Dear Friends,

Throughout its 133-year history, our School of Pharmacy has graduated pharmacists and scientists who have excelled at the very highest levels of the profession and of science. We have only to look at the accomplishments of our alums to find the evidence.

- The School is the daily home to an exceptionally talented and cohesive cadre of faculty, students, and staff. Our faculty care passionately about making a difference and for their efforts, they have been recognized. This year, faculty members were recipients of three national awards: the American Pharmacists’ Association Tyler Prize for the Stimulation of Research; Fellow of the American Association for the Advancement of Science; and Fellow of the American Society of Health-System Pharmacists.

- The PharmD program is the largest of the School’s degree-granting programs, with approximately 108 students per class. Enviably, graduates consistently pass licensing examinations on their first attempt. All graduates are prepared to provide direct patient care as the result of an innovative and demanding curriculum. In FY11, 26 percent of the graduating class pursued advanced practice residency training or additional degree programs.

- In a remarkable demonstration of appreciation for the richness of their Pitt Pharmacy experiences and generosity, the PharmD Class of 2011 pledged $50,000 toward the construction of the Commons, an area of new construction that will benefit those who will come after them.

- The advanced practice post-graduate residency program has become one of the premier programs in the country both in quality and in the number of trainees, which has grown three-fold in eight years—from 11 residents in 2003 to 33 in 2011. The program became a national model for residency research training and now also offers an education certificate to prepare residents for faculty and preceptor positions.

- PhD education of the School extends back to the 1950s. In the early 1980s, the School became an innovator in clinical scientist training, which sustains excellence today as one of the top three Clinical Pharmaceutical Scientist PhD programs in the country. The PhD program in Pharmaceutical Sciences includes pharmacology, drug delivery, and medicinal chemistry. The School has aggressively pursued the University’s goal of increasing the number of PhD graduates, more than doubling the number of full-time PhD students in the last decade with 42 PhD students enrolled during FY11.

- To support the goal of becoming a “research school of distinction,” the School of Pharmacy has fostered a culture of research and scholarship. In FY11, 24 faculty researchers were responsible for 69 active research projects and $51,724,534 in active research awards; $12.55 million in expenses was specifically allocated to FY11. The School of Pharmacy ranks #11 among schools of pharmacy in all NIH grant funding received. Research funding is 8.5-fold higher than in FY99 and is 2.7-fold higher than
FY00. In FY11, NIH provided 75 percent of the total research funding. As impressive as the dollar amount of funding is, it is overshadowed by the incredible contribution of the research to the understanding of human health and disease.

- In the patient care arena, faculty members are recognized nationally for innovative models that optimize care for patients. With the School’s UPMC partner, faculty members provide care for patients and evaluate models of care in institutions and during transitions of care. Faculty members are also renowned for developing models of pharmacist-provided medication-based care to patients in the community, including the homeless and working poor.

- As evidence of cohesiveness and commitment, the members of the School of Pharmacy’s extended family are also generous, making gifts to the School totaling $2.65 million in FY11. The School has raised $22.2 million toward the Capital Campaign, a 4-fold increase in total Capital Campaign dollars raised since 2001. A remarkable 36.1 percent of the School’s 4,887 living alumni were engaged in FY11. The pride and cohesiveness of the School’s extended family is evident from the top three ranking of Pitt Pharmacy among all schools of the University in alumni engagement for all five years of the alumni rankings.

FY11 was a great year that also built on previous successes; together, the accomplishments form an accumulated record of excellence. I hope that you enjoy the details of our achievements in the descriptions in this Annual Report 2010–2011.

Sincerely,

Patricia D. Kroboth, Dean

The School of Pharmacy is committed to improving health through excellence, innovation, and leadership in education of pharmacists and pharmaceutical scientists, in research and scholarship, in care of patients, and in service to our communities.
UNIVERSITY OF PITTSBURGH  
SCHOOL OF PHARMACY  

Mission  
The School of Pharmacy is committed to improving health through excellence, innovation, and leadership in education of pharmacists and pharmaceutical scientists, in research and scholarship, in care of patients, and in service to our communities.  
Adopted July 2006  
Revised July 2009  

Vision  
To be an outstanding school of pharmacy renowned for excellence in discovery and advancement of science-based use of medicines and other interventions to enhance the vitality and quality of life.  
Adopted July 2006  

Values  
Integrity guides our daily work. We foster: Passion, commitment, and diligence; Creativity and personal growth; Collaboration and teamwork; A culture of respect for the individual.  
Adopted July 2006
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Long-Range Plan 2006–2012

Long-Range Plan 2006–2012
  Progress At a Glance
Educating the Next Generation of Practitioners and Scientists
Educating the Next Generation of Practitioners and Scientists

The School builds on its rich tradition of excellence in education, continuing to fulfill its teaching mission to ultimately enhance the health and well-being of people’s lives. The School prepares pharmacists of the future through the PharmD program and advanced practice residencies and prepares future scientists through its graduate programs.

By 2012, the School of Pharmacy will have:
• Become a national leader in pharmacy education.

This strategic outcome serves as the overall objective for the PharmD, residency, and graduate programs for the School of Pharmacy.

**Curricular and Training Programs: FY11**

**EDUCATION BY THE NUMBERS FOR FY11**

**PHARMD PROGRAM**

In FY11:
• 108 students enrolled in the PharmD Class of 2015 with average GPA of 3.67, and PCAT of 80%.

• 11.7 – The number of applicants per seat through open admission.

• 191 scholarships totaling $350,000 were awarded to 175 PharmD students.
Pitt pharmacy student organizations won 7 national or regional awards.

PharmD students presented 3 papers at international or national meetings.

310 pharmacists in 23 states and 4 countries provided 728 APPE rotations for 104 fourth professional year students.

In May 2011, 81 students received the BS in pharmaceutical sciences at the end of their second professional year.

104 students received PharmD degrees in the 2011 graduating class.

100% graduated in four years.

Residency Program

In FY11:

The School partnered with 7 institutions/entities that provided 11 types of residency programs.

22 PGY1 and 11 PGY2 residents participate in the residency training program.

33 residents participating in our affiliated residency programs came from 18 schools of pharmacy in 12 states.

29 of 33 residents presented their research results at national or regional meetings.

17 residents were awarded certificates for completion of the Teaching Mastery Program, which includes development of skills in both clinical precepting as well as teaching within the pharmacy curriculum.

17 of our 22 PGY1 pharmacy residents have been accepted into PGY2 specialty residency programs.

1 of 7 non-management PGY2 residents accepted clinical positions at academic medical centers.

2 of 4 graduating management residents accepted hospital pharmacy management positions and 1 management resident accepted a Congressional Healthcare Policy fellowship.

3 pharmacy residents continued their careers as clinical pharmacists with UPMC Health System.

2 residents accepted faculty positions at schools of pharmacy.

3 residents were recently board certified pharmacotherapy specialists.
GRADUATE PROGRAM
In FY11:
• 42 students were enrolled in the pharmaceutical sciences PhD program; 3 students were enrolled in the Master of Science program.

• 12 new students were admitted to the PhD program; 1 new student was admitted to the Master of Science program.

• 4 students graduated with their PhD degree after successful defense of their dissertations; 2 students graduated with the MS degree.

• 45% (19/42) of the PhD students are U.S. citizens or permanent residents.

• 50% (21/42) of the PhD students have pharmacy degrees.

• 5 PhD students received competitive fellowships.

• Gordon Conference invitation issued to a graduate student: 1!

• Graduate students published 18 peer-reviewed manuscripts.

• Graduate students gave 25 presentations at national and international scientific meetings.

SCHOLARSHIP OF EDUCATION
In FY11, faculty and students demonstrated scholarship in education through:

• 14 publications.

• 23 presentations about teaching and teaching innovations.

• 6 total grants, 1 of which is new.

PHARM.D PROGRAM: EDUCATING THE NEXT GENERATION OF PRACTITIONERS
As a recognized national leader in pharmacy education, the School of Pharmacy is building the rich tradition of excellence in education to provide world-class learning opportunities for our students. We contribute to the national dialogue about the scholarship of teaching, learning, and assessment through publications and presentations. We are empowering students to become practitioners with the necessary skills and knowledge to be leaders in patient-centered care and key contributors on the health care team. We provide student pharmacists and graduate pharmacists with support and resources through a life-time of professional development.
Accreditation from the Accreditation Council for Pharmacy Education for the PharmD Program

- The School’s doctor of pharmacy program is fully accredited by the Accreditation Council for Pharmacy Education (ACPE). The accreditation term granted extends until June 30, 2016, which represents the maximum of six years between comprehensive evaluations.

Innovations in Student Learning

We are investing in and committed to continually improving our teaching strategies, learning environments, and student experiences.

Simulated Patient Care Experiences

Standardized Patients and Colleagues – Students gain skills in patient interviewing, clinical reasoning, and therapeutic decision making through a variety of simulated patient care experiences that are woven throughout the curriculum. Actors trained as standardized patients provide students opportunities to practice patient care in a safe environment. Additionally, actors trained as standardized physicians provide student opportunities to practice interprofessional communication skills to effectively navigate through difficult conversations.

Virtual Patient Simulation – Drs. Neal Benedict and Kristine Schonder are developing and using computer-based, virtual patients to integrate case-based teaching of complex therapeutic concepts and clinical decision-making processes into the curriculum. Their specific work with a branched-outcome decision-making model has enhanced the therapeutics component of the curriculum.

