## **Developing the Next Generation** of Healthcare Leaders

#### ANNUAL REPORT 2009-10



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

### Message from the Dean

#### Solid Foundation Prepares Strong Future

As I look back on our accomplishments during the 2009-2010 academic year, I am reminded of one of our greatest accomplishments to date – the Groundbreaking Ceremony for John and Editha Kapoor Hall. This event represents the beginning of our future as well as the focus of all we currently strive to achieve and enhance. Kapoor Hall will allow us to attain our curricular objectives, advance our research, expand collegial interactions and assist all members of the school in reaching their goals. The September 2009 Groundbreaking Ceremony laid the foundation for our occupancy of the building in the Summer of 2012.

Our PharmD students were very active in pharmacy and healthcare policy objectives. Legislatively, SPAWNY organized a very successful Pharmacy Legislative Advocacy Day where local legislators visited the school and spoke with students about state health care policy and budget. APhA-ASP tackled legislative issues with the creation of a video showing how pharmacy impacts heath care reform at the local and regional levels. This was submitted to APhA as well as state and federal congressional offices. Nationally, the UB Team again took top honors with fourth place recognition at the AACP's Pruitt-Schutte Business Plan Competition. On campus, our students represented the school well by their invited participation at the UB Celebration of Academic Excellence where PharmD and pharmaceutical sciences students showcased their research work via poster presentations.

The continued high caliber work of our faculty continues to be recognized. Dan Brazeau received the UB 2010 Teaching Award, Jerry Schentag received the UB 2010 Faculty Entrepreneur Award and Brian Tsuji was the recipient of the Pfizer 2009 ASPIRE Young Investigator Award in Antibacterial Research. The faculty at large has accomplished a great deal in all areas of scholarship and has their efforts continue to be recognized here at the school as well as by their national peers. Their dedication and intellectual rigor continually reinforce our high standards of excellence.

The 2009-10 accomplishments and recognitions noted throughout this annual report gave a strong foundation to our current activities. As we review budget and curricular objectives in preparation for our upcoming accreditation and move to Kapoor Hall, it is evident how our past strengths have prepared us to meet these important future events.

Warm regards,

Wayne A. anderson

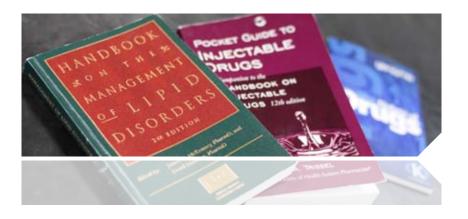
Wayne K. Anderson Professor and Dean

#### OUR MISSION STATEMENT

The mission of the University at Buffalo School of Pharmacy is to educate students in pharmacy practice and the pharmaceutical sciences, to create and disseminate knowledge in pharmacy practice and the pharmaceutical sciences, to provide patient care, and to provide services to the community at large based upon this knowledge. This mission is to be achieved consistent with the highest ethical standards and with respect for diversity and cultural sensitivity.

The mission recognizes pharmaceutical care as a mode of pharmacy practice within the health care team in which the patient is empowered "to achieve the desired outcomes of drug and related therapy."

The mission also recognizes that research in the broad area of the clinical sciences, pharmaceutical sciences and education is necessary to create and maintain a body of knowledge needed for professional education, health care delivery and the advancement of science. In this context, our goal is to enhance the local, national and international leadership of the School of Pharmacy and continue it as one of the strong components of the University at Buffalo and the State University of New York system. This will involve a focus on those areas of unique strength within the school and those areas that form unique, interdisciplinary bridges within the university.





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On the bench, Associate Professor Javier G. Blanco, PhD has a keen research eye fixed on genotyping as a way to reduce the risk of congestive heart failure among childhood cancer survivors.



## Bench to Bedside, Bedside to Bench

Considering more efficient clinical management of diabetes and safer regimens for curing cancer

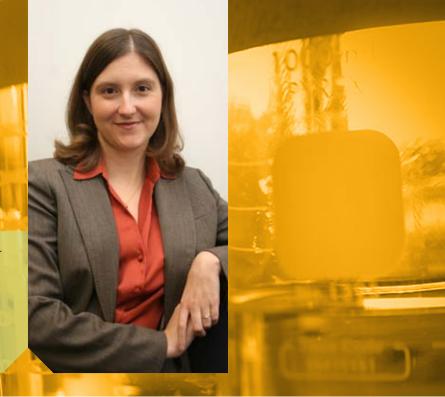
MARCH 1

Defining more efficient clinical management of diabetes and safer drug regimens for curing cancer are critical pursuits among today's medical practitioners.

Rising to this challenge, two UB SoPPS faculty are leading notable research that points to greater personalization of cancer and diabetes pharmacotherapy for the best overall outcomes for patients and providers.

At bedside, Clinical Assistant Professor Erin Slazak, PharmD has completed a pilot clinical study that articulates best practice for cost- and care-effective long term management of Type 2 diabetes.

On the bench, Associate Professor Javier G. Blanco, PhD has a keen research eye fixed on genotyping as a way to reduce the risk of congestive heart failure among childhood cancer survivors. At bedside, Clinical Assistant Professor Erin Slazak, PharmD has completed a pilot clinical study that articulates best practice for cost- and careeffective long term management of Type 2 diabetes.



ALWAYS TELL MY STUDENTS that if we can contribute to findings that will save at least one life — that will be the achievement of a lifetime," Blanco says.

A national of Argentina, where he earned his professional and doctorate degrees in clinical biochemistry, Associate Professor Blanco decided to enter the pharmacy field because he felt it was the best way, in the long run, of being able to help someone.

Blanco completed a post-doctoral fellowship at St. Jude Children's Hospital under the mentorship of Dr. Mary V. Relling before joining the pharmaceutical sciences faculty in 2003. He defines himself as "a clinical biochemist involved in scientific pharmaceutical translational research." That research path is focused on the improvement of cancer chemotherapy by understanding factors that contribute to inter-individual variability in drug response.

In 2010, at its 46th annual meeting in Chicago, the American Society of Clinical Oncology (ASCO) highlighted Blanco's novel study on anthracycline-related cardiomyopathy in childhood cancer survivors.

The laboratory work was based on a supposition that specific DNA sequence variations in genes associated with the metabolism of anthracycline drugs impact the risk of clinical cardio toxicity.

Powerful and highly toxic, anthracycline drugs have been used successfully for more than 30 years to cure a wide variety of cancers. They are especially effective in eradicating forms of childhood cancer. "If we stop using anthracylcines we will not be able to cure up to 90 percent of the children who suffer from acute lymphoblastic leukemia, a very common childhood cancer," Blanco explains. "If you take these drugs out of the picture, the cure rates will go down."

But while more people are surviving cancer for longer periods of time, chemotherapeutic use of these drugs statistically result in numerous related toxicities. These toxicities – which range from neurological to gastrointestinal to cardiologic – can present any time from two to 30 years after the patient has been cured of cancer.

Cardio toxicity, especially manifest as congestive heart failure, is a well-documented side effect of anthracyclines. And fewer than half of the patients who develop this chemotherapyrelated heart failure survive for two years.

"Patients with cancer are treated with standard 'recipes' of





pharmaceuticals, but only a fraction of patients develop a toxic event," Blanco explains, adding that the numbers are high enough to warrant causation research. "We thought, maybe there are some genetic factors that make these patients more prone to these kinds of toxicities. What if we can pinpoint those genetic factors in advance, before administering any therapy? That's the whole idea. Maybe there are genetic factors that predispose people to these toxicities."

In collaboration with the Children's Oncology Group, of which he is a member – and working closely with Smita Bhatia, MD, MPH, Chair of the Department of Population Sciences at City of Hope National Medical Center in Duarte, California – Blanco mounted a pilot study to test this hypothesis.

The study, which began seven years ago, compared DNA genotypes of childhood cancer survivors diagnosed with heart disease to a control group

of cancer survivors without heart disease. About 80 percent of the participants began treatment after 1981; the median age of diagnosis was 7.5 years, and median advent of cardiomyopathy was 7.1 years.

"The idea is that small genetic differences between cases and control dictate this risk. But there are chances of finding differences everywhere, because the human genome is very plastic," Blanco says. "So we put together a list of candidate polymorphisms. We narrowed it down to a list of genes that we believe are involved in the genesis of this anthracyclinerelated cardio toxicity."

Using this candidate gene approach, Blanco and his research team were able to isolate a tiny gene variant related to cardio toxic risk. "That was really exciting. Everybody was happy. We ended up publishing a study," he laughs.

"We repeated the same analysis with a different and much larger set of 165 cases with cardiomyopathy and 323 survivors without heart disease," he continues, adding that the second analysis utilized detailed tests to diagnose cardiac disease. Further pharmacogenetic analysis showed a clear dose-response relationship between anthracycline use and cardiomyopathy among patients with certain CBR enzymerelated genotypes. "We were able to validate our findings. And that's what we presented at the ASCO conference last year, the validation in a totally independent cohort of cancer survivors."

Clinical Assistant Professor Erin Slazak also is engaged in a second round of research to validate the initial findings of her clinical pharmacy services (CPS) study, which supports the positive impact that pharmacists can have in enhancing patient care while decreasing health care costs.

Slazak is a Buffalo native who earned her PharmD in 2004, followed with a UB pharmacy practice residency in ambulatory care – and is now a well-respected educator and innovative academician in the field of diabetes. Her clinical research is focused on patient-centered pharmacotherapy management of ambulatory disease states and the effect of pharmacist intervention on health care and economic outcomes.

