

Expanding the Horizons of Research and Healthcare

ANNUAL REPORT 2011-12



Message from the Dean

Academic year 2011-2012 was a year filled with much celebration, excitement and activity.

The school celebrated its 125th anniversary with many events, programs and celebrations. As soon as our anniversary celebrations were completed, we were immediately thrust back to reality with the arrival of our ACPE accreditation team. I am happy to report the PharmD Program is in full compliance through 2020. As 2011 closed and 2012 began, so began our last few months in Cooke and Hochstetter Halls on the North Campus. This time brought much mixed emotion from all school members: nostalgia, anxiety, excitement and exhaustion as we all began the process of 'packing up' 35 years of research and academic work and moving the school to Kapoor Hall on the South Campus. A project of this scale had not been done before on campus and I am proud to say, our move was seamless. John and Editha Kapoor Hall is a marvelous new building for our school and I am proud to call it 'home'.

Our faculty and staff continued to enhance the reputation of the school via their awards, recognitions and scholarship. Leung Fung was chosen as a 2012 University at Buffalo Distinguished Professor recognizing his over 40 years of leadership in research, education and scholarship internationally as well as nationally in the pharmaceutical sciences. Murali Ramanathan and his multidisciplinary research team continue to make great strides in using complex data analysis to better understand the potential causes of multiple sclerosis. Sathy Balu-Iyer was awarded the 2011 UB Exceptional Scholar Teaching Innovation Award, received the 2011 Niagara Frontier Inventor of the Year Award as well as the 2012 Innovation in Biotechnology Award from AAPS. Also on the national level, Marilyn Morris was elected as an American Association for the Advancement of Science Fellow and was selected as President-elect to the American Association of Pharmaceutical Scientists. At the school level, Gina Prescott was recognized as the 2012 Teacher of the Year. These and many other faculty members' contributions allow the school to keep advancing forward.

The accomplishments of our students are always a source of much pride. Our students were recognized locally, regionally and nationally. APhA-ASP was recognized as UB's 'Student Organization of the Year' and received the Excellence in Academics and Service Award. Our NCPA Pruitt Schutte Business Plan Team placed 12th at the national competition and our Student Pharmacist Compounding Team placed 2nd at the MEDISCA Physical Compounding event. Student representatives, Cecilia Lon and Bridget Morse from Drs. Jusko's and Morris' labs received 2012 American Association of Pharmaceutical Scientists Graduate Student Awards.

This past academic year was filled with much change, but what is again evidenced is the strength and dedication of school members. Without everyone coming together as an effective team we would not have been able to achieve our reaccreditation, the revamping of our curriculum and the move to our new home, all while maintaining the highest levels of teaching, research and service to our students and valued partners. I thank all members of the school for their dedication, insightfulness and perseverance throughout the past year. I am proud to call you all my colleagues and thank you for making my years of service as Dean a pleasure...

Warm regards,



Wayne K. Anderson, PhD
Professor and Dean



SCHOOL OF PHARMACY AND PHARMACEUTICAL SCIENCES

MISSION

The mission of the University at Buffalo School of Pharmacy and Pharmaceutical Sciences is to provide a world-class, high quality education to students in pharmacy practice and the pharmaceutical sciences; create and disseminate knowledge in pharmacy practice and pharmaceutical sciences via our innovative research and development activities; and provide service and improve health and wellness locally, nationally, and worldwide.

VISION

The vision of the University at Buffalo School of Pharmacy and Pharmaceutical Sciences includes:

- To maintain a U.S. ranking as one of the top 20 Schools of Pharmacy and Pharmaceutical Sciences;
- To provide world-class education to pharmacy practice and pharmaceutical sciences students, at all academic levels including the postdoctoral level, using best-practices and evidence-based educational approaches, enabling our graduates to contribute to and advance the profession;
- To be a leader in innovative education, research, practice and service;
- To house a world renowned research enterprise that targets basic and applied research to advance basic, clinical and translational research;
- To be responsive to society's health care needs and improve health, wellness, and health care outcomes;
- To advance pharmacy practice in new and emerging practice and care models, including interprofessional team-based models;
- To provide a collaborative and productive academic environment that promotes effective mentoring, professional growth and development, and life-long learning.

VALUES


We achieve our mission and goals within a values framework that guides our enterprise and our efforts. These include:

- Excellence in teaching, research, practice and service;
- Integrity in and accountability for our teaching, research, practice, and service;
- The highest ethical standards in our education, research, practice, and service activities, imparting these values in our graduates who will be the next generation of leaders in the profession;
- A culture that embraces diversity, inclusiveness, equity, and respect for all persons;
- Innovation and creativity to advance pharmacy practice and pharmaceutical sciences applications to improve health and health care;
- Organizational values that promote and reward critical thinking and continuous quality improvement.

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At the bench: Marilyn Morris was named a fellow of the American Association for the Advancement of Science, the world's largest general scientific society



Bench to Bedside, Bedside to Bench

The Course from Serendipity to Serious Science

In a field firmly anchored to science and logic, Marilyn Morris, PhD and Nicole Albanese, PharmD, both say chance led them to disciplines in which each has made far-reaching contributions of new knowledge.

Morris, a Canadian national, was en route to Winnipeg from Edmonton when fate intervened. She had been representing the University of Manitoba as its centennial scholar, at a national meeting of the Canadian Pharmaceutical Association. When her inbound flight was delayed – in fact, hijacked – the airline sent a bus to take stranded passengers to dinner, where she met a pharmacist who was a faculty member at the University of Ottawa.

“There I was, going into my senior year, and he told me about a new combined master’s degree and clinical residency program there,” Morris says. “It sounded so exciting that I applied for it. And that’s where I ended up earning my master’s degree in pharmacology.”

Albanese was a high school senior working as a cashier in a grocery store chain when her career path emerged. When a technician called off one day, she was asked to fill in behind the pharmacy counter.

“I really liked it. They requested me to come back for a few weekends, and I ended up getting a permanent position behind the pharmacy counter, doing real technician work,” says the Buffalo native, who believes things happen in life for a reason. “I mean, this just definitely fell into my lap. Pharmacy wasn’t even a blip on my radar.”

Today, Morris and Albanese are breaking future ground in scientific research and clinical practice, classroom instruction and leadership in the pharmacy profession.

Morris came to UB to earn her PhD, on a scholarship after working as an assistant professor at Dalhousie University in Halifax, Canada. “The program here is highly ranked, and I was interested in working with one of the professors, Dr. Gerhard Levy,” she says. “So I came here and was very happy that he took me into his lab.”

She joined the faculty in 1985 after a postdoctoral fellowship at the University of Toronto, Canada. In 2006 she received the SUNY Chancellor’s Award for Research and Creative Activity, and from 2006 to 2012 served as the associate dean for graduate and postgraduate education in the UB Graduate School, where she established the Office of Postdoctoral Scholars.

At bedside: Nicole Albanese works daily on assessing how adherence counseling can result in improved pharmacoconomics and improved patient outcomes.



“ IF I CAN DECREASE SOMEONE’S A1C MARKER BY ONE PERCENTAGE POINT, JUST ONE, from nine percent to eight percent, I have saved the healthcare system \$820 for every year that their A1C stays at eight.”

In December 2012 Morris was named a fellow of the American Association for the Advancement of Science, the world’s largest general scientific society and publisher of the journal *Science*. The prestigious recognition is for “distinguished contributions to the field of pharmaceutical sciences in the area of membrane transport and its influence on the pharmacokinetics and pharmacodynamics of drugs.”

She also is a fellow – and president-elect – of the American Association of Pharmaceutical Scientists (AAPS), and serves as associate editor of the *AAPS Journal* and on the editorial board for the *Journal of Pharmaceutical Science*, *Pharmaceutical Research*, *Pharmaceutics* and *Drug Disposition*.

Funded by the National Institute of Drug Abuse, her novel bench work examines the toxicokinetics and toxicodynamics of gamma-hydroxybutyric acid (GHB) – also known as liquid ecstasy or the “date rape drug”— to identify therapeutic strategies to prevent overdose deaths, which occur predominately in teenagers and young adults.

“We’re interested in what happens to GHB in the body. How is it getting into the brain? How is it being eliminated from the body? We’re interested in the pharmacological effects that lead to coma and death. Basically, what we’ve shown in my lab is that it causes respiratory depression that we can demonstrate in an animal model, and this is responsible for many of the deaths.”

Morris knew from her previous research that, because GHB is a small, ionized molecule, it cannot move through a lipid cell membrane: so a transport mechanism must be present for its absorption, tissue distribution and renal elimination from the body. The author

of more than 160 peer-reviewed scientific papers, she has published extensively on renal transport, hepatobiliary transport and hepatic clearance models – and on the monocarboxylate transporters she has now identified as therapeutic targets for the treatment of GHB drug overdose.

“We’re targeting these transporters in order to increase the elimination of the drug from the body and prevent the drug from getting to the brain,” Morris says.

In the lab, she and her team discovered that Lactated Ringer’s solution, or L-lactate for injection, is an effective therapy for GHB overdose. Commonly found in emergency rooms, lactate is a substrate and competitive inhibitor for the monocarboxylate transporters responsible for the brain uptake and renal clearance of GHB.

In addition to preventing GHB uptake into the brain and increasing its elimination by the kidney, Morris is investigating therapies to prevent GHB from binding to certain neurotransmitters in the brain.

“Our work has demonstrated that the GABAB receptor is responsible for the respiratory depression that leads to death,” she says. “If we can give a drug that can inhibit the effects of that receptor, we can also block the effect.”

But while there is L-lactate on the market with the therapeutic potential to inhibit GHB transport through cell membranes, there are no drugs currently marketed that can block the drug from binding to the receptor in the brain responsible for respiratory depression and death.

“**I’M LOOKING AT THE CHANGES THAT MAY BE NEEDED TO NOT ONLY PREPARE STUDENTS FOR AN ACADEMIC CAREER, but equip them for these new roles in the pharmaceutical industry.** (Morris)

There is no drug on the market that can do that. There is nothing being currently investigated, except by us,” Morris points out. “So we are looking at potential drug development. There is also the potential for the development of new drugs here as inhibitors of the transport by monocarboxylate transporters.”

Morris is also investigating the pharmacokinetics and pharmacodynamics of dietary components, specifically flavonoids and organic isothiocyanates, for possible therapeutic application to cancer therapy and chemoprevention.

Flavonoids and isothiocyanates are organic compounds found in apples, cranberries and wine, among other foods, and in numerous popular nutritional supplements. Isothiocyanates are present in cruciferous vegetables, such as broccoli.

“We know that flavonoids and isothiocyanates are absorbed into the body. We want to know how they affect the membrane transport of drugs,” Morris says, adding that this area of her research focuses on efflux transporters.

“**I**n the treatment of cancer these efflux transporters are responsible for multi-drug resistance. And we’ve identified a number of naturally occurring compounds that are very effective against efflux transporters. We found that a number of flavonoids do inhibit these efflux transporters, in particular, an efflux transporter called breast cancer resistance protein, which can be overexpressed in various cancers.”

In addition to the National Institute on Drug Abuse, Morris’s research has been funded by the National Institutes of Health, the Department of Defense, the National Science Foundation, Susan G. Komen for the Cure, the National Cancer Institute and other agencies. She is also an advisory committee member for the U.S. Food and Drug Administration’s Center for Drug Evaluation and Research.