Human Patient Simulators – The Peter M. Winter Institute for Simulation, Education and Research (WISER) center remains a valuable resource for use in our courses. Equipped with 16 full-sized simulators in a bank of simulated environments, control centers, and debriefing rooms, the WISER center is staffed with full-time technicians and serves students across the health sciences as well as practitioners across the UPMC system. In addition, the School has invested in two simulation mannequins, four arms, and a wound care foot that are housed in Salk Hall for students’ use to improve their clinical skills.

Selected Publications


Selected Presentations

BS in Pharmaceutical Sciences

In FY11, the Office of the Provost approved the School’s proposal to award the Bachelor of Science in Pharmaceutical Sciences (BSPS) degree to students enrolled in the PharmD degree program after the completion of a minimum of 120 credit hours. Typically, students will have completed the pre-professional component and the first four academic terms (semesters) of the nine-term (semester) PharmD program. The BSPS is awarded only to those students who have not previously earned a baccalaureate degree and who elect to receive the degree. Students cannot enroll in the BSPS program without admission to the PharmD program. With official graduate status, students are eligible to earn credit through selected electives toward University-approved certificates. Additionally, the award of the BSPS degree provides eligibility for training programs including the NIH National Service Award (NRSA) Institutional Training Grants (T32). The latter awards are intended to enhance research training opportunities for individuals who are training for careers in specified areas of biomedical, behavioral, and clinical research.

In May 2011, 81 students received the BS in pharmaceutical sciences at the end of their second professional year.

Areas of Concentration
In FY11:
- The area of concentration in research (ARCO-RES) was approved by the University; three students have committed to the program of study.
- 5 new students were accepted into the ARCO-Pharmacy Business Administration, bringing the total to 9 students (5-P3 and 4-P4 students).
- The first PharmD student graduated with an Area of Concentration designation in Pharmacy Business Administration.

Strides in Curricular Improvement and Oversight
Through the efforts of the Curriculum Committee, the faculty evaluates all courses over a cycle of four years. Thus, each year one fourth of the courses are subjected to an in-depth course evaluation process. We have expanded our use of curricular mapping for curricular design, scheduling of courses, tracking of content and curricular assessment. The curricular mapping infrastructure and database are expanding and evolving into valuable tools for the tracking and organization of curricular content across the four years of the professional program. Faculty and staff are in the process of adapting our curricular map so that it can be used to generate course syllabi.

The School’s Curriculum Assessment Committee is responsible for monitoring the effectiveness of the PharmD curriculum and the achievement of student learning outcomes. As a result of the School’s successful self study and reaccreditation in 2019-10, the School has become nationally recognized for its assessment approaches and commitment to a culture of assessment.

Implementation of e-Portfolio – The School has a long tradition of students using portfolios to demonstrate achievement. Over time, faculty members have tested several e-portfolio platforms. In FY10, the School invested in the development of a customized e-portfolio platform in which students build an assessment portfolio to show integration of learning across courses and progressive development across the curriculum. In FY11, an adaptation of the platform was developed to support the creation of professional portfolios by students nearing the end of the curriculum and preparing for interviews.
Selected Invited Presentations


Selected Presentations


Interprofessional Education

The School is a partner with the other health sciences schools across campus in developing interprofessional education and training experiences for health professions students. Dr. Susan Meyer is engaged in a number of national initiatives focused on advancing interprofessional education and preparation of future health care providers for team-based collaborative practice.

Selected Publications


Selected Invited Presentations


Students

Great programs start with great students, and we continue to find the best and brightest to be the future leaders of pharmacy. Our faculty and staff are committed to ensuring a fair review and selecting students that fit with our strategic goal of graduating student pharmacists who will become leaders in pharmacy. Thirteen faculty and staff members participate on the PharmD admissions committee.

Two-thirds of our full-time faculty participated in interviewing applicants. Their work resulted in the selection of an excellent group of 108 students for the Class of 2015.
• Conditional admission Class of 2015
  • 56 students applied for PharmD program after sophomore year
  • 56 were interviewed
  • 49 were qualified and admitted to the program

• Open Enrollment Class of 2015
  • 692 applied to the PharmD program
  • 117 were interviewed
  • 74 were offered admission
  • 59 accepted the offers

• The entering Class of 2015
  • 34% are men
  • 27% are out-of-state students
  • 16% have a college degree prior to entering the PharmD program
  • 7% were an underrepresented minority
First-Year Class Enrollments 2002-2011

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<tr>
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<th>Residency Status</th>
<th>Conditional Acceptance</th>
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<tr>
<td></td>
<td>PA (%)</td>
<td>Non-PA (%)</td>
<td>Pitt</td>
<td>Community College</td>
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<tr>
<td>2002</td>
<td>92</td>
<td>8</td>
<td>37</td>
<td>37</td>
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<tr>
<td>2003</td>
<td>86</td>
<td>14</td>
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<td>2004</td>
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<td>2005</td>
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<td>2009</td>
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<td>2010</td>
<td>81</td>
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<tr>
<td>2011</td>
<td>73</td>
<td>27</td>
<td>49</td>
<td>44</td>
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*Total across Applications Pathway sums to the total students enrolled;

In State/Out of State Admittance

Degree/Non-Degree

Scholarship Awards

Scholarship Awards
Student National and Regional Awards and Recognition

• Amanda Johnson (P3) was one of ten awardees selected to receive the highly competitive UCB Family Epilepsy Scholarship. The award is given to a student with epilepsy or a family member/caregiver of a person with epilepsy who demonstrates academic achievement, possesses a strong record of participation in activities outside of school and serves as a positive role model.

• Indrani Kar (P2), Andrew Clark (P3), Corrine Martenak (P2), Eric Gardner (P4) received Jonas Salk Fellowships through an education program of the Jewish Healthcare Foundation, co-sponsored by the University of Pittsburgh Center for Bioethics and Health Law. Students are provided with a venue to explore issues of revolutionary change in medicine and public health.

• The student team of Nicholas Wytiaz (P3), Melissa Ruminski (P3), and Sara Dombrowski (P3) tied for second place in Pennsylvania Pharmacists Association Appropriate Medication Use Project Competition.

• Nicholas Wytiaz (P3) received honorable mention at the AMCP Summer Intern Best Project Competition at the 2010 Educational Conference in St. Louis, Mo., for his poster “Impact of a Value-Based Formulary Initiative on Utilization and Adherence of Asthma Medications, Disease Control, and Prescribing Trends.”

• Natalie Capozzolo (P2) and Ravi Patel (P1) each received a grant from the Center for Global Health to conduct a research project abroad. Their studies occurred independently. Natalie’s project was titled “Tailoring the delivery of a diabetes education program for pharmacists and student pharmacists in Salvador, Bahia, Brazil,” and Ravi’s, “Baseline Survey of Pharmaceutical Care in Rural Hyderabad, India.”

• Indrani Kar (P3) was selected for the APhA-ASP Awards Standing Committee.

• José Nery (P1) won the Anita Angus Scholarship from the Pitt Alumni Association.

• Anna Bondar (P1) presented her research as Nicaragua Panel Member in University’s 2011 Latin American Social and Public Policy Conference and at the Middle Atlantic Council of Latin American Studies Annual Conference, Globalization and Well-Being in Latin America, held at the University of Pittsburgh.

• Michele Doan (P3) and Cristina Elgin (P1) were chosen as Pittsburgh Schweitzer Fellows.

• Elyse Weitzman (P2) presented a poster on HIV medication utilization at the Academy of Managed Care Pharmacy (AMCP) annual meeting in Minneapolis, Minn.

• Dan Yarabinec (P3) won a national Kappa Psi Pharmaceutical Foundation Scholarship.

• The School’s Kappa Psi chapter was recognized as the third best collegiate chapter nationally.


• Kate Steward (P3) brought a resolution to APhA-ASP House of Delegates opposing drastic cuts to Poison Control Center Funding across the nation.
Experiential Learning Rotations

International Rotations
Students may complete APPE rotations at international sites as long as they are fulfilling an elective experience. This year

- 2 students participated in experiential rotations at the UPMC facility in Palermo, Italy.
- 2 students participated in experiential rotations at the UPMC Beacon Hospital in Dublin, Ireland.
- 2 students completed experiential rotations in Honduras.
- 2 students completed experiential rotations in Australia.
- 2 students received Global Health Scholarships to conduct research; one student assessed medication use in India and the other identified needs for diabetes education in Brazil.
- One student conducted research on self medication in Nicaragua.

Introductory Pharmacy Practice Experience (IPPE) and Advanced Pharmacy Practice Experience (APPE) Rotations

IPPE Rotations
- 46 preceptors supervised 109 P1 students
- 61 preceptors supervised 106 P2 student
- 110 preceptors supervised 108 P3 students
- 310 preceptors supervised P4 students during 728 five- or six-week rotations for 104 students.

Students in the P4 year have the opportunity to nominate a preceptor who is an exceptional role model and who has made outstanding teaching contributions during the year, for the University of Pittsburgh School of Pharmacy Preceptor of the Year Award. The Experiential Learning committee reviews nomination letters and makes the final selection. The 2010-11 awardees were:

- Pamela Smithburger, Assistant Professor, Department of Pharmacy and Therapeutics. Dr. Smithburger provides acute care rotations at UPMC Presbyterian Hospital in the Medical Intensive Care Unit for P3 and P4 students.

