral fellow, two biomedical engineering students and several undergraduate students. Her research is funded by the National Institutes of Health, the National Heart, Lung and Blood Institute and the National Institute of Biomedical Imaging and Bioengineering.

“I have very hard-working students in the lab,” she smiles. “What I learned during my post-doc was to think outside of the box. That’s what I try to teach them too, because that’s one of the best ways to discover better drug delivery vehicles, to advance the field.”

At the lectern, assistant professor Nguyen teaches a class on drug development and a section of a drug delivery class focused on nucleic acids and bio-inspired materials. She also teaches disperse systems and drug formulation in Physical Pharmacy.

Like Daly, she too envisions that the impact of her bench work using biology techniques to reprogram exosomes will extend far into the future.

“We envision that our zip code-like biomaterials could be used for the treatment of cancer metastasis. Being able to interrupt pathological cellular communication is a big step,” Nguyen says.

“In the case of myocardial infarction, there is currently, besides heart transplantation, no treatment that completely regenerates the heart. There is no treatment that fully cures the disease. So this is what we are aiming to do.”

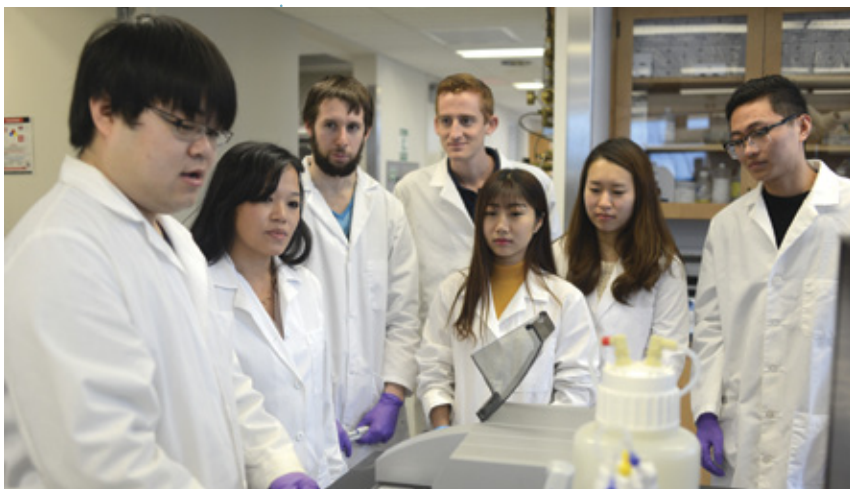
**Christopher Daly, through the UB SPPS Research Pharmacy, is working to advance the pharmacy practice field with a model to centralize delivery of the pharmacy support needed to carry out clinical studies that are increasingly interdisciplinary.**

“An investigator comes to us when they want to do a clinical study, consisting of medication-related human subjects research, and have a specialized need for dispensing or other pharmaceutical need,” he says of the Kapoor Hall Research Pharmacy where he is the principal investigator.

“They need help getting product to the patient in a way that is going to improve adherence, maximize safety and augment the outcomes of what they investigating.”

Daly earned a dual PharmD - MBA degree from SPPS in 2012, and went on to a Post-Graduate Year 1 Community Pharmacy residency at the University of North Carolina Eshelman School of Pharmacy and Moose Pharmacies, near Charlotte.

“It was a very progressive and innovative environment, very different from New York. There were aspects of community pharmacy but we also performed clinical functions for a centralized Medicaid managed care organization, Community Care of North Carolina.



Dr. Nguyen and her lab team

We would work on patient cases that needed a pharmacist to look at the medication lists coming out of the hospital, and determine if there were drug therapy problems consisting of high risk medications, non-compliance or duplication of medications," he says.

"There were a lot of parameters that would involve our expertise. Pharmacy practice is moving forward at this present time. It is becoming more clinical... more population focused in addition to bottom line, volume driven services. The future will look to assimilate these sometimes competing key drivers."

When Daly returned to UB to join the faculty, he was tasked with the innovation of practice opportunities for advanced clinical pharmacy research and now leads the strategic, service-driven development of UB SPPS Research Pharmacy.

What is now the SPPS Research Pharmacy evolved from an entity that was defined in 1995 as a result of investigator-related compliance issues. On the South Campus, it provided support for studies that included nationwide clinical trials for medications used to treat ADHD.

"It started as an invention to fill a need for more pharmacy support in clinical research. Investigators needed pharmacy involvement from a regulatory point of view. Now the vision here at UB is to centralize research in one area at the Clinical Research Translational Center. When we centralize there we can grow exponentially with them," Daly explains.

Located in the Buffalo Medical Corridor near downtown, the CTRC serves as an integrated academic home for outstanding clinical and translational science, providing innovative research tools, support, training, resources and coordination. The CTRC is the hub of the Buffalo Translational Consortium (BTC) formed in 2009, which includes the leading academic, healthcare and research institutions in the Buffalo region, along with key community partners. Each BTC institution is represented in the governance of the CTRC.

With dual training in business administration and pharmacy practice, Daly is responsible for coordinating the day-to-day activity and strengthening the internal processes of the SPPS Research Pharmacy. He also serves as its liaison to the University at Buffalo Research Foundation, which has oversight on how its funds are collected and distributed.

"We are a closed door New York State outpatient licensed pharmacy. You can't bring a prescription to us and have it filled. That's the simplest definition of what we are," he explains.

"We only dispense according to Institutional Review Board protocols and New York State Board of Pharmacy regulations. So we operate on a scientific and proprietary plan with a principal investigator, with principal investigators from all over the BTC. When you look at the caliber of who we provide service to, you understand why UB is recognized as the research leader that it is here."

The SPPS Research Pharmacy self defines as a "unique, outpatient, investigational drug pharmacy" with a population limited to patients who are enrolled in clinical trials. It provides clinical trial support for UB-affiliated investigators from all of the UB Health Sciences schools, as well as to PhD and masters degree candidates from various departments who are working on research projects. Evolving outreach includes all the clinical institutions and community partners that comprise the Buffalo Translational Consortium as well as interested campus partners at the University at Buffalo.

To define the scope of pharmacy support for a clinical study, Daly designed a comprehensive Research Medication Services Request Form that itemizes the broad range of services which include, among others: special packaging and patient instructions for complex dosing regimens, randomizing and blinding, placebo preparation, adverse reaction monitoring, maintaining patient logs and dispensing records, patient counseling on medication-related issues, and organizing and analyzing study data.

"We partner differently for every study, depending on the investigator's focus. Some studies are investigator initiated and some are initiated by a pharmaceutical company," he says, adding that the Research Pharmacy also provides post-market analysis.

"We also work with clinicians who are trying to maximize the use of existing drugs. These drugs may be already FDA-approved for one treatment, but need a New Investigative Drug application to be used for another treatment."

Like Nguyen's hybrid bench work with bio-inspired drug delivery, Daly ultimately is developing a hybrid business-practice model to lead the future of research pharmacy. Currently, the SPPS Research Pharmacy manages approximately 25 studies – and he is focused on increasing that number. Funded now



The Research Pharmacy Team

primarily by the contracted services it provides, Daly also is focused on building support for clinical pharmacy research directly into an investigatory grant.

Other advancement objectives include expanding pharmacokinetic, pharmacodynamic and pharmacogenetic capabilities; establishing Kapoor Hall as a clinical site and collaboration with the Research Institute of Addictions.

"We're at a really good point where we're maximizing our operations and abilities here, and beginning to strategically add new evolutions to our model to get to the next step, whether that's new equipment, such as a tablet press machine, or to become USP 797 compliant, with the ability to make sterile preparations to dispense to human subjects," he says.

In keeping with the SPPS mandate of academic excellence, both Daly and Nguyen also are preparing the next generation of pharmacy practitioners and pharmaceutical scientists to advance the novel work they have begun.

"We teach all the time," says Daly, whose teaching passion lies in the social and behavioral sciences aspects of pharmacy practice management, entrepreneurship and innovation.

"We have students with us, on rotations. We teach them good clinical practice through research pharmacy and really impart to those who are interested in a research focus what it is that a research pharmacist does, and how they are able to align with studies and be a part of a research cycle."

The continued evolution of the SPPS Research Pharmacy, he says, potentially will improve the future of patient care by expanding the scope of support available to clinical investigators.

"I believe it's going to give investigators a bigger toolkit that allows them to imagine and design more complex and effective studies. UB is expanding out to be a state-of-the-art research facility and the SPPS Research Pharmacy I would like to believe is a very exciting part of that."

*J. Thorpe, Outside the Box Communications*



# Education

The UB School of Pharmacy and Pharmaceutical Sciences provides students with critical thinking skills that allow them to achieve the desired outcomes of drug-related therapy and disease management through research and clinical intervention.

## Office of Admissions and Advisement

In 2014-15, the Office of Admissions and Advisement moved forward with new initiatives to further streamline the admissions processes, resulting in improved interactions with prospective students which allowed enrollment of the most competitive applicants for our programs.

Our goals for admissions are to (1) be competitive, yet accessible and flexible, (2) be desirable for talented prospective students, and (3) successfully weather potential future enrollment challenges.

The most critical shift in managing enrollment was altering our prestigious Early Assurance Program back to a 2-year option only from what had become either a 2- or 3-year option.

Efforts to continue to attract and retain the highest caliber and most diverse applicants include:

- increasingly efficient application processing
- earlier interview sessions
- personalized recruitment using Dean's Student and Alumni Ambassadors
- online chats and virtual fairs
- targeted social media outreach
- PCAT name buying, and
- traditional relationship building among key colleges and pre-health advisors.

To augment outreach to our undergraduate pre-pharmacy pipeline we grew our 3+4 Educational Affiliation Agreements with partnering institutions. 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.

To enrich our successful Dean's Ambassador Program comprised of Alumni and Student Ambassadors (DSA), we added peer mentors. Peer mentors speak with current and prospective students about research, getting involved, special programs, course selection, and other advice and tips.

Finally, our undergraduate open houses have been enhanced by specialized experiential visits. An unsupervised PharmD student panel was a welcome addition to our fall and spring events, offering visitors an unfiltered view of the

lifeblood of our school. DSA tour guides escorted visitors to the Model Pharmacy and the Behling Simulation Center. Hands-on demonstrations took place within our Pharmaceutical Genetics and Compounding Laboratories. Interactive presentations showcased career opportunities, active learning strategies, and blood pressure collection. Of the 138 students who attended, approximately 71% applied and, of these, 69% enrolled (another nearly 20% were high school juniors at the time of visit).