“I owe any success I might have had to the talented undergraduate, PharmD and graduate students and postdoctoral fellows who have worked with me.” Besides her lab work, she teaches PharmD and graduate courses, including her own graduate course in “Drug Metabolism and Disposition.”

While Morris is working at the bench to save lives, Albanese is at bedside and in the classroom defining new clinical practice outcomes and academic groundwork to improve patient care and clinical competency.

After switching her undergraduate major at Canisius College from business to health care, she earned her PharmD degree from Virginia Commonwealth University, and completed her community pharmacy residency in Richmond, Virginia.

“My job as a resident at Rite Aid was to start their clinical program. So I started a diabetes clinic,” Albanese says. “It was through my residency that I realized I wanted to be on faculty at a school of pharmacy. I really enjoyed the teaching. I had a lot of opportunity to do that as a resident and I wanted to continue that. I also wanted a clinical practice site where I could see patients.”

She joined the UB faculty in 2002: Since then, she has been recognized for scholarship and research focused on management of diabetes in an ambulatory setting, innovative approaches to the pharmacology of chronic disease, and alternative practice models focused on patient education and medication adherence.

In 2009, Albanese was named the UB SoPPS Teacher of the Year – and has been nominated again to receive the 2013 award – and in January 2013 received the Faculty Teaching Award from the UB SoPPS Department of Pharmacy Practice. Her scholarly publications include a co-authored White Paper in the *American Journal of Health System Pharmacy* on the role of the pharmacist as practitioner and teacher.

Since 2005, she has been counseling patients through her clinical practice, the result of collaboration among UB, Buffalo Medical Group and Independent Health.

“Before I was brought on board, these groups decided they needed a way to change physicians’ practice in an evidence-based manner. They wanted a way to educate the physicians about changing guidelines or updating medication protocol.”

“The partnership is focused on optimizing patient outcomes and represents a step toward full integration of pharmacy practice into the ambulatory care infrastructure, following the long-established hospital model,” she says.

“It is what is going to catapult pharmacists to be included in every physicians’ office, working with the patient, providing education, providing follow up, providing what we call medication therapy management.”

In the clinic setting, her core research tracks A1C markers in diabetes patients to define clinical outcomes of pharmacy intervention. “Intervention could be education, it could be medication therapy management, helping to determine the right medication at the right dose, what works for the patient and what works for their lifestyle,” explains Albanese.

She believes adherence counseling to determine if there is a deficit of patient knowledge or patient motivation, is also critical in clinical care. “When I counsel patients I barely say anything. I listen to them. I take in what they’re saying and I’ll feed it back to them to make sure we’re on the same page. Then once we’re

on the same page we can move forward and address their concerns.”

In addition to improved patient outcomes, Albanese’s research translates to measurable savings for health care providers.

“If I can decrease someone’s A1C marker by one percentage point, just one, from nine percent to eight percent, I have saved the healthcare system \$820 for every year that their A1C stays at eight,” she explains.

That number is quantifiable through the partnership with Buffalo Medical Group and Independent health, which enables Albanese to track the cost of patient medical and pharmacy claims.

“If I can show somebody’s blood pressure decreased because of a recommendation I made, whether it was a dietary recommendation or a medication recommendation, then I can actually tie that to money saved throughout the entire health care system.”

At Kapoor Hall, Albanese is responsible for the introduction of an active learning model that has been incorporated into the new UB SoPPS curriculum. She was introduced to Team Based Learning (TBL), which holds students accountable for what they learn in class, at a conference in 2009 and brought the concept back to share with fellow faculty.

“try to bring the reality of patients with a chronic disease into the classroom. I teach a lot with cases and hands-on learning,” she says when asked why she thinks her teaching style is considered innovative.

In the TBL model, which focuses also on peer-to-peer interaction, students are quizzed individually at the beginning of class, and then asked to answer the same questions in groups using a scratch-off form. After that, the instructor fields questions on the subject matter of the quiz. “If they don’t need any discussion I move on to the next thing, which might be giving them a patient case and walking them through the case.”

Team Based Learning, Albanese says, helps to better prepare students to counsel patients and manage a pharmacy in the real world. “Our first year students are getting a new curriculum, and in our new curriculum we have built TBL into our main course, which is pharmacotherapeutics.”

Her instructional originality is also evidenced in her elective “Advanced Diabetes Management,” which requires students to live connected to an insulin pump for 72 hours.

“They not only have to wear the pump, they have to utilize the pump. They basically act like a diabetic for three days. It provides students with a heightened empathy for what a patient with diabetes has to think about literally every minute of every day. They get the experience firsthand and they are all surprised at how difficult it is,” Albanese says of the class, admitting that she is unaware of its experiential instruction method at use in other pharmacy schools.



“It’s become super-popular. All the students love it and, literally, my class registration maxes out on the first day that it’s offered.”

As AAPS president-elect, Morris says that while scientific programming and scholarship support for graduate and post-doctoral students are priorities, she is focused on defining what the membership will need to oversee the changing landscape of the pharmaceutical industry.

About 20 percent of the current 11,000 AAPS membership is employed in academia; the rest work in the pharmaceutical industry, where most graduate students now find employment.

“The pharmaceutical industry used to mean the big ‘pharma’, but now 50 percent of our members are working in small, mid-sized companies. This is where things are leading,” she says.

“I’m looking at the changes that may be needed to not only prepare students for an academic career, but equip them for these new roles in the pharmaceutical industry. The mid-sized companies are very different from the large companies where many things are outsourced. So we will have to have a broader knowledge overall, and be able to understand not only just the science, but be interdisciplinary, problem-solvers and team players to move into the future.”

Albanese believes that patient-centered medical homes and new, private Accountable Care Organizations (ACOs) will radically transform pharmacy practice in the ambulatory care world.

In a patient-centered medical home, the physician collaborates with case managers, nutritionists, specialists, social service providers and pharmacists using the patient’s Electronic Medical Record (EMR) to ensure continuity and optimal outcomes.

Accountable Care Organizations allow physicians to restructure patient billing. This may include coding for medication therapy management counseling between hospital discharge and follow up with a primary care physician.

“We do this right now at Buffalo Medical Group for Independent Health patients. When we speak with patients and we find an issue, we present the issue and a solution to the primary care physician directly,” Albanese says, adding common problems include drug interactions and therapeutic duplication.

“Medication Reconciliation after hospital discharge has been shown to save the health care system a lot of money. I also have been shown to decrease re-admission rates. And this is a key area right now since there are federal funds that will be withheld if a hospital’s re-admission rates are not on target.”

– Jessica Thorpe, *Outside the Box*



Education

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

Admissions

Each year, the Office of Admissions and Advisement strives to continually improve and enhance our efforts to attract prospective students through innovation and planning.

Our efforts extend to professional PharmD candidates and pre-pharmacy and pre-pharmaceutical sciences undergraduate freshmen and transfers. Our helpful Dean's Alumni Ambassadors continue to engage in admissions activities by attending graduate school recruitment fairs across the country, electronically reviewing admission applications, interviewing, and as valued speakers for our annual Orientation and White Coat Ceremony. These initiatives, together with our personalized outreach and exciting electronic and paper media presence, allow us to attract and enroll the best students.

The University and the School continued our strong tradition and welcomed another highly talented freshman class, with nearly 300 students indicating pre-pharmacy as their intended major, representing nearly 8 percent of the undergraduate incoming class. UB's Early Assurance (EA) Program continues to offer outstanding pre-pharmacy students the opportunity to enter our PharmD professional program with a minimum GPA of 3.5. The median GPA for EA students accepted into the program for this year was 3.7.

Meet the Class of 2015

Interviewed	230
Accepted	124
Middle 50th Percentile Science & Math GPA (Biology, Chemistry, Physics, Math)	3.3 – 3.7*
Middle 50th Percentile of Sum PCAT Percentile Score (excluding composite)	335 – 401*
In-State	85%
Out-of-State	15%
Foreign Citizen	5%
Number of States/Provinces Represented	12
Females	60%
Males	40%
2 years or less of college	56%
Bachelor's degree or higher	34%
Average Age	22

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

Degrees Granted (2011-12)

PharmD	115
BS in Pharmaceutical Sciences	8
BS/MS in Pharmaceutical Sciences	7
PhD in Pharmaceutical Sciences	5
Total	135

Degree Program Enrollment (2011-12)

P1 Year	129
P2 Year	123
P3 Year	110
P4 Year	121
PharmD Subtotal	483
BS in Pharmaceutical Sciences	35
BS/MS and MS in Pharmaceutical Sciences	26
PhD in Pharmaceutical Sciences	36
Pharmaceutical Sciences Subtotal	97
Total Enrollment	580





Office of Continuing Pharmacy Education

Mission: To provide continuing education activities designed in knowledge, application, and practice-based learning to meet the needs of pharmacists and preceptors in all practice settings.

Fiscal Year 2011-2012

UB Programs	19
Home Study Programs	1
Cosponsored	13
Total	33

Goal:

The goal is to support life-long learning and to create an environment of continuing professional development. The University at Buffalo School of Pharmacy and Pharmaceutical Sciences strives to provide continuing education opportunities to assist in the health care delivery of patients in an inter-professional team approach.

The Office of Continuing Pharmacy Education (OCPE) underwent its petition for continued accreditation with the Accreditation Council for Pharmacy Education (ACPE). The OCPE received the full term of reaccreditation and was commended for a quality CPE program. In addition, the overall strength of the CPE program and the commitment and support from the university and the school of pharmacy were recognized.

As an accredited provider of continuing pharmacy education, we provide accreditation to programs offered by other schools of health science within the UB community, as well as our affiliated hospital partners, community pharmacies, pharmacy organizations, rural healthcare networks, and New York State Department of Health initiatives.

Over 2900 healthcare professionals, including but not limited to, pharmacists, physicians, physician assistants and nurse practitioners attended our ACPE accredited CE activities this past year. Educational opportunities are designed and offered as part of resident training sessions, preceptor continuing professional development and alumni events.

The Office of Continuing Pharmacy Education (OCPE) launched a new online program registration database allowing program participants to register electronically for multiple programs and track attendance history. This enhanced system allows electronic upload of attendance records to the newly developed CPE Monitor implemented by the Accreditation Council for Pharmacy Education (ACPE) and the National Association of Boards of Pharmacy (NABP). The OCPE provided notification and assistance to hundreds of pharmacists in setting-up their NABP eProfile and educated pharmacists on this new process.

CPE Monitor is a new system instituted to provide an electronic system for pharmacists and pharmacy technicians to track their completed continuing pharmacy education credits (CPE). All pharmacists and pharmacy technicians need to register for the system to offer the boards of pharmacy the opportunity to electronically authenticate the CPE units completed by their licensees. CPE Monitor will provide a secure, central system that maintains and tracks all ACPE-accredited CPE credits.

A new OCPE website was created, www.pharmacy.buffalo.edu/ce and includes a *future topics* online survey tool where pharmacists can request educational activities specific to their area of need.

The School completed its move from North Campus to Kapoor Hall on the South Campus providing a new state-of-the-art facility which brings with it technologies assisting in the delivery of application and practice based inter-professional continuing educational activities.