- Shrina Duggal, Clinical Pharmacy Specialist – UPMC Shadyside/Hillman Cancer Center. Dr. Duggal provides an acute care rotation for P4 students.
**National Recognition and Awards: Student Organizations**

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<th>Organization</th>
<th>Award</th>
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<td>ASP</td>
<td>Won Outstanding International Pharmaceutical Students’ Federation (IPSF) Activity Award. Finished in top ten nationally in PharmFlix Best Video competition.</td>
</tr>
<tr>
<td>Kappa Psi</td>
<td>Received Province II Chapter of the Year Award (9th straight year).</td>
</tr>
<tr>
<td>SNPhA</td>
<td>Won Rite Aid/Chauncey I. Cooper Chapter Excellence Award for Best Small Chapter.</td>
</tr>
<tr>
<td>PPA</td>
<td>Tied for second place in the Pennsylvania Pharmacists Association Appropriate Medication Use Project Competition.</td>
</tr>
<tr>
<td>PLS</td>
<td>Raised $6,500 for the Grace Lamsam Pharmacy Program for the Underserved through the annual student auction.</td>
</tr>
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**Recognition and Awards: Individual Students**

<table>
<thead>
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<th>Award</th>
<th>Description</th>
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</thead>
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<td>Anna Bondar (P1)</td>
<td>Gave a presentation at the Middle Atlantic Council of Latin American Studies Annual Conference, Globalization and Well Being in Latin America, titled “Self-Medication in Nicaragua: Healthcare Choices in a Decentralized System.”</td>
<td>Based on a six-week field research project conducted in Leon, Nicaragua, in summer 2010.</td>
</tr>
<tr>
<td>Natalie Capozzolo (P2)</td>
<td>Awarded grants from the Center for Global Health</td>
<td>These grants are awarded to students who would like to conduct a research project abroad.</td>
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<tr>
<td>Ravi Patel (P1)</td>
<td></td>
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<tr>
<td>Michele Doan (P3)</td>
<td>Selected as Pittsburgh Schweitzer Fellows</td>
<td>One-year fellowship focusing on reducing disparities in health and health care and on developing leaders in service.</td>
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<tr>
<td>Cristina Elgin (P1)</td>
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<td></td>
</tr>
<tr>
<td>Eric Gardner (P4)</td>
<td>Received Jonas Salk Fellowships</td>
<td>An educational program of the Jewish Healthcare Foundation, co-sponsored by the University of Pittsburgh Center for Bioethics and Health Law, to give students in health-related disciplines a venue to explore issues of revolutionary change in medicine and public health.</td>
</tr>
<tr>
<td>Andrew Clark (P3)</td>
<td></td>
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<tr>
<td>Corrine Martenak (P2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indrani Kar (P2)</td>
<td></td>
<td></td>
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<tr>
<td>Diana Pinchevsky (grad student)</td>
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<tr>
<td>Svetlana Goldman (P3)</td>
<td>Elected PPA Corresponding Secretary 2010-2011</td>
<td>Student officer in the Pennsylvania Pharmacists Association.</td>
</tr>
<tr>
<td>Student</td>
<td>Award</td>
<td>Description</td>
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<td>----------------------</td>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Indrani Kar (P2)</td>
<td>Appointed to the American Pharmacists Association Academy of Student Pharmacists (APhA-ASP) Awards Standing Committee</td>
<td>Standing committee for the Committee member of the APhA-ASP national pharmacy organization.</td>
</tr>
<tr>
<td>Jose Nery (P1)</td>
<td>Won Anita Angus Scholarship from University of Pittsburgh Alumni Association; member of the University crew team.</td>
<td>Award given to one student each year who participates in football, basketball, or crew. Every year, this award is alternated among these three sports. The award is given for exemplary academics and for outstanding performance as an athlete.</td>
</tr>
<tr>
<td>Alexa Ray (P4)</td>
<td>Received grant from Pennsylvania Pharmacy Association (PPA) Special Interest Group for Independent Pharmacy (four of six awardees statewide)</td>
<td>The grant covers the related expenses to attend the National Community Pharmacists Association Annual Convention.</td>
</tr>
<tr>
<td>Sarah Krahe (P3)</td>
<td>Kate brought resolution to APhA-ASP House of Delegates opposing drastic cuts to Poison Control Center Funding across nation (see file for more details)</td>
<td>APhA-ASP House of Delegates passed a resolution by the University of Pittsburgh that APhA-ASP advocates upholding and maintaining regional poison control centers throughout the country.</td>
</tr>
<tr>
<td>Amanda Nguyen (P3)</td>
<td>Elected Kappa Psi Treasurer: Province II</td>
<td>Kappa Psi is a professional co-ed pharmacy fraternity whose members engage in volunteer community service activities. Province II includes Delaware, New Jersey, Pennsylvania, and West Virginia.</td>
</tr>
<tr>
<td>Nick Wytiaz (P3)</td>
<td>Won a $500 scholarship from the Allegheny County Pharmacists Association.</td>
<td>One scholarship is awarded annually to a student from each school of pharmacy in Allegheny County.</td>
</tr>
<tr>
<td>Christopher Turton (P3)</td>
<td>Honorable Mention: Academy of Managed Care Pharmacy’s Summer Intern Best Project Competition for his poster, “Impact of a Value-Based Formulary Initiative on Utilization and Adherence of Asthma Medications, Disease Control, and Prescribing Trends.”</td>
<td>Posters are evaluated on the basis of scientific merit, innovation, and practicality, as well as the presenter’s knowledge of the subject matter.</td>
</tr>
</tbody>
</table>
Student Awards at Graduation

<table>
<thead>
<tr>
<th>Award Title</th>
<th>Student Awardee</th>
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</thead>
<tbody>
<tr>
<td>APhA Academy of Student Pharmacists Recognition Certificate</td>
<td>Steven Zona</td>
</tr>
<tr>
<td>Facts and Comparisons Award of Excellence in Clinical Communication</td>
<td>Jeremy Post</td>
</tr>
<tr>
<td>John Herman Wurdack Award</td>
<td>Elizabeth van Olden</td>
</tr>
<tr>
<td>Lilly Achievement Award</td>
<td>Gerard Mascara</td>
</tr>
<tr>
<td>Merck Award</td>
<td>Samantha Chetosky, William Conklyn, Zachary Snyder</td>
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<tr>
<td>Mylan Pharmaceutical Excellence in Pharmacy Award</td>
<td>Tracy Sparkes</td>
</tr>
<tr>
<td>Natural Medicines Comprehensive Database Recognition Award</td>
<td>Megan Reilly, Rhea Santangelo</td>
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<tr>
<td>Pennsylvania Pharmacists Association Outstanding Student Award</td>
<td>Jennifer Bacci</td>
</tr>
<tr>
<td>Robert W. Taylor Award for Outstanding Performance in Patient Care Rotation</td>
<td>Sheena Teckchandani</td>
</tr>
<tr>
<td>TEVA Pharmaceuticals Outstanding Student Award</td>
<td>Eric Gardner</td>
</tr>
<tr>
<td>U.S. Public Health Service Award for Excellence in Public Health Pharmacy Practice</td>
<td>Alexa Ray</td>
</tr>
<tr>
<td>University of Pittsburgh School of Pharmacy Patient Care Award</td>
<td>Morgan Adams</td>
</tr>
<tr>
<td>University of Pittsburgh School of Pharmacy – Pharmacy Communications Award</td>
<td>Ashley Tylavsky</td>
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</table>

Graduating Class of 2011

104 students received their PharmD diplomas at the May 2011 Commencement Ceremony.

In calendar year 2010, 97.2% of students passed the North American Pharmacist Licensure Exam on their first attempt and 96% passed the Multistate Pharmacy Jurisprudence Examination on their first attempt. School graduates have consistently exceeded state and national averages for scores and pass rates on these two examinations.

100% of students completed their degrees on time.

26% of the class of 2011 continued training in a post-PharmD residency, fellowship, PhD program, or MBA program. Others obtained employment in varied pharmacy practice settings.
### Comparison of NAPLEX Pass Rates: First-Time Candidates

<table>
<thead>
<tr>
<th>Year</th>
<th>Pitt Candidates Pass/Total</th>
<th>Pitt Pass Rate (%)</th>
<th>State Pass Rate (%)</th>
<th>National Pass Rate (%)</th>
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<tbody>
<tr>
<td>2011</td>
<td>101/103</td>
<td>98.0</td>
<td>97.8</td>
<td>96.6</td>
</tr>
<tr>
<td>2010</td>
<td>104/107</td>
<td>97.2</td>
<td>87.6</td>
<td>91.5</td>
</tr>
<tr>
<td>2009</td>
<td>102/102</td>
<td>100</td>
<td>98.0</td>
<td>97.5</td>
</tr>
<tr>
<td>2008*</td>
<td>26/27</td>
<td>96.3</td>
<td>93.5</td>
<td>92.2</td>
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<tr>
<td>2007</td>
<td>97/98</td>
<td>98.9</td>
<td>90.9</td>
<td>95.3</td>
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<tr>
<td>2006</td>
<td>90/95</td>
<td>94.7</td>
<td>87.3</td>
<td>93.6</td>
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<tr>
<td>2005</td>
<td>79/80</td>
<td>98.8</td>
<td>85.3</td>
<td>91.3</td>
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<tr>
<td>2004</td>
<td>81/86</td>
<td>94.2</td>
<td>95.6</td>
<td>95.0</td>
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<tr>
<td>2003</td>
<td>20/22</td>
<td>90.9</td>
<td>89.2</td>
<td>88.2</td>
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<tr>
<td>2002</td>
<td>81/84</td>
<td>96.4</td>
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</table>