### Meet the PharmD Class of 2018

Interviewed	308
Accepted	132
Middle 50th Percentile Science & Math GPA (Biology, Chemistry, Physics, Math)	3.0 – 3.6*
Middle 50th Percentile of Sum PCAT Percentile Score (excluding composite)	324 – 408*
In-State	82%
Out-of-State	12%
Foreign Citizen	6%
Females	56%
Males	44%
2 years or less of college	19%
Bachelor's degree or higher	63%
Average Age	22
Number of States/Provinces Represented:	16

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

### Degrees Granted (2014-15)

PharmD	133
BS, BS/MS, MS and PhD in Pharmaceutical Sciences:	25
<b>Total</b>	<b>158</b>

### Degree Program Enrollment (2014-15)

PharmD:	498
BS, BS/MS, MS and PhD in Pharmaceutical Sciences:	107
<b>Total</b>	<b>605</b>







## Office of Continuing Pharmacy Education

### Steering Committee identifies "Transition of Care" as interprofessional CE need

This inter-professional continuing educational program identified communication gaps within transition of care, outlined obstacles, discussed best practices, and outlined strategies to assist in communicating across the healthcare spectrum. Presenters included pharmacists and physician and nursing professionals, representing emergency room, in-patient, discharge, long-term care, primary care and community practice sites.

The Continuing Pharmacy Education (CPE) office has become the ACPE pharmacy CE provider for the HIV/AIDS Education and Training Institute, St. Luke's-Roosevelt Hospital Center, which provides HIV education for the NYS DOH AIDS Institute. The CPE office has expanded its role providing accreditation to the NYS DOH Medicaid Prescriber Education program and various other state programs.

The school is a certified trainer of the APhA Pharmacy-based Immunization Delivery certificate program and the APhA Delivering Medication Therapy Management

certificate program, and over 100 pharmacists were trained again this past year.

As the school adopted a new webinar broadcast platform, the number of webinar offerings continues to expand to meet the needs of our alumni and local and out of region preceptors. Enhancements to the CE registration system have offered participants the opportunity to select their method of attendance and receive the direct webinar links within their program confirmations. Educational offerings have been captured and offer a library of enduring material.

The Office of Continuing Education has increased cosponsorship, providing organizations with accreditation for their educational programming.

#### Fiscal Year 2014-2015

Cosponsored	55
Home Study Programs	13
UB Programs	24
<b>Total</b>	<b>92</b>



## Continuing Education Programs and Symposia

Programs and Symposia	
8/19/2014	APhA's Delivering Medication Therapy Management Services Program
9/12/2014	Angiogenesis as a Target for Recovery after Stroke
9/13/2014	The Role of the Pharmacist in Self-Care
12/4/2014	The Rise of Vaccine-Preventable Disease in the U.S.
12/17/2014	Diabetes Management: Putting the Guidelines into Practice
1/11/2015	Diabetes Management: Putting the Guidelines into Practice
1/14/2015	Back to the Basics: An Introduction to Designing HIV Drugs Regimens
1/25/2015	Fraud, Waste and Abuse in Pharmacy 2015
1/28/2015	Metastatic Melanoma: A Paradigm for Novel Treatment Strategies
2/8/2015	Concepts in Patient Medication Safety for the Pharmacist/Buffalo
2/11/2015	The Diabetes Alphabet Soup-a Review of SGLT2 Inhibitors and GLP-1 Agonists
2/22/2015	Concepts in Patient Medication Safety for the Pharmacist/Rochester
2/25/2015	Naloxone: An Opportunity to Prevent Opioid Overdose in your Patients
3/4/2015	Experiential Education: Enhancing Your Teaching and Learning Environment
3/8/2015	Pharmacy Law Update 2015: "Everything you wanted to know about e-prescribing in NYS but was afraid to ask"/Buffalo
3/11/2015	Navigating Natural Products for Weight Loss: an Evidence-Based Approach
3/15/2015	Pharmacy Law Update 2015: "Everything you wanted to know about e-prescribing in NYS but was afraid to ask"/Rochester
3/25/2015	The Good, the Bad, and the Made-for-TV: A Safety Review on the Most Commonly Used Dietary Supplements
5/14/2015	Pain Management in Geriatric Inpatients in a Long Term Care Facility
5/28-29/2015	20th Annual Comprehensive Pharmacy Law CE Review for Pharmacists 2015, Day 1 & 2
6/17/2015	APhA's Delivering Medication Therapy Management Services
6/17/2015	Medication Management and Fall Prevention in Older Adults
6/24/2015	APhA's Pharmacy-Based Immunization Delivery
Co-sponsored Programs	
7/27/2014	Improving use of Antibiotics in the Community Setting
9/21/2014	Safety and Therapeutics Challenges with Pediatric Drug Therapy
10/4/2014	Pharmacists Responsibility for Patient Medication Safety
10/4/2014	Fraud, Waste and Abuse in Pharmacy Practice
10/4/2014	Pharmacy Law Update 2014
10/25/2014	RSS: Use of Oral Targeted Therapies in Renal Cell Cancer: Clinical Pearls for Management and Monitoring
10/25/2014	The Treatment of Depression in Cancer Patients: Treatment Pearls and Perils
10/25/2014	Breaching the Barrier: Oral Antineoplastic-Induced Cutaneous Toxicities
10/25/2014	Work Smarter, Not Harder! Oral Therapies Changing the Landscape for Blood Cancers in 2014
10/25/2014	Current Landscape of Oral Chemotherapy Agents and the Potential for Medication Errors
1/22/2015	Menopausal HRT and Non-Hormonal Therapies
2/26/2015	Overview of Medications that Lead to QTc Prolongation: Causes and Concerns for Patient Care
3/4/2015	Chemotherapy Induced Peripheral Neuropathy
3/26/2015	An Update on Antibacterial Therapy and Antibacterial Resistance: There is no ESKAPE!
4/18/2015	Polypharmacy in the Elderly
4/23/2015	Bacillus Calmette-Guerin (BCG) Vaccine and Non-Muscle Invasive Bladder Cancer
5/3/2015	An Update on the Treatment of Hypertension and Dyslipidemia
5/14/2015	Drug Treatment for Head and Neck Cancers
5/19/2015	Breaking it Down: Bone Health
6/1/2015	T-Cells, Targets and Toxicities: Navigating the Dynamic Frontier of Immunotherapy
6/9/2015	Pharmacotherapy of Multiple Myeloma
Ongoing Online Programs	
7/1/2014	HIV Pharmacotherapy Community Pharmacy CE
7/1/2014	HIV Pharmacotherapy Case Study Workshop
7/1/2014	HIV Pharmacotherapy Practiced-Based Program
7/1/2014	HIV Annual Update
3/3/2015	Prostate: CanceRxCE
3 – 6/2015	CanceRxCE: 28 programs presented

## Pharmacy Practice Residents/Fellows

### Residents

Michelle Amsler, PharmD  
PGY1-Pharmacy/ECMC

Jessica Beyer, PharmD  
PGY1-Pharmacy/Lifetime Health

Lisa Garza, PharmD  
PGY1-Community Pharmacy/ Middleport Family Health

Holly Hamilton, PharmD  
PGY2-HIV-AIDS Pharmacotherapeutics/ECMC

Ryan Lindenau, PharmD  
PGY1-Community Pharmacy/Middleport Family Health

Kimberly Mulcahy, PharmD  
PGY1-Pharmacy Practice/Buffalo Psychiatric Center

Alyssa Pignato, PharmD  
PGY1-Pharmacy/Buffalo Medical Group

Alexandra Pullano, PharmD  
PGY1-Community Pharmacy/Mobile Pharmacy Solutions

### Fellows:

Rajindar Bhardwaj, PharmD  
Roche

Justin Lenhard, PharmD  
Infectious Diseases

Rajnikant Sharma, PharmD  
Infectious Diseases

Michael Trang, PharmD  
ICPD Pharmacometrics



The Department of Pharmacy Practice continued its commitment to providing post-graduate education through its postgraduate year-1 (PGY-1) and postgraduate year-2 (PGY-2) residency training.



## Residency Training Program Summary 2014-15

Our mission is 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. Upon completion of the program, residents are able to practice autonomously in a variety of settings.

During the 2014-15 academic year, the residency program consisted of seven PGY-1 residents and one PGY-2 resident training at the following practice sites:

- Buffalo Medical Group (PGY-1 Pharmacy)
- Erie County Medical Center (PGY-1 Pharmacy)
- Erie County Medical Center HIV/AIDS Immunodeficiency Center (PGY-2)
- Lifetime Health Medical Group (PGY-1 Pharmacy)
- Mobile Pharmacy Solutions (PGY-1 Community Pharmacy)
- Middleport Family Health (PGY-1 Community Pharmacy)

Our residents participated in teaching, research and community service. UB SPPS sponsors an annual Residency Teaching Certificate program, attended this year by 23 residents from across western and central New York. The program consists of a two-day seminar on topics relevant to both didactic and clinical/experiential teaching and learning. This marked the first year that residents had the option of attaining one of two teaching certificates: a Basics of Teaching certificate or an Advanced Academic Teaching certificate. Residents complete the required Advanced Academic Teaching Certificate by facilitating a small group learning experience, teaching a large group lecture, completing a six-week precepting experience at their practice site, and designing and delivering an ACPE-accredited continuing education program at the school.

SPPS residents are required to complete at least one residency project and present the results of the

research conducted over the course of their residency. This year, our residents presented at a variety of forums, including the ASHP Midyear Clinical Meeting (Anaheim, CA), the APhA Annual Meeting (San Diego, CA), UB SPPS Residency Project Presentation Day (Buffalo, NY), and the Eastern States Residency Conference (Hershey, PA).

Community service plays a significant role at SPPS. Residents served the community by volunteering their pharmacy services at the Good Neighbors Clinic. While at the clinic, which offers primary care for uninsured and underinsured adults in Buffalo, residents assisted providers with patient care and provided medication counseling to patients, including help with obtaining affordable prescription medications.

2014-2015 also marked the first year for University Pharmacy Resident Services, Inc. (UPRS). This corporation, a separate entity from the school and university, was created to serve as the employer of record for pharmacy practice residents. Though the residency training sites continue to provide the funding for resident positions, the corporation allows unification of our residencies under one entity. UPRS allows for streamlined pay, benefits and administration of the programs in an effort to better meet accreditation standards set forth by the American Society of Health Systems Pharmacy (ASHP). Two of our PGY-1 residencies (Buffalo Medical Group and Lifetime Residency Training Program Summary 2014-2015 Health Medical Group) were administered via UPRS during this residency year.