Her current CPS research is mounted through MedSense, a pharmacist-led, patient centered pharmacotherapy program developed by UB SoPPS and Lifetime Health Medical Group, the regional primary care physician group where Slazak sees patients and oversees student and resident education. She is also the program coordinator of the MedSense Program Research Initiative, an interdisciplinary approach to care for patients with complex disease state and medication burdens, particularly those with uncontrolled Type 2 diabetes or the metabolic syndrome.

"Our program allows us to educate patients on the management of chronic disease," Slazak says. These chronic health conditions may include hypertension and high cholesterol concomitant with Type 2 diabetes. "We educate patients not only about the condition itself and how to manage it through non-pharmacologic treatment like diet and exercise, but also how to best use their medication to get the best outcomes."

Data for Slazak's CPS research were collected from 2006 to 2007 from Lifetime Health patients with Type 2 diabetes. A total of 122 patients enrolled and received an initial consultation with a MedSense pharmacist. Of that number, only 50 patients had sufficient laboratory and economic data to allow for inclusion in the study.

Patient data were obtained from the initial CPS interview and from patients' electronic medical records. Clinical and economic assessments were conducted at the six- and 12-month intervals of CPS enrollment; baseline assessments were obtained from the most recent medical data up to a maximum of six months before enrollment.

Each of the 50 patients formally enrolled in the CPS pilot study received diabetes education and pharmacotherapeutic regimen review. All clinical recommendations made to their

### UR PROGRAM ALLOWS US TO EDUCATE PATIENTS on the management of chronic disease," Slazak says. These chronic health conditions may include hypertension and high cholesterol concomitant with Type 2 diabetes.

primary care provider were documented and retrospectively reviewed to determine if they had been accepted.

"This is not necessarily novel. But I think that each time that it's done it shows the very tangible impact that a pharmacist can have," Slazak says. Unlike the 1996 Asheville Project, which focused on patient-centered education and provides a general benchmark for diabetes-focused clinical pharmacy programs, her study additionally targets pharmacist-physician collaboration to affect optimal clinical and economic outcomes.

"I think our recommendations were only taken by the doctors about 50 percent of the time back when we did this, because the program was very new," she reports. "Now they take our recommendations almost 90 percent of the time."

The preliminary results of her work – published in the Mar/ Apr 2009 edition of the Journal of the American Pharmacists Association – demonstrated that within six months, clinical pharmacists collaborating with primary care providers were able to reduce A1C levels (the hemoglobin index control for diabetes) by an average of 1.1 percent. These clinical improvements occurred while monthly costs per patient decreased by approximately \$212, around \$2500 per year, despite nominal increases in the cost of medications prescribed.

Slazak's study also was featured in Buffalo Business First, Medpage Today, a national online medical news site, and received inquiries from the United States Indian Health Service Corps.

"Patient centered education is key to the positive outcomes of the pilot study," Slazak says. "Patients definitely did not get a scripted education session. They got one that was very individualized according to their medication regimen," she explains. "It's really important to listen, to hear what the patient can do, what they are willing to do. Very often I encounter patients who say, 'I don't like to cook at home' or 'I do not want to inject insulin.' Then we try to work with them to tailor a regiment that will still control their diabetes and also address their concerns."

Beyond their novel findings in clinical diabetes management



and childhood cancer chemotherapy, the bench and bedside work of Blanco and Slazak broadly supports the future importance of personalized medical care.

"Our next step is a prospective study to follow survivors with the genotype variant that puts

them at risk for anthracylcine-related cardio toxicity," says Blanco, whose research is funded collaboratively through the National Institute of General Medical Science, Leukemia & Lymphoma Society and Lance Armstrong Foundation.

Ultimately, real life application of his work could mean bedside genotyping at the time of diagnosis to address possible risk of cardio toxicity after treatment. The process would assess individual risk factors, including environmental exposure, age, sex, nutritional status, additional medications and pharmacokinetic/ pharmacodynamic considerations.

"The paradigm would be to develop some kind of algorithm for the physician or the nurse, I imagine a small computer program or something, that would help them tabulate all the variables and to actually enable them to suggest a different dosage or treatment," Blanco says. "Maybe he or she will need to follow this patient. Or maybe the patient will need to be treated with a type of medication now being developed called 'cardio protectors.'"

Slazak is preparing to collect a second data that tentatively will result in more definitive outcomes of her CPS study. Collaborating UB SoPPS colleagues include Scott Monte, Clinical Assistant Professor, Pharmacy Practice; Nicole Paolini, Clinical Assistant Professor, Pharmacy Practice; Joseph Paladino, Professor, Pharmacy Practice, and PharmD student Guari Rao.

"Lifetime Health, obviously, has a great interest in what we're able to do with our patients," she says. "The one thing that would be interesting, now that the doctors take the majority of our recommendations, is to see how the outcomes will change. Will we see even greater drops in glucose levels? I'm also hoping the next time around we will see decreases in blood pressure and cholesterol levels."

She also hopes her work through MedSense will help lead to changes in pharmacy practice laws in her home state. New York currently does not support collaborative practice, which allows pharmacists to make medication according to a pre-specified protocol set up between specific physicians and pharmacists.

"In states such as ours where collaborative practice isn't yet part of the pharmacists scope of practice, programs like MedSense are extremely important to enable us to go to our lawmakers, our decision makers, and say, 'this is why it would be so important to have collaborative practice laws.'"

By: Jessica Thorpe, Outside the Box Communications

## **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**

The Office of Admissions and Advisement strives to improve and enhance our processes from year to year through innovation, creativity, input, and planning. In 2009-10, we expanded our in-person interview sessions to include a longer interview with both a faculty/staff member and an alumnus, a detailed campus tour, a patient-care oriented group activity led by our Dean's Student Ambassadors, and a student social. Our Dean's Alumni Ambassadors participated in admissions activities by attending graduate school recruitment fairs across the country, electronically reviewing admission applications, interviewing, and participating as speakers for our annual Orientation and White Coat Ceremony.

With the goal of engaging emerging markets, we introduced an active social media presence including a School Facebook Fan Page, Twitter, YouTube, and a Wiki-page. These initiatives, together with many others, continue to have a positive impact on the quality of our talented and diverse applicant pool, ultimately allowing us to enroll the best of the best in our P1 PharmD class.

For 2009, the University at Buffalo welcomed another highly talented freshman class, with 325 students indicating pre-pharmacy as their intended major, representing nearly 10 percent of the incoming class. UB's Early Assurance program continues to offer outstanding pre-pharmacy students the opportunity to enter our PharmD professional program with a minimum GPA of 3.5. For the 2009-2010 academic year, the median GPA for Early Assurance students accepted into the program was 3.8.

#### Meet the Class of 2013

Interviewed	250
Accepted	125
Middle 50th Percentile Science & Math C	SPA
(Biology, Chemistry, Physics, Math)	3.5 – 3.9*
Middle 50th Percentile of Sum PCAT	
Percentile Score (excluding composite)	380 - 421*
In-State	75%
Out-of-State	21%
Foreign Citizen	4%

Number of States/Provinces Represented	14
Females	66%
Males	34%
2 years or less of college	53%
3+ years of college	6%
Bachelor's degree or higher	41%
Average Age	21
*The middle 50th percentile reflects those betv 25th and 75th percentiles.	veen the









#### Degrees Granted (2009-10)

PharmD	114
BS in Pharmaceutical Sciences	13
BS/MS in Pharmaceutical Sciences	3
MS in Pharmaceutical Sciences	1
PhD in Pharmaceutical Sciences	1
Total	132

#### **Degree Program Enrollment (2009-10)**

Total Enrollment	584
Pharmaceutical Sciences Subtotal	89
PhD in Pharmaceutical Sciences	37
MS in Pharmaceutical Sciences	13
BS/MS in Pharmaceutical Sciences	4
BS in Pharmaceutical Sciences	35
PharmD Subtotal	495
P4 Year	112
P3 Year	133
P2 Year	125
P1 Year	125

#### **Continuing Education**

### Office of Postgraduate Professional and Continuing Education

#### Fiscal Year 2009-2010

Total	31
Cosponsored	8
Home Study Programs	2
UB Certificate Programs	1
UB Programs	20

The Department of Pharmacy Practice, Office of Postgraduate Professional Continuing Education, accredits and conducts continuing pharmacy education programs in support of life-long learning. Continuing professional development offerings are held live on a local and regional scale, and web-based and homestudy on a national and international level designed to provide reviews and updates of drug classes and therapies, pharmacy law, and emerging technologies used in pharmacy practice.

Expanding the opportunity for WebEx participation, this modality offers opportunity for alumni and preceptors, specifically those out of region, to participate in SoPPS offerings from any area.

Over 400 pharmacists this year have taken part in the HIV Continuing Education Online Programs, providing varied levels of training for pharmacists seeking the knowledge and skills necessary to assess, counsel and manage the medications of patients living with HIV infection and other common co-morbidities. The basic pathophysiology of HIV and pharmacology of antiretrovirals are covered in the programs as well as contemporary issues in patient management, such as adherence, adverse drug reactions, drug interactions, and antiretroviral resistance.

The postgraduate office has brought continuing education programs to professional conferences, designed opportunity for resident offerings and accredited inter-professional activities.

The New York State Department of Health recently implemented (Continued on pg 8)

#### **Continuing Education**

#### (continued)

a Medicaid Medication Therapy Management (MTM) pilot program designed to help patients adhere to medication therapy and ultimately improve their therapeutic outcomes. This pilot program was focused on asthma in the Bronx. The UB SoPPS CE office designed and delivered trainings in New York City within this pilot.