*Jan–April 2008 scores

### Comparison Multistate Pharmacy Jurisprudence Examination® (MPJE®) Results: First-Time Candidates Any State

<table>
<thead>
<tr>
<th>Year</th>
<th>Pitt Candidates Pass/Total</th>
<th>Pitt Pass Rate (%)</th>
<th>State Pass Rate** (%)</th>
<th>National Pass Rate** (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011**</td>
<td>94/94</td>
<td>100%</td>
<td>97.3</td>
<td>92.2</td>
</tr>
<tr>
<td>2010</td>
<td>207/214</td>
<td>96.7</td>
<td>93.5</td>
<td>93.1</td>
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<tr>
<td>2009</td>
<td>180/187</td>
<td>96.3</td>
<td>91.3</td>
<td>90.5</td>
</tr>
<tr>
<td>2008*</td>
<td>104/108*</td>
<td>96.3</td>
<td>91.7</td>
<td>91.8</td>
</tr>
<tr>
<td>2007</td>
<td>102/106*</td>
<td>96.2</td>
<td>90.0</td>
<td>91.5</td>
</tr>
<tr>
<td>2006</td>
<td>96/104</td>
<td>92.3</td>
<td>84.5</td>
<td>89.4</td>
</tr>
<tr>
<td>2005</td>
<td>166/183</td>
<td>90.7</td>
<td>87.5</td>
<td>88.6</td>
</tr>
<tr>
<td>2004</td>
<td>157/165</td>
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<td>86.0</td>
<td>87.5</td>
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<tr>
<td>2003</td>
<td>143/147</td>
<td>97.3</td>
<td>93.2</td>
<td>92.1</td>
</tr>
<tr>
<td>2002</td>
<td>110/113</td>
<td>97.3</td>
<td>93.2</td>
<td>92.1</td>
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</tbody>
</table>

*Jan–June 2008 scores

**Jan–August 2011 scores

* Includes all University of Pittsburgh School of Pharmacy graduates taking the MPJE in any state as a first-time candidate for that state.

** For all first-time candidates.
PROFESSIONAL DEVELOPMENT: EDUCATING THE NEXT GENERATION OF PRACTITIONERS

Pennsylvania Project

The Pennsylvania Project (supported in 2010-11 by grants from the Highmark Foundation and the DSF Charitable Foundation) is an educational initiative led by Pitt in partnership with the Pennsylvania Coalition of Colleges and Schools of Pharmacy. With support from grants to Pitt, faculty from all seven schools of pharmacy in Pennsylvania partnered to develop a continuing education program that includes Web-based instruction (Part 1) and a one-day live course (Part 2) to assist pharmacists to develop and enhance pharmacist-led patient care practices in Pennsylvania. Hundreds of pharmacists have completed the online educational program; nine live training programs have been conducted throughout Pennsylvania.

Three important accomplishments were made this year:
• completion of four live training programs
• finalization of the curriculum template to be used by Pennsylvania schools of pharmacy
• a foundation for collaboration among the schools and the Pennsylvania Pharmacists Association

Major Accomplishments
• The Pennsylvania Project–Part 1 had 330 participants with 279 participants completing the online program.

• 15 faculty members drawn from across the seven schools of pharmacy in Pennsylvania have been trained to deliver the live training session.

• 9 live training sessions have been conducted.

• The Pennsylvania Project–Part 2 had 194 attendees complete the live program.

DM Educate®: Comprehensive Diabetes Management

The DM Educate® online course has been available to schools of pharmacy for curricular use since 2006 and for CE since 2007. More than 10,000 students and pharmacists have taken the course. For FY11, several modules were updated and new modules developed.

Major Accomplishments
• Collaborated with the Universidade Federal da Bahia (Salvador, Brazil) to conduct a student project entitled: “Tailoring the Delivery of a Diabetes Education Program for Pharmacists in the state of Bahia, Brazil.” This project has resulted in the implementation of DM Educate at the School of Pharmacy for student’s access and at multiple hospital sites for access by pharmacists.

• Developed an iPad App for the course providing the ability to offer the course on multiple mobile devices.

• Secured CE accreditation for newly developed module “Improving Patient Counseling Effectiveness Through the Use of Motivational Interviewing.”
• Applied for renewal of American Association Diabetes Educators CE accreditation for all modules for pharmacists, nurses and dieticians.

Grants

Selected Publications

Continuing Education for Practitioners

The School of Pharmacy partnered with the UPMC Center for Continuing Education in the Health Sciences (CCEHS) to deliver live continuing education programs in FY11:

• Fall Continuing Education Seminar: “Targeted Pharmacist Services: Influenza Immunization and Medication Assistance Programs” featured presentations by William McKendree, JD, and Assistant Professor Kristine Schonder in 402 Salk Hall with 52 attendees. The intent of this continuing education program was to update attendees on influenza vaccination as well as to provide an in-depth understanding of Medicare Part D and other prescription medication assistance programs.

• Spring Continuing Education Seminar: “Topics in Diabetes Management” featured presentations by Assistant Professors Scott Drab and Karen Pater in 402 Salk Hall with 59 attendees. The intent of this continuing education program was to update attendees on recent advances in anticoagulation and immunizations for older adults, as well as to outline new opportunities for pharmacists to expand outpatient services through collaborative practice.

• In appreciation of our preceptors, the School of Pharmacy held a preceptor continuing education dinner program, “Interventions and Mandatory Reporting for Impaired Professionals,” at the University Club, attended by 39 preceptors. The featured speaker for this presentation was Kathie E. Simpson. The intent of this one-hour program was to promote the identification of, intervention for, and treatment of chemically dependent pharmacists and student pharmacists.

Residency Program: Educating the Next Generation of Practitioners

The School of Pharmacy partners with health care provider organizations to support outstanding residency training programs in research and teaching. The School provides three programs to enhance the training provided at each residency site:

• Resident Seminars – Develop good presentation skills and present a seminar summarizing information on an important drug-related topic.

• Teaching Mastery – Develop and deliver effective educational programs including presentation of lectures in the PharmD program.

• Resident Research Series – Develop knowledge of the research process including the design, conduct and publication of results of a project.
RESIDENCY PROGRAM BY THE NUMBERS FOR FY11

- The School partnered with 7 institutions/entities that provided 11 types of residency programs.
- 33 residents participating in our affiliated residency programs came from 18 schools of pharmacy in 12 states.
- 22 PGY1 and 11 PGY2 residents participate in the residency training program.
- 29 of 33 residents presented their research results at national or regional meetings.
- 17 residents were awarded certificates for completion of the Teaching Mastery Program, which includes development of skills in both clinical precepting as well as teaching within the pharmacy curriculum.
- 17 of our 22 PGY1 pharmacy residents have been accepted into PGY2 specialty residency programs.
- 1 of 7 non-management PGY2 residents accepted a clinical position at academic medical center.
- 2 of 4 graduating management residents accepted hospital pharmacy management positions and 1 management resident accepted a Congressional Healthcare Policy fellowship.
- 3 pharmacy residents continued their careers as clinical pharmacists with UPMC Health System.
- 2 residents accepted faculty positions at schools of pharmacy.
- 3 residents were recently board certified pharmacotherapy specialists.