## Pharmaceutical Sciences Postdoctoral Fellows/Associates

Jun Li

*Proteomic investigation of drug therapy responsive proteins and their post-translational modifications (PTMs)*

Adolfo Quiñones-Lombrana

*Pharmacogenetic determinants in cardio-oncology*

Tista Roy Chaudhuri

*Tumor priming strategies in conjunction with drug delivery approaches to improve therapy of pancreatic cancer*

Sharad Sharma

*Development of novel antibody-drug conjugates and understanding the determinants for PK/IPD of these molecules*

## Commencement Awards

### Lilly Achievement Award

Madeline Waldron

### Michael E. Crawford Award

Madeline Waldron

### Eino Nelson Award

Ryan Dillon

### Renee A. Dederich Award

Jaclyn Kotula

### Francis P. Taylor Award

Jennifer Murray

### UB School of Pharmacy and Pharmaceutical

### Sciences Professionalism Award

Megan Gee

### National Community Pharmacists Association

### Outstanding Student Member Award

Charles Hinton

### Lori Esch Memorial Award

Kristin Hart

### Merck Award

1st Elizabeth Lakota, 2nd Jennifer Murray,  
3rd Wesley Kufel

### Mylan Pharmaceutical Excellence in

### Pharmacy Award

Elizabeth Lakota

### David E. Guttman Award

Zi Yang He

### Facts and Comparisons Award of Excellence in Clinical Communication

Zackery Bulman

### Samuel J. Bauda Award

Ryan O'Laughlin

### Pharmacists' Society of the State of New York

Wesley Kufel

### Natural Medicines Comprehensive Database Recognition Award

Nisa Zhao

### McKesson Leadership Award

Kristina Chmiel

### TEVA Pharmaceuticals USA Outstanding Student Award

Cristina Kowalczyk

### A.B. Lemon Memorial Award

Iffat Shafiq

### The Inpatient Advanced Pharmacy Practice Experience Award

Jennifer Murray

### Robert M. Cooper Memorial Award

Andrew Wroblewski

### Pharmacists' Association of Western New York Student Leadership Award

Rebecca Campbell

### Excellence in Pharmacogenomics Award

Samsad Pavel

### Margaret C. Swisher Memorial Award

Susan Chen

### Western New York Society of Health-system Pharmacists Award

Brittany Slocum

### Kelli Jordan Memorial Award

Elizabeth Lakota

### Robert H. Ritz Award

Ryan Dillon

### Roy M. Barr Award

1st Justin Bigg, 2nd Ryan Dillon

### Outstanding Graduating Senior Award in Pharmaceutical Sciences

Negin Salehi

### Robert H. Gumtow Undergraduate Research Award in Pharmaceutical Sciences

Samuel Kim

### Excellence in Teaching Award

Ashley Woodruff, PharmD  
Clinical Assistant Professor



## 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

Patrick Glassman

Tommy Li

Shunxin Lin

Charvi Nanavati

Ly Minh Nguyen

Sheryl Trueman

### Pharmacy Practice

#### POST GRADUATE RESIDENTS AND FELLOWS

##### Lifetime Health Medical Group

Jessica Beyer

##### Buffalo Medical Group

Alyssa Pignato

##### Roche Pharmaceuticals

Rajinder Bhardwaj

## Who's Who Among Students in American Universities and Colleges

Ian Bader

Justin Bader

Zackery Bulman

Rebecca Campbell

Valerie Cooper

Megan Gee

Kristin Hart

Charles Hinton

Caitlin Hoar

Jaclyn Kotula

Cristina Kowalczyk

Wesley Kufel

Nicholas Ladziak

Elizabeth Lakota

Sarah Lynch

Jacqueline Meaney

Jennifer Murray

Jinhee Park

Quynh-Anh Pham

Kelly Ross

Brittany Slocum

Betty Vu

Madeline Waldron

Philip Yeung



Class of 2015 Farewell Reception



## Student Achievements

### UB wins local student pharmacist compounding competition

Brenda Basile, '16, Patrick Rose, '16, Craig Sauers, '16, and Nahid Zaman, '16, were winners of the local 2015 Student Pharmacist Compounding Competition. The team represented UB in the 2015 MEDISCA Student Pharmacist Compounding Competition in Gainesville, FL.

### SPPS students shine at UB's Celebration of Academic Excellence

Sheryl Trueman-Fathallah, PHC PhD program: Sigma Xi Graduate Research Competition: *Optimization of pancreatic tumor priming by dovitinib to enhance gemcitabine uptake and efficacy*

Kemji Eke, '16, and Sara DiTursi, '16, PharmD program: Collegiate Sciences and Technology Entry Program (CSTEP) poster presentations

Negin Salehi, '15: UB's Undergraduate Award for Excellence in Research: *Optimizing combination chemotherapy of trastuzumab with paclitaxel in HER2-positive breast cancer*

### UB's AMCP chapter recognized for shadowing program

The UB student chapter of the Academy of Managed Care Pharmacy (AMCP) was nationally recognized for developing a successful new pharmacy and therapeutics shadowing program for members. The UB chapter was one of eight schools asked to present its project during the Chapter Leadership Academy at the AMCP Annual Meeting in April 2015.

## Individual Achievements

### Elizabeth Lakota, '15, receives the SUNY Chancellor's Award for Student Excellence

The State University of New York awarded Elizabeth Lakota, PharmD/MS '15, the 2015 SUNY Chancellor's Award for Student Excellence. The award honors SUNY students who have best demonstrated and been recognized for their integration of academic excellence with other aspects of their lives, including leadership, athletics, career achievement, community service or creative and performing arts.

### Tyler Mullen, '16, presents at SUNY Global Health Institute Meeting

Tyler Mullen, '16, presented at the inaugural meeting of the SUNY Global Health Institute at the SUNY Global Center in New York City. He presented on student opportunities within the SUNY Global Health Institute.

### Iffat Shafiq, '15, and John Diep, '15, top five poster finalists at ACCP Annual Meeting

Iffat Shafiq, '15, and John Diep, '15, were in the top five student poster finalists at the American College of Clinical Pharmacy annual meeting for their poster titled *Ceftaroline and daptomycin combinations demonstrates synergistic and bactericidal activity against methicillin-resistant Staphylococcus aureus (MRSA) from a patient who failed daptomycin*.

### PharmD candidate "Leading by Example"

Madeline Waldron, '15, was featured in the April issue of *Pharmacy Times*. The profile focused on her natural aptitude toward leadership through her role as president of the School of Pharmacy and Pharmaceutical Sciences Student Association and numerous volunteer and leadership efforts.

### Kerry Archer, '16, and Ryan St. James, '16, accepted into VALOR Program

Kerry Archer, '16, and Ryan St. James, '16, were accepted into the summer 2015 VALOR Program at the White River Junction VA Medical Center in Vermont. The program gives outstanding students the opportunity to develop competencies in clinical pharmacy while at an approved VA health care facility.

### Ciera Patzke, '15, selected as AACP Walmart Scholar Program Recipient

Ciera Patzke, '15, has been selected as a 2015 American Association of Colleges of Pharmacy (AACP) Walmart Scholar Program Recipient. The program provides \$1,000 travel scholarships to 85 student/faculty pairs from AACP member institutions to attend the AACP Annual Meeting and the AACP Teachers Seminar.

### Maya Holsen, '17, appointed to national post in ASHP

Maya Holsen, '17, was appointed to the American Society of Health-System Pharmacists (ASHP) Pharmacy Student Forum Student Society Development Advisory Group (SSDAG). This advisory group, established by the ASHP Pharmacy Student Forum Executive Committee, is responsible for providing feedback and suggestions to the Executive Committee regarding benefits and services for ASHP student members. Maya is the first SPPS student that has been appointed to a national post within ASHP.

### Sharif Soleman, '17, chosen for internship at Roche Pharmaceuticals

Sharif Soleman, '17, was chosen for an internship at Roche Pharmaceuticals Translational and Clinical Research Center in New York City. He is involved in pharmacokinetic and pharmacodynamics mathematical modeling and clinical trial design. Sharif is working on a joint PharmD/MS in PHC degree.

### Graduate students Gurkishan Chadha and Radha Ramakrishnan present at AAPS National Biotechnology Conference

Graduate students Gurkishan Chadha and Radha Ramakrishnan gave presentations at the American Association of Pharmaceutical Scientists National Biotechnology Conference in June 2015.



## 2014-2015 Degree Recipients

### Bachelor of Science in Pharmaceutical Sciences

#### February 2015

Genevieve Stever

#### June 2015

Lingling Chen

Ting Ting Chen

Piotr Gawel

Zi Yang He

Samuel Kim

Michael Payne

Negin Salehi

Ann Chi Sam

### Bachelor of Science/Master of Science in Pharmaceutical Sciences

#### June 2015

Nathan Williams

### Master of Science in Pharmaceutical Sciences

#### September 2014

Bo An

#### February 2015

Jigar Patel

Gauri Rao

#### June 2015

Elizabeth Lakota

Yujie Yang

### Doctor of Pharmacy

#### February 2015

Leah Andress

Nazli Soltani

#### June 2015

Kwadwo Baah

Ian Bader

Justin Bader

Ryan Bailey

Matthew Belair

Hannah Bibens

Justin Bigg

Zackery Bulman

Heeyoung Byun

Rebecca Campbell

Mariely Castaneda

Man Ting Chan

Stephanie Chan

Janet Chen

Susan Chen

Kristina Chmiel

Valerie Cooper

Vincent Dellavalle

John Diep

Heather Dillenbeck

Ryan Dillon

Lauren Dingman

Alyssa Droopad

Caitlin Frohnapple

Patrick Galdun

Colleen Gardon

Megan Gee

Brittney Giuga

Heather Grove

Lin Feng Guan

Matthew Haintz

Yuliya Halko

Kristin Hart

Kushol Hasnat

Caitlyn Herr

Charles Hinton

Erica Ho

Caitlin Hoar

Randall Horlacher

Niveta Jeyakumar

Jing Jin

Yeonwoo Jung

Suo Karas

Benjamin Kematick

Hye Ji Kim

Sonya Kim

Suk Young Kim

Jaclyn Kotula

Cristina Kowalczyk

Gabriela Krawiec

Wesley Kufel

Shahjabin Kureshi

Nicholas Ladziak

Elizabeth Lakota

Judy Lam

Kevin Langdon

Charles Lavallee

Byung Hee Lee

Kevin Lee

Mi Ryung Lee

Young Ji Lee

Eric Lenhard

Meghan Lim

Hengxin Lin



Enen Liufu

Paul Lupano

Sarah Lynch

Jacqueline Meaney

Charlene Meyer

Jessica Meyers

Sophia Min

Alyssa Moore

Allen Mosher

Jennifer Murray

Esra Mustafa

Andrew Newberg

Kelley Nghiem

Alain Nguyen

Hanh Nguyen

Minh Nguyen Dang

Thanh Nguyen

Melinda Novak

Gianna Ognibene

Ryan O'Laughlin

Erica Orłowski

Anait Pahlevanyan

Jinhee Park

Samsad Pavel

Quynh-Anh Pham

Jamie Raffaniello

Jacob Reaser

Kelly Ross

Michael Rudzinski

Brian Russell

Sarith Saju

Sarah Schuessler

Iffat Shafiq

Parth Shah

Brittany Slocum

Charles Smith

Courtney Smith

David Smith

Jeremy Smith

Joseph Sperber

Samuel Steele

Thomas Steele

Dmitriy Sulik

Thomas Tamul

Alexandra Thomas

William Tihin

Alyssa Turose

Varun Vohra

Catherine Voytovich

Betty Vu

Madeline Waldron

Johnny Wan

Christina Wang

Margaret Wang

Stephanie Waugh

Deborah Wells

Jennifer Wiafe

Samantha Will

Andrew Wroblewski

Haihui Wu

Philip Yeung

Carmen Yu

Timothy Zablocki

Alexander Zach

Nisa Zhao

Yip-Kee Zou

Brittani Zurek

### Doctor of Philosophy in Pharmaceutical Sciences

#### June 2015

Gurkishan Chadha

Frank Engler

Carrie Hoefler

Krithika Shetty

Li Zhang

# Research and Training

Our school creates 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.