Continuing Education Programs and Symposia

- 8/9/11 NYS Medicaid Medication Therapy Management Pilot Program: Asthma in the Bronx
- 9/14/11 No Pressure: Simple Hypertension Management for an Ambulatory Setting
- 2/26/12 Pharmacy Law Update 2012 Buffalo
- 3/20/12 Exploring the Relationship between HIV Infection and Mental Illness
- 3/20/12 Co-morbidity: The Real Health Threat to the HIV Positive Individual
- 3/20/12 Prescription Opioid Drug Abuse: Our Legitimate Concerns
- 3/20/12 Medication Shortages: Why are There so Many and How are They Being Addressed?
- 3/25/12 Pharmacy Law Update 2012 Rochester
- 3/27/12 Compounded Topical Pain Preparations for the Treatment of Diabetic Neuropathy
- 3/27/12 Statins and Their Risk for Diabetes Mellitus
- 3/27/12 The Role of Diabetes Self-Management Education (DSME) in a Community Pharmacy
- 3/27/12 The Role of Fish Oil in the Treatment of Dyslipidemia
- 3/28/12 Pharmacotherapy Literature Evaluation
- 5/16/12 Forging the Missing Link: Optimizing the Pharmacists Role in Treatment of Patients Living with HIV/AIDS
- 5/23/12 17th Annual Comprehensive Pharmacy Law CE for Pharmacists and Technicians, Day 1
- 5/23/12 17th Annual Comprehensive Pharmacy Law CE for Pharmacists and Technicians, Day 2
- Ongoing: Online HIV Pharmacotherapy Annual Update
- Ongoing: Online HIV Pharmacotherapy Community Pharmacy CE Program
- Ongoing: Online HIV Pharmacotherapy Practiced-Based Program



Residency Training Program Summary 2011-12

The Department of Pharmacy Practice maintained its commitment to providing post-graduate education through general (PGY-1) and specialty (PGY-2) residency training. Our residency program demonstrated continued growth in its outpatient programs during the 2011-12 academic year. This past year, our program consisted of seven PGY-1 programs; two in the ambulatory care/primary care setting, two in the inpatient setting, one in a hospice/palliative care setting, and two in community pharmacy (increased from one in 2010-11). Our program also offered two PGY-2 programs; HIV and psychiatry.

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

The goals of our program are achieved by involving our residents in unique clinical activities such as those available within local medical groups, health maintenance organizations, hospitals, local community health locations as well as specialization in such areas as informatics and HIV pharmacotherapy. These goals are further enhanced via novel research projects and a variety of teaching opportunities. Specifically, our residents attend an established teaching certificate program, actively participate in small and large group didactic teaching and clinical precepting, present an ACPE accredited CE program, participate in a unique didactic research course, and conduct a research project in their area of practice. The University at Buffalo School of Pharmacy sponsors an annual Residency Presentation Day, which continued to expand in 2012, and includes multiple residency programs from the Western New York, Rochester, and Syracuse area. This program gives all residents the opportunity to give a platform style presentation to area residency program directors, preceptors, and resident peers on their research and scholarship.

PHARMACY PRACTICE RESIDENTS/FELLOWS

Melissa Apa, PharmD
Resident
PGY1- Primary Care/Buffalo
Medical Group

Lauren Koranteng, PharmD
Resident
PGY1- Homecare/Hospice-Niagara
Hospice

Kristina Marchese, PharmD
Resident
PGY1- Pharmacy Practice/ECMC

Christina Manciocchi, PharmD
Resident
PGY1- Ambulatory Care/Lifetime
Health

James Mikula, PharmD
Resident
PGY2- HIV/ID/ECMC

Michael Shuman, PharmD
Resident
PGY1- Psychiatry

Ashley Smith, PharmD
Resident
PGY1- Community Pharmacy/
Middleport Family Health

Ashley Toale, PharmD
Resident
PGY1-Community Pharmacy/
Vascuscript

Samira Garonzik, PharmD
Fellow
Drug Development/Novartis

Benjamin Guiastrenec, PhD
Fellow
Drug Development/Novartis

Ridhi Parasrampur, PhD
Fellow
Drug Development/Novartis

Gauri Rao, PharmD
Fellow
Roche

Rachel Soon, PhD
Fellow
Drug Development/Novartis

Vanessa Stevens, PhD
Fellow
Outcomes Research

Karen Thudium, PharmD
Fellow
Drug Development/Novartis

Stuart Turner, MPH, BPharm
(Honors)
Fellow
Outcomes Research

Lance Wollenberg, PhD
Fellow
Drug Development/Novartis

Bai Xue, PhD
Fellow
Ordway

Kuo-Hsiung Yang, PharmD
Fellow
Roche

PHARMACEUTICAL SCIENCES POSTDOCTORAL ASSOCIATES/FELLOWS

Sihem Ait-Oudhia
*Mechanistic PK/PD Modeling of
Anti-cancer Drugs; Modeling of
Noninvasive Images of Tumor
Vasculature; Mechanism-based
Disease Progression Modeling of
Rheumatoid Arthritis*

Yanguang Cao
*Mechanistic PK/PD Modeling of
Anti-diabetes Drugs*

Lucie Chevillard
Investigation of the Pharmacokinetics and Pharmacodynamics of Cocaine that Drive Addiction/ Dependence and Relapse from a Quantitative System Pharmacological Perspective

Xiaotao Duan
*Mass Spectrometric Analysis in
Clinical Proteomics and Endogenous
Metabolism*

Melanie Felmlee
*In Vitro-In Vivo Extrapolation of
Renal Clearance: Determination of
Scalars of Renal Transporters*

Brent Footer
*Reagent-Free Detector for the
Continuous Measurement of
Analytes In-Vivo*

Allison Gaudy
*Influence of Charged Residues in
the Variable Domain on Half-Life,
Tissue Distribution, and Bio-
availability of Therapeutic IgG
Antibodies*

Salaheldin Hamed
*PK/PD/disease Modeling of
Gemcitabine for More Efficacious
Treatments of Pancreatic Cancer*

Xiaosheng Jiang
*Clinical Proteomic Profiling
on Cancer and Cardiovascular
Diseases*

Leonid Kagan
*Investigation of Interferons PK
and PD*

*Investigation of Subcutaneous
Absorption of Monoclonal
Antibodies*

Tao Ji
Use of Accelerator Mass Spectrometry for Investigating Target Ligand Turnover kinetics

Jun Li
*Proteomic Investigation of Drug
Therapy Responsive Proteins and
their Post-translational Modifica-
tions (PTMs)*

Dongyang Liu
*PK/PD/PG/DIS Models for Explora-
tion of Cytokines Role in RA
Progression of Rats*

Eslam Nouri Nigjeh
*Label-free and Biomarker-discovery-
based Quantitative Proteomics*

Ayse Meric Ovacik
*Algorithmic Study Design for
Identification of Target Expression
from Disposition Data*

*Systems Pharmacology Modeling
of Therapeutic Proteins in Signaling
Networks*

Yuzhuo Pan
*miRNA Regulation on Drug
Metabolism and Disposition*

Adolfo Quinones-Lombrana
*Molecular and Functional Charac-
terization of Human Anthracycline-
metabolizing Enzymes*

Samuel Roiko
*The Role of Monocarboxylate
Transporters in the Toxicokinetics/
Toxicodynamics of GHB (gamma-
hydroxybutyrate)*

Siddharth Sukumaran
*Pharmacokinetics and Pharmaco-
dynamics of Corticosteroids Drugs
used for Immunosuppression and
as Anti-inflammatory Agents*

Chengjian Tu
*Proteomic Analysis for Biomarker
Discovery in Cancer, Neurotic, and
Cardiovascular Diseases*

Fang Wu
*Lymphatic Uptake of Proteins:
Use of Whole Body Fluorescence
in Rats*

Weiyang Zhang
*General Platform for Understanding
the Subcutaneous Absorption of
mAbs*

Ying Zhang
*Systems Biology of Erythropoietin
Production Under Hypoxic Condi-
tions in Rats*

*Application of Transit Compart-
ments Model in Describing Signal
Transduction and Delays in PK/PD
Systems*

Bo Zheng
*Pharmacokinetics and Pharmaco-
dynamics of Antibody and Protein
Drugs*

Commencement Awards

Lilly Achievement Award

Danielle Joset

Michael E. Crawford Award

Christopher Diehl

Eino Nelson Award

Christina Behney

UB Pharmacy and Pharmaceutical

Sciences Alumni Association Award

Maria Landicho

David E. Guttman Award

Peter Bloomingdale

Renee A. Dederich Award

Meghan Rowcliffe

Francis P. Taylor Award

Christina Behney

UB School of Pharmacy & Pharmaceutical

Sciences Professionalism Award

Nadia Abole

Robert H. Ritz Award

Uzoamaka Atuegwu

National Community Pharmacists

Association Outstanding Student

Member Award

Christopher Daly

Roger Mantsavinos Award

Tsz Man Hu

Lori Esch Memorial Award

Kirsten Woelfel

Merck Award

1st Christina Behney,
2nd Amy Wojciechowski

Robert M. Cooper Memorial Award

Danielle Joset

Mylan Pharmaceutical Excellence in

Pharmacy Award

Geraldene Agbasionwe

Facts and Comparisons Award

of Excellence in Clinical

Communication

Heather Johnson

Roy M. Barr Award

1st Amy Wojciechowski,
2nd Tsz Man Hu

Western New York Society of Health-

system Pharmacists Award

Amy Wojciechowski

Samuel J. Bauda Award

Matthew Schnupp

Pharmacists' Society of the State of

New York

Danielle Joset

Natural Medicines Comprehensive

Database Recognition Award

Scott Pickford

McKesson Leadership Award

Jason Hou

TEVA Pharmaceuticals USA Outstanding

Student Award

Rebecca Walker

A.B. Lemon Memorial Award

Nadia Abole

The Inpatient Advanced Pharmacy

Practice Experience Award

Caitlin Carpenter



The Outpatient Advanced Pharmacy Practice Experience Award

Allyson Harmon

Pharmacists' Association of Western New York Student Leadership Award

Christopher Daly

Excellence in Pharmacogenomics Award

Uzoamaka Atuegwu

Katherine Doyle Memorial Award

Caitlin Jackowiak

Kelli Jordan Memorial Award

Gavrilo Durica

Phi Lambda Sigma Certificate of Achievement, Chapter Member of the Year Award

Jason Hou

The Outstanding Graduating Senior Award in Pharmaceutical Sciences

Andrew Shick

The Alfred and Erma Jones Award

Peter Bloomingdale

Margaret C. Swisher Memorial Award

Julie Graf

Excellence in Teaching Award

Gina Prescott, 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

Genentech

Jun Wang

Pfizer, Inc.

Vaishali Chudasama

Anas Fathallah

Nisha Vijay

Xu Zhu

John & Editha Kapoor Fund

Rutwiji Dave

Puneet Gaitonde

Center For Protein Therapeutics

*(Abbott, Amgen, Eli Lilly, Janssen,
Merck, Pfizer, Roche/Genentech,
and Sanofi Aventis)*

Lubna Abuqayyas

Frank Engler

Yash Gandhi

POSTDOCTORAL

ASSOCIATES/FELLOWS:

Pfizer, Inc.