Residents 2010-2011

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Pitt Residency Program</th>
<th>Year</th>
<th>PharmD School</th>
<th>Plans for FY12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anderson</td>
<td>Scott V</td>
<td>Pharmacy/Pharmacy Management</td>
<td>PGY1</td>
<td>University of Illinois at Chicago</td>
<td>Residency at Virginia State University</td>
</tr>
<tr>
<td>Agnew</td>
<td>Amanda</td>
<td>Oncology</td>
<td>PGY2</td>
<td>Duquesne University</td>
<td>Unit Based Pharmacist Position at UPMC Shadyside</td>
</tr>
<tr>
<td>Armahizer</td>
<td>Michael</td>
<td>Critical Care</td>
<td>PGY2</td>
<td>Duquesne University</td>
<td>Unit Based Pharmacist Position at UPMC Presbyterian</td>
</tr>
<tr>
<td>Bezjak</td>
<td>Johanna D</td>
<td>Pharmacy Residency</td>
<td>PGY1</td>
<td>Duquesne University</td>
<td>Clinical Pharmacist with Chartwell</td>
</tr>
<tr>
<td>Casapao</td>
<td>Anthony M</td>
<td>Infectious Diseases</td>
<td>PGY2</td>
<td>Wingate Univ School of Pharmacy, NC</td>
<td>Infectious Diseases Pharmacotherapy Outcomes Research Fellow at Wayne State Univ.</td>
</tr>
<tr>
<td>Conforti</td>
<td>Brandon</td>
<td>Community Mgmt Res-CVS</td>
<td>PGY2</td>
<td>Wilkes University</td>
<td>Pharmacy Supervisor, CVS Caremark, covering Southeastern Massachusetts</td>
</tr>
<tr>
<td>Last Name</td>
<td>First Name</td>
<td>Pitt Residency Program</td>
<td>Year</td>
<td>PharmD School</td>
<td>Plans for FY12</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>------------------------</td>
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<td>----------------</td>
</tr>
<tr>
<td>D’Antonio</td>
<td>Nicole</td>
<td>Family Medicine Pharmacy</td>
<td>PGY1</td>
<td>Duquesne University</td>
<td>PGY2 Family Medicine Resident at UPMC St. Margaret</td>
</tr>
<tr>
<td>Devabhjathuni</td>
<td>Sandeep</td>
<td>Cardiology</td>
<td>PGY2</td>
<td>University of Pittsburgh</td>
<td>Faculty, Cardiology/Critical Care Pharmacy at Maryland State Univ.</td>
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<tr>
<td>DiCriscio</td>
<td>Anthony</td>
<td>Community Pharmacy Rite Aid</td>
<td>PGY1</td>
<td>University of Pittsburgh</td>
<td>Year two of a two-year Health System Pharmacy Practice Administration Residency</td>
</tr>
<tr>
<td>Edward</td>
<td>Hany S</td>
<td>Pharmacy/Pharmacy Management</td>
<td>PGY1/PGY2</td>
<td>Florida A&amp;M</td>
<td>Inpatient Pharmacy Manager, Sterile Products at the Cleveland Clinic</td>
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<tr>
<td>Eggers</td>
<td>Garrett</td>
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<td>PGY2</td>
<td>University of Wisconsin</td>
<td>PGY2 Ambulatory Care/Family Medicine Residency at New Hanover Regional Medical Center</td>
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<td>Eisenhower</td>
<td>Christine</td>
<td>Pharmacy</td>
<td>PGY1</td>
<td>University of Rhode Island</td>
<td>PGY2 Ambulatory Care/Family Medicine Residency at New Hanover Regional Medical Center</td>
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<td>Felbinger</td>
<td>Matthew</td>
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<td>University of Pittsburgh</td>
<td>PGY2 Critical Care Residency at Duke University</td>
</tr>
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<td>Fisher</td>
<td>Christine</td>
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<td>PGY1</td>
<td>Temple University</td>
<td>PGY2 Critical Care Residency at Duke University</td>
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<td>Garcia</td>
<td>Jorge J</td>
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<td>PGY1/PGY2</td>
<td>Nova Southeastern University</td>
<td>Year two of a two-year Health System Pharmacy Practice Administration Residency</td>
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<tr>
<td>Ghebreselassie</td>
<td>Elizabeth H</td>
<td>Pharmacy</td>
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<td>LECOM School of Pharmacy</td>
<td>PGY2 Internal Medicine</td>
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<tr>
<td>Goldberg</td>
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<td>Managed Care Pharmacy</td>
<td>PGY1</td>
<td>Duquesne University</td>
<td>Managed Care Position</td>
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<td>Greco</td>
<td>Angelo J</td>
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<td>PGY1</td>
<td>Duquesne University</td>
<td>PGY2 Ambulatory Care/Academics at University of North Carolina</td>
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<td>Jenkins</td>
<td>Matthew</td>
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<td>PGY2</td>
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<td>Shands HealthCare, Florida</td>
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<td>Jernigan</td>
<td>Meredith G</td>
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<td>PGY1</td>
<td>University of North Carolina</td>
<td>PGY2 Infectious Diseases Residency at UPMC Presbyterian Shadyside</td>
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<td>Johnson</td>
<td>David</td>
<td>Transplant</td>
<td>PGY2</td>
<td>University of Michigan</td>
<td>Transplant Specialist at Temple Univ.</td>
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<tr>
<td>Kauffman</td>
<td>Yardlee S</td>
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<td>PGY1</td>
<td>University of Pittsburgh</td>
<td>PGY2 Advanced Practice Residency in Global Health at Univ. of Pittsburgh</td>
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<td>Kim</td>
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<td>Internal Medicine Pharmacy</td>
<td>PGY2</td>
<td>UNC Eshelman School of Pharmacy</td>
<td>Assistant Professor of Pharmacy Practice, Shenandoah Univ. Bernard J. Dunn School of Pharmacy</td>
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<td>Kipp</td>
<td>Gretchen</td>
<td>Pharmacy</td>
<td>PGY1</td>
<td>University of Pittsburgh</td>
<td>PGY2 Solid Organ Transplantation Residency at UPMC Presbyterian Shadyside</td>
</tr>
<tr>
<td>Last Name</td>
<td>First Name</td>
<td>Pitt Residency Program</td>
<td>Year</td>
<td>PharmD School</td>
<td>Plans for FY12</td>
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<tr>
<td>Lohr</td>
<td>Brian R</td>
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<td>PGY2 Critical Care Residency at UPMC Presbyterian Shadyside</td>
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<td>Leyner</td>
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<td>PGY1/PGY2</td>
<td>LECOM School of Pharmacy</td>
<td>Year two of a two-year Health System Pharmacy Practice Administration Residency</td>
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<td>PGY1/PGY2</td>
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<td>Year two of a two-year Health System Pharmacy Practice Administration Residency</td>
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<td>Nicholas</td>
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<td>Pikoulas</td>
<td>Theodore E</td>
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<td>Duquesne University</td>
<td>PGY2 Psychiatry Resident at Cleveland VA</td>
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<td>Giavanna</td>
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<td>PGY1</td>
<td>Duquesne University</td>
<td>PGY2 Family Medicine Residency at UPMC St. Margaret</td>
</tr>
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<td>Sales</td>
<td>Ibrahim</td>
<td>Pharmacy Residency</td>
<td>PGY1</td>
<td>University of South Carolina</td>
<td>PGY2 Ambulatory Residency at UPMC Presbyterian Shadyside</td>
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<td>Steinhardt</td>
<td>Sarah</td>
<td>Pharmacy/Pharmacy Management</td>
<td>PGY2</td>
<td>Purdue University</td>
<td>Pharmacy Health Policy, Washington, DC</td>
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<tr>
<td>Turner</td>
<td>Ted</td>
<td>Community Pharmacy Forbes Pharm</td>
<td>PGY1</td>
<td>University of Southern Nevada</td>
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</tr>
</tbody>
</table>

Residents Recruited for 2011-2012

Total Residents: 40
Total Number of Types or Residency Programs: 14
(Management is PGY1 & PGY2 combined)
Locations for the 3 PGY1 programs: 8
Locations for the 11 PGY2 programs: 3

<table>
<thead>
<tr>
<th>Program Type</th>
<th>Location</th>
<th>Resident</th>
<th>Education</th>
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</thead>
<tbody>
<tr>
<td>PGY1 Community Pharmacy</td>
<td>University of Pittsburgh School of Pharmacy</td>
<td>Jennifer Bacci</td>
<td>University of Pittsburgh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Michelle Macguire</td>
<td>The Ohio State University</td>
</tr>
<tr>
<td>PGY1 Managed Care Pharmacy</td>
<td>CVS-Caremark</td>
<td>Sara Burnheimer</td>
<td>Duquesne University</td>
</tr>
<tr>
<td></td>
<td>UPMC Health Plan</td>
<td>Amy Patel</td>
<td>Rutgers University</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Anokhi Shah</td>
<td>Philadelphia College of Pharmacy</td>
</tr>
<tr>
<td>PGY1 Pharmacy Practice</td>
<td>UPMC Presbyterian-Shadyside, WPIC</td>
<td>Maho Hibino</td>
<td>Michigan State University</td>
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<td></td>
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<td>Megan Kloet</td>
<td>University of Florida</td>
</tr>
<tr>
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<td></td>
<td>Ian McGrane</td>
<td>University of Montana</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Roshi Patel</td>
<td>University of Pittsburgh</td>
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<td>Combined PGY1 Pharmacy Practice &amp; PGY2 Health System Pharmacy Admin.</td>
<td>Hany Edward</td>
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<td></td>
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<td>Gia Russo-Alvarez</td>
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<td>PGY2 Infectious Disease Pharmacy</td>
<td>Louise Gillis</td>
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<td>Meredith Jernigan</td>
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<td>Gretchen Kipp</td>
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<td>Ana Lupu</td>
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<td>PGY2 Specialized Area of Pharmacy: Underserved/Global Health</td>
<td>Yardlee Kauffman</td>
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Residents in the School of Pharmacy Masters Program in Pharmacy Administration

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<tr>
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<tr>
<td>Scott Anderson</td>
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<td>Elaine Mabel</td>
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<tr>
<td>Leyner Martinez</td>
<td>PGY1</td>
<td>LECOM School of Pharmacy</td>
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</table>
GRADUATE PROGRAM: EDUCATING THE NEXT GENERATION OF SCIENTISTS

GRADUATE AND POSTDOCTORAL PROGRAM BY THE NUMBERS FOR FY11

In FY11:

• 45 students were enrolled: 42 PhD students and 3 Master of Science students.

• 13 new students matriculated: 2 PhD students and 1 Master of Science student.

• 6 students received degrees in pharmaceutical sciences; 4 PhD degrees were awarded after successful defense of their dissertations and 2 students graduated with Master of Science degrees.

• 45% (19/42) of the PhD students are U.S. citizens or permanent residents.

• 50% (21/42) of the PhD students have pharmacy degrees.

• 6 PhD students received competitive fellowships.

• Gordon Conference invitation to a graduate student: 1!

• 3 students received regional or national awards for excellence in research.

• 18 peer-reviewed manuscripts were published by graduate students.

• Graduate students gave 25 presentations at national and international scientific meetings.

• 19 postdoctoral fellows were engaged in research in School of Pharmacy laboratories.

Graduate Program in Pharmaceutical Sciences Details

This program provides students with the foundation to become independent researchers as either basic scientists or clinical pharmaceutical sciences. The program has four tracks: Biochemical Pharmacology, Medicinal Chemistry, and Pharmaceutics and Clinical Pharmaceutical Sciences (a specialized program to train students to be independent clinical and translational researchers.)