The Department of Pharmaceutical Sciences at the University at Buffalo is internationally recognized for excellence in its academic and research programs, predominantly in the realms of pharmacokinetics, pharmacodynamics, and protein therapeutics.

## Department of Pharmaceutical Sciences

Our strengths lie in biological applications of pharmaceutical sciences for traditional small molecules, as well as biotechnology products such as monoclonal antibodies. Research focus includes systems pharmacology (pharmacokinetics, pharmacodynamics, pharmacometrics, pharmacogenomics) and drug delivery.

The development of new therapeutic approaches, utilizing mechanistic studies employing the tools of genomics, proteomics, computation, and bioinformatics, is also an important focus.

The department consists of a distinguished group of 13 tenure-track, two part-time, and four research faculty members with highly productive, largely NIH-funded research programs and corporate support, totaling about \$5.1 million in external funding for 50 specific projects.

The BS undergraduate program, directed by Kathleen Boje, associate dean for academic affairs, included 37 students. The graduate program, headed by Murali Ramanathan, consisted of 25 BS/MS, MS, and PharmD/MS students and 45 PhD and PharmD/PhD students. We also hosted nine post-doctoral fellows and visiting scientists. We conducted a successful search for a new faculty member in the area of pharmacometrics and obtained a commitment from Dr. Robert Bies from the University of Indiana School of Medicine.

The Center for Protein Therapeutics (CPT), directed by Joseph Balthasar, professor and associate dean for research, was established in 2008 to advance the development of next-generation protein drugs via protein engineering and bioanalysis/proteomics, as well as PK/PD.

2014-15 CPT sponsors included Abbvie, Amgen, Eli Lilly, Genentech/Roche, Janssen, Merck, Sanofi-Aventis, and UCB. To date, the center has provided financial support (~\$100,000 per project) for 84 research projects, with 11 projects funded. The Sixth Annual CPT Symposium, held in July 2014, gathered industry sponsors with faculty and trainees to review project results and select new projects. In many cases, study results (e.g., mathematical models, new methodologies) have been quickly implemented by the industry sponsors.

Forty-six presentations by local and visiting scientists comprised the 2014-15 Lecture and Seminar Program. Dr. Julie Johnson, Distinguished Professor and Dean of the School of Pharmacy at the University of Florida, provided the 2014 *Gerhard Levy Distinguished Lectureship in Pharmaceutical Sciences* presentation, "Hypertension Pharmacogenomics: Using 'Omics Approaches to Define Variable Drug Responses." Hank F. Kung, Professor at the University of Pennsylvania, gave the *David C K Chu Lecture in Drug Development*. Ah-Ng (Tony) Kong from Rutgers University provided the *Pharmaceutics GSA Alumnus Lecture*. Other notable visiting speakers included Robert Kerbel, University of Toronto; Adam Gaweda, University of Louisville; Greg Thurber, University of Michigan; Tarek Leil, Bristol Myers Squibb; and Gaurav Sahay, Oregon State University.

The Thirteenth Buffalo Pharmaceutics Symposium was held in July 2014. Chaired by Donald E. Mager and supported by 13 pharmaceutical compa-

nies, the theme was "Pharmaceutical Sciences: A Model of Translational Therapeutics." This outstanding scientific program featured alumni speakers Ryan Hansen from Eli Lilly, Mohammad Tabrizi from Merck, Amit Garg from Genentech, Andrew Chow from Amgen, Holly Kimko from Johnson & Johnson, Sukyung Woo from the University of Oklahoma, Jean-Michel Scherrmann from the University of Paris, Brian Booth from the Food and Drug Administration, David E. Smith from the University of Michigan, Tristan Maurer from Pfizer, Saeho Chong from Takeda, Dan Salazar from Otsuka, Iqbal Ramzan from the University of Sydney, and Tony Kong from Rutgers University. Additional speakers were Victor Wroblewski from Eli Lilly and Saroja Ramanujan from Genentech, as well as UB faculty members Donald Mager, William Jusko, Dhaval Shah, Juliane Nguyen, and Jun Qu. Many students presented posters as well. Session III was titled, "Ho-Leung Fung: Tradition of Excellence," with several of Fung's former students and post-docs paying special tribute on the occasion of his retirement.

May 2015's Buffalo Pharmacometric Workshops offered visiting scientists from the pharmaceutical industry, academia and the FDA courses in Pharmacokinetic-Pharmacodynamic (PK/PD) Modeling, Antibody PK/PD, ADAPT for Biologics, and Population Pharmacokinetic Modeling.

Our faculty members were highly prolific in their scientific accomplishments, with 85 research articles and book chapters, and one book published. Seventy-two seminars and lectures were given along with 88 research posters at various scientific meetings, universities and industrial venues. Many faculty and students attend and make presentations at the *American Association of Pharmaceutical Scientists* (AAPS) and *American Conference on Pharmacometrics* (ACoP) meetings— alumni receptions are held in conjunction with these events.

- Javier Blanco organized a post-graduate course in Clinical Pharmacogenetics at the University of Cordoba, and gave several lectures at Barcelo University in Argentina.
- Wojciech Krzyzanski coordinated eight 2-3-day workshops for hands-on use of pharmacometric software, supported with donations from companies such as Certera and Simcyp.
- Dr. Marilyn Morris served as past president of the *American Association of Pharmaceutical Scientists* and received the AAPS Innovation in Biotechnology Award, June 2015.
- Donald E. Mager completed service as president of the *International Society for Pharmacometrics* and spent three weeks in January as a Visiting Professor at the University of Paris Descartes teaching PK/PD.
- Jun Qu received an American Heart Association Development Award and the Thermo Fisher Scientific Research Award for Tandem MS.







## Department of Pharmaceutical Sciences

Continued from page 14

- Dhaval Shah won the Meritorious Manuscript Award at the annual meeting of AAPS in Fall 2014.
- Ying Xu received the 2015 American Association of Colleges of Pharmacy New Investigator Award.
- Nisha Vijay was selected for the Buffalo Pharmaceutics Graduate Scholar Award, Xi (Cindy) Chen and Scott Ferguson received Alan Barnett Fellowship Awards, and Sheryl Trueman and Peter Bloomingdale won Outstanding TA Awards at our Annual Awards Banquet in December.
- Ho-Leung Fung retired from our faculty but maintains visibility as Emeritus UB Distinguished Professor, as well as editor-in-chief of *The AAPS Journal*.
- William Jusko holds the title of editor-in-chief for the *Journal of Pharmacokinetics and Pharmacodynamics*.

The department continues the advancement of its illustrious research and training programs. We remain robust in the areas of protein therapeutics and cancer therapeutics, maintain our prominence in pharmacokinetics, pharmacodynamics, and pharmacometrics, and are moving towards greater implementation of systems pharmacology.

## Department of Pharmacy Practice

Academic year 2014-2015 in the Department of Pharmacy Practice was marked by the maturation and development of existing programs, leading to an exciting year in fulfilling our mission to serve the global community through leadership in research, clinical care, and teaching of the practice of pharmacy.

### Leadership in research

The department faculty authored 47 papers in peer-reviewed publications, maintaining a rate of publication that far exceeds the national average for pharmacy practice faculty.

The Research Pharmacy, particularly the Buffalo Clinical and Translational Research Center (CTRC), continued to grow and has promoted its benefits for various investigators. Dr. Gene Morse received a seven-year, \$12 million NIH contract to direct a Clinical Pharmacology Quality Assurance initiative focused on HIV/AIDS and related therapies.

The Outpatient Research Pharmacy center has evolved to support growth in research endeavors. It has established and expanded the principal investigator (supervisor role) within the Research Pharmacy and created a student IPPE-3 rotation. A new project pharmacist was hired and a co-investigator role was developed to enhance strategic relationships with the CTRC and the UB Institutional Review Board for expansion of services, supplies, and equipment.

A rebranding effort included a new website and increased operational efficiency via a new study intake processes.

### Leadership in clinical care

The Department of Pharmacy Practice has had a sustained presence and interest in international health care. Gene Morse, SUNY Distinguished Professor, is internationally recognized for his work in HIV/AIDS. Over the past several years, he has collaborated with the University of Zimbabwe, training pharmacists as part of their effort to combat this disease. Under the leadership of Gina Prescott, clinical assistant professor, we saw a record number of our faculty and students engage in medical mission trips, visiting the Dominican Republic and Honduras.

Nationally, our students collaborated with other healthcare professions, caring for underserved populations in Chicago and rural Tennessee. Locally, our faculty and students served in free clinics within the Western New York area. These opportunities not only bring a measure of inter-professional healthcare to some of the poorest communities, they serve as a cross-cultural window to broaden the scope of our students' training.

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

### Leadership in teaching

Postgraduate education saw the University Pharmacy Residency Services Corporation (UPRS) complete its first year of operation. It is expected to support the growth of pharmacy residency training in the Western New York area.

The Office of Continuing Pharmacy Education (CPE) noted increased participation in webinars, assisting in meeting the continuing professional development needs of faculty, preceptors, and non-accredited organizations. The CPE office is now the pharmacy accrediting entity for a number of practice-based certificate programs, including the NYS DOH-supported Oncology Translational Research Laboratory CancerRx program and the Allegheny County Pharmaceutical Society's Medication Therapy Management program. The office continues to provide pharmacy ACPE credit to numerous inter-professional organizations.

William Prescott, clinical assistant professor, received the University at Buffalo Teaching Innovation Award, and Ashley Woodruff, clinical assistant professor, recipient of the UB SPPS Teacher of the Year. Gene Morse was named a SUNY Distinguished Professor, the highest academic rank within the SUNY system.