Soon to be completed is the new online CE program registration webpage, allowing for multiple program selection, participation type, registration and payment in one transaction.

Precepting SoPPS students offers pharmacists the opportunity to gain credits and apply those credits towards continuing pharmacy educational opportunities. Additional information on becoming a preceptor can be found by accessing the school's web page (www.pharmacy.buffalo.edu) or contacting the Office of Experiential Education at (716) 645-4799.

#### **Continuing Education Programs and Symposia**

08/18/2009	Staphylococcus aureus Continuing Education Series/Strong Memorial
09/13/2009	Medication Errors 2009 in Buffalo
10/27/2009	Staphylococcus aureus Continuing Education Series/BGH
11/04/2009	Staphylococcus aureus Continuing Education Series/RPCI
11/07/2009	Medication Errors 2009 in Albany
11/08/2009	Medication Errors 2009 in Rochester
11/15/2009	Pharmacist Educators in Ambulatory Antihypertensive Therapy Management: Prescriber Education Program
11/16/2009	Pharmacist Educators in Ambulatory Antihypertensive Therapy Management: Prescriber Education Program
12/06/2009	MRSA: New Challenges and Approaches
01/01/2010	Pharmacy-Based Immunization Delivery
01/27/2010	Cased Based Clinical Update An Integrated Case-Based Approach
02/21/2010	Ophthalmology Part 1: Self-Treatment of Ophthalmic Conditions
03/07/2010	Ophthalmology Part II: Pharmacotherapeutic Management of Primary Open Angle Glaucoma and Primary Angle-Closure Glaucoma
03/21/2010	Ophthalmology Part III: Pharmacotherapeutic Management of Dry Eye Syndrome
03/23/2010	Teaching, Learning, and the Preceptorship: A Review of the Research
03/28/2010	Pharmacy Law Update 2010 in Rochester
04/11/2010	Pharmacy Law Update 2010 in Buffalo
04/29/2010	HIV Update Symposium 2010
05/12/2010	Clinical Pharmacy Service
05/19/2010	15th Annual Comprehensive Pharmacy Law Continuing Education for Pharmacists (Day 1)
05/20/2010	15th Annual Comprehensive Pharmacy Law Continuing Education for Pharmacists (Day 2)
06/23/2010	Pharmacy-Based Immunization Delivery
Ongoing:	Online-Introductory HIV Pharmaceutical Care Specialist Program
Ongoing:	Online-HIV Pharmacotherapy CE Update
Ongoing:	Online-HIV Annual Update CE

#### Residency Training Program Summary 2009-10

The Department of Pharmacy Practice maintained its commitment to providing post-graduate education through general (PGY-1) and specialty (PGY-2) residency training. During the 2009-10 academic year, our residency program consisted of four PGY-1 programs; two ambulatory care / primary care, one inpatient, and one in hospice/palliative care. Our program also offered three PGY-2 programs; HIV, psychiatry, and informatics. We are pleased to report we had two residency programs reaccredited: PGY1 Pharmacy Practice/Family Medicine at Erie County Medical Center and PGY1 Ambulatory Care Pharmacy Practice at Lifetime Health.

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 the clinical pharmacy and/or academic settings, sets the framework for our program.

The goals of our program are accomplished by involving our residents in clinical activities, research projects, and teaching. Specifically, our residents participate in a unique didactic research course, attend an established teaching certificate program, actively participate in small and large group didactic teaching and clinical precepting, present an ACPE accredited CE program, and conduct a research project. The University at Buffalo School of Pharmacy sponsors an annual Residency Presentation Day, which continued to expand in 2010, and now includes multiple residency programs from the Western New York, Rochester, and Syracuse area.



#### PHARMACY PRACTICE RESIDENTS/FELLOWS

Shari Allen, PharmD Resident PGY1-Psychiatry

Qusai Al-share, PharmD Fellow Drug Development/Novartis

Miranda Cole, PharmD Resident PGY1- Psychiatry

Patrick Comerford, PharmD Resident PGY1- Primary Care/Buffalo Medical Group Natalie Dearing, PharmD Resident PGY1- Ambulatory Care/Lifetime Health Mostafa Elgebaly, PhD

Fellow Drug Development/Novartis Cory Fominaya, PharmD

Fellow Outcomes Research

Samira Garonzik, PharmD Fellow Drug Development/Novartis Varsha Iyer PhD Fellow Drug Development/Novartis

Kiana Keyvanjah, PharmD Fellow Drug Development/Novartis

Rachelle Lubin, PharmD Fellow Drug Development/Novartis

Shelley Wilson, PharmD Resident Homecare/Hospice

#### PHARMACEUTICAL SCIENCES POSTDOCTORAL FELLOWS

#### Sihem Ait-Oudhia

Mechanistic PK/PD Modeling of Anticancer Drugs; Modeling of Noninvasive Images of Tumor Vasculature; Mechanism-based Disease Progression Modeling of Rheumatoid Arthritis

#### Yanguang Cao

Mechanistic PK/PD Modeling of Antidiabetes Drugs

#### Shang-Chiung Chen

Investigation of the Influence of FcRn on Target-mediated Elimination of Monoclonal Antibody (mAb)

#### Qiuying Cheng

Pharmacogenetics and Molecular Biology of Human and Dog Carbonyl Reductases

#### 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

#### Salaheldin Hamed PK/PD/disease Modeling of Gemcitabine

for More Efficacious Treatments of Pancreatic Cancer John Harrold Multi-scale Systems Analysis of Anti-CD20 mAb Pharmacodynamics

Wei Ji Steroid Receptor Regulated Gene Expression

Leonid Kagan Investigation of Interferons PK and PD Investigation of Subcutaneous Absorption of Monoclonal Antibodies

#### Hong Li

Population PK Modeling and Limited Sampling Strategy to estimate Mycophenolic Acid Area under the Concentration-time Curve in Hematopoietic Stem Cell Transplantation Recipients

Population Modeling of Long-Term Steroid-induced Bone Loss in Patients Undergoing Hematopoietic Stem Cell Transplantation

#### Jun Li

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

Dongyang Liu PK/PD/PG/DIS Models for Exploration of Cytokines Role in RA Progression of Rats Srinidi Mohan Arginine Paradox and Tolerance

Yuzhuo Pan miRNA Regulation on Drug Metabolism and Disposition

Samuel Roiko The Role of Monocarboxylate Transporters in the Toxicokinetics/ Toxicodynamics of GHB (gammahydroxybutyrate)

Hongwu Shen Drug-Drug Interactions of Indolealkylamines

#### Indrajeet Singh

Upregulation of Erythropoietin and Reticulocytes in Rats Induced with Hypoxia and the Resultant PK/PD Analysis

#### Mitalee Tamhane

Lymphatic Uptake of Proteins by Non-invasive Fluorescence Imaging Tissue Distribution and PBPK Modeling of Proteins

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

Bo Zheng Pharmacokinetics and Pharmacodynamics of Antibody and Protein Drugs





#### **Commencement Awards**

Lilly Achievement Award Seon Jo Park Phi Lambda Sigma of Achievement, Chapter Member of the Year Award Nicholas Fusco

Michael E. Crawford Award Katie Jaenecke

Eino Nelson Award Kristen Lim

UB Pharmacy and Pharmaceutical Sciences Alumni Association Award Brian Wetzel Susana Eng

David E. Guttman Award Long Kim Nguyen

Renee A. Dederich Award Sierra Wolford

Francis P. Taylor Award Caroline Suczynski

UB School of Pharmacy & Pharmaceutical Sciences Professionalism Award Keith Rowe

Robert H. Ritz Award Madlin Faria National Community Pharmacists Association Outstanding Student Member Award Kristen Gawronski ASP National Patient Counseling Award

Miranda Minhas

Roger Mantsavinos Award Kristen Lim

Lori Esch Memorial Award Ashley Hughes

Merck Award 1st Kaitlin Ganley, 2nd Sarah Davis, 3rd Kristen Lim

Robert M. Cooper Memorial Award Nicholas Falco

Mylan Pharmaceutical Excellence in Pharmacy Award

Jill Jessmer Facts and Comparisons Award of Excellence in Clinical Communication Jennifer Taggart

Roy M. Barr Award Kofi Adjei Western New York Society of Health-System Pharmacists Award Kristen Gawronski

Samuel J. Bauda Award Jamie Kaminski

Pharmacists' Society of the State of New York

Victoria Adams Natural Medicines Comprehensive

Database Recognition Award Vivian Park

McKesson Leadership Award Keith Rowe

TEVA Pharmaceuticals USA Outstanding Student Award

Brian Wetzel

Margaret C. Swisher Memorial Award

Dong Liu A.B. Lemon Memorial Award

Nicholas Fusco

ASP Certificate of Recognition Miranda Minhas Applied Pharmacotherapy Professional Experience Program Award Sonia Sawkar