2010-2011 Admission Demographics

• 12 PhD students were selected from over 250 applicants for admission to the 2010/2011 academic year (10 for Fall admission and 2 for Spring admission)
  3 U.S. citizens/permanent residents – 1 with PharmD degree
  9 non-U.S. citizens – 7 with a degree in pharmacy

• 2 MS students joined the program in Fall 2010, 1 MS student joined in January 2011

2011-2012 Admission Demographics

• 16 PhD students were selected from over 220 applicants for Fall 2011
  5 U.S. citizens – 2 with PharmD degree
  11 non-U.S. citizens – 9 with Pharmacy degrees

• 1 MS student was selected for Fall 2011.
Full time students in FY11:
- 45% (19/42) of the PhD students are U.S. citizens or permanent residents.
- 50% (21/42) of the PhD students have pharmacy degrees.
- 3 students passed their comprehensive examination and achieved PhD candidate status.

**Student Completing Graduate Degrees in 2010-2011**

**Kelong Han, PhD**
Advisor: Raman Venkataramanan, PhD
Graduated: December 2010 (Defense completed August 2010)
Dissertation Title: Clinical Pharmacokinetics and Population Pharmacokinetic Analysis of Voriconazole in Transplant Patients
Current Position: Genentech

**Yuyan Jin, PhD**
Advisor: Robert R. Bies, PharmD, PhD
Graduated: December 2010 (Defense completed October 2010)
Dissertation Title: Quantifying Variability in Drug Disposition, Response and Public Health Outcomes: The Implementation of Pharmacometric Based Modeling and Simulation Approaches
Current Position: Pfizer

**Dong Eun Kim, MS**
Advisor: Yong Tae Kwon, PhD
Graduated: December 2010 (Thesis completed October 2010)
Thesis Title: The Role of the N-End Rule Pathway in Cardiovascular Development, Signaling, and Homeostasis
Current Position: PhD Student, Switzerland
Nisanne Ghonem, PharmD, PhD
Advisor: Raman Venkataraman, PhD
Graduated: December 2010 (Defense completed December 2010)
Dissertation Title: Treprostinil for Protection of Liver Grafts Against Ischemia and Reperfusion Injury During Orthotopic Liver Transplantation - A Translational Study
Current Position: Postdoctoral Fellow, Yale School of Medicine

Jiangquan (Jocelyn) Zhou, PhD
Advisor: Samuel M. Poloyac, PharmD, PhD
Graduated: August 2011 (Defense completed June 2011)
Dissertation Title: Evaluation of the Effects of Therapeutic Hypothermia and Cardiac Arrest on Specific Cytochrome P450 Isoform Activity
Current Position: Novartis

Tian Zhou, MS
Advisor: Dexi Liu, PhD
Graduated: August 2011 (Defense completed June 2011)
Thesis Title: Effectiveness and Safety of Hydrodynamic Gene Delivery in Animals with Fibrotic Liver
Current Position: PhD student in Dr. Lisa Rohan’s Lab, University of Pittsburgh School of Pharmacy

Awards

National
• Yijun Huang won the Award for the Best Podium Presentation at the 44th Annual Mid-Atlantic Graduate Student Symposium (MAGSS) in Medicinal Chemistry. June 28, 2011.


• ZuWei Zhai received the 2011 Research Society on Alcoholism Student Merit Award. April 29, 2011.

Travel Awards
• Yijun Huang won the Division of Medicinal Chemistry Travel Grant, American Chemical Society, August 2010.

Research or Presentation Awards
• Mark Donnelly’s poster was awarded a podium presentation at the University of Pittsburgh School of Pharmacy 2nd Annual Research Retreat held at the Seven Springs Mountain Resort, Seven Springs, PA.

• Jie Gao’s poster was awarded a podium presentation at the University of Pittsburgh School of Pharmacy 2nd Annual Research Retreat held at the Seven Springs Mountain Resort, Seven Springs, PA.

• Tiantian Gong’s poster was awarded a podium presentation at the University of Pittsburgh School of Pharmacy 2nd Annual Research Retreat held at the Seven Springs Mountain Resort, Seven Springs, PA.
Competitive Fellowships

- Mark Donnelly received an NRSA Pre-doctoral Fellowship (F31) for his proposal “Role of 20-HETE and EETs in Cerebrovascular Complications after aSAH” Mentor- Samuel Poloyac, PharmD, PhD. (Funded January 2011-January 2012)


- Rebecca Hammond received an NRSA Pre-doctoral Fellowship (F31) for her proposal “The Role of GPR30 in Mediating Estrogen Effects on Neurons and Cognitive Performance.” Mentor-Robert Gibbs, PhD. (April 1, 2011- March 31, 2013)


- Diana Pinchevsky received an AFPE Pre-Doctoral Fellowship In Pharmaceutical Science for her proposal “Identifying genetic factors that link depression and cardiovascular diseases to translate the findings to biomolecular pathophysiology research and patients’ outcomes.” Mentor-Tanya Fabian, PharmD, PhD. (September 2011-August 2012)

- Yifei Zhang has been awarded a two-year pre-doctoral fellowship from American Heart Association for her proposal “Novel Polymeric Vectors for Pulmonary uPA Gene Therapy.” Mentor- Wen Xie, MD, PhD. (July 2011-June 2013)

Other Awards

- Ayman Akil was awarded the September 2010 Certificate of Appreciation for Outstanding Performance as AAPS Student Chapter chair at the University of Pittsburgh.

- Yijun Huang won the Norman R. and Priscilla A. Farnsworth Student Award, University of Pittsburgh. June 7, 2011.

- Diana Pinchevsky and Mohammad Shawaqfeh were both awarded the Jewish Healthcare Foundation Patient Safety Fellowship, 2010-2011.

- Diana Pinchevsky won the Randy and Renée Juhl Pharmacy Graduate Scholar Award, University of Pittsburgh. June 7, 2011.

- Shashi Sriram received the Life Sciences Intern Award, Office of Technology Management, University of Pittsburgh, 2011.

- Shashi Sriram received Graduate Student Excellence Award University of Pittsburgh School of Pharmacy June 7, 2011.

Publications, Presentations
In FY11, graduate students:
- Published 18 papers in peer-reviewed journals.
- Made 25 presentations at national and international scientific meetings.
The School of Pharmacy hosted the Second Annual Graduate Student and Postdoc Research Retreat at Seven Springs Resort, Seven Springs, Pa., in June 2011. Graduate student awards were announced at the banquet:

- Diana Pinchevsky, PharmD  Randy and Renée Juhl Pharmacy Graduate Scholar Award
- Yijun Huang, MS  Norman R. and Priscilla A. Farnsworth Student Award
- Timothy Pouland, BS  Graduate Student Teaching Award
- Shashi Sriram, MS  Pharmaceutical Sciences Graduate Student Excellence Award

**Clinical Pharmaceutical Scientist Program**

The Clinical Pharmaceutical Scientist Program is a specialized track of the graduate program that trains students to be independent clinical and translational researchers. Students utilize contemporary research approaches to generate new discoveries applicable to the disposition and activity of drugs in humans. The newly formed Center for Clinical Pharmaceutical Sciences is now responsible for directing this program.

**Major Accomplishments**

- Created a new course offered jointly with the Universities of Minnesota, North Carolina, and Pittsburgh for first- and second-year graduate students. TOPICS IN TRANSLATIONAL RESEARCH, structured as a journal club, focuses on translational investigations. All three programs will participate in discussions by live video-teleconferencing.


- Enrolled four PhD students with PharmD degrees into the Pre-Doctoral Fellowship-Clinical Scientist Associate (CSA) position where part of their support comes from a TA stipend and part from the health system for CSA clinical work.

**Combined PharmD-PhD Program**

Initiated in 2007, this program is designed to give students the opportunity to enter the graduate program during the third professional year. It permits the students to complete some of the course requirements for the PhD with electives in their PharmD program. The goal is to recruit pharmacists to the PhD program and encourage them to become faculty at schools of pharmacy.

- The first PharmD student, Diana Pinchevsky, committed to the program for the fall of 2008 and is mentored by Dr. Tanya Fabian.

- The second student, Lindsay Ferguson, committed to the program and entered the graduate program full-time in fall 2009 to work in Dr. Lisa Rohan’s laboratory after receiving her PharmD degree in April 2009.

- Dana Roman committed to the graduate program to work in Dr. Kerry Empey’s laboratory. She entered the Graduate program full-time in fall 2010 after receiving her PharmD degree in April 2010.
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<thead>
<tr>
<th>Name</th>
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### Students Selected for Pharmaceutical Sciences Graduate Program
#### Beginning in Fall 2011

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*CPS – Clinical Pharmaceutical Scientist Program

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**Graduate Student Publications**


• Hammond R, Gibbs RB. GPR30 is positioned to mediate estrogen effects on basal forebrain cholinergic neurons and cognitive performance. *Brain Res.* 2011;1379:53-60. Epub 2010 Dec 5.


**Graduate Student Accepted Presentations, Posters, and Podiums**


• AAPS Annual Meeting, New Orleans, LA. Improved UPLC-MS/MS Method to Measure CYP-AA Metabolites in CSF of SAH Patients. November 11, 2010. Donnelly MK.


• 2nd Annual Mylan School of Pharmacy Research. Duquesne University, Pittsburgh, PA. Vaginal Delivery of UC781 in Woman’s Condom Capsules. October 20, 2010. Gong TI.

• Society for Neuroscience Annual Meeting. San Diego, CA. Effects of basal forebrain cholinergic lesions and estradiol on relative levels of estrogen receptor mRNAs in the rat forebrain. November 15, 2010. Hammond RE.


• First Experiences in Research, University of Pittsburgh. Protein-Protein Interaction Directed Libraries. April 19, 2011. Huang YI and Khoury KA.

• 2nd Annual Mylan School of Pharmacy Research. Duquesne University, Pittsburgh, PA. Applications of Gewald Multicomponent Reaction in Drug Discovery. October 20, 2010. Huang YI.


• 43rd Annual Mid-Atlantic Graduate Student Symposium (MAGSS) in Medicinal Chemistry. Purdue University, West Lafayette, IN. Discovery of Low-molecular-weight Protein-protein Interaction Antagonists via Multicomponent Reactions. July 19, 2010. Huang YI.


• AAPS Workshop on Drug Transporters in ADME: From the Bench to the Bedside. Bethesda, MD. Impaired renal drug transport capacity in kidney transplant recipients with BK virus infection. March 14, 2011. Momper JD.

• Proceedings of the American Association for Cancer Research. Effects of the aldehyde dehydrogenase inhibitor, disulfiram, on the plasma pharmacokinetics and metabolism of benzaldehyde dimethane sulfonate (NSC281612, DMS612, BEN) in mice. April 2011. Parise RA.


• 13th International Winter Eicosanoid Conference. Baltimore, MD. Soluble EpoxideHydrolase(sEH) Inhibitor Trans-4-[4-(3-Adamantan-1-yl-Ureido)-Cyclohexyloxy]-Benzoic Acid (t-AUCB) is Neuroprotective in a Rat Temporary Focal Ischemia Model. March 13-16, 2011. Shaik JS.

• 2010 Pharmaceutical World Congress & American Association of Pharmaceutical Sciences (AAPS) Annual Meeting, New Orleans, LA. Antiretroviral Drugs Inhibit the Metabolism of Sunitinib and Sorafenib in Primary Cultures of Human Hepatocytes. 2010. Shawaqfeh MS.

• Pharmacy Grand Rounds, ACPE Accredited. Clinically Relevant Drug Interactions Mediated By Drug Transporters. Sponsored by University of Pittsburgh Center for Continuing Education in the Health Sciences. 2010. Shawaqfeh MS.

• Drug Use and Disease State Management Program, University of Pittsburgh Medical Center. Therapeutic Approaches to Acute Insomnia in Hospitalized Patients. 2010. Shawaqfeh MS.


• 2011 Society for Research in Child Development. Montreal, Quebec, Canada. Executive cognitive functioning latent structure in boy and girl offspring of fathers with vs. without illegal drug use disorder. April 2, 2011. Zhai ZU.

Postdoctoral Fellows

School of Pharmacy Postdoctoral Associates FY11

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
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<th>Field</th>
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<tr>
<td>Bonamassa, Barbara</td>
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<td>Gao, Mingming</td>
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Advancing Human Health Through Research
Advancing Human Health Through Research

The overall goal of the School of Pharmacy’s research programs is to advance human health through research supported by a diversified funding portfolio that ranges from the molecular to patient outcomes. School of Pharmacy investigators are using state-of-the-art techniques to answer important questions leading to new drug targets and improved drug therapy. Faculty are identifying sources of variability to improve patient outcomes and creating evidence-based guides for therapy. The quality of the science is shown through successful competition for NIH research support. As stated in Long-Range Plan 2006–2012:

By 2012, the School of Pharmacy will:
• Be recognized as a research school of distinction.

Research by the Numbers for FY11

• 24 faculty members were principal investigators.

• 69: the number of active research projects.

• $51,724,534 in total active grants.

In FY11, these funded projects generated:

$12,553,775 in total costs (see graph below for funding source).

Annual Research Costs

- NIH 75%
- Other Federal 15%
- Industry 6%
- Other 1%
- Foundation 3%
Faculty research resulted in 133 peer-review research publications.

**Peer-Reviewed Publications by Type**

- Preclinical: 46%
- Clinical & Translational: 22%
- Practice-Based: 23%
- CEDAR: 9%

**RESEARCH FUNDING**

Research in the School of Pharmacy is focused on medication discovery, development, and delivery and drug use in improving human health.

**Annual Grant Costs by Source**

The annual costs for FY11 were **$12.5 million** with **$9.4 million in direct costs** (shown in the following graph) and $3.1 million in indirect costs. The graph and tables below provide the detail regarding FY11 sources of funding for direct costs.
Direct Costs: Research Funding

Direct Costs for Research by Funding Category

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<tr>
<th>Source</th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
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<td>Federal-Oth</td>
<td>974,624</td>
<td>1,024,805</td>
<td>846,586</td>
<td>961,814</td>
<td>1,264,891</td>
<td>856,030</td>
<td>1,268,055</td>
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<td>Industry</td>
<td>359,881</td>
<td>232,777</td>
<td>156,419</td>
<td>99,363</td>
<td>468,401</td>
<td>60,226</td>
<td>518,140</td>
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<td>Found/Assoc</td>
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<td>369,428</td>
<td>351,468</td>
<td>209,084</td>
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<td>Other</td>
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<td>134,181</td>
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<td>$8,511,456</td>
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Research Details

FY11 PHS Funding

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<td>B. Day</td>
<td>NIH</td>
<td>R01 CA090787</td>
<td>Mechanisms and Prevention of Etoposide-Induced Leukemia</td>
<td>9,874</td>
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<td>B. Day</td>
<td>NIH</td>
<td>R56 NS065789</td>
<td>PINK1 Regulation of Neuronal and Mitochondrial Homeostasis</td>
<td>17,531</td>
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<td>B. Day</td>
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<td>Cyclooxygenase 2 and Ischemic Neuronal Injury</td>
<td>21,835</td>
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<td>B. Day</td>
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<td>RC4 DK090770</td>
<td>Small Molecule-Mediated Augmentation of Kidney Regeneration</td>
<td>80,000</td>
<td>41,200</td>
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<td>B. Day</td>
<td>NIH</td>
<td>R01 A057083</td>
<td>Small Molecule Inhibitors of HIV Nef</td>
<td>28,225</td>
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<td>B. Day</td>
<td>NIH</td>
<td>R01 CA129127</td>
<td>The Role of PKD3 in Prostate Carcinogenesis</td>
<td>2,687</td>
<td>1,383</td>
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<td>A. Doemling</td>
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<td>Anchor: A PDB-wide and Web-Based Discovery Resource of Small Molecular Weight Protein Interaction (Ant)agonists</td>
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<td>A. Doemling</td>
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<td>A. Doemling</td>
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<td>Protein Protein Interaction Directed Libraries</td>
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<td>M. Donnelly</td>
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<td>Role of 20-HETE and EETs in Cerebrovascular Complications after aSAH</td>
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<td>Y. Kwon</td>
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<td>Role of Ubiquitin in Cardiovascular System</td>
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<td>107,809</td>
<td>350,559</td>
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<td>Irradiation Damage and Protection of Pulmonary Endothelium Oxidative Lipidomics</td>
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<td>S. Li</td>
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<td>Image-Guided Hydrodynamic Gene Delivery</td>
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<td>S. Poloyac</td>
<td>NIH</td>
<td>R21 HD058846</td>
<td>COX2-Derived Cyclopentenone Prostaglandins Exacerbate Hypoxic Ischemic Brain Injury by Inhibiting Protein Disulfide Isomerase and Worsening Endoplasmic Reticulum Stress</td>
<td>2,729</td>
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<td>S. Poloyac</td>
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<td>Determining Genetic and Biomarker Predictors of DCI and Long term Outcomes after a SAH</td>
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<td>Overcoming Membrane Transporters to Improve CNS Drug Therapy</td>
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<td>Development of a Novel Nanoparticle Pyrimidinedione Vaginal Polymeric Film as an Anti-HIV Microbicide</td>
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<td>Alternative Formulations of Tenofovir and UC781</td>
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<td>Microbicide Properties of RT Inhibitor Combinations</td>
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<td>RT Inhibitor CSIC and Entry Inhibitor Retrocyclin RC101 as Microbicides</td>
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<td>Longitudinal Impact of Antihypertensive Polypharmacy on Geriatric Syndromes</td>
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<td>Using Medical Records Repositories to Improve the Alert System Design</td>
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<td>Drug Abuse Vulnerability: Mechanisms and Manifestations</td>
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<td>Impact of Pregnancy on Drug Absorption, Disposition and End Organ Response</td>
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<td>Regulation of Sulfotransferases by LXR and Its Implication in Pathophysiology</td>
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<td>The Regulation of Human Hydroxysteroid Sulfotransferase by Nuclear Receptor ROR</td>
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<td>New Concepts, Methodologies and Scaffolds for Diversity-Oriented Organic Synthesis</td>
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<td>Enhancing the Detection and Management of Adverse Drug Events in the Nursing Home</td>
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<td>R. Farrah</td>
<td>Univ. of Iowa</td>
<td>Antiviral Lectins as Microbicides</td>
<td>14,675</td>
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<td>R. Gibbs</td>
<td>National Science Foundation</td>
<td>Role of GPR30 in Estrogen-Mediated Effects on Cholinergic Function and Cognition</td>
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<td>D. Huryn</td>
<td>SAIC-Frederick</td>
<td>Discovery and Optimization of Inhibitors of STAT3 Activation for the Treatment of Squamous Cell Carcinoma of the Head and Neck</td>
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<td>D. Huryn</td>
<td>SAIC-Frederick</td>
<td>Discovery and Optimization of Inhibitors of STAT3 Activation for the Treatment of Squamous Cell Carcinoma of the Head and Neck (Purchase Order 1)</td>
<td>6,601</td>
<td>3,399</td>
<td>10,000</td>
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<tr>
<td>S. Li</td>
<td>Dept of Defense</td>
<td>Targeted Co-delivery of Synthetic MicroRNA and microRNA Expression Vector for Rapid and Sustained Inhibition of Breast Cancer</td>
<td>75,000</td>
<td>38,625</td>
<td>113,625</td>
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<tr>
<td>Y. Li</td>
<td>PA State University</td>
<td>Functional Analysis of Nuclear Receptor Variants</td>
<td>44,000</td>
<td>22,660</td>
<td>66,660</td>
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<tr>
<td>Y. Li</td>
<td>Van Andel Institute</td>
<td>Structural and Functional Studies of the Nuclear Receptor PPARgamma</td>
<td>38,709</td>
<td>19,935</td>
<td>58,644</td>
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<td>S. Poloyac</td>
<td>UNCCH</td>
<td>Cytochrome P450 Derived Eicosanoids and Inflammation</td>
<td>12,786</td>
<td>7,099</td>
<td>19,885</td>
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<tr>
<td>J. Pringle</td>
<td>Mercy Behavioral Health</td>
<td>New Lease on Life</td>
<td>48,387</td>
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<td>60,000</td>
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<tr>
<td>J. Pringle</td>
<td>SAMSHA</td>
<td>The Pennsylvania Medical Residency Training Program (MR-SBIRT)</td>
<td>493,889</td>
<td>11,947</td>
<td>505,836</td>
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<tr>
<td>J. Pringle</td>
<td>Allegheny County</td>
<td>Strategic Prevention Framework State Incentive Grant (SPF-SIG)</td>
<td>122,224</td>
<td>25,276</td>
<td>147,500</td>
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<tr>
<td>L. Rohan</td>
<td>Univ of Louisville</td>
<td>Antiviral Lectins as Microbicides</td>
<td>20,635</td>
<td>10,628</td>
<td>31,263</td>
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<tr>
<td>C. Scelsi</td>
<td>Health Resources &amp; Serv. Admin.</td>
<td>Geriatric Education Center</td>
<td>6,907</td>
<td>553</td>
<td>7,460</td>
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<tr>
<td>W. Xie</td>
<td>St. Jude Children's Hospital</td>
<td>Regulation of PXR by Cell Cycle and Phosphorylation</td>
<td>8,358</td>
<td>4,304</td>
<td>12,662</td>
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**TOTAL** | **$1,268,055** | **$355,889** | **$1,623,944**
### FY11 Industry Funding