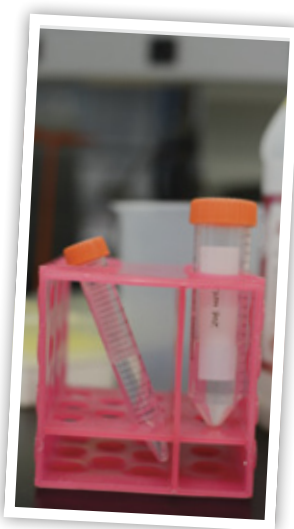
The Office of Experiential Education has continued to expand global opportunities for our students, with affiliated sites in India, Brazil, Taiwan and Canada. Recognized at the 7th Annual Preceptor Awards Program were:

- IPPE Outstanding Contribution Award  
Craig Brozek (DeGraff Memorial Hospital)
- Professional Practice Elective Preceptor of the Year  
Elizabeth Thomas (Walgreens Pharmacy)
- J. Fred Bennes Outpatient Care Preceptor of the Year Award  
Klara Manning (Lifetime Health Medical Group – Amherst)
- Inpatient Care Preceptor of the Year  
James Bartlett (Catholic Health System – Kenmore Mercy Hospital)
- Pharmacy Practice Faculty Preceptor of the Year  
Robert Wahler (SUNY Buffalo / Niagara Hospice)

### Faculty Changes

The Department of Pharmacy Practice welcomed David Jacobs, PharmD, as a Clinical Assistant Professor with a focus on pharmacoepidemiology; Terry E. Dunn, PharmD, as Clinical Assistant Professor with a focus on pharmacoinformatics; and Denise Swiatek, PharmD, with a focus in research pharmacy projects.

July 1, 2014 - June 30, 2015

**Pharmaceutical Sciences****Joseph Balthasar**Center for Protein Therapeutics  
*Physiologically-Based Pharmacokinetic (PBPK) Modeling of IgG***Joseph Balthasar**Center for Protein Therapeutics  
*Determinants of mAb Brain Distribution in Mouse Models of Alzheimer's Disease: Investigation of FcRn Binding and Charge***Joseph Balthasar**Center for Protein Therapeutics  
*Investigation of the Effects of Co-Administered Drugs on mAb Pharmacokinetics***Joseph Balthasar**F. Hoffman-LaRoche  
*Investigation of the Utility of LC/MS for Characterization of the Plasma and Tissue Pharmacokinetics of a Novel Series of Anti-Carcinoembryonic Antigen (anti-CEA) Monoclonal Antibodies (mAbs)***Sathy Balu-Iyer**National Heart Lung and Blood Institute  
*Development and Pharmacology of Novel Lipidic rAHF***Sathy Balu-Iyer**AFPE  
*AFPE Predoctoral Fellowship for Jennifer Swieck***Sathy Balu-Iyer (Co-I)**National Cancer Institute  
*Re-activating Memory T Cells in the Microenvironment of Human Tumors***Robert Bies**Trustees of Indiana University  
*The Efficacy and Safety of a Selective Estrogen Receptor Beta Agonist***Sihem Bihorel**PhRMA Foundation  
*Systems Pharmacological Approach to Support Novel Drug Sequencing to Overcome Lapatinib Resistance in HER2 Positive Breast Cancer***Javier Blanco**Eunice Kennedy Shriver National Institute of Child Health and Human Development  
*Characterization of Cardiac Mitochondrial DNA in Donors with Down Syndrome***Javier Blanco**National Institute of General Medical Sciences  
*Contribution of CBRs and AKRs to the Pharmacodynamics of Anthracycline Drugs***Javier Blanco**Mae Stone Goode Foundation  
*Pinpointing Molecular Determinants for the Cardiotoxicity Associated with the Use of Trastuzumab for Breast Cancer Chemotherapy***Yanguang Cao**Food and Drug Administration  
*Physiologically Based Pharmacokinetic Model for Drugs Encapsulated into Liposomes***Alan Forrest**Hoffmann Laroche Incorporated  
*Pharmacy Roche Fellowship***Alan Forrest**Monash University  
*New Tricks for 'Old' Drugs: PK/PD of Polymyxin Nonantibiotic Combinations***William Jusko**Center for Protein Therapeutics  
*Inclusion of "Tissue Target Dynamics" in Minimal PBPK Models for mAb PK/PD Assessment***William Jusko**Center for Protein Therapeutics  
*Suppression of Free TNF- $\alpha$  with Infliximab in Plasma and Joints in CIA Rats***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**SUNY Downstate  
*Molecular and Clinical Pharmacology of Retinopathy or Prematurity***Qing Ma**National Institute of Mental Health  
*Antiretroviral Pharmacogenomics, Pharmacokinetics and Toxicity in neuroAIDS***Donald Mager**University of Iowa  
*Neonatal Anemia and Thrombocytopenia: Pathophysiology and Treatment***Donald Mager**Daiichi Sankyo Pharma Development  
*PK/PD 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**Institut de Recherches Servier  
*Translational PKPD of Biologics***Donald Mager**F. Hoffman-LaRoche  
*Mechanistic Modeling in Hematology to Systematically Explore Factors Contributing to Differences in anti-CD20 Therapy Outcomes and to Inform Optimal anti-CD20 Combination Strategies***Donald Mager**EMD Serono Research and Development Institute Incorporated  
*PBPK Model Development for Antibodies and Nanobodies Displaying pH-Dependent Target Binding***Donald Mager**Center for Protein Therapeutics  
*Quantitative Structure-Absorption Relationships (QSAR) of mAbs***Marilyn Morris**Center for Protein Therapeutics  
*Evaluation of mAb Brain Disposition in Alzheimer's Disease***Marilyn Morris**Center for Protein Therapeutics  
*Evaluation of the Role of Renal Clearance and Metabolism in the Altered Pharmacokinetics of IgG in Diabetes Mellitus***Marilyn Morris**National Institute on Drug Abuse  
*Gamma-Hydroxybutyrate: Toxicokinetics, Toxicodynamics and Treatment Strategies***Marilyn Morris**National Institute on Drug Abuse  
*Diversity Supplement: 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**American Heart Association  
Founders Affiliate  
*Biomarker Release after Reversible Ischemia***Jun Qu (Co-I)**National Institute of Dental and Craniofacial Research  
*Regulation of Skeletal Development and Homeostasis by IFT Protein***Jun Qu (Co-I)**National Institute of Heart, Lung, Blood  
*Systems Biology of Glycosylation***Jun Qu**RMT Epidemonex Incorporated  
*UB CAT: Protein Methylation Contract Research Service***Jun Qu**SUNY Downstate  
*Molecular and Clinical Pharmacology of Retinopathy or Prematurity***Jun Qu**Health Research Incorporated  
*The Regulation of YAP Oncogenic Functions by PTPN14 and Yap Tyrosine Modification***Jun Qu**Utah State University  
*Protein Arginine Methylation***Jun Qu**Center for Protein Therapeutics  
*Very-High-Resolution LC/MS for Rapid, Selective, Sensitive and Extensive Characterization and Quantification of Antibody-Drug Conjugate to Support PK Studies***Jun Qu**Merrimack Pharmaceuticals Incorporated  
*Comprehensive Quantitative Analysis of Liposome-bound Plasma Proteins***Murali Ramanathan**Lineagen Incorporated  
*UB CAT: Whole Genome Sequencing of DNA from Multiple Sclerosis Patient Cohort***Murali Ramanathan**National Multiple Sclerosis Society  
*Lipoprotein and Lipid Metabolism in Multiple Sclerosis Disease Progression***Murali Ramanathan**NYS Department of Economic Development  
*Center for Advanced Technology in Biomedical and Bioengineering***Dhavalkumar Shah**F Hoffman La Roche Limited  
*Distribution of Antibodies and its Fragments***Dhavalkumar Shah**National Institute of General Medical Sciences  
*Translational Systems Pharmacokinetic Models of Novel Anticancer Biologics***Dhavalkumar Shah**Center for Protein Therapeutics  
*Elimination Mechanism for Antibody-Drug Conjugates (ADCs) with Higher DAR***Dhavalkumar Shah**Center for Protein Therapeutics  
*Understanding and Characterizing the Bystander Effect for Antibody-Drug Conjugates*

## Pharmaceutical Sciences (Continued)

**Dhaval Kumar Shah**  
Center for Protein Therapeutics  
*Development of Translational Physiologically-Based Pharmacokinetic (PBPK) Model for Antibody-Drug Conjugates (ADCs)*

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

**Robert Straubinger**  
Merrimack Pharmaceuticals Incorporated  
*MM2014: Pancreatic Cancer*

*Therapy with Novel Nanoparticle Agents Testing*

**Robert Straubinger**  
Merrimack Pharmaceuticals Incorporated  
*MM2015: Pancreatic Cancer Therapy with Novel Nanoparticle Agents Testing*

**Robert Straubinger**  
National Cancer Institute  
*Pancreas Cancer Combination Therapy Based on Stromal Modulators and Nano-Carriers*

**Robert Straubinger**  
UB CTRC, Translational Pilot Studies Fund  
*Biomarkers for Detection of Treatment Response and Disease Recurrence in Pancreatic Cancer*

**Robert Straubinger (Co-I)**  
National Institute of Biomedical Imaging and Bioengineering  
*Light-Triggered Drug Release in Primed Pancreatic Tumors*

**Ying Xu**  
Tetra Discovery Partners  
*SBIR: PDE4B Inhibitors for*

*Treating Major Depression*

**Ying Xu**  
American Association of Colleges of Pharmacy  
*Targeting PDE2 to Treat Memory Loss Associated with Alzheimer's Disease*

**Ying Xu**  
UB Vice President for Research and Economic Development  
*IMPACT: Identification of PDE4A as a Target for Treating Memory Impairment*

# PHARMACY PRACTICE

## Pharmacy Practice

**Edward Bednarczyk**  
New York State Department of Health  
*SUNY/NYSDoH Pharmacy Collaborative Medicaid Initiative*

**Alice Ceacareanu**  
NY State Department of Health  
*Community Pharmacists Trained in Pharmaceutical Care for Cancer Survivors*

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

**David Jacobs**  
Astellas Pharma Global Development Incorporated  
*A Multicenter Characterization of the Treatment of Candiduria*

**Scott Monte**  
Health Foundation for Western and Central New York  
*Improving Safe Medication Use in Elders Living in Rural Settings*

**Gene Morse**  
National Institute of Allergy and 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**  
Fogarty International Center  
*Antiretroviral Pharmacology Training in Resource Poor Countries*

**Gene Morse**  
Fogarty International Center  
*Antiretroviral Pharmacology Training in Resource Poor Countries - Administrative Supplement*

**Gene Morse**  
University of Rochester  
*Center for Human Experimental Therapeutics*

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

**Gene Morse**  
Erie County Medical Center  
*New York State Adherence Program*

**Gene Morse**  
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**Gene Morse**  
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*Women, Infants, Children and Youth Healthcare*

**Gene Morse (Mentor)**  
University of Rochester  
*University of Rochester Center for AIDS Research-Pharmacokinetics and Immunodynamics of Multi-Model Nanoparticles for TB*

**Gene Morse (Co-I)**  
National Institute of Allergy and Infectious Disease  
*Pharmacokinetics and Immunodynamics of Multimodal Nanoparticles for HIV and TB*

**Gene Morse (Co-I)**  
Abbvie  
*Intrahepatic ABT450 Concentration in Preclinical Models*

**Gauri Rao**  
Wayne State University  
*Optimizing Clinical Use of Polymyxin B: Teaching an Old Drug to Treat Superbugs*

**Kathleen Tornatore**  
Astellas Scientific and Med Affairs Incorporated  
*Influence of Race, Sex, and ABCB1 Haplotypes on Tacrolimus (Prograf) Pharmacokinetics and Adverse Effects in Stable Renal Transplant Recipients*

**Brian Tsuji**  
National Institute of Allergy and Infectious Disease  
*Novel PK/PD Strategies for Polymyxin Combinations against Gram-negative Superbugs*

**Brian Tsuji (Co-I)**  
National Institute of Allergy and Infectious Disease  
*Persistent H. influenzae in COPD - Virulence, Vaccines and Antibiotic Resistance*



## New Technology

Invention Disclosure	Faculty Member
<i>HyperHis Platform for Enhancing FcRn Binding Kinetics</i>	<i>Balthasar, Joseph</i>
<i>Novel Software-Implementable Method for Modeling Patient Adherence Patterns in Drug Dosing</i>	<i>Ramanathan, Murali</i>
<i>Methods for Identifying an Increased Risk of Anthracycline-Related Cardiotoxicity (City of Hope)</i>	<i>Blanco, Javier</i>
<i>Description of Novel Method for Encapsulating Cells and Fixing Them Into an Array</i>	<i>Nguyen, Juliane</i>

# Scholarship

Pursuing innovation, identifying solutions and presenting results to enhance the local, national and international leadership of SUNY, UB and the SPPS.