Ambulatory Care Professional Experience Program Award Amy Colby

Pharmacists' Association of Western New York Student Leadership Award

Lisa Lederhouse

Excellence in Pharmacogenomics Award

Madlin Faria

Katherine Doyle Memorial Award Natalie Travagliato

Kelli Jordan Memorial Award Charles Venuto

The Outstanding Graduating Senior Award in Pharmaceutical Sciences

Amy Doty Excellence in Teaching Award

Peter Brody, 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 POS

Eli Lilly & Co. Fdtn. Chao Xu

Genentech Bioncolgy Jun Wang

**Johnson & Johnson** Wei Gao

Merck & Co. Xiling Jiang

**Pfizer, Inc.** Lubna Abuqayyas Jing Fang Melanie Felmlee Dipak Pisal

**Schering Corp.** Yang He

**Daiichi Sankyo, Inc.** Anson Abraham

#### POSTDOCTORAL ASSOCIATES/FELLOWS:

**Pfizer, Inc.** Sihem Ait-Oudhia Yanguang Cao Wei Ji Indrajeet Singh

Hoffman LaRoche Salaheldin Hamed

#### Center for Protein Therapeutics

(Genentech, Lilly, Roche, Merck, Pfizer, Abbott) Laboratory for Protein Therapeutics (Novartis) Shang-Chiung Chen John Harrold Leonid Kagan Dongyang Liu Mitalee Tamhane Fang Wu Bo Zheng

#### Pharmacy Practice PHARMACY POST GRADUATE RESIDENTS AND FELLOWS

Lifetime Health Medical Group Natalie Dearing Buffalo Medical Group Patrick Comerford

Novartis Pharmaceuticals Corporation Qusai Al-share Varsha Iyer Rachelle Lubin Samira Merali Mostafa Elfebaly Kiana Keyvanjah

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

Victoria Adams Kofi Adjei Ann Andrasik Kirsten Butterfoss Susan Chang Nicole Cieri Annie Dinh Philip Eisenberg Susana Eng Nicholas Falco

Nicholas Fusco Kristen Gawronski Hany Geris Gregory Gotie Jill Jessmer Shirley Lau Lisa Lederhouse Peggy Lee Teresa Li Lauren Lim Melissa Mackey Miranda Minhas Seon Jo Park Vivian Park Keith Rowe Kari Sprout Caroline Suczynski Natalie Travagliato Brian Wetzel



#### **Student Achievements**

#### 2010 Celebration of Academic Excellence Student Research Poster Presenters

Ryan Cummings Jorge Gallegos Sean Lee Carrie Sanborn Andrew Tong Charles Venuto Amy Zhou Jian Li Zhu

#### 2010 SoPPS Student Research Poster Winners

#### BS and BS/MS

First place: Amy Doty Second place: Sean Le Third place: Jian Li Zhu

#### P3 Students

First place: Gauri Rao Second-place tie: Angela Mwaura & Dung Ngo

#### P4 Student

First place: Katie Jaenecke

#### American Association of Colleges of Pharmacy Pruitt-Schutte Business Plan Competition, 4th Place Team Members

Mike Grota, Danielle Kauffman, Miranda Minhas and Vikram Sundararaman

American Pharmacists Association Academy of Student Pharmacists Members Develop Video Showing the Importance of Pharmacy in Health Care Reform

Drew Lambert, Michael Krajewski, Oluwa Fabiyi, Kristen Zeitler, Jamie Chin, Gauri Rao and Jason Hou

#### **Individual Achievements**

Samuel Aitken recipient of 2010 American Association of Colleges of Pharmacy and WalMart Scholars Programs

Suraj Bhansali recipient of the American College of Clinical Pharmacology Student/Trainee Award for his abstract: "Development of Physiological Based Pharmacokinetic Model to Predict Tissue Distribution of Vascular Endothelial Growth Factor C1565"



Caitlin Carpenter recipient of the Pharmacists' Association of Western New York Owl Drugs/ Donald Arthur, Sr. Entrepreneurial Scholarship

Christopher Daly recipient of the Pharmacists' Association of Western New York Golf Scholarship and is a recipient of the 2010 U.S. Public Health Service Excellence in Public Health Pharmacy Practice Award

Gertrude Chimhungwe recipient of a 2009 National Community Pharmacy Association Foundation Presidential Scholarship Katherine DiPalo has been accepted into the Veteran's Administration VALOR Program at the Buffalo Veterans Administration Medical Center. VALOR offers a paid internship and gives qualified students the opportunity to develop clinical practice competencies under the guidance of a preceptor

Kristen Gawronski recipient of a 2009 National Community Pharmacy Association Foundation Student Chapter Outstanding Members of the Year Award David Jacob recipient of 2010 American Association of Colleges of Pharmacy and WalMart Scholars

Programs Lindsay Rodgers recipient of the Buffalo Federation of Women Scholarship

Caitlin Turner recipient of the 2009 RX Portfolio National Achievement Award

Charles Venuto recipient of the 2010 Daniel H. Murray Professional Development Award

Kristen Zeitler selected as a member of the American Pharmacists Association- Academy of Students of Pharmacy (APhA-ASP) Policy Standing Committee. She is also the recipient of Pharmacists' Association of Western New York Howard and Bee Scholarship and the 2010 Respect, Excellence and Service in Pharmacy Student Award

#### 2009-10 Degree Recipients

Nicole Cieri

Bachelor of Science in Pharmaceutical Sciences September 2009 Anas Fathallah Mehwish Ghauri

February 2010 Nabeel Khan

June 2010 Jennifer Biernacki Ryan Cummings Amy Doty Matthew Franchini

Jorge Gallegos Sean Guang Lee Jian Hui Liu Genki Nakamura Long Kim Nguyen Tina Tsang Prince Yeboah

Bachelor of Science/ Master of Science in Pharmaceutical Sciences

September 2009 Diana Molano Jrace Rong

February 2010 Eun Jin Bang

Ghislaine Ngo Mbong June 2010

JiHye Lee

#### Doctor of Pharmacy June 2010

Victoria Adams Kofi Adiei Ann Marie Andrasik Monika Baltaziuk Sarah Bandinelli Anuoluwapo Bank-Oni Julie Bannister Michael Bartels Michael Bevilacqua Heather Brand Andrea Brever Kirsten Butterfoss Marianne Cacicia Katherine Carlough Andrea Carlson Susan Chang Oueena Chen

Amy Colby Travis Dangelo Sarah Davis Anna Decolongon Rachel Deppas Nghi Dinh James DiNicolantonio Philip Eisenberg Susana Eng Nicholas Falco Madlin Faria Graziella Furnari Nicholas Fusco Joseph Gajewski Kaitlyn Ganley Kristen Gawronski Lisa George Hany Geris Brian Gielowski Gregory Gotie Natalie Graiver Gary Greco Jennifer Gremke Ashley Hughes Jesse Imes Katie Jaenecke Kavita Jain Jessica Jarnot Jill Jessmer Jamie Kaminski Brian Kersten Erin Knight Saneel Kulkarni Hayley Kwiat Zhibin Lai Dechen Lama Tshering Lama Thomas Latuga Shirley Lau Lisa Lederhouse Christopher Lee Kyung Na Lee Peggy Lee Teresa Li Kristen Lim Lauren Lim Dong Liu Wing Liu Laurie Loedeman Melissa Mackey Miroslava Mandroshchuk Giuseppe Marino **Bethany Markert Stephen Meyers** 

Christopher Miller Miranda Minhas Brett Mohorcic Alex Morales Dana Nerenberg Lea Nitche Azaliah O'Banyoun Emily Obrist Pamela Olbrych Seon Jo Park Vivian Park Amisha Patel Christopher Poon Brenda Queeno **Basant Riwes** Keith Rowe Sonia Sawkar David Seelman Nida Siddiqi Amanda Skinner Kari Sprout **Brian Staiger** Deanna Stengel Tiffany Stevens Caroline Suczynski **Elizabeth Sutton** Jennifer Taggart SiuBun Tang Peggy Tapia Christopher Terrance Andrew Tong Kim Sang Tran Natalie Travagliato Charles Venuto Nathaniel Wade Brian Wetzel Sierra Wolford Chung Wong Phillip Wong Trevor Yannace David Yeow Erica Zak

#### Doctor of Philosophy in Pharmaceutical Sciences September 2009 Xinning Yang

#### February 2010 Anu Krishnatry Urvi Telang

June 2010

Anson Abraham Dhavalkumar Shah



## **Research and Training**

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

#### **Department of Pharmaceutical Sciences**

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

Moreover, the department is a leading academic institute for cutting edge research and teaching in Pharmacogenomics. The department strengths lie in biological applications of pharmaceutical sciences 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.

Of special note were the activities of the Center for Protein Therapeutics, directed by Dr. Joseph P. Balthasar. With additional major input from Drs. William Jusko, Marilyn Morris, and Donald Mager, and participation by several other members of the department, the Center seeks to apply our capabilities in pharmacokinetics, pharmacodynamics, protein analysis, and protein formulation, and to address major questions regarding the delivery, pharmacokinetics, and in vivo effects of protein drugs such as monoclonal antibodies. Research sites are at the Center of Excellence in Bioinformatics and Life Sciences in the medical corridor as well as in the Cooke-Hochstetter Building on the North Campus. Financial support of \$1.35 million for the third year of research and training by the Center was provided by Abbott, Boehringer-Ingelheim, Eli Lilly, Genentech, Hoffman-LaRoche, Merck, Pfizer, as well as additional related funding provided by Novartis and Amgen.