Siheem Ait-Oudhia

Yanguang Cao

Center For Protein Therapeutics

*(Abbott, Amgen, Eli Lilly,
Janssen, Merck, Pfizer,
Roche/Genentech, and
Sanofi Aventis)*

Hong Ding

Brent Footer

Allison Gaudy

Leonid Kagan

Dongyang Liu

Fang Wu

Bo Zheng

Pharmacy Practice

POST GRADUATE RESIDENTS AND FELLOWS

Lifetime Health

Christina Manciocchi

Buffalo Medical Group

Melissa Appa

Novartis Pharmaceuticals Corporation

Mostafa Elgebaly

Samira Garonzik

Benjamin Guiastrenec

Ridhi Parasrampur

Rachel Soon

Karen Thudium

Lance Wollenburg

Roche Pharmaceuticals

Gauri Rao

Who's Who Among Students in American Universities and Colleges

Nadia Abolej

Geraldene Agbasionwe

Uzoamaka Atuegwu

Josephine Cheuk

Christopher Daly

Christopher Diehl

Kristen Della Penna

Robert Goris

Sara Hilliard

Jason Hou

Danielle Joset

Yusouf Khan

Michael Lake

James Martin

Sean Ordway

Meghan Rowcliffe

Matthew Schnupp

Christopher Sherrow

Grace Shyh

Amanda Szafranski

Deborah Targoff

Jillian Venci

Carolina Villegas

Amy Wojciechowski



Student Achievements

2012 School Awards Ceremony Winners:

Meghan Rowcliffe '12: Daniel H. Murray Memorial Professional Development Award

Christopher Daly '12: Pharmacy Times – Walmart 'Respect Excellence and Service Award'

Danielle Joset '12: U.S. Public Health Service Excellence in Public Health Pharmacy Practice Award

National Association of Chain Drug Stores, Pruitt–Schutte Business Plan Competition Team Members

Ian Bader '15, Kristen Mazurkiewicz '14, Lindsey Feuz '14 and Georgia DiFiore '14

MEDISCA Student Pharmacist Compounding Competition 2nd Place Team Members

Georgia DiFiore '14, Amanda Paxton '13, Andrew Rumpf '13 and Amy Wojciechowski '12

APhA-ASP Recognized as UB's Student Organization of the Year & Present at Celebration of Excellence

The American Pharmacists Association Academy of Student Pharmacists (APhA-ASP) was the recipient of the 2012 UB Student Organization Award for Excellence in Academics and Service. This award recognizes clubs that take what they learn in the classroom, and apply it to assist others. The group also received a \$1,000 stipend. Co-Presidents, Ali Mohamedali '13 and Scott Coon '13 presented a poster highlighting the work APhA-ASP has accomplished.

Pharmaceutical Sciences Students Recognized at UB's Celebration of Academic Excellence Event

Peter Bloomingdale, Daniel Ferguson, Weilin Jin, and Jigar Patel presented posters from the department of pharmaceutical sciences, while Almedina Djesevic presented a poster from Chemistry, and Yun Zheng presented a poster from the McNair Scholars Program.

These students were presented with the Undergraduate Research and Scholarship Award of Distinction:

Daniel Ferguson: "DNA Sequence Variants in the Carbonyl Reductase 1 Gene (*cbr1*) in 7 Breeds of *Canis Lupus Familiaris*" *Research Mentor, Dr. Javier Blanco*

Weilin Jin: "Prediction of Biliary Excretion in Dogs Using Quantitative Structure-Pharmacokinetic Relationship" *Research Mentor, Dr. Marilyn Morris*

Yun Zheng: "Analysis of Anions in Local Water Bodies" *Research Mentor, Dr. Valerie Frerichs, Medicinal Chemistry*

Puneet Gaitonde and Jamie Chin Recognized for International Research Award

Congratulations to Puneet Gaitonde, PhD student and Jamie Chin, PharmD/MS student for their work in Dr. Sathy Balu's research lab. Dr. Balu-Iyers' research "Mitigation of Immunogenicity of Therapeutic Proteins by 'Reverse Vaccination TM' – Lipid Renders Therapeutic Protein Tolerogenic" received the 2012 Biotechnology Innovation Award from American Association of Pharmaceutical Scientists (AAPS) National Biotechnology Conference. Both Puneet and Jamie actively contributed in receipt of this international award.

VALOR Internship Program

Angela Borton '13 and **Michelle Ingalsbe '13** accepted into the Veterans Administration VALOR (internship) program here at the Buffalo VA Medical Center. The VALOR program is an honors program that provides outstanding students a chance to develop competencies in pharmacy practice while working at a VA health facility.

Individual Achievements

Jamie Chin '13 recipient of an American Association of Colleges of Pharmacy Walmart Scholars Program award.

Vaishali Chudasama, pharmaceutical sciences graduate student, was awarded an American Foundation for Pharmaceutical Education (AFPE) Pre-Doctoral Fellowship for her work: "Mechanism-Based Cellular Pharmacodynamic Modeling of Combination Chemotherapy in Multiple Myeloma".

Lindsey Feuz '14 elected to the National Community Pharmacists Association Student Leadership Council.

Nicholas Hopwood '14 recipient of the 2011 Rx Portfolio Achievement Award from the Rx Insider.

Yeonwoo Jung '15 participated in a medical mission through Global Assistant Partner/UNICEF where he assisted with patient education and blood pressure screenings.

Karen Louie '16 recipient of a 2012 Grace C. Capen Academic Award from the University at Buffalo.

Kristen Mazurkiewicz '13 recipient of a summer internship with Genetech Pharmaceuticals in their General Training and Development Department.

Dustyn Miller '13 recipient of the Kenmore Mercy Hospital LOVE Award (Living Our Values Effectively) for demonstrating effort above and beyond that which is expected.

Samantha Reiss '13 presented and published her scholarly project "Application of Novel Handwriting Recognition Technology in an Oncology Specialty Pharmacy" which she presented at Academy of Managed Care Pharmacy 24th Annual Meeting and had her abstract published in the Journal of Managed Care Pharmacy show issue March 2012.

Khadeeja Saleh '14 recipient of the 2012 Ruth Davies Flaherty Service Award from the school's Lambda Kappa Psi chapter.





2011-2012 Degree Recipients

Bachelor of Science in Pharmaceutical Science

September 2011

Kenneth DiPasquale

February 2012

Hyoun Sik Kim

Ying Wang

June 2012

Matthew Bernardez

Peter Bloomingdale

Toshaben Dave

Weilin Jin

Jigar Patel

Neel Patel

Andrew Shick

Master of Science in Pharmaceutical Sciences

September 2011

Mudit Kulshrestha

Vidhi Mody

June 2012

Ting Chen

Julie Dumond

Samira Garonzik

Asfiha Gebre

Amanpreet Singh

Doctor of Pharmacy

February 2012

Erik Rogers

Scott Wilson

June 2012

Nadia Aboley

Josiane Abou- Jaoude

Geraldene Agbasionwe

Julie Agostinelli

Richard Ang

Uzoamaka Atuegwu

Nicholas Bacon

Elizabeth Badgley

Jeffrey Balsam

Philip Basko

Christina Behney

Karen Bernardi

Roni Birdsall

Dimitra (Economidis)

Bitikofer

Andrew Brown

Emily Brown

Alexander Campos

Caitlin Carpenter

Cecilia Chan

Josephine Cheuk

Edward Cheung

Getrude Chimhungwe

Alexander Chu

Megan Connaughton

Shannon Conway

Matthew Dailey

Christopher Daly

Raghu Damarla

Lindsay DeBellis

Evan Delaney

Kristen Della Penna

Shu Mei Deng

Christopher Diehl

Michael Drozdowicz

Gavrilo Durica

Stephanie Dylag

Zekun Feng

Krystina Geiger

Robert Goris

Julie (Schroeder) Graf

Daniel Graves

Kristina Grove

Thomas Guzzino

Kyle Hacker

Ryan Hare

Allyson Harmon

Jenna Hendershot

Christina Hew

Sara Hilliard

Sarah Holmes

Yen Nien Hou

Tsz Man Hu

Caitlin Jackowiak

Heather Johnson

Curtis Johnston

Danielle Joset

Katherine Kaczor

Tricia Kalinowski

Stephanie Kalisz

Eric Kanouse

David Kelsey

Yusouf Khan

Kristin Kielar

Jia Kuang

Tammy Kublas

Michael Lake

Maria Margarita

Landicho

Katie Marcheson

Sarah Mark

Christopher Martens

James Martin

Caitlin Mason

Nicholas Mayers

Samuel Miller

Huy Nguyen

Karen Nguyen

George Nimako

Evelyn Nkeyasen

Kerri O'Connor

Katherine Olson

Jacqueline Oot

Kevin Patel

Robert Philipps

Scott Pickford

Teresa Rizzzone-Ebel

Meghan Rowcliffe

Anthony Russo

Marie San Roman

Vanessa Schmouder

Matthew Schnupp

Shawn Sessanna

Christopher Sherrow

Grace Shyh

Katherine Spence

Meagan (Reeb)

Stringham

Caroline Symes

Amanda Szafranski

Deborah Targoff

Phuong Tran

Cheong Tsang

Caitlin Turner

Henry Uguala

Adam Urbanczyk

Aleksey Ushkin

T'Quomas Van Bergen

Jillian Venci

Julie Veneklase

Eric Viani

Carolina Villegas

Rebecca Walker

Rebecca Ware

Kirsten Woelfel

Amy Wojciechowski

Sylvia Wong

Jessica Wu

Yun Zou

Doctor of Philosophy in Pharmaceutical Sciences

February 2012

Nathaniel Page

Dipak Pisal

June 2012

Lubna Abuqayyas

Yang Chen

Jing Fang

Puneet Gaitonde

Yash Gandhi

James Kalabus

Dipti Pawaskar



Research and Training

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

Department of Pharmaceutical Sciences

Our Department has a well established, international reputation for a tradition of excellence in teaching and research and is well positioned to expand its prowess in Pharmacokinetics, Pharmacodynamics, and Protein Therapeutics.

Moreover, the Department is a leading academic institute for cutting edge research and teaching in Pharmacogenomics. Our strengths lie in biological applications of pharmaceutical sciences to traditional small molecules as well as biotechnology products, particularly areas of systems pharmacology (pharmacokinetics, pharmacodynamics, pharmacogenomics), drug delivery, and development of new therapeutic approaches utilizing mechanistic studies with tools of genomics, proteomics, computation, and bioinformatics.

Our *Center for Protein Therapeutics*, with director, Dr. Joseph Balthasar, was established in 2008 to promote the application of pharmaceutical sciences to the development of protein drugs. The Center: (a) trains students and post-doctoral fellows in emerging areas relevant to the development and optimization of therapeutic proteins, (b) develops improved analytical and computational tools for use in assessing protein pharmacokinetics and pharmacodynamics, (c) develops new paradigms for the analysis of protein absorption, disposition, and pharmacodynamics, (d) develops new strategies to engineer protein formulations and dosage regimens to optimize effects and to minimize risks for immunotoxicity, (e) further evolves measurements of proteins and other biomarkers as a means of monitoring and modeling disease progression and drug efficacy, and (f) develops new strategies for assessing the therapeutic equivalence of protein pharmaceuticals.