## PHARMACEUTICAL SCIENCES

**Intellectual Contributions**  
July 1, 2014 - June 30, 2015

### Pharmaceutical Sciences

#### BALTHASAR, JOSEPH P.

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#### BALU-IYER, SATHY V.

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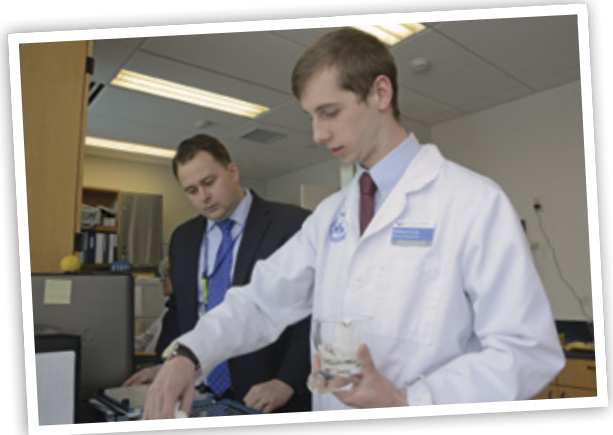
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Student Attendees: 2015 Awards Ceremony

## Special Honors for Faculty and Staff

### Morse Named SUNY Distinguished Professor

**Gene Morse** was named a 2014-15 SUNY Distinguished Professor, the highest faculty rank in the SUNY system. This distinction was given in recognition of his international leadership in the field of HIV pharmacology research, establishment of the National HIV TDM Registry for protease inhibitors, and development of a pharmacology laboratory for the National Institutes of Health-funded AIDS Clinical Trials Group. He is a founding leader of the SUNY Global Health Institute, global leader in assessing the pharmacokinetics of new infectious disease medications and has established a highly successful antiretroviral pharmacology training program at the University of Zimbabwe.



Dr. Gene Morse, SUNY Distinguished Professor

**Rebecca Brierley**, assistant dean, office of external affairs, appointed Secretary of the American Association of Colleges of Pharmacy Administrative Section.

**Alice Ceacareanu**, assistant professor, pharmacy practice, received the United University Professions (UUP) Professional Development Award from the University at Buffalo UUP Health Sciences Chapter.

**Karl Fiebelkorn**, senior associate dean, clinical associate professor, pharmacy practice, was elected as the Director of Public Policy, Board of Directors, of the Western Chapter New York State Council of Health-system Pharmacists (WNYSHSP).

**Carolyn Hempel** and **Scott Monte**, clinical assistant professors, pharmacy practice, recipients of the 2015 School of Pharmacy and Pharmaceutical Sciences Teachers of the Year award.

**Marilyn Morris**, UB Distinguished Professor and vice chair, pharmaceutical sciences, recipient, 2015 American Association of Pharmaceutical Scientists Innovation in Biotechnology Award. The award was based on strength and impact of abstract submission that can be adapted by the biotechnology field in a significant manner.

**Gene Morse**, SUNY Distinguished Professor, leading the University at Buffalo team, received acceptance as Center of Excellence in Antiviral Clinical Pharmacology by the Global Virus Network (GVN) Scientific Review Board. The GVN is a coalition of the world's leading medical virologists, where global scientific teams focus on key problems leading to the formation of Centers of Excellence. This effort demonstrates the strength of the UB

HIV and HCV Clinical Pharmacology Laboratory as an internationally recognized leader in antiviral pharmacology and therapeutics.

**Kathleen Tornatore-Morse**, professor, pharmacy practice, was designated a Fellow of the American Society of Transplantation (FAST). The FAST designation recognizes AST members who have demonstrated both an exceptional commitment to the field of transplantation and outstanding service to the AST.



Dr. Nicole Albanese (l) presents award to Dr. Carolyn Hempel (r)

**William Prescott**, clinical associate professor, pharmacy practice, recipient, 2015 UB Teaching Innovation Award. Established to honor exceptional educational pedagogy, recognizes faculty who have contributed significantly to engaging students with new methods and approaches to teaching while also enhancing student learning-outcomes.

**Sara Robinson**, academic advisor and assistant director Office of Admissions and Advisement, recipient of 2015 Outstanding Academic Advising Award from the UB

Undergraduate Advisement Council. Awardees embody the mission and spirit of academic advising at UB.

**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/IPD Model: A Case Study with Brentuximab-Vedotin*.

**Robert Wahler**, clinical assistant professor, pharmacy practice, recognized as a Certified Pain Educator (CPE) by the American Society of Pain Educators and is the only certified educator in Western New York. Dr. Wahler also received the 2015 School of Pharmacy and Pharmaceutical Sciences Pharmacy Practice Faculty Preceptor of the Year award.

**Ashley Woodruff**, clinical assistant professor, pharmacy practice, recipient of the 2015 American Association of Colleges of Pharmacy, Teacher of the Year award.

**Ying Xu**, research assistant professor, pharmaceutical sciences, recipient of the 2015 American Association of Colleges of Pharmacy New Investigator Award. This award provides \$10,000 in support of Dr. Xu's research proposal *Targeting PDE2 to Treat Memory Loss Associated with Alzheimer's Disease*.



2015 Awards Ceremony



Dr. Kathleen Tornatore-Morse receives AST Fellow Designation



# Philanthropy

An annual report is intended to detail and sum up what has happened in the past year. On the following pages, we focus on key strides and successes in securing philanthropic support for our school.



At the same time, this report also provides an opportunity to reflect on the larger purpose of what we're summing up – in this case, why the generosity of our alumni and friends is so vital, and what it does for our faculty and students.

The School of Pharmacy and Pharmaceutical Sciences, and especially our students, would not be what we are today – as demonstrated by what you see on every page of this annual report – without philanthropic support.

During the last fiscal year, endowed scholarships and fellowships generated \$355,189 for our students. Without the gifts over the years that created these funds, we would simply not be able to offer this type of assistance.

More broadly, the school would not be as strong as it is today without the tremendous investment of our donors. Without scholarship support, fewer UB Pharmacy students would thrive academically, and fewer top graduate prospects would choose to attend our school.

That is just one example – although a very important one – of why private support is so important. I can say without exaggeration that we depend on private philanthropy to ensure continued excellence in our core missions of teaching, research, and outreach. With that said, I am happy to report that 2014-15 was a good year for private support. Highlights include a 31% increase in the size of alumni gifts to the school – from \$484 to \$635; a 10% increase in the number of \$1,000+ gifts – from 94 to 105; and a 4% increase in total philanthropic commitments to the school – from \$1,996,934 to \$2,068,257.

We take pride in acknowledging all of our supporters in the Donor Honor Roll beginning on page 28 of this report. On the following pages, we would like you to meet two of them – Allen Barnett (right) and Heather Ackley '62, (page 34) – and the students that their gifts will support.

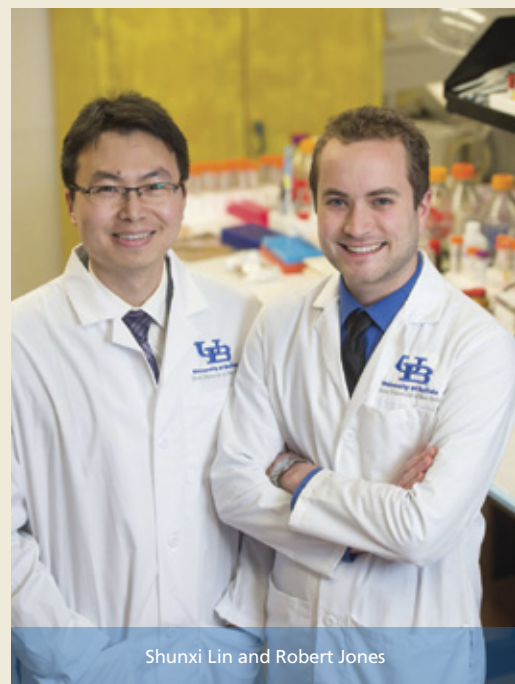
I want to thank every person who made a gift in the past year. You keep the UB Pharmacy reputation strong and allow us to continue to serve as a leading pharmacy school for the next generation.

A handwritten signature in black ink, appearing to read "J. O'Donnell".

James M. O'Donnell, PhD  
Professor and Dean



## Allen Barnett Promoting Pharmaceutical Scientists in the Making



Shunxi Lin and Robert Jones

## 2015 Barnett Fellows The Next Generation of Pharmaceutical Scientists

## ONE OF ALLEN BARNETT'S MANY CONTRIBUTIONS to UB is the fellowship he established in the School of Pharmacy and Pharmaceutical Sciences and in the medical school, where he earned a PhD in pharmacology in 1965.

Barnett Fellowships are awarded to outstanding graduate students pursuing PhDs in areas related to drug discovery and development in either school.

Since retiring from the pharmaceutical industry, Barnett has been an adjunct faculty member in pharmacology and toxicology in UB's medical school, a member of the Deans Advisory Council in the SPPS and an advisor to UB's Office of Science, Technology Transfer and Economic Outreach, which helps researchers turn discoveries and inventions into products and services.

He has additional connections to Buffalo and UB as president emeritus of Athenex, an international drug development company that grew out of the UB-based startup Kinex Pharmaceuticals, which he headed for several years.

As a senior executive in drug discovery for Schering-Plough, Barnett managed programs for the allergy drug Claritin, which became the fifth-leading drug in the world, based on sales; Zetia, a novel cholesterol-lowering agent introduced in 2002; Doral, a sedative-hypnotic drug; and Clarinex, the successor to Claritin.

He remains grateful to UB for providing him a strong fundamental background in research.