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 over \$150,000 for graduate student training were provided by Eli Lilly, Daiichi Sankyo, Schering-Plough, and Amgen, and as well as continued funding of a training grant for \$500,000 to support 6 students and 4 post-doctoral fellows by Pfizer Pharmaceuticals. Dr. Robert Straubinger was successful in obtaining funding for a new LC/MS/MS Instrument to augment our bioanalytical capabilities. An active Seminar Program was offered with over 25 presentations by local and visiting scientists. Dr. Malcolm Rowland, Professor and Dean Emeritus at the University of Manchester in the United Kingdom was selected for the 2009 Gerhard Levy Distinguished Lectureship in Pharmaceutical Sciences. His presentation was entitled, "Physiologically-Based Pharmacokinetics: Moving the Big Picture Forward." Other notable speakers during the academic year were: Dr. Bradley Anderson from the University of Kentucky, Dr. Doanh Tran from the FDA, Dr. Micheline Piquette from the University of Toronto, and Dr. Carol Lim from the University of Utah. The Twelfth Buffalo Pharmaceutics Symposium was held in July with great success. Alumni from the US, Europe, Japan, and Australia attended. Notable visiting speakers included: Dr. Alison Betts from Pfizer, Dr. Yuichi Sugiyama from the University of Tokyo, Dr. Jean-Michel Scherrmann from the University of Paris, Dr. Steven Hansel from Pfizer, Dr. Gordon Amidon from the University of Michigan, Dr. Lisa Benincosa from Hoffman-LaRoche, Dr. Lawrence Lesko from the FDA, Dr. YoungJin Moon from the FDA, along with several presentations by departmental faculty members, fellows, and students. Our social event at the Buffalo Zoo did not traumatize the animals too badly.

Our department faculty members were active in dissemination of our scientific accomplishments and knowledge. We had 82 research articles and book chapters published and gave 84 seminars, lectures, and research presentations at various scientific meetings, university and industrial venues.

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 we were pleased to offer our 18th session of the PK/PD Modeling course. Similarly, the department offers an annual summer workshop in Molecular Genetic Methodologies for Pharmaceutical Sciences. Some of these courses are also provided on site at various pharmaceutical companies and other universities.



Dr. Joseph Balthasar received the "Outstanding Manuscript in Modeling and Simulation" Award from the American Association of Pharmaceutical Scientists in November 2009 for developing an innovative spherical tumor model to describe drug penetration. Dr. Sathy Balu-Iyer was nominated for Inventor of the Year Award in 2010 for his patents related to lipidized proteins.

The department is poised for further growth of its research and training programs. We added Dr. Jun Qu as a faculty member in the area of bioanalytics and proteomics and are seeking to expand capabilities in the areas of Protein Therapeutics, Cancer Therapeutics, and Pharmacogenomics.



#### **Department of Pharmacy Practice**

The 2009-10 academic year was a robust and productive year for the Department of Pharmacy Practice. The teaching and research of the faculty continued to increase within the PharmD program as well as with our postgraduate training programs. Two of our residency programs underwent reaccreditation this year and the department is continually assessing all training programs to meet future accreditation needs.

Our faculty members represented the school well at many national meetings. At the 2009 American Association of Colleges of Pharmacy meeting, many faculty members attended and participated in poster presentations, seminars and group discussion topics. Drs. Gene Morse and Linda Catanzaro, along with Professor Karl Fiebelkorn, are lead authors in the development of the Business Model submission 'Developing a Bioinformatics and Medication Management Research Network' published by the California Pharmacists Association. Also of note was national press attention garnered by Drs. Erin Slazak and Scott Monte for their recent diabetes study showing the positive impact pharmacists have in enhancing patient care, while decreasing health care costs.

The department is proud of the continued collaboration with the New York State Department of Health. Activities have continued to grow and expand with involvement in a pilot Medication Therapy Management Program, statewide drug utilization review and a novel prescriber education program (PEP). These efforts, in collaboration with other SUNY health science units, are expected to provide much benefit to New York State Medicaid recipients and provide excellent opportunities for our faculty and students to engage in pharmacoeconomic and pharmacoinformatic scholarly activities.

The Office of Experiential Education has continued to meet the ever increasing demands for rotational sites for our P1-P4 students. The Experiential Program has expanded the depth and breadth of rotational opportunities for P1-P3 students and has also expanded P4 opportunities throughout the country. The implementation of new scheduling and management software has created efficiencies in rotational scheduling and reporting. Faculty Development programs continue to expand and grow.

#### **Faculty Grants Awarded**

#### July 1, 2009 - June 30, 2010

#### **Pharmaceutical Sciences**

#### Joseph Balthasar

National Heart Lung & Blood Institute (Balu-Iyer Co-PI) Pharmacology and Bioengineering of New Treatments of ITP

Multiple Sponsors Protein Therapeutics Consortium

National Cancer Institute (D. Brazeau Co-PI) Pharmacokinetic Strategies to Optimize IP Chemotherapy

University of Michigan PTD-Mediated Protein of Drug Delivery for Cancer Therapy

#### Sathy Balu-Iyer

National Heart Lung & Blood Institute (Balthasar Co-PI) Development and Pharmacology of Novel Lipidic RAHF

National Cancer Institute (Co-PI) Re-activating Memory T cells in Microenvironment of Human Tumors

#### Javier Blanco

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

National Institute of General Medical Sciences ARRA: Pharmacogenetics of Human Carbonyl Reductases

City of Hope National Medical Center Adverse Events After Childhood Hematologic Malignancies: Role of Genetic Susceptibility

#### Daniel Brazeau

National Institute on Deafness and other Communication Disorders (Co-PI) Noise-Induced Acute Hair Cell Death

#### **Ho-Leung Fung**

National Heart Lung & Blood Institute (D. Brazeau Co-PI) Organic Nitrate Metabolism, Tolerance and Action

#### William Jusko

National Institute of General Medical Sciences Corticosteroid Pharmacokinetics and Pharmacodynamics

National Institute of General Medical Sciences (Mager & Krzyanski Co-PI's)

Mathematical Models in Pharmacodynamics

Pfizer, Inc. Pfizer PKPD Fellowships

NOVO Nordisk Pharmaceuticals Inc. Ethnic Differences in Type 2 Diabetes

#### **Donald Mager**

Hoffmann LaRoche, Inc. Modeling of the Pharmacokinetics of TDM1 Using a Mechanism-Based Approach

Fred Hutchinson Cancer Research Center Population Pharmacokinetics/Pharmacodynamics in Nonablative Stem Cell Recipients

National Institute on Drug Abuse (Co-PI) Innovative Nanotherapy for Drug Addiction

#### **Marilyn Morris**

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

Susan G. Komen Breast Center Multiple Flavonoids in the Treatment of Multidrug Resistance

#### Jun Qu

National Heart Lung and Blood Institute (Co-PI) Metabolic Adaptation and Functional Recovery of Hibernating Myocardium

Health Research Inc. (Straubinger Co-PI) PSA-Proteomic Analysis of RB-Associated Proteins

National Institutes of Allergy and Infections (Co-PI) ARRA: Pathogenesis of Moraxella Catarrhalis in Chronic Obstuctive Pulmonary Disease

National Institutes of Allergy and Infections (Co-PI) Protein Arginine Methylation in Trypanosomes

#### Murali Ramanathan

National Multiple Sclerosis Society Brain-Derived Neurotrophic Factor in Multiple Sclerosis

#### Robert Straubinger

National Center for Research Resources (Fung Co-PI) ARRA: Circular Dichroism Spectropolarimeter with Fluorescence Acquisition and Temperature Control

#### Health Research, Inc.

CCPD-1: Proteomics and Biopharmaceutical Analysis in Support of Translational Cancer Research

National Institute on Drug Abuse (Qu Co-PI) Peripheral Biomarkers of Cocaine Dependence and Relapse

#### **Aiming Yu**

National Institute on Drug Abuse (Jusko & Boje Co-PI's) Pharmacogenetics in Indolealkylamine Metabolism and Drug Interactions



#### **New Technology**

Invention Disclosures	
Invention Title	Faculty Member
An Inline Urinary Monitoring Device with a Multi-Sensor Array Suitable for Continuous Monitoring of Biological Conditions Reflexive of Health and Disease	Jerome Schentag
A Method of Diabetes Treatment Using the Process of Biomarker Measurement with the System of a Supply-Side Treatment Algorithm as a Method to Provide Personalized Pharmaceutical Compositions and Dosages	Jerome Schentag
A Method of Diabetes Treatment Using the Process of Biomarker Measurement with the System of a Supply-Side Treatment Algorithm as a Method to Provide Personalized Pharmaceutical Compositions and Dosages	Scott Monte

#### **Pharmacy Practice**

#### **Gayle Brazeau**

Hoffman LaRoche, Inc. Formulation Approaches for Minimizing Injection Site Reactions: In VIVO and in Vitro Studies

#### Alice Ceacareanu

NYS Council of Health-System Pharmacists Evaluating the Prognostic Value of Adiponectin Levels in Diabetics with Breast Cancer: Role of Insulin Sensitizers

NYS Council of Health-System Pharmacists (Dr. Alan Forrest Co-PI) Diabetes Pharmacotherapy in Breast Cancer: Quo Vadis?