Center sponsors in 2011-12 included: Abbott, Amgen, Eli Lilly, Genentech, Merck, Pfizer, and Roche. The Center provided funding (~\$100,000/project) for 53 research projects, with 9 projects funded in 2011-12. Key recent research includes the development of predictive physiologically-based pharmacokinetic models for antibody disposition (*J Pharmacokin Pharmacodyn* 2012, 39:683-710), investigation of determinants of monoclonal antibody absorption following subcutaneous dosing (*AAPS J* 2012, 14:559-70, and *AAPS J* 2012, 14:252-61), and development of new strategies for quantifying concentrations of protein drugs in blood and tissues (*Anal Chem* 2012, 84:4373-82, and *J Chromatogr A* 2012, 1251:63-73). Often, project results (e.g., mathematical models, new methodologies) have been quickly implemented by industry sponsors.

We have excellent faculty members over a range of academic levels with highly productive, largely NIH-funded research programs and some corporate support. Donations of \$150,000+ for graduate student and post-doc training were provided by Hoffmann-LaRoche, Genentech, and Simcyp, and as well as continued training grant funding of \$250,000 from Pfizer Pharmaceuticals. Our BSc undergraduate program included 24 students while our graduate program, headed by Dr. Murali Ramanathan, had 46 MS and PhD students. We also hosted 30 post-doctoral fellows and visiting scientists.

An active Seminar Program offered 39 presentations by students and local and visiting scientists. Dr. Leslie Benet, Professor of Bioengineering & Therapeutic Sciences at the University of California at San Francisco was selected for the 2011 *Gerhard Levy Distinguished Lectureship in Pharmaceutical Sciences* and presented, "*The Clinical Pharmaceutical Sciences: What Hath Levy Wrought?*" Other notable speakers were: Tamara Minko, PhD, Rutgers University and Jennifer Fretland, PhD, Hoffmann-LaRoche. The Graduate Student Association (GSA) hosted alumnus Dr. Patrick McNamara for the *GSA Alumni Lecture* who presented, "Modeling Drug Transport Function: Stereoselective Drug Accumulation in Milk". The newly enacted *David Chu Lectureship in Drug Development* featured Dr. Christopher Lipinski, formerly of Pfizer and currently with Melior Discovery with the topic, "Drug Discovery and Chemical Biology: Lessons Learned and Times of Change".

Our faculty had over 90 research articles and book chapters published and gave over 80 seminars, lectures, and research presentations at various scientific meetings, university, and industrial venues. Many faculty and students routinely attend the meeting of the American Association of Pharmaceutical Scientists (AAPS) where we host an annual Buffalo Alumni Reception.

The Department offers annual courses in Pharmacokinetic-Pharmacodynamic Modeling, Protein Therapeutics, and Population Pharmacokinetic Modeling for visiting scientists from the pharmaceutical industry, academia, and the FDA in May which included our 20th session of the PK/PD Modeling course. Drs. Mager, Balthasar, and Jusko also presented the PK/PD courses



at the University of Paris Descartes in January. We were hosted by alumnus Jean-Michel Scherrman, PhD, who was recently appointed as Dean of the School of Pharmacy.

Dr. Wojciech Krzyzanski was promoted to Associate Professor with tenure and Dr. Sathy Balu-Iyer to full Professor. Balu

received the UB 2011 Exceptional Scholar Teaching Innovation Award, the 2011 Niagara Frontier Inventor of the Year Award, and a 2012 Innovation in Biotechnology Award from AAPS. He holds numerous patents for his research with lipidized proteins. In 2012, Dr. Marilyn Morris was named a Fellow of the American Association for the Advancement of Science and received the UB Distinguished Postdoctoral Scholar Mentor Award. She served several years as the Associate Dean of the Graduate School with much interest in the needs of UB post-doctoral fellows.

The Department is poised for further growth of its research and training programs. We maintain strong capabilities in the areas of Protein Therapeutics and Cancer Therapeutics and continue our prominence in Pharmacokinetics, Pharmacodynamics, and Pharmacometrics.

Department of Pharmacy Practice

The 2011-2012 year brought with it many advances within the Department of Pharmacy Practice.

The department was pleased to welcome the addition of a Vice Chair, William A. Prescott, Jr., PharmD, Clinical Assistant Professor, the addition of faculty members Mohammed Mohamoud, PharmD, MPH, Clinical Assistant Professor, and Senior Research Scientists Michael Krajewski, PharmD, MLS, and Kalpesh Desai, BscPhm, PharmD.

Our faculty members worked to develop a newly enhanced curriculum, while readying the Kapoor Hall teaching spaces for the first semester in our new state-of-the-art school of pharmacy. Gina M. Prescott, PharmD, BCPS was the recipient of the Teacher of the Year Award. Jack Brown, PharmD, MS, BCPS was recognized as the Teacher of the Year finalist.

The American Association of Colleges of Pharmacy honored Gene D. Morse, PharmD., Professor, medicine and pediatrics, with the Volwiler Research Achievement Award for his outstanding research and contributions to the fields of clinical/translational pharmacology and pharmaceutical sciences. The department also recognizes the efforts of our faculty who were awarded grants for their outstanding research efforts and their continued excellence in scholarly and service activities.

The Office of Continuing Pharmacy Education continues to be a vital link to the continuing professional development of

today's pharmacists, offering many educational activities as webinars providing an opportunity for live attendance by out of area alumni and preceptors. The adoption of new technology allows for the webinar participant to actively participate remotely in pre- and post-test assessments. The CPE office continues to serve as an accrediting entity for programs offered by our health care partners and pharmacy corporations.

The department is proud of its continued collaboration with the New York State Department of Health, also providing fellowship and residency training opportunities. Department faculty now provide, for the NYS Medicaid Monthly Update Newsletter, an article generated from questions submitted via the Drug Information Response Center, a service which is provided as part of the outreach from the Prescriber Education Program.

The Office of Experiential Education has enhanced its use of the E*Value System by better implementing toolkit and scheduling functions to further improve their reporting and student tracking. Outreach to training sites across the country to provide diverse experiential opportunities is always a primary directive. The Office has added additional community, hospital, research and regulatory training sites giving students many unique educational opportunities.

Faculty Grants Awarded

July 1, 2011 - June 30, 2012

Pharmaceutical Sciences

Joseph Balthasar

Multiple Sponsors
Protein Therapeutics Consortium
Regents of the University of Michigan
PTD-Mediated Protein or Drug Delivery for Cancer Therapy

Sathy Balu-Iyer

National Heart Lung and Blood Institute
Development and pharmacology of novel lipidic rAHF

Javier Blanco

National Institute of General Medical Sciences (RO1)
Pharmacogenetics of Human Carbonyl Reductases

William Jusko

National Institute of General Medical Sciences
Corticosteroid Pharmacokinetics and Pharmacodynamics
National Institute of General Medical Sciences (Mager and Krzyanski Co-PI's)
Mathematical Models in Pharmacodynamics
Eunice Kennedy Shriver National Institute of Child
Molecular and Clinical Pharmacology of Retinopathy of Prematurity

Wojciech Krzyzanski

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

Donald Mager

Eunice Kennedy Shriver National Institute of Child
Molecular and Clinical Pharmacology of Retinopathy of Prematurity

Marilyn Morris

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

Jun Qu

National Institute of General Medical Sciences (Co-PI)
Roles for Mismatch Repair Proteins in Maintaining Genome
Stability

National Institute of Neurological Disorders & Stroke (Co-PI)
Laminin receptors and signals in Schwann cells

National Institute of Allergy & Infectious Disease (Co-PI)
ARRA: Integration of Clinical, Genomic and Proteomic Data
using a Bioinformatic Approach

US Army Medical Research Acquisition Activity
Gene-Environmental Interactions in Progression of Multiple
Sclerosis

American Heart Association Founders Affiliate
Biomarker Release after Reversible Ischemia

Eunice Kennedy Shriver National Institute of Child
Molecular and Clinical Pharmacology of Retinopathy of Prematurity

Murali Ramanathan

National Multiple Sclerosis Society
Brain-Derived Neurotrophic Factor in Multiple Sclerosis
US Army Medical Research Acquisition Activity
Gene-Environmental Interactions in Progression of Multiple
Sclerosis

Dr. Jerome Schentag

NYS Department of Economic Development (Co-PI)
Center for Advanced Biomedical and Bioengineering Technology

Robert Straubinger

Merrimack Pharmaceuticals Incorporated
Liposomal formulations for pancreatic cancer treatment
Merrimack Pharmaceuticals Incorporated
M398/M310 Testing Services

Trustees of Columbia University
Optical Imaging of Chemotherapy for Brain Tumors
National Institute on Drug Abuse (Dr. Qu Co-PI)
Peripheral Biomarkers of Cocaine Dependence and Relapse

Aiming Yu

National Institute on Drug Abuse (Drs. Jusko and Boje Co-PI's)
Pharmacogenetics in Indolealkylamine Metabolism and Drug
Interactions
Board of Trustees of the University of Illinois
Altered Drug Metabolism in Pregnancy

New Technology

Invention Disclosure	Faculty Member
Composition for less immunogenic, long acting and tolerance induction	Sathy Balu-Iyer
Device for Monitoring Breath Glucose and other Analytes	Jerome Schentag
Oral Formulation Mimetic of Roux-en-Y Gastric Bypass Actions on the Ileal Brake; Compositions, ... Diagnostics and Systems for Treatment of Metabolic Syndrome Manifestations including Insulin Resistance, Fatty Liver Disease & Type 2 Diabetes	Jerome Schentag
A microRNA for the treatment of cancers	Aiming Yu
Effect of ADP355 Administration in High Fat Fed Sprague-Dawley Rats; A Study Evaluating Safety and Animal Body Response	Alice Ceacoreanu

Pharmacy Practice

Edward Bednarczyk

State University of New York
Evidence Based Clinical Research Collaborative Program
Health and Human Services
Poison Control Stabilization and Enhancement Program

Alice Ceacareanu

NYS- Department of Health
Modulation of Inflammatory Response by Diabetes Management in Breast Cancer Patients: a Potential Modifier of Breast Cancer Prognosis

Alan Forrest

Hoffmann-LaRoche Incorporated
Pharmacy Roche Fellowship

Qing Ma

New York University School of Medicine
The Effect of Efavirenz and Ritonavir-Boosted Darunavir on the Pharmacokinetics of the HMG CoA Reductase Inhibitor Pitavastatin

Scott Monte

VascuScript Pharmacy Incorporated
UBSOPPS & VascuScript Community Pharmacy Residency Expansion Project
National Association of Chain Drug Stores Foundation
UBSOPPS & VascuScript Community Pharmacy Residency Expansion Project