"My acceptance to graduate school at UB was a game-changer for me," he recalled. "During my time here at UB, it was a very dedicated faculty that often put teaching ahead of their own research. Having a very good background in research, I always felt confident."

Barnett plans to continue to support UB by promoting the development of spinoff companies in new drug discovery and related technologies, and by serving as a resource to students about career choices in the pharmaceutical field.

What motivates his generosity?

"I went through college and graduate school without paying anything for my education," said Barnett, who also earned a bachelor's degree in pharmacy from Rutgers. "I always felt it would be nice to give something back and help someone else."

**Shunxi Lin** conducts research focused on developing monoclonal antibodies (mAbs) for the treatment of certain bacterial infections. The emergence of antibiotic resistant bacteria, the paucity of new antibiotics, and the detrimental effects of broad-spectrum antibiotics on a healthy microbiome give urgency to the search for pathogen-specific antibacterials. Lin is working on developing mAbs against antibiotic-resistant *Acinetobacter baumannii* and the oral pathogen *Treponema denticola*. He hypothesizes that antibacterial mAbs his lab is developing will render these superbugs less pathogenic and enhance clearance of the bacteria by host immune systems. He is testing the efficacy of several mAb candidates against clinical isolates both *in vitro* and in animal models. He expects to complete his research and his degree by the end of 2017.

Lin, who comes from Fujian, China, and has many relatives living in New

York City, has been a student at the School of Pharmacy and Pharmaceutical Sciences for eight years. He transferred to Buffalo after a year of undergraduate study at City College of New York on the advice of a professor who told him that if he wanted to work in drug development – at the time Lin was interested in cancer drugs – he should be at UB. He calls the school "fantastic," and says that Drs. Fung and Balthasar have been wonderful mentors.

Lin's long-range ambition is to have his own lab so that he can follow his own ideas, probably in an academic setting or a small pharmaceutical company. But first he'll be looking for a position in an industry lab – someplace like Genentech or MedImmune – working on antibody therapies.

He will use the Barnett Fellowship funds to buy more reagents for his research and for travel to the 2016 American Association of Pharmaceutical Sciences meetings.

**Robert Jones** came to the school from San Diego after earning a BS in chemistry and biological sciences at the University of California, Irvine and then, on the suggestion of an undergraduate advisor, working for two years as an analytical chemist for a pharmaceutical company. Both his parents were pharmaceutical scientists with Merck, so that world was familiar.

When it was time to choose a graduate school, Buffalo's strength in computational sciences was attractive. Now in the third year of his doctoral studies working on drug transporters in Marilyn Morris's laboratory, Jones is preparing to defend his recently submitted research proposal. Then he'll spend two to three years conducting the research.

Jones's investigation concerns Monocarboxylate Transporter 6 (MCT6), which has recently been recognized for its role as an absorptive drug transporter. Primarily expressed in

the human kidney and intestine, its localization resides at major sites of drug absorption and clearance. However, the significance of MCT6 interactions, its substrate specificity, and functional characterization remain largely unknown, classifying MCT6 as an "orphan" transporter. His study seeks to determine MCT6 substrate specificity and functionality through *silico*, *in vitro*, and *in vivo* approaches.

Last year, in addition to the Barnett Fellowship, Jones received a PhRMA Foundation Predoctoral Fellowship. He is excited that he can use the funding to support his research with top-of-the-line equipment – he has the Barnett funds earmarked for a particular software package. Jones was also named Outstanding Teaching Assistant of the year.

Jones would spend 24 hours a day on his research if he could – "because it's exciting."

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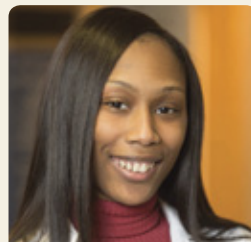
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Veena Thomas

“ I am sincerely grateful for the fellowship from the Kapoor Foundation. The support made it possible for me to pursue my PhD and to work in the field of antibody PK/PD modeling and drug development. ”

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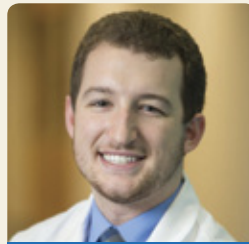
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Thanh Nguyen  
Alex Principino  
Ahmed Saeed  
Mridul Singh  
Jia Ying Situ  
Betty Vu  
Carmen Yu  
Yip-Kee Zou

**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  
Susan Chen  
SeongJun Choi  
Nichole Cipparauolo  
Collin Clark  
Danielle Davide  
Vincent Della Valle  
Sara DelVecchio  
John Diep  
Heather Dillenbeck  
Ryan Dillon  
Peter Fendt  
Patrick Galdun  
Colleen Gardon  
William Gavin  
Megan Gee  
Brittany Giuga  
Heather Grove  
Matthew Haintz  
Kristin Hart  
Charles Hinton  
Caitlin Hoar  
Spinel Karas  
Eun Tae Kim  
Hyunghoo Kim  
Jaclyn Kotula  
Cristina Kowalczyk  
Elizabeth Lakota  
Vincent Mark  
Jessica Meyers  
Amanda Mogul  
Tyler Mullen  
DeAnna Nigro  
Julie Obenauer  
Jovin Panthapattu  
Samsad Pavel  
Kyle Polanski  
Ayaj Porosh  
Kelly Ross  
Rachael Scott  
Thomas Tamul  
Anthony Torres  
Manav Wahi  
Madeline Waldron  
Johnny Want  
Christina Wang

Corey Wells  
Brandon Wolski  
Victoria Wronski  
Sammy Yafai  
Alfred Yeung  
Qianqian Yin  
Jonathan You  
Wai In Yu  
Nahid Zaman  
Cody Zhang  
Liang Zhuo



Corey Wells

“ Thanks to the Newton Scholarship, I can now work less during the school year and focus completely on my studies. ”

**HENRY A. PANASCI SCHOLARSHIP FUND**

Ahmed Abd-elrahman  
Justin Bader  
Peter Fendt  
Kelly Ross  
Corey Wells



Peter Fendt

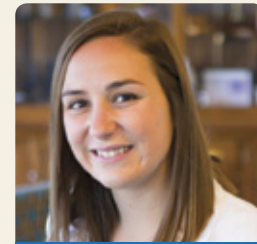
“ For years I have been looking forward to practicing pharmacy and impacting the lives of many people. I am very grateful to the Panasci family for assisting me in achieving this goal. ”

**COPEL & MAX RUBENSTEIN SCHOLARSHIP FUND**

Matthew Belair

**UB SCHOOL OF PHARMACY AND PHARMACEUTICAL SCIENCES ALUMNI ASSOCIATION SCHOLARSHIP FUND**

Kevin Szeto  
Somalis Tien  
Manav Wahi  
Angeline Walker



Angeline Walker

“ The UB Pharmacy Alumni Scholarship allows me to focus solely on school, not on my financial burden – especially since this is my most challenging year. ”

**UB SCHOOL OF PHARMACY AND PHARMACEUTICAL SCIENCES GOLF TOURNAMENT SCHOLARSHIP FUND**

Bisi Aiyelabowo  
Megan Gee  
Tyler Mullen  
Alain Nguyen  
Kelly Ross  
Jennifer Wiafe

**WALMART SCHOLARSHIP FUND**

William Gavin

**WOMEN'S CLUB COLUMBIA SCHOLARSHIP FUND**

Mario Beccari  
Vincent Mark  
Bethany Wattengel  
Victoria Wronski

## Heather Ackley – Supporting the Future of Pharmacy

By the time Heather Ackley, BS '62, retired from the Women and Children's Hospital of Buffalo outpatient pharmacy in mid-2015, there wasn't much she hadn't seen in her career – including, recently, young pharmacists with very high student debt.

That was a motivation in her decision this past year to endow a scholarship in the PharmD program, along with the appreciation of how well her family had fared through the decades as pharmacists with UB degrees.

The first Hock-Ackley Scholarship, named for her father and her late husband William Ackley, '62, was awarded this year to Laura Bielecki (see below).

Heather Ackley was practically a pharmacist by birth. Her father Albert Hock, BS '30, owned Leroy Pharmacy on the corner of Leroy and Fillmore in Buffalo, so she'd grown up in the business before she enrolled in UB's School of Pharmacy. An uncle and an aunt were pharmacists, as was a cousin. She married a pharmacist.

She and her husband, Bill, who she says always loved the retail business – loved being behind the counter – took over her father's pharmacy in the city and operated it until 1995 when they sold to Rite Aid,

long after the other merchants on what had been a thriving commercial intersection had followed their customers to the suburbs.

But the Ackleys had not been standing still. In the meantime, they'd been building a business providing prescription services for nursing home residents, starting with Lutheran homes on Buffalo's East Side and eventually handling 2,000 beds in Erie and Niagara Counties. They sold that business to Omnicare in 1998, staying on for three years and then consulting in the field.

She says pharmacy has been a good profession for her because it was reliably steady – even during the Great Depression her father made a good income in the business – and because she's been able to work in a variety of settings well into her 70s.

Both her father and her aunt and uncle were generous supporters of their school so Heather Ackley is following a family tradition with the gift that endows the scholarship in her family names.

## Laura Bielecki – Getting Ready to be the Future of Pharmacy

From where high school student Laura Bielecki stood at her register in a checkout line in a Wegmans supermarket in Amherst, NY, she could watch what was happening in the store's pharmacy.



It looked interesting so she applied for a job there. And it was interesting, so she applied to the School of Pharmacy and Pharmaceutical Sciences PharmD early assurance program for high school students.

After three years of undergraduate preparation at UB and a good performance on the PCAT, she was admitted to the PharmD program, and after completing a year of her pharmacy studies she was admitted to the joint PharmD-MBA program.

Today, Laura is a P2 (second-year PharmD student) with one year of pharmacy and one year of business school behind her. She is taking the health care concentration in her MBA program in order to prepare for a career in which managed care will be a key factor.

She's already putting what she's learned in business school to work as a teaching assistant for Professor Karl Fiebelkorn's pharmacy courses.

Through the years of her progress toward the day in 2018 when she will finally step into the world with her PharmD in one hand and her MBA in the other, Bielecki has continued to work in Wegmans pharmacies.

It is her current ambition to stay with the company in a managerial position. But she knows that's not a sure thing, even with her connections, in a job market that has become intensely competitive in just the five years since she started at UB.

Bielecki, who also received a Women's Club of Columbia Pharmacy Sciences Fund scholarship this year, will use her Hock-Ackley scholarship to help pay her tuition.

As the inaugural holder of that scholarship, Laura Bielecki, on the basis of her performance to date, does look like a sure bet to make all her supporters proud.

# Alumni Relations

Our alumni help to continue our proud tradition of advancing pharmacy education, advocacy, practice and research. Their dedication is vital to our mission.

UB School of Pharmacy and Pharmaceutical Sciences alumni have been well recognized in 2015.

The 2015 Annual Awards Ceremony gave distinction to alumni who contributed significantly to the field of pharmacy.