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

University of Pittsburgh Optomizing Dosing of Colistin for Infections Resistant to all Other Antibiotics







Issued Patents	
Patent Title	Faculty Member
Method of Complexing a Protein by the Use of a Dispersed System and Proteins Thereof	Sathy Balu-Iyer
Method of Complexing a Protein by the Use of a Dispersed System and Proteins Thereof	Robert Straubinger
Anti-FcRn Antibodies for Treatment of Auto/Allo Immune Conditions	Joseph Balthasar
Compositions and Methods of Preparation of Liposomal Microparticulate II-12 for Immunotherapy	Sathy Balu-Iyer

#### Gene Morse

University of Rochester Targeted Neuro Protection of HIV-1 Associated Neurologic Disease

Erie County Medical Center HIV Treatment Education

Erie County Medical Center Adherence Project

Fogarty International Center (Drs. Ma and Maponga Co-PI's) Antiretroviral Pharmacology Training in Resource Poor Countries

Social and Scientific Systems, Inc. AACTG Pharmacology Laboratory

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

University of Rochester Upstate New York Translational Research Network

University of Rochester Center for Experimental Therapeutics

University of Rochester Units for HIVIAids Clinical Trials Network

University of Rochester Units for HIV/Aids Clinical Trials Network: Equipment

Washington University, St. Louis Neurologic Aids Research Consortium

University of California, San Francisco (Dr. Ma Co-Pl) Disulfiram Interactions with HIV Medications: Clinical Implications

#### **Kathleen Tornatore**

National Institute Diabetes & Digestive & Kidney Disease (D. Brazeau Co-PI)

ARRA: Genomic and Cellular Markers and Chronic Renal Allograft Function

Novartis Pharmaceuticals Corporation

The Relationship of Drug Exposure and Immunodynamic Responses During Myfortic Therapy in Stable African American and Caucasion Renal Transplant Patients

#### Dr. Brian Tsuji

Monash University (Dr. Alan Forrest Co-PI) Targeting MDR Hetero-Resistant Gram-Negatives: PK/PD for Rational Combinations

Cubist Pharmaceuticals Antimicrobial Pharmacodynamics of a Novel Investigational Lipopetide Against S. Aureus

#### **Pfizer Pharmaceuticals**

Impact of Linezilid on the Accessory Gene Regulator System of Staphylococcus Aureaus by Profiling Pharmacodynamics

Albany College of Pharmacy and Health Sciences Epidemiology of Vancomycin Susceptibility Phenotypes Associated with Suboptimal Clinical Outcomes Among Patients with MRSA bloodstream infections in Upstate New York

#### **Robert Wahler**

Community Health Foundation of WCNY Medication Management for Older Adults



### **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, 2009 - June 30, 2010

#### **Pharmaceutical Sciences**

#### Balthasar, Joseph P.

Urva, S. R., Yang, V. C., & Balthasar, J. P. (2010). Physiologically based pharmacokinetic model for T84.66, a monoclonal anti-CEA antibody. Journal of Pharmaceutical Sciences, 99(3), 1582-1600.

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Urva, S. R., & Balthasar, J. P. (2010). Target mediated disposition of T84.66, a monoclonal anti-CEA antibody: application in the detection of colorectal cancer xenografts. Mabs, 2(1), 67-72.

Garg, A., & Balthasar, J. P. (2009). Investigation of the influence of FcRn on the distribution of IgG to the brain. AAPS Journal, 11(3), 553-557.

Urva, S. R., Yang, V. C., & Balthasar, J. P. (2009). Development and validation of an enzyme linked immunosobent assay for the quantification of carcinoembryonic antigen in mouse plasma. J Immunoassay Immunochem, 30(4), 418-427.

#### Balu-Iyer, Sathy V.

Kosloski, M., Miclea, R. D., & Balu-Iyer, S. V. (2010). Role of Glycosylation in Conformational stability, activity, macromolecular interaction and immunogenicity of recombinant human Factor VIII. AAPS Journal, 11 2009(3), 424-31.

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Peng, A., Gaitonde, P., Kosloski, M. P., Miclea, R. D., Varma, P., & Balu-Iyer, S. V. (2010). Effect of route of administration of human recombinant Factor VIII on its immunogenicity in Hemophilia A mice. Journal of Pharmaceutical Sciences, 98 2009(4), 4480-84.

Rao, G., Iyer, V., Kosloski, M. P., Pisal, D. S., Midduagh, C. R., & Balu-Iyer, S. V. (2010). Use of a folding model and in situ biophysical techniques rational formulation development and stability testing of monoclonal antibody therapeutics. Journal of Pharmaceutical Sciences, 99 2010(4), 1697-706.

Peng, A., Straubinger, R. M., & Balu-Iyer, S. V.. Phosphatidylinositol containing lipidic particle reduces inhibitor development and catabolism of factor VIII in hemophilia A mice. AAPS J, 2010; 12:473-81.

#### **Blanco**, Javier

Cao, J., Gonzalez-Covarrubias, V., Straubinger, R. M., Wang, H., Duan, X., Yu, H., Qu, J., & Blanco, J. G. (2010). A rapid, reproducible, on-the-fly orthogonal array optimization method for targeted protein quantification by LC/MS and its application for accurate and sensitive quantification of carbonyl reductases in human liver. Analyt. Chem., 82(7), 2680-9.

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Choi, J. Y., Barlow, W. E., Hong, C. C., Blanco, J. G., Davis, W., Rae, J. M., Yeh, I. T., Hutchins, L. F., Livingston, R., Martino, S., Lyss, A. P., Osborne, K., Abeloff, M., Hayes, D. F., & Ambrosone, C. B. (2009). Nitric oxide synthase (NOS3) variants and disease-free survival among treated and untreated breast cancer patients in a SWOG Clinical Trial (S8897). Clinical Cancer Research, 15(16), 5258-66.

Cao J., Gonzalez-Covarrubias V., Straubinger R.M., Wang H., Duan X., Yu H., Li J., Qu J., and Blanco J.G. A Rapid,



Reproducible, on-the-fly Orthogonal Array Optimization Method for Targeted Protein Quantification by LC/MS and its Application for Accurate and Sensitive Quantification of Carbonyl Reductases in Human Liver. Anal Chem. 2010 Apr 1;82(7):2680-9.

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#### Brazeau, Daniel

Brazeau, D. A., & Brazeau, G. A. (2009). Role of the genomics revolution in Pharmaceutics.. Laboratory Medicine, 40, 216-266.

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#### Fung, Ho Leung

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#### Gao, Wenqing

Gao, W., & Dalton, J. T. (2009). Expanding the therapeutic use of androgens via selective androgen receptor modulators (SARMs). Drug Discovery Today, 12(5-6), 241-8.

Gao, W., & Dalton, J. T. (2009). Ockham's Razor and Selective Androgen Receptor Modulators (SARMs): Are We Overlooking the Role of  $5\alpha$ -Reductase?. Molecular Intervention, 7(1), 10-13.

Pan, Y., Gao, W., & Yu, A. (2009). MicroRNAs regulate CYP3A4 expression via direct and indirect targeting. Drug Metab Dispos, 37(10), 2112-2117.

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Gao, W. Peptide Antagonist of the Androgen Receptor. Curr Pharm Design, 16(9), 1106-1113.

#### Jusko, William

Wiczling, P., Rosenzweig, M., Vaickus, L., & Jusko, W. J. (2010). Pharmacokinetics and Pharmacodynamics of a Chimeric/ Humanized Anti-CD3 Monoclonal Antibody, Otelixizumab (TRX4), in Subjects with Psoriasis and with Type 1 Diabetes Mellitus. Journal of Clinical Pharmacology, 50, 494-506.

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#### Krzyzanski, Wojciech

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#### Mager, Donald

Kagan, L., Abraham, A. K., Harrold, J. M., & Mager, D. E. (2010). Interspecies scaling of receptor-mediated pharmacokinetics and pharmacodynamics of type I interferons. Pharm Res, 27, 920-932.

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#### Morris, Marilyn E.

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#### **Tornatore-Morse, Kathleen**

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#### **Office of the Dean**

#### Hess, Jennifer

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#### Triggle, David

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#### **Special Honors for Faculty and Staff**

**Edward Bednarczyk**, clinical associate professor, appointed as Chair-elect (2010-2011) of the Clinical Sciences section of the APhA-Academy of the Pharmaceutical Research and Science.

**Daniel Brazeau**, research associate professor, recipient of the 2010 University at Buffalo Teaching Innovation Award recipient.

Gayle Brazeau promoted to Full Professor.

**Peter Brody**, clinical assistant professor, recipient of the 2010 SoPPS Teacher of the Year Award.

Alice Ceacareanu, assistant professor, appointed to the board of directors of the New York State Council of Health-System Pharmacists Research and Education Foundation and was awarded the Clinical Pharmacy Services Research Award by the New York State Council of Health-System Pharmacists.



Peter Brody

Alan Forrest, research professor,

recipient of the Oncology One Award from the American Society of Clinical Oncology.

Jill Hochreiter, senior research support specialist, finalist, 2010 SoPPS Staff Member of the Year Award.

**Donald Mager**, associate professor, elected as a Fellow in the American College of Clinical Pharmacology and elected as Vice Chair, American Association of Pharmaceutical Sciences, Clinical Pharmacology and Translational Research.

**Marilyn Morris**, professor, elected Member-At-Large, American Association of Pharmaceutical Sciences and was the recipient of the Faculty Service Award, SoPPS Pharmacy Leadership Society, Beta Omicron Chapter.

**Gene Morse**, professor, appointed as Co-chair Oral HIV/ AIDS Research Alliance, Oral Pharmacokinetics Focus Group and to the steering committee of the New York State Research Centers Consortium Dr. Morse was also appointed as the Associate Director of the New York State Center of Excellence in Bioinformatics and Life Sciences.

**Nicholas Norgard**, clinical assistant professor, finalist, 2010 SoPPS Teacher of the Year Award.

**Joseph Paladino**, clinical professor, elected to the Board of Directors of the Society of Infectious Disease Pharmacists.



Elizabeth Rugg, Sara Renzi, Jill Hochreiter

**Mary Pasko**, clinical associate professor, recipient of the 2010 SoPPS Pharmacy Practice Preceptor of the Year Award.

**Murali Ramanathan**, associate professor, finalist, 2010 SoPPS Teacher of the Year Award.

**Alfred Reiman**, clinical assistant professor, recipient of the Individual School Spirit Award at the 2009 American Association of Colleges of Pharmacy Annual Meeting.