Gene Morse

Erie County Medical Center
HIV Treatment Education
Erie County Medical Center
New York State Adherence Project
Fogarty International Center (Drs. Ma and Maponga Co-PI's)
Antiretroviral Pharmacology Training in Resource Poor Countries
Brigham and Womens Hospital (Co-PI)
ACTG Pharmacology Specialty Laboratory
National Institute of Allergy & Infectious Disease (Options 1-5)
Clinical Pharmacology Quality Assurance and Quality Control
LFA Incorporated
Standard Administration Protocol (SAP) Phase 1
Brigham and Womens Hospital (Co-PI)
ACTG Precautionary & Prohibited Medication Table
Social and Scientific Systems Incorporated
A Prospective, Phase III, Open-Label Study of Boceprevir, Pegylated-Interferon Alfa 2b and Ribavirin in HCV/HIV Coinfected Subjects: Boceprevir, Interferon, Ribavirin to Treat HCV/HIV Coinfected Subjects (BIRTH)
Social and Scientific Systems Incorporated (Co-PI)
Pharmacokinetics and Drug Interaction Potential of Boceprevir in HIV/HCV Coinfected Subjects: A Substudy of A5294
University of Rochester (Co-PI)
Upstate New York Translational Research Network (UNYTRN)
University of Rochester (Co-PI)
Units for HIV/Aids Clinical Trials Network
University of Rochester (Co-PI)
CHET
University of Rochester
ARRA: Researcher Resilience through Multidimensional Mentoring: The Rochester Research Workforce Diversity Program
Brigham and Womens Hospital (Co-PI)
AIDS Clinical Trials Group Executive Committee
University of California, San Francisco (Co-PI)
Disulfiram Interactions with HIV Medications: Clinical Implications
Kathleen Tornatore
Novartis Pharmaceuticals Corporation
The Influence of Diabetes on Myfortic (enteric coated mycophenolic acid sodium) Pharmacokinetics and Adverse Drug Effects in Stable African American and Caucasian Renal Transplant Recipients
Brian Tsuji
Cubist Pharmaceuticals, Inc
Research Material Transfer Agreement: Pharmacokinetic-Pharmacodynamic Evaluation of CXA-102 Against Multi-Drug Resistant Gram Negative Organisms in a Invitro Hollow Fiber Model
Monash University
Targeting MDR Hetro-Resistant Gram-Negatives: PKIPD for Rational Combinations





Scholarship

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

Intellectual Contributions
July 1, 2011 - June 30, 2012

Pharmaceutical Sciences

Balthasar, Joseph P.

Deng, R., & Balthasar, J.P. "Immune Complex Therapies for Treatment of Immune Thrombocytopenia" in Development of Antibody-Based Therapeutics. (Ed.), Springer, 2012.

Duan, X., Dai, L., Shang-Chiung Chen, Balthasar, J.P. & Qu, J. "Nano-scale liquid chromatography/mass spectrometry and on-the-fly orthogonal array optimization for quantification of therapeutic monoclonal antibodies and the application in preclinical analysis". *Journal of Chromatography A*, June 2012.

Duan X., Abuqayyas L., Dai L., Balthasar J.P., Qu J. High-throughput method development for sensitive, accurate, and reproducible quantification of therapeutic monoclonal antibodies in tissues using orthogonal array optimization and nano liquid chromatography/selected reaction monitoring mass spectrometry. *Anal Chem.* 2012 May 15;84(10):4373-82. doi: 10.1021/ac2034166. Epub 2012 Apr 27.

Girish S., Martin S.W., Peterson M.C., Zhang L.K., Zhao H., Balthasar J., Evers R., Zhou H., Zhu M., Klunk L., Han C., Berglund E.G., Huang S.M., Joshi A. AAPS workshop report: strategies to address therapeutic protein-drug interactions during clinical development. *AAPS J.* 2011. Sep;13(3):405-16. doi:10.1208/s12248-011-9285-6. Epub 2011 Jun 1.

Shah D.K., Veith J., Bernacki R.J., Balthasar J.P. Evaluation of combined bevacizumab and intraperitoneal carboplatin or paclitaxel therapy in a mouse model of ovarian cancer. *Cancer Chemother Pharmacol.* 2011 Oct;68(4):951-8. doi: 10.1007/s00280-011-1566-3. Epub 2011 Feb 9.

Shin B.S., Bulitta J.B., Balthasar J.P., Kim M., Choi Y., Yoo S.D. Prediction of human pharmacokinetics and tissue distribution of apicidin, a potent histone deacetylase inhibitor, by physiologically based pharmacokinetic modeling. *Cancer Chemother Pharmacol.* 2011 Aug;68(2):465-75. doi: 10.1007/s00280-010-1502-y. Epub 2010 Nov 11.

Balu-Iyer, Sathy V.

Bhansali, S.G., Balu-Iyer, S.V., & Morris, M.E. "Influence of route of administration and liposomal encapsulation on blood and lymph node exposure to the protein VEGF-C156S". *J Pharm Sci*, vol. 10, pp. 852-9, June 2012.

Trummer, B.J., Iyer, V.S., Balu-Iyer, S.V., O'Connor, R., & Straubinger, R.M. "Physicochemical properties of EGF receptor

inhibitors and development of a nanoliposomal formulation of gefitinib". *Journal of Pharmaceutical Sciences*, vol. 101, pp. 2763-2776, April (2nd Quarter/Spring) 2012.

Kagan, L., Turner, M., Balu-Iyer, S.V., & Mager, D.E. "Subcutaneous absorption of monoclonal antibodies: role of dose, site of injection, and injection volume on rituximab pharmacokinetics in rats". *Pharm Res*, vol. 29, pp. 490-499, February 2012.

Gaitonde, P., Straubinger, R.M., Bankert, R., & Balu-Iyer, S.V. "Down-regulation of CD40 signal and induction of TGF- β by Phosphatidylinositol, mediates reduction in immunogenicity against recombinant human Factor VIII". *Journal of Pharmaceutical Sciences*, vol. 101, pp. 48-55, June 2012.

Peng, A., Ding, H., Kosloski, M., & Balu-Iyer, S.V. "PEGylation of FVIII-PI Complex: Pharmacokinetics and Immunogenicity in Hemophilia A Murine Model". *AAPS Journal*, vol. 14, pp. 35-42, June 2012.

Peng, A., Doty, A., Pisal, D., & Balu-Iyer, S.V. "Phosphatidylinositol induces fluid phase formation and packing defects in phosphatidylcholine model membranes". *Chemistry and Physics of Lipids*, vol. 165, pp. 15-22, June 2012.

Pisal, D., Kosloski, M., Middaugh, R., Bankert, R., & Balu-Iyer, S.V. "Native like aggregates of Factor VIII (FVIII) are immunogenic in von Willebrand Factor deficient (wvff^{-/-}) and in Hemophilia-A mice". *Journal of Pharmaceutical Sciences*, June 2012.

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Special Honors for Faculty and Staff

Sathy Balu-Iyer, professor, recipient 2012 American Association of Pharmaceutical Scientists Innovation in Biotechnology Award.

Jack Brown, clinical assistant professor, recipient 2011 SoPPS Teacher of the Year Finalist Award. Jack was also the recipient of the 2012 New York State American College of Clinical Pharmacy Research of the Year Award.

Linda Catanzaro, clinical assistant professor, received certification from the American College of Clinical Pharmacy Leadership and Management program.

Ho-Leung Fung, professor, 2012 recipient of the distinguished rank of University at Buffalo Distinguished Professor. This distinction was bestowed in recognition of Leung's lifelong work in the area of vasodilator kinetics as well as national and school based leadership.

William Jusko, professor, recipient 2012 American College of Clinical Pharmacology Distinguished Investigator Award.

Marilyn Morris, professor, recipient 2012 University at Buffalo Graduate School Distinguished Postdoctoral Mentor Award.

Gina Prescott, clinical assistant professor, recipient 2012 SoPPS Teacher of the Year.

William Prescott, clinical assistant professor, Ad Hoc Reviewer, Pediatric Pulmonology



Linda Catanzaro and faculty at the 125th Anniversary Open House

Erin Slazak, clinical assistant professor, recipient 2012 Lambda Kappa Sigma Female Pharmacist of the Year Award.

Christine Stumm, Registrar and Assistant Director of Admissions, recipient 2012 SoPPS Staff Member of the Year Award.

Ashley Webb, clinical assistant professor, received board certification as a clinical toxicologist.

Robert Straubinger, professor, and Sathy Balu-Iyer, professor, received recognition by the University at Buffalo Office of Science, Technology Transfer and Economic Outreach for their joint work on these patents: Patent # 7,875,288: Method for Treating Blood Coagulation Disorders and Patent # 7,875,289: Compositions for Less Immunogenic and Long-Circulating Protein Lipid Complex.



2012 Award Ceremony Honorees

Thanks to you...

We say thanks to you, our alumni and friends, for the support you've given during this landmark year.

John and Editha Kapoor Hall, a world-class facility that is now our new home, officially opened in September, returning UB Pharmacy to its roots on the South Campus. It also is the first professional school at UB in 30 years to return to the City of Buffalo. Its ultramodern and efficient research, teaching and computer facilities promote improved capabilities for faculty and students.

While the school looks to the future in its new location, all of UB Pharmacy looks back at the tenure of Dean Wayne K. Anderson, who is retiring from the position he has held since 1995. Pleased with the progress made in the school's curriculum, degree programs and research discoveries, Dean Anderson said he eagerly anticipates further growth and health-care innovations in the school's future.

We invite you to continue being an important part of the school's exciting vision for UB Pharmacy. Your commitment to making the school stronger has helped our faculty members provide an outstanding education to our students. Your generosity allows us to provide scholarships and academic experiences that help prepare them to be the next generation of pharmacy professionals, clinicians and researchers. Your investment ensures that the school can fully address future challenges in health care far into the 21st century.



Wayne K. Anderson,
dean of UB Pharmacy,
is retiring to return to
the faculty as an educator.

He talked recently about what he'll remember most from his time as dean, and what he sees as an exciting future for the school.

What's ahead?

Teaching my new course in pharmaceutical chemistry and writing a textbook.

What are your most vivid memories of your tenure?

No single thing in particular. I had a long and successful career in research, I was active in faculty governance (faculty senate leadership roles) and my transition into administration guided the pharmacy school to a new level of prominence.

Most interesting part of being dean?

Engaging with national leaders in pharmacy, medicine and pharmacy education as the dynamic pharmacy profession and the health-care system undergo significant transformation.

Best memory of your career?

Working with the Drug Development Program of the National Cancer Institute, and collaboration with colleagues around the world in the discovery and development of new cancer treatments. "A-ha!" moments in the laboratory.

Most challenging?

Transitions—from research to administration, and now the decision to retire. I see so many exciting new opportunities for our university, our school and the pharmacy profession, and at the same time, I had to determine that it was the right time for a leadership transition.

Most fun at UB?

Playing defense on the school's hockey team "The Lethal Doses."

Your perfect day?

Blue sky, no meetings, and time to study and reflect on the current literature and discover new potential opportunities for our school's students and faculty.

What are your primary roles as dean?

I have been responsible for developing an exciting vision for our school's future in collaboration with our faculty/staff/students and presenting that vision. I also have worked to highlight our school's achievements and identify needs for future growth. And my role has been to articulate that "excitement" to alumni and other potential donors.

Three top accomplishments as dean?

Development of the PharmD program; the completion of Kapoor Hall; and the creation of robust cores to support our researchers.

Your legacy?

My science, my students and the school's growth and development.

Your hope for the school?