**Joseph Sterman, '52**, was the recipient of the Willis G. Gregory Memorial Award, named for our school's fourth dean. It is the Alumni Association's most prestigious award, given annually to an outstanding alumni pharmacist who personifies the ideals of service, integrity, and who, in the eyes of his or her associates, personifies the profession of pharmacy.

**Michael Ghobrial, '09**, received the Orville C. Baxter Memorial Professional Practice Award, named in honor of a long-standing faculty member who was extraordinarily dedicated to the professional practice of pharmacy. This annual award is given to recognize an outstanding practicing alumni pharmacist who demonstrates high ideals of professionalism and whose practice demonstrates genuine concern for patients.

The Rochester Chapter of the UB Alumni Association recognized **Christopher D. Diehl, '12**, as their inaugural Young Alumni Award recipient during the UBAA Rochester Chapter Annual Awards Ceremony. This award recognizes young alumni who have a successful career path and ambitious personality, and who demonstrate leadership in the workplace.

The 2015 Student Scholarship Golf Tournament was attended by more than 100 golfers and raised over \$21,000 for scholarships, which are awarded to students with academic merit. Throughout the 2014-2015 academic year, alumni enriched our students' education with their wisdom through panel discussions, precepting and guest lecturing.

Our 2014 Reunion welcomed many alumni back to campus. The activities

kicked off with a key note presentation entitled *Angiogenesis as a Target for Recovery After*

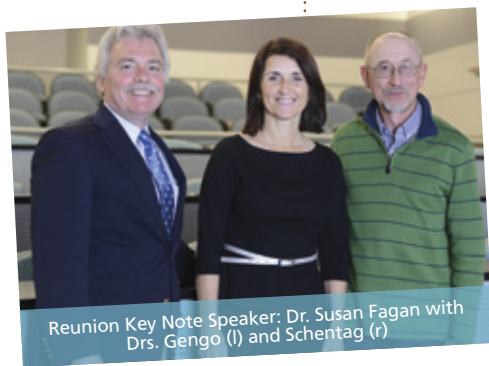
*Stroke* by Susan Fagan, '84, assistant dean, Georgia Regents University and a continuing education program on *Self Care* by Erin Slazak, '04, clinical assistant professor, pharmacy practice. These were followed by an energetic tailgate party and UB Bulls football game. The weekend wrapped up on Buffalo's waterfront at our All-Alumni Reception at Templeton Landing.

Over 150 alumni, friends, faculty and students attended the 2014 American Society of Health Systems Pharmacists Mid-Year Alumni and Friends Reception in Orlando, FL. This annual event offers colleagues a dynamic way to reconnect.

The 2016 reception will be held in Las Vegas—we hope to see you there!

The Alumni Association hosted the 2015 graduating PharmD class as they celebrated their graduation at the Hotel Lafayette in downtown Buffalo. Dean James O'Donnell and Senior Associate Dean Karl Fiebelkorn recognized students for their academic achievements and philanthropic contributions to the school. Class officers offered comments to their classmates and honored Joshua Sawyer, clinical assistant professor, pharmacy practice, with the Class of 2015 Faculty Recognition Award.

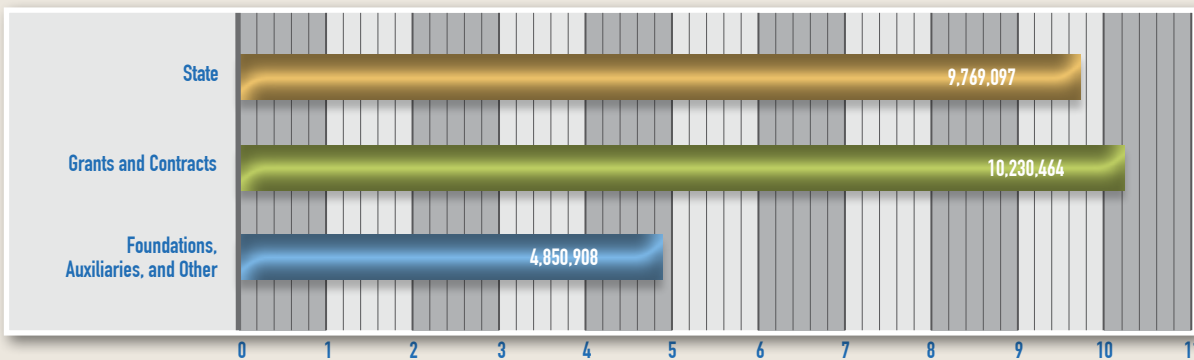
The alumni association plays an important role in supporting our students and keeping our alumni informed and connected to each other and the school.



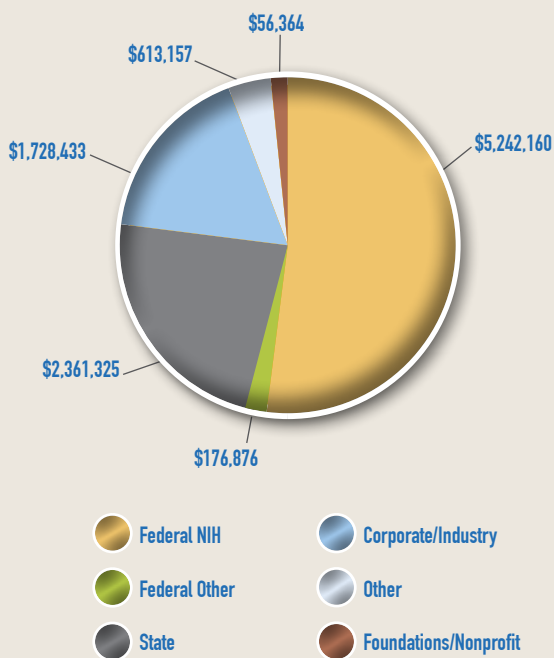
# Financial Reports

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.

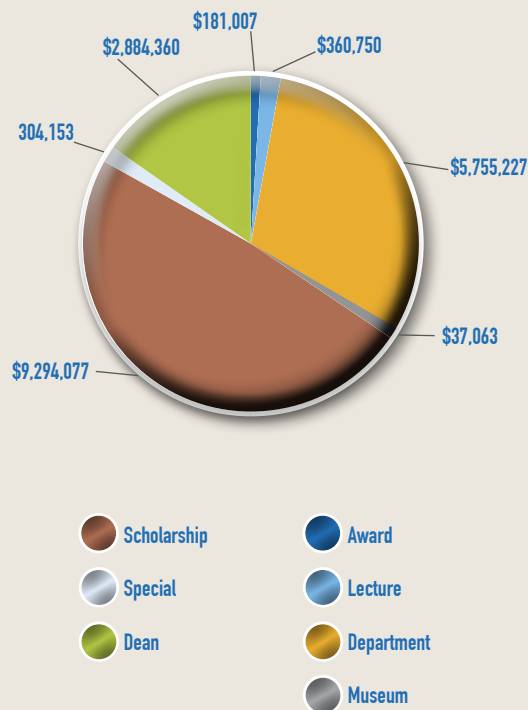
**AMOUNT OF TOTAL SCHOOL REVENUE BY FUNDING SOURCE**  
TOTAL REVENUE \$24,850,469



**EXPENDITURES BY FUNDING SOURCE FOR RESEARCH AND TRAINING (TOTAL EXPENDITURES \$10,178,315)**



**ENDOWMENT MARKET VALUE JUNE 30, 2015 (\$18,816,637 TOTAL MARKET VALUE FY 14/15)**



Our school-wide committees give governance and oversight to our school. The structure, composition and charges of the school's standing committees are prescribed in the bylaws of the School of Pharmacy and Pharmaceutical Sciences.

## School-Wide Committees

### Admissions Committee

Jennifer Hess (*Chair*), Javier Blanco, Holly Coe, Karl Fiebelkorn, Irene Hong

Support: Sara Robinson, Mark Sauberan, Christine Stumm

### Assessment Committee

Fred Doloresco (*Chair*), Nicole Albanese, Kathleen Boje, Pete Brody, Karl Fiebelkorn, Jennifer Hess, Wojciech Krzyzanski, Marsha Nelson, William Prescott, Murali Ramanathan, Mark Wrobel, Mary Wurm-Schaar

Rebecca Martin (P2), Brenda Basile (P3), Nicholas Ladziak (P4)

### Curriculum Committee

Nicole Albanese (*Chair*), Kathleen Boje (*non-voting*), Peter Brody, Deborah Chiarella (*non-voting*), Fred Doloresco, Karl Fiebelkorn, Donald Mager, William Prescott (*non-voting*), Murali Ramanathan, Erin Slazak, Christine Stumm (*non-voting*), Robert Wahler, Ashley Woodruff, Mark Wrobel

Rebecca Martin (P2), Brenda Basile (P3), Nicholas Ladziak (P4)

### Executive Committee

James O'Donnell (*Chair*), Joseph Balthasar, Edward Bednarczyk, Kathleen Boje, Rebecca Brierley, Karl Fiebelkorn, Jennifer Hess, William Jusko, Cindy Konovitz, Candise Morris, Marilyn Morris, William Prescott, Leigh Yates  
Karen Dallas (*recording secretary*)

### Research Committee

Joe Balthasar (*Chair*), Alan Forrest, Marilyn Morris, Gene Morse, Dhaval Shah, Robert Straubinger, Brian Tsuji

### Safety Committee

Cindy Konovitz (*Chair*), Robert Chau, Vicki Rink, Lee Zak

### Student Academic Affairs Committee

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

### Scholars Committee

Nicolas Norgard (*Chair*), Ed Bednarczyk (*Co-Chair*), Joseph Balthasar, Jennifer Berryman, Peter Brody, Fred Doloresco, Gina Prescott, William Prescott, Christine Stumm

### Tenure and Promotion

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 Chairman, Commercial*

*Advisory Committee*

Coherus Biosciences, Inc.

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.

Carol Gloff, '75

*President*

Carol Gloff and Associates

Mark Gurney

*Chairman and CEO*

Tetra Discovery Partners

Steven Hansel, '93

*Senior Director*

Pfizer, Inc.

George Lasezkay, '74, '78

*Executive Vice President, General Counsel*

Acucela, Inc.

Margaret McGlynn, '82

*Board Director and Consultant*

Biopharmaceuticals

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

*Chief Scientific Officer*

EMS Pharma

Michael Taylor, '81

*President and CEO*

Deciphera Pharmaceuticals

Avi Yacobi, '75

*President*

DOLE Pharma, LLC

# Alumni Reunion Weekend

## September 23-24, 2016

### Celebrating the classes of

1956, 1961, 1966, 1971, 1976, 1981, 1986, 1991, 1996, 2001, 2006 & 2011

#### Friday, September 23

- Alumni Panel Discussion
- Tours of Kapoor Hall
- All-Alumni Reunion Class Cocktail Party
- Private Class Dinners

#### Saturday, September 24

- UB Bulls Football Tailgate Party
- UB Bulls v. Army