Sara Renzi, administrative assistant, finalist, 2010 SoPPS Staff Member of the Year Award.

**Elizabeth Rugg**, senior staff assistant, recipient, 2010 SoPPS Staff Member of the Year Award

Jerome Schentag, professor, recipient of the 2010 University at Buffalo Faculty Entrepreneur Award.

**Christine Stumm** promoted to the Assistant Director of Admissions and also appointed Co-chair of the Newsletter Committee and Executive Board Member of the New York Association for College Admission Counseling.

**Brian Tsuji**, assistant professor, recipient of the Pfizer 2009 ASPIRE Young Investigator Award in Antibacterial Research.

**Robert Wahler**, clinical assistant professor, appointed section leader of the National Council of Hospice and Palliative Care Professionals.

## Thanks to you...

Construction on Kapoor Hall creates sense of community for students, faculty, staff and alumni

As John and Editha Kapoor Hall takes shape on the South Campus, donors have responded enthusiastically to the promise it offers students, faculty and staff. Construction on the school's new home is progressing quickly. The structure is now encased by a glass wall and the interior framework is evolving into the lecture halls, classrooms, labs, patient assessment suites and other spaces that faculty and staff will occupy in 2012.

Donors, inspired by the potential that Kapoor Hall offers the school, have committed generous support to name spaces within the building. These spaces provide donor legacies while inspiring students, who learn about alumni and friends who have made significant contributions that have shaped the profession.

Following the lead of John N. Kapoor, who has given \$10.8 million to the pharmacy school, several alumni and friends have added their support:

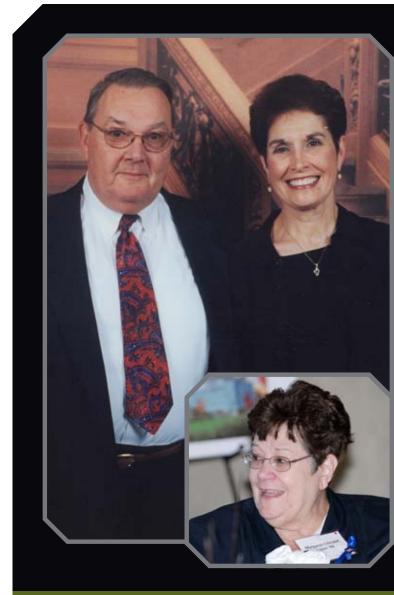
- Members of the Panasci Family—Faye Panasci, whose late husband and father-in-law, Henry A. Panasci Jr. and Henry A. Panasci Sr., were UB pharmacy graduates; her son David A. Panasci; and daughter, Beth Leventhal—are funding the building's atrium.
- Ron Isaacs '56 made a significant donation, which will fund the Ronald J. Isaacs Lecture Hall.
- Alfonse Muto '83, president of Pine Pharmacy and Home Care Center in Williamsville, New York, will fund the Pharmacy Care Learning Center classroom, which will be named after his business.
- CVS Caremark is funding a student organization suite.

Other donors funded patient assessment and counseling rooms:

- Ralph Behling '40
- Bruce '57 and Barbara Moden
- Stephen '81 and Carolyn Giroux
   Salvi Parpia '88
  - Salvi Parpia '88
- Margaret Hempling McGlynn '82 
   Tom '84 and Rachel Spire Smith '84
- Robert '59 and Sharon Miller Ken Yee '75

To read more about these donors and their gifts, visit the Giving section of the school's website: http://pharmacy.buffalo.edu.

Designed with open spaces and an abundance of natural light, Kapoor Hall will create a sense of community for students, faculty, staff and alumni. It is an example of practicing sustainable architecture in its reuse and renovation of an existing building, the former Acheson Hall. The 147,000-square-foot structure is targeting silver certification from Leadership in Energy and Environmental Design (LEED), a green building national rating system that provides standards for environmentally sustainable construction.



Jan '59 and Rose Mary (Crimaldi) Madejski '59 Margaret (Crimaldi) Quinn '60

During fiscal year 2009-10, the pharmacy school again ranked second among all UB schools in terms of alumni participation. The school increased the total number of dollars raised by 28 percent, with collections totaling \$3,549,030. Additionally, the school received gifts from 82 new donors and 123 donors from the previous fiscal year increased the amount they gave this year. The school also welcomed seven new members to the Willis G. Gregory Society, for a total of 75 members.

## 'Coal Miner's Daughters' Continue Tradition of Giving

#### Rose Mary Madejski and her sister, the Hon. Margaret J. Crimaldi Quinn, know firsthand the value of scholarships:

as high school students—and self-described 'coal miner's daughters'— the Crimaldi girls were thriving academically but struggling financially.

Their practical solution was to attend secretarial school after graduation, but a guidance counselor intervened on their behalf. Recognizing their abilities, she arranged for scholarships that allowed them to attend UB.

Rose Mary found another mentor at UB: Asa Bertram Lemon, then dean of the pharmacy school, who told her "You just take care of the grades, and I'll take care of the scholarships." In 1959, she earned a B.S. from the school, where she became a clinical assistant professor.

Over the course of her career, Rose Mary and her husband, Jan, owned a community pharmacy which specialized in consultant pharmacy services; she also practiced as a hospital and community pharmacist and currently works for Rite Aid. Margaret earned a B.S. from the pharmacy school in 1960, worked as a pharmacist, then returned to UB as a law student, graduating in 1970. Throughout their careers, the sisters have remained generous donors to UB and their respective schools.

Margaret, a retired administrative law judge for the Social Security Administration, established the Margaret Crimaldi Quinn Scholarship for law students with financial need. "I would not have graduated if it had not been for scholarships," she said then. "When you receive, you have to learn to give back. Otherwise people in similar circumstances will not make it." Rose Mary and Jan Madejski established the Crimaldi-Madejski Family Scholarship in the pharmacy school, to which Rose Mary, Jan, Margaret and the Madejski children also make annual donations. The fund has supported six deserving pharmacy students, most recently Amy L. Wojciechowski, a 2012 PharmD candidate.

Amy has worked as an intern in the pharmacy of Niagara Falls Memorial Medical Center for the past several years and said that the experience "has confirmed that I want to pursue a career in hospital pharmacy."

"I enjoy the excitement of helping guide decisions regarding patients' medical therapy and seeing the positive results that come from these interventions," she said. "It is quite fulfilling to watch patients progress during their hospital stay, knowing the positive impact I have had in improving their medical condition in the hospital and their quality of life after they are discharged."

Amy said she was honored to be chosen as a recipient of the Crimaldi-Madejski scholarship, which she said "has given me the freedom to focus on my education and to spend time developing the skills that will be crucial in my future profession."

The sisters claim that they are the ones who have received much more from giving to UB, including meeting and following the careers of the students who benefit from their generosity. Inspired? Please contact the pharmacy development office at 645-3432 to discuss how you can make a difference through donating to UB.

ECEIVING THE CRIMALDI-MADEJSKI SCHOLARSHIP has given me the freedom to focus on my education and to spend time developing the skills that will be crucial in my future profession." Amy Wojciechowski, Class of 2012



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John & Editha Kapoor Charitable Foundation

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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 Loyalty Club: \$99 & below This report includes donors who made gifts and planned gift commitments between July 1, 2009 and June 30, 2010. 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.

#### THE HAYES SOCIETY

Thomas Bardos Allen Barnett Thomas Blanchard '61 Daniel & Gayle Brazeau Robert '53 & Nina Doran '53 The Hayes Society honors individuals who have made legacy gifts to the School of Pharmacy and Pharmaceutical Sciences through a bequest or other method of deferred giving.

Pamela Maude Emerson '52 Joseph Figlow '70 Edward & Jean Frank '54 Carol Gloff '75 Joel Goodrich '59 Jan '59 & Rose Mary Madejski '59 DeWitt Niles '62 Robert Ravin '57 Irving Sultz '55

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.

#### ENDOWED STUDENT SCHOLARSHIP AND FELLOWSHIP SUPPORT

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Walmart Scholarship Ashley Smith

### **The Pharmaceutical Care Learning Center**

The school is entering an exciting phase of our history, with classes set to begin in 2012 in Kapoor Hall. The first facility designed specifically for the needs and growth of the school, Kapoor Hall—with its fully equipped classrooms and laboratories—offers students and faculty members many new opportunities for research and academic success.

"The move to Kapoor Hall is giving us an unbelievable opportunity to improve our curriculum," said Patty Havard, associate professor of pharmacy practice. "Teaching students under one roof, using the newest technology and equipment, will allow us to introduce new teaching pedagogical methods and improve teaching efficiency. Efforts are under way to establish interprofessional collaborations with the other health sciences schools to enhance multidisciplinary training for our pharmacy students."

The centerpiece of Kapoor Hall is the two-story Pharmaceutical Care Learning Center (PCLC), which provides spacious areas filled with the latest technology and equipment that further support the curriculum. Students will attend lectures in the pharmaceutical care classroom, and apply what they have learned in one of the 12 nearby patient assessment and counseling rooms, where they can practice basic clinical skills, including interviewing patients, taking blood pressures, immunization training and certifying CPR. Faculty will be able to review student progress and debrief students with the aid of video monitoring and capturing.

The PCLC also includes a model pharmacy for students to learn pharmacy best practices for managing medication distribution and caring for outpatients and inpatients. A practice laboratory will provide an area and equipment for training in basic and advanced compounding and inpatient counseling.