<table>
<thead>
<tr>
<th>Investigator</th>
<th>Agency</th>
<th>Title</th>
<th>Direct $</th>
<th>Indirect $</th>
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</tr>
</thead>
<tbody>
<tr>
<td>K. Coley</td>
<td>Takeda Pharmaceuticals</td>
<td>Reclassification of ICD-9 Coding for Patients with Gout: Evaluation of Patient Characteristics, Prescribing Patterns and Resource Use</td>
<td>$68,500</td>
<td>$17,125</td>
<td>$85,625</td>
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<tr>
<td>D. Liu</td>
<td>Pain Therapeutics Inc.</td>
<td>Expression of Human Factor IX in Large Animals Using the OC31 Gene Expression</td>
<td>58,725</td>
<td>32,886</td>
<td>91,611</td>
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<tr>
<td>J. Pringle</td>
<td>Healing Our Village</td>
<td>A Patient Clinical Team Collaboration Model of Diabetes Self Management</td>
<td>51,324</td>
<td>13,242</td>
<td>64,566</td>
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<tr>
<td>J. Pringle</td>
<td>Pharmacy Quality Assurance</td>
<td>Phase II Pennsylvania Demonstration Project</td>
<td>46,591</td>
<td>4,659</td>
<td>51,250</td>
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<tr>
<td>R. Smith</td>
<td>Novo Nordisk</td>
<td>Self-Directed Online Learning Platform for Mobile Devices</td>
<td>293,000</td>
<td>-</td>
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<td><strong>TOTAL</strong></td>
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<td><strong>$518,140</strong></td>
<td><strong>$67,912</strong></td>
<td><strong>$586,052</strong></td>
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### FY11 Foundation and Association Funding

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<th>Investigator</th>
<th>Agency</th>
<th>Title</th>
<th>Direct $</th>
<th>Indirect $</th>
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<tbody>
<tr>
<td>D. Brody</td>
<td>American Chemical Society</td>
<td>Synthesis and Evaluation of Discodermolide Analogs</td>
<td>$24,000</td>
<td>-</td>
<td>$24,000</td>
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<tr>
<td>K. Coley</td>
<td>Jewish Healthcare Fnd.</td>
<td>Pharmacists as Advocates in Care Transitions</td>
<td>93,500</td>
<td>-</td>
<td>93,500</td>
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<tr>
<td>J. He</td>
<td>AHA</td>
<td>Regulation of CD36 by the Aryl Hydrocarbon Receptor (AhR) and Its Implication in Fatty Liver Disease</td>
<td>45,000</td>
<td>-</td>
<td>45,000</td>
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<tr>
<td>Y. Li</td>
<td>AHA</td>
<td>Mechanism and Specificity of Ligand Bind and Coactivator Assembly by PPARgamma</td>
<td>70,000</td>
<td>7,000</td>
<td>70,000</td>
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<tr>
<td>J. Pringle</td>
<td>Staunton Farm Fdn.</td>
<td>Allegheny General Hospital Emergency Department Pilot Program</td>
<td>51,282</td>
<td>8,718</td>
<td>60,000</td>
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<td><strong>TOTAL</strong></td>
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<td><strong>$305,600</strong></td>
<td><strong>$17,900</strong></td>
<td><strong>$323,500</strong></td>
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### FY11 Other Funding

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<th>Direct $</th>
<th>Indirect $</th>
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<tr>
<td>S. Li</td>
<td>CRDF</td>
<td>Farnesoid X Receptor and Hepatic Stellate Cells</td>
<td>$15,000</td>
<td>-</td>
<td>$15,000</td>
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<td>F. Vitale</td>
<td>Purdue Univ.</td>
<td>CEASE Program – Phase II Smoking Cessation Program</td>
<td>96,157</td>
<td>-</td>
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<td><strong>TOTAL</strong></td>
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<td></td>
<td><strong>$111,157</strong></td>
<td>-</td>
<td><strong>$111,157</strong></td>
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</table>
RESEARCH RECOGNITION OF FACULTY

Faculty members received various forms of recognition for their accomplishments and their expertise during FY10.

- 20 faculty members served on scientific journal editorial boards.
- 12 faculty members served on NIH grant review committees.
- 51 – the number of invited research presentations by faculty.
  - presentations at 13 universities in 10 states
  - 21 Presentations at 20 scientific meetings in 13 states
  - 10 presentations at 9 universities in 4 countries
  - 13 presentations at 11 international scientific meetings in 9 countries

### Members of Editorial Boards

<table>
<thead>
<tr>
<th>Faculty Member</th>
<th>Number</th>
<th>Editorial Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan H. Beumer, PharmD, PhD</td>
<td>3</td>
<td>The Open Chemical and Biomedical Methods Journal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Journal of Chromatography and Separation Techniques</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cancer Chemotherapy and Pharmacology</td>
</tr>
<tr>
<td>Colleen M. Culley, PharmD, BCPS</td>
<td>2</td>
<td>Clin-Alert</td>
</tr>
<tr>
<td></td>
<td></td>
<td>American Journal of Health-System Pharmacy</td>
</tr>
<tr>
<td>Billy W. Day, PhD</td>
<td>2</td>
<td>Current Molecular Pharmacology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Journal of Environmental Protection Science</td>
</tr>
<tr>
<td>Alexander Doemling, PhD</td>
<td>2</td>
<td>Molecular Diversity</td>
</tr>
<tr>
<td>Barry Gold, PhD</td>
<td>2</td>
<td>Editorial Advisory Board of Burger’s Medicinal Chemistry and Drug Discovery</td>
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<tr>
<td></td>
<td></td>
<td>Editorial Advisory Board of Future Medicinal Chemistry</td>
</tr>
<tr>
<td>Robert B. Gibbs, PhD</td>
<td>1</td>
<td>Hormones and Behavior</td>
</tr>
<tr>
<td>Sandra L. Kane-Gill, PharmD, MS, FCCM</td>
<td>2</td>
<td>Critical Care Medicine</td>
</tr>
<tr>
<td>Levent Kirisci, PhD</td>
<td>1</td>
<td>Bipolar Disorder: International Journal of Psychiatry and Neurosciences</td>
</tr>
<tr>
<td>Edward P. Krenzelok, PharmD</td>
<td>1</td>
<td>Lexi-Comp</td>
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<td>Clinical Toxicology</td>
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<tr>
<td>Song Li, MD, PhD</td>
<td>2</td>
<td>Journal Gene Medicine</td>
</tr>
<tr>
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<td></td>
<td>Biological Procedure On-Line</td>
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<tr>
<td>Dexi Liu, PhD</td>
<td>4</td>
<td>Gene Therapy (Member)</td>
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<tr>
<td></td>
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<td>Molecular Therapy (Member)</td>
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<tr>
<td></td>
<td></td>
<td>Pharmaceutical Research (Member)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AAPS Journal (Associate Editor)</td>
</tr>
<tr>
<td>Scott M. Mark, PharmD, MS, MEd, MPH, MBA, FACHE, FASHP, FABC</td>
<td>1</td>
<td>Co-Editor for Director’s Forum in Hospital