The school has a nice balance of established, mid-career and new faculty members, and an incredible legacy of former

faculty members. Our graduates have gone forward and made very significant advances in professional practice, academia, industry and government. My hope is we continue on this positive upward trajectory and that our faculty and students and the "next generation" of faculty and students continue to be recognized as innovators and leaders.

How has alumni giving helped?

I would like our alumni and friends to know that their gifts have made a difference! Scholarships, seed support for new research ideas, support for core facilities, support for teaching/learning innovations, Kapoor Hall—their gifts have been critical to our success!

Why give now?

We face an exciting future with many new challenges to address in an advancing pharmacy profession. We need to continue to attract and support the best and brightest new students and provide opportunities for all potential students. We need to continue developing new teaching/learning technologies and teaching pedagogies to ensure that our students will be well prepared to meet the new challenges they will face. The continuing accomplishments of our research at the forefront of many important fields carry a persistent demand for the latest technologies.

Appeal to alumni?

MAKE A DIFFERENCE.

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KEY:

Willis G. Gregory Society:

\$1,000 and above

1886 Club:

\$500 - \$999

Mortar and Pestle Club:

\$250 - \$499

Century Club:

\$100 - \$249

This report includes donors who made gifts and planned gift commitments between July 1, 2011 and June 30, 2012. Every effort has been made to ensure the accuracy of the information. In the event of an error or omission, please contact the SoPPS Development Office at (716) 645-3432 so that we may update our records.

Thomas Bardos
Allen Barnett
Ralph Behling '39,' 40
Thomas Blanchard '61
Daniel & Gayle Brazeau '89
Robert '53 & Nina Doran '53

Joseph Figlow '70
Edward '52 & Jean Frank '54
Carol Gloff '75
Joel Goodrich '59
Jan '59 & Rose Mary Madejski '59
Robert Miller '59

DeWitt Niles '62
Beatrice Noble '39
Irving Sultz '55
Ralph Vescio '55
Pierce Weinstein '39, '44

To learn more or to notify the school of a legacy gift that you have planned, please call the development office at (716) 645-3432 or visit our web site at pharmacy.buffalo.edu.

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Meghan Rowcliffe

JENNIE BAUDA DEMUTH SCHOLARSHIP

Kirsten Woelfel

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Devin Holden
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Sarah Sckena

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Brianna Baron
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Katherine Dixon
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April Huang
Srijana Jonchhe
Elizabeth Lakota
Stephanie Li
Katherine Olson
Hannah Park
Amanda Paxton
Katherine Spence
Meagan Stringham

JUNE FARINECH BRACKER SCHOLARSHIP

Lindsey Feuz

LYLE A. GRAVES SCHOLARSHIP

Josiane Abou Jaoude
Ngozi Agbasionwe
Angela Borton
Christina Carbone
Shannon Conway
Benjamin Daigler
Michelle Davis
Lindsay Debellis
Kelley Dunnigan
Kyle Hacker
Curtis Johnston
Katherine Kaczor
David Kelsey
Christopher Martens
Nicholas Mayers
Vanessa Schmouder
Christopher Sherron
Deborah Targoff
Julie Veneklas
Amy Wojciechowski

JOHN KAPOOR FELLOWSHIP IN PHARMACEUTICAL SCIENCES

Rutwij Dave

GILBERT J. KULICK SCHOLARSHIP

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LORREN LARWOOD SCHOLARSHIP FUND

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Yen Nien Hou
Heather Johnson
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FRANCIS & EDWARD MAYER SCHOLARSHIP

Tao Chen
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Aleem Jamil Merani
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Khadeeja Saleh
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NATIONAL ASSOCIATION OF CHAIN DRUG STORES FOUNDATION (NACDS) SCHOLARSHIP

Michael Bear
Christopher Solinger
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Alexander Chu
Matthew Dailey
Raghu Damarla
Christopher Diehl
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Gavriilo Durica
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Zekun Feng
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Jie Gu
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Jenna Hendershot
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Devin Holden
Nicholas Hopwood
Christine Hou
Jenna Hurd
Meer Husain
Caitlin Jackowiak
Srijana Jonchhe
Yusouf Khan
Gabriela Krawiec
Tammy Kublas

Julia Kuroski
Jason Kwok
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Kaila Evertts
Aubrey Gawron
Kristin Martinez
Kristen Mazurkiewicz

Scholarship blooms from snowbound love story

It was St. Patrick's Day 1936 in Buffalo and a winter storm was dropping nearly two feet of snow across the region.



Alexander Aversano and his wife, Margherita (Strozzi) Aversano

Schools and businesses were shutting down, so Alexander Aversano accepted an offer to go home with Paul Strozzi, his fraternity brother in Alpha Phi Delta, the pharmacy school fraternity at UB.

Aversano didn't know that, as he sat down at the Strozzi dining room table, the dinner would change his life. Reports are that he took one look at Paul's sister, Margherita, and "that was it. She met his eyes and he knew she was the woman of his dreams," according to Camille Passarella, the couple's oldest daughter, who heard the story from family members, including her aunt, Catherine Sullivan, Margherita's younger sister.

Aversano graduated from the School of Pharmacy and the couple married a year later, spending the early years of their marriage running their pharmacy on Niagara Street in Buffalo. Their marriage united two families that each boast several UB graduates.

On the Strozzi side of the equation, the first was Margherita's father, Frank Strozzi, a 1904 pharmacy school graduate, who opened his own pharmacy on Busti Avenue in Buffalo.

"My grandfather came to Buffalo from Italy when he was 10 years old, knowing no English," Passarella said. "That was in 1891. We have wonderful memories of his drugstore. People came in for medical advice. He always wore a white lab coat and was always meticulous. He used a mortar and pestle, and worked at a high marble counter in the back room, mixing the prescriptions and filling the capsules."

Frank's brother Fred, who became a doctor, helped put their brother Michael through UB pharmacy school; Michael graduated in 1912, then opened a drugstore on Niagara Street, a few miles from where his niece and her husband would set up shop more than two decades later.

Frank's son, Paul Strozzi, fraternity brother of Alexander Aversano, graduated from the UB pharmacy school in 1937.

On the Aversano side of the aisle, Alexander was a star student athlete while studying pharmacy, serving as the football team's quarterback during the 1930s and earning membership in the UB hall of fame.

Alexander helped put his brother, Sam Aversano, through medical school at UB. Sam graduated in 1949, and his wife, Mary Aversano, was a 1950 UB pharmacy school graduate. Their son, Thomas Aversano, MD, spent two years at UB, completing a medical residency and serving as a research fellow in cardiology.

Alexander Aversano eventually went to work for the Foster-Milburn Company, makers of Doan's pills, which later became Westwood Pharmaceuticals, then Bristol-Myer Squibb. He and Margherita had three children, all of whom learned from their parents about the importance of education. The oldest, Camille Passarella, is a 1961 UB graduate, who taught and worked in school administration at the Potomac School in McLean, Va.; her younger sister is Mary Aversano, and their brother is Paul Aversano, DO, professor of neurology and internal medicine at Western University of Health Sciences COMP-Northwest in Oregon.

Frank Strozzi established the Aversano-Strozzi Scholarship at UB in 1980 to honor Margherita and her family following her death from cancer at age 52. He designated that it be given to pharmacy students with financial need.

While her father didn't talk about the fund, she and her siblings knew that "it was definitely his love for the University of Buffalo as well as for his profession that helped him decide on this way to honor my mother's memory," Passarella said.

This year's recipients are Jaclyn Kotula and Jinhee Park, both PharmD candidates. Kotula, who became interested in becoming a pharmacist when she was in 8th grade, said the scholarship offers her a precious resource: more time.

"It has given me an opportunity to focus on my studies as opposed to working increased hours outside of

school," Kotula said. "I am so grateful to be a recipient of such a generous gift."

Kotula became interested in pharmacy in high school. "My dad was admitted to a local hospital with a pulmonary embolism. I got to see the pharmacy working with his doctors to adjust his medications and monitor INR changes. I learned how critical pharmacists are to patient care and good patient outcomes. I knew this was a field which would allow me to make a difference."

On track to graduate in 2015, Kotula will work to secure a spot in the residency program at the University of North Carolina Chapel Hill. "Afterwards I would like to pursue a career as a clinical or consultant pharmacist in a health systems setting," she said.

Second-year student Jinhee Park earned a bachelor's degree in English literature and chemistry, and spent a year on a Fulbright grant teaching English to South Korean inner-city middle-school students, before deciding to pursue a career in pharmacy.

Park, who would like to work as a clinical pharmacist and possibly teach someday, said she was "sincerely grateful" for the Aversano-Strozzi scholarship. She also was thankful for the recent chance to travel with her UB professors on a medical mission trip to San Pedro, Dominican Republic.

"There, I applied so many things that schools try to teach in the classroom, such as patient care, triage, counseling in an entirely different language, pediatric dosing and compounding suspensions – all within a matter of one week," she said. "The amount that I learned far exceeds the cost of the trip."

Scholarship recipients
Jinhee Park and Jaclyn Kotula



UB education helped couple fulfill their American dream

David C.K. Chu, PhD '75, said he and his wife, Jane Jee-Young Chu '75, would not have "fulfilled the American dream" without the education they received at the UB School of Pharmacy and Pharmaceutical Sciences.

"Jane and I came to the United States in 1970 and 1968, respectively, as graduate students, and after 40 years of working here, we fulfilled the American Dream," David Chu said. "Although we worked extraordinarily hard during this period, the major reason that we accomplished our dream is credited to our higher education."

While attending UB, the couple worked as graduate assistants in medicinal chemistry under the direction of several professors, including Leo Fedor and the late Thomas Bardos.

"Without these supports, we would not have completed our education," David Chu said. "We are deeply appreciative of the University at Buffalo and our major advisors."

Jane Chu earned two master's degrees from UB, one in pharmacy and the other in chem-

istry. David Chu earned his doctoral degree, and completed postdoctoral work at Memorial Sloan-Kettering Institute for Cancer Research in New York.

The couple spent their careers at the University of Georgia, Athens, where David was Distinguished Research Professor of Pharmaceutical and Biomedical Sciences, and Jane worked as a systems designer in the Library Automation division at the University of Georgia Libraries.

But they never forgot the start they received from UB and the critical role their education played in their professional success.

Upon retiring, the Chus, along with their physician daughters, Susan and Jaclyn, created the Chu Family Foundation through which they support annual scholarships for five UB pharmacy students.

Susan Chen, one of this year's recipients, is grateful for the scholarship because it allows her to "wholeheartedly concentrate on my studies" and more.

"In addition to focusing on academics, the Chu scholarship has motivated me to become a dean's student ambassador and give back to the community by aiding any prospective students interested in UB Pharmacy," she said.

Ryan Dillon, another recipient who hopes to practice as a clinical coordinator in a critical care setting, said the scholarship allows him to concentrate on "how I can personally contribute to every patient I come in contact with."

Dillon is working on a community initiative to educate first responders in the national Vials of Life program, which "helps our elderly patients keep updated medication histories in their homes that would facilitate getting this medication history to



Jane and David Chu, seated, with their daughters: Jaclyn, left, and Susan

health professionals in emergency situations."