William A. Prescott Jr., residency director and clinical assistant professor of pharmacy practice, is working with Havard on developing a new interprofessional curriculum for the school that focuses on continuity of care for patients. Prescott agreed that the new building and the PCLC in particular will allow the faculty to use many new teaching methods.

"I am most looking forward to the opportunities we will have to incorporate active learning, including simulation-based learning," he said. These will include simulation training in the center's model pharmacy, where students will learn pharmacy practice procedures that take place in hospital and community settings. In the patient assessment area, students will learn how to take a patient's history, how to assess a patient's condition through various techniques, including diabetic foot examinations; and how to best educate patients on their health care and medication management.

Prescott said that these two learning spaces, coupled with the newly developed Behling Simulation Center in the UB medical school, "will offer our students unique learning opportunities to help them grow as professionals and leaders in patient care."

Relocating to the South Campus will give UB Pharmacy closer proximity to the UB schools of medicine, dental medicine, public health and health professions and nursing. The close proximity to the Academic Health Center will promote the opportunity of interprofessional collaboration on student training. Havard said the curriculum will include shared training (Continued on pg 34)

> First floor, Pharmaceutical Care Learning Center

#### The Pharmaceutical Care Learning Center (continued)

opportunities, such as joining with the UB School of Nursing, to enhance "real-life" clinical practice-based environment in the PCLC.

Dean Wayne K. Anderson noted that moving to Kapoor Hall will be a new beginning for the pharmacy school, one that was made possible through the generosity and vision of John Kapoor and the donors who followed his example and supported the new building.

"Our donors have given us the future by investing in Kapoor Hall," Anderson said. "Through their gifts, they have made it possible for us to include several important teaching and learning spaces where our students will receive the highest quality education and training."

Second floor, Pharmaceutical Care Learning Center

IIII

HANKS TO THEIR GENEROSITY, we can look forward to the school's future, one in which we continue to attract the brightest students and faculty from around the world, make critical scientific discoveries and improve the quality of patient care: a future that will happen in Kapoor Hall."



John and Editha Kapoor Hall

## **Alumni Relations**

The support of our alumni community has been invaluable in the various student events and outreach efforts that have contributed to the continued success of our school.

#### 2009-10 Alumni Association Activities

The 2009-2010 academic year was a busy one for the Alumni Association. We were proud to recognize Donald Pritchard '53 as our 2010 Willis G. Gregory Award recipient and Joseph Rutowski '84 as our 2010 Orville C. Baxter Award recipient. Donald and Joseph were recognized for their meritorious contributions to the field of pharmacy at the school's 2010 Awards Ceremony.

2009 Reunion activities were held at the Grand Island Holiday Inn where the classes of 1954, 1959, 1984 and 1999 were recognized. Robert Miller '59, Paul Scavone '59 and Thomas Smith '84 gave heartwarming comments and reflections from their years at the school and how the education they and their classmates received prepared them for their career paths. Those who attended the 2009 Reunion received special opportunity to also be involved with the groundbreaking activities for John & Editha Kapoor Hall which also took place during reunion.

The American Society of Health-Systems Pharmacists mid-year meeting is the association's premier national outreach meeting. Our 2009 ASHP alumni reception was held in Las Vegas and over 120 alumni and guests attended. We remind all our alumni members 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. In 2010, the association organized a Farewell Celebration reception for the PharmD Graduates of the Class of 2010 as well as for the 2010 BS and MS graduates from the Pharmaceutical Sciences. These celebrations were a great success! In 2010, the association gave six \$500 'grants-in-aid' awards to needy PharmD students as well as recognized Susana Yang '10 and Brian Wetzel '10 with awards at the 2010 Commencement in recognition of their 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.



Joseph Rutowski '84 and Donald Pritchard '53

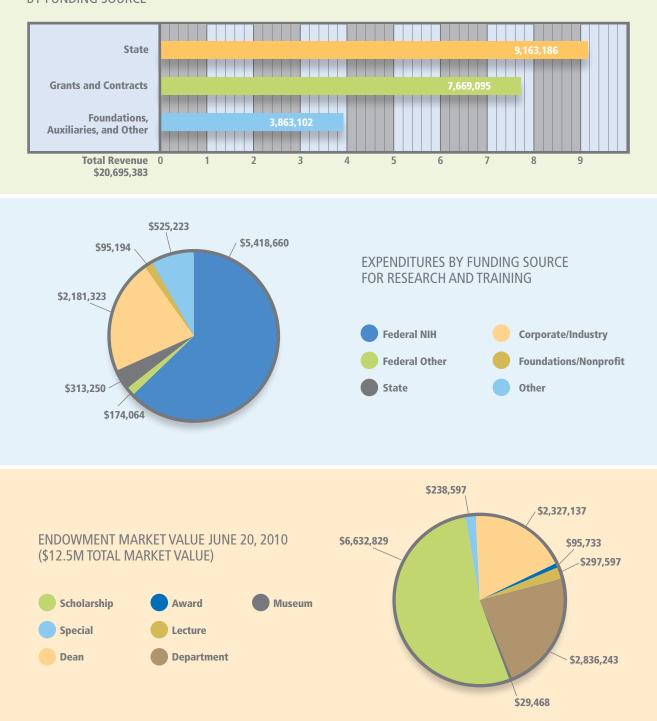


Class of 1959

## **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



#### **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) Javier Blanco, Fred Doloresco, Karl Fiebelkorn, Gayle Brazeau, Cindy Konovitz (ex official), and William Prescott

Support: Cynthia Acara, Christine Stumm and Mark Sauberan

#### **Curriculum Committee**

Gayle Brazeau (Chair), Karl Fiebelkorn (ex officio), Cindy Konovitz (ex officio), Javier Blanco, Peter Brody, Deborah Chiarella, Wenging Gao, Patricia Grace, Nicole Paolini Albanese, Erin Slazak, Heather Rodman (P1), Elyse Jackson (P2), Christina Hall (P3), Kirsten Butterfoss (P4)

#### **Executive Committee**

Wayne Anderson (Chair), Edward Bednarczyk, Kathleen Boje, Gayle Brazeau, Rebecca Brierley, Peter Brody, Karl Fiebelkorn, Jennifer Hess, William Jusko, Cindy Konovitz, Candise Morris, Gene Morse, Leigh Yates

#### Safety Committee

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

#### **Student Academic Affairs Committee**

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#### **Tenure And Promotion**

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#### National Industrial Advisory Council

**Wayne Anderson** 

Dean University at Buffalo School of Pharmacy & Pharmaceutical Sciences

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James Ermer '83 Senior Director, Clinical Pharmacology Shire Pharmaceuticals

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**Pramod Gupta** Vice President, Quality & Chief Scientific Officer Coldstream Laboratories

**Steven Hansel '93** Senior Director Pfizer, Inc.

#### **Christoph Hergersberg**

Global Technology Leader, Biosciences General Electric

George Lasezkay '74, '78 Retired, Corporate Vice President, Corporate Development Allergan, Inc.

Margaret McGlynn '82, '83 Retired President, Global Vaccines and Infectious Diseases Merck & Co., Inc.

**Edward McNiff '75, '76, '83** Senior Vice President, Pharmaceutical Development Agennix USA Inc.

**Richard Morrison '83** *Executive Director* Merck & Co., Inc.

**David Panasci** *President* DHP Consulting, LLC

John Rodgers '83 Executive Vice President and Chief Operating Officer Independent Health Association, Inc.

Daniel Salazar '89 Vice President, Translational Medicine and Clinical Pharmacology Daiichi Sankyo Pharma

**Michael Taylor '81** *President and Chief Executive Officer* Ensemble Discovery Corporation

**Avi Yacobi '75** *President* DOLE Pharma, LLC

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### School of Pharmacy and Pharmaceutical Sciences

**University at Buffalo** The State University of New York

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### **Celebration Events**

#### **Activity overview**

Wednesday, 9/14/11: Continuing Education Evening: Continuing Education Program on Hypertension

#### Thursday, 9/15/11, 12:30 – 1:50: Gerhard Levy

Distinguished Lectureship in Pharmaceutical Sciences Speaker: Leslie Benet, PhD, professor of Bioengineering and Therapeutic Sciences, UCSF. Topic: The Clinical Pharmaceutical Sciences. What Hath Levy Wrought?

Evening: Lecture Reception

Friday, 9/16/11, 5:30 – 9:00: Open House and Tours of the School

Key Note Speaker: Steven Sutton, PhD Class of 1983

Reunion Activities for special recognition classes from 1956, 1961, 1986 and 2001.



# 125th Anniversary

### Saturday, 9/17/11 Morning: South Campus Tours and John & Editha Kapoor Hall

Please join us for a Continental Breakfast on South Campus, Tours of Kapoor Hall, a Walk 'Down Memory Lane' as we tour Cary & Foster Halls and see the future of health care training at the Behling Simulation Center as well as tour the Health Sciences Library.

### Saturday, 9/17/11 Evening: Gala Dinner Dance at The Buffalo Club

- 5:00 6:00 Private Cocktail Party for Reunion Recognition Classes: Classes of 1956, 1961, 1986 and 2001
- 6:00 7:30 Cocktail Party for all attendees. Comments and presentations from Key Note Speakers and Guests
- 7:30 9:00 Dinner
- 9:00 12:00 Dancing and Other Programming

#### Sunday, 9/18/11

Social Programs at various cultural and entertainment venues throughout the area.

Please check http://www.pharmacy.buffalo.edu/ for additional information.