For recipient Kayla Maxwell, a dual-degree student in the PharmD and PhD program, the scholarship is particularly helpful because she "will be in school much longer than the average pharmacy student." Maxwell is conducting research on finding optimal therapy for breast cancer, which her two grandmothers, aunts and mother have battled.

Nicholas Hopwood, another recipient in the PharmD program who hopes to be a supervisor pharmacist after graduation, said the scholarship freed him from "focusing on working, and passing up valuable opportunities," such as being selected to be on the four-person business plan team this year to represent UB, which is giving him "professional hands-on experience in how to start up an independent pharmacy," his long-term career goal.

The fifth recipient, Emily Chan, would like to work after graduation in an HIV/AIDS ambulatory clinic. She is "immensely grateful" for the scholarship, which has helped her with academic expenses and other final-year costs, such as board exam fees.

In addition to the scholarships, the Chus also established the annual David Chu Lectureship to invite experts in drug discovery or biomedical research to speak at UB. The lectureship and scholarships reflect the Chu family's belief in the power of education to transform the world.

"We struggled occasionally as graduate students in Buffalo; however, one thing is clear: we had an excellent graduate education which was the basis for our success and accomplishments in later life," David Chu said. "We believe that education is the most important investment we can make in young people."



2012-13 Chu Scholars: From left, Kayla Maxwell, Susan Chen, Ryan Dillon and Nicholas Hopwood. Not pictured, Emily Chan.

Alumni Relations

With planning for the school's 125th Anniversary as well as our move to Kapoor Hall, alumni were heavily engaged in many important ways here at the school.



Thank you to our core group of alumni who helped plan and guide our multi-day 125th Anniversary Celebration: Vitauts Alks '74, Gayle Brazeau '89, Karl Fiebelkorn '78, Renee Rizzo Fleming '83, Carol Gloff '75, Rosemary Crimaldi Madejksi '59, Robert Miller '59, Marilyn Morris '84, Betsy Grabowski Murphy '72, Mark Rosenfeld '59, William Schack '61, Rachel Spire Smith '84 and Thomas Smith '84. Your ideas and guidance help create wonderful experiences and programs for all who attended.

Our 125th Anniversary also included special recognition for the classes of 1951, 1956, 1961, 1986 and 2001. Members of these classes were recognized during our Gala Dinner at the Buffalo Club. We thank all our alumni for their attendance and support of our anniversary activities.

Another great group of alumni and friends assisted the school in organizing our collection of artifacts and antiquities for our move to Kapoor Hall. Thanks goes to **Bruce Moden '57 and his family, Rose Mary Madejksi '59, Phyllis Slattery (wife of John Slattery '51) and Louise Cooper '73** for their knowledge and care in creating new homes for our display pieces in Kapoor Hall.

Each year, the Alumni Association bestows two awards, the Willis G. Gregory Memorial Award and the Orville C. Baxter Memorial Professional Practice Award. The Gregory Award, the association's premier award, bears the name of our 4th Dean and is given to an outstanding alumni pharmacist who personifies the ideals of service, integrity and is a consummate pharmacy professional. The Baxter Award bears the name of a long standing faculty member, and is given to an outstanding alumni pharmacist who demonstrates high

ideals of professionalism and genuine care for patients. We were proud to recognize **Robert Miller '59** as our 2012 Willis G. Gregory Memorial Award recipient and **Bharati Bhardwaja '01** as our 2012 Orville C. Baxter Memorial Professional Practice Award recipient. Robert and Bharati were recognized for their meritorious contributions to the field of pharmacy at the school's 2012 Awards Ceremony.

New Orleans was the site of our 2011 alumni and school reception at the American Society of Health Systems Pharmacists mid-year meeting, with over 100 alumni and guests in attendance. We remind all alumni who attend the ASHP mid-year meeting to look for the association's annual reception. It is a great way to reconnect with your alumni colleagues, faculty and students from the school!

One of the primary missions of the association is support of students. The association organized a Farewell Celebration reception for the PharmD Graduates of the Class of 2012 at Banchetti's Restaurant, where Professor Fiebelkorn gave comments as well as Class President, Matt Schnupp. The reception was well attended and a great success! Also in 2012, the association gave six \$500 'grants-in-aid' awards to needy PharmD students as well as recognized **Maria Landicho '12** during Commencement for her valuable contributions to the alumni association.

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

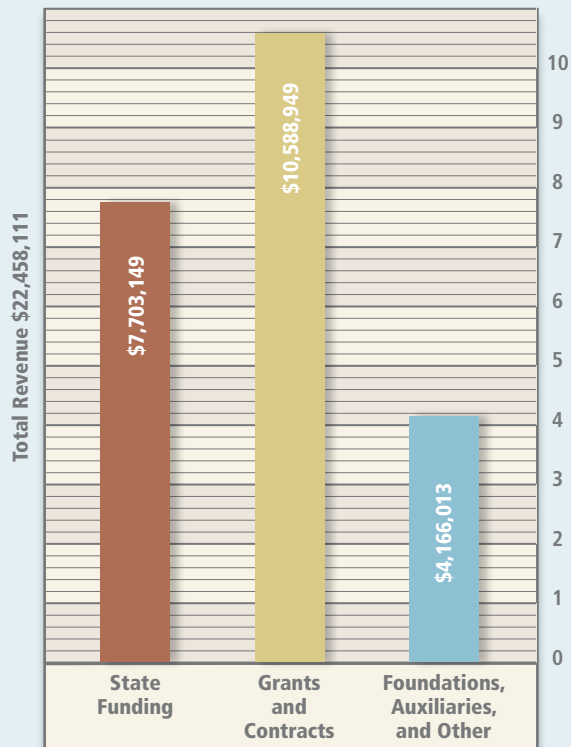
125th Anniversary Celebration



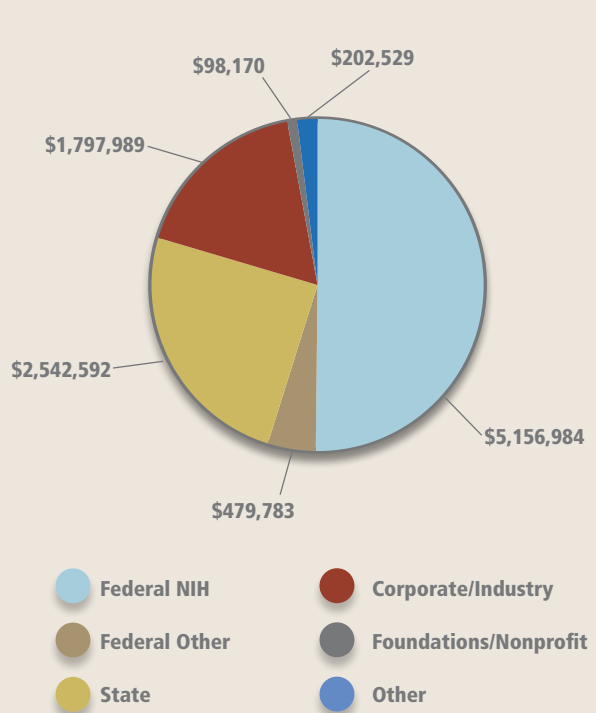
Financial Reports

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

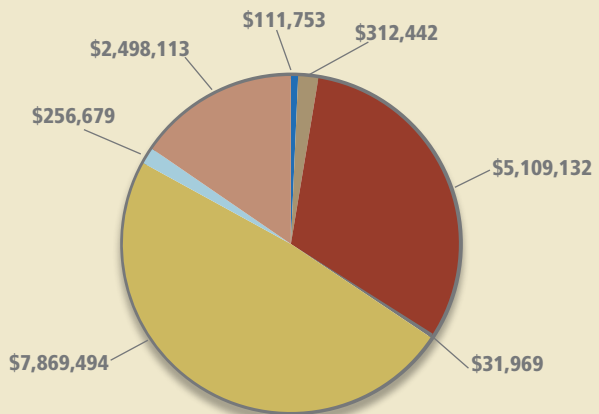


EXPENDITURES BY FUNDING SOURCE FOR RESEARCH AND TRAINING



ENDOWMENT MARKET VALUE JUNE 30, 2012 (\$16.2M TOTAL MARKET VALUE)

- Scholarship
- Award
- Museum
- Special
- Lecture
- Department
- Dean



School-Wide Committees

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.

Admissions Committee

Jennifer Hess (Chair), Fred Doloresco, Karl Fiebelkorn, Cindy Konovitz, (ex officio), William Prescott and Josh Sawyer

Support: Cynthia Acara, Christine Stumm and Mark Sauberan

Assessment Committee

Fred Doloresco (Chair), Jack Brown, Mei Jen Ho, Wojciech Krzyzanski, Mark Sauberan, Aiming Yu

Curriculum Committee

Patty Havard (Chair), Nicole Albanese (co-chair), Karl Fiebelkorn (ex officio), Peter Brody, Patricia Burch, Deborah Chiarella, Fred Doloresco, Ho Leung Fung, Donald Mager, Jun Qu, Erin Slazak, Robert Wahler, Mark Wrobel, Jun Qu, Mary Wurm-Schaar, Joseph Sperber (P1), Julie Graham (P2), Heather Rodman (P3), Matthew Schnupp (P4)

Executive Committee

Wayne Anderson (Chair), Joseph Balthasar, Edward Bednarczyk, Kathleen Boje, Rebecca Brierley, Peter Brody, Karl Fiebelkorn, Diane Fisher, Patty Havard, Jennifer Hess, William Jusko, Cindy Konovitz, Candise Morris, Gene Morse, Mary Wurm-Schaar, Leigh Yates

Safety Committee

Alfred Reiman (Chair), Vicki Rink, David Soda, Leona Zak

Student Academic Affairs Committee

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

Tenure and Promotion

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

National Industrial Advisory Council

Wayne Anderson

Dean

UB School of Pharmacy and
Pharmaceutical Sciences

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Kinex Pharmaceuticals, LLC

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Senior Vice President, Development

Boehringer Ingelheim
Pharmaceuticals, Inc.

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Vice President and Global Head, Drug

Metabolism and Pharmacokinetics

Hoffmann-LaRoche, Inc.

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Executive Vice President, Chief

Commercial Officer

Incyte Corporation

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Vice President, Drug Development

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Michael Taylor, '81

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2013 GALA

- REUNION RECOGNITION FOR THE CLASSES OF 1953, 1958, 1963, 1978, 1988 AND 2003
- RECOGNITION OF DEAN WAYNE ANDERSON

We hope you will attend and help celebrate our upcoming reunions and the nearly 20 years of leadership Dean Wayne K. Anderson has brought to our school, the university and the profession of pharmacy.

THURSDAY, SEPTEMBER 26

- Gerhard Levy Distinguished Lectureship in the Pharmaceutical Sciences and dinner banquet
- Pharmacy Continuing Education Program

FRIDAY, SEPTEMBER 27

- Participate in classes, lectures and labs with our pharmacy students, as well as tours of John and Editha Kapoor Hall; meet with alumni colleagues
- Gala Dinner Dance: Reunion recognitions and tributes to Dean Anderson

SATURDAY, SEPTEMBER 28

- University at Buffalo Football Game: UB vs. UConn

Registration will begin July 2013.

Questions:

Office of External Affairs: phm-alumni@buffalo.edu or 716-645-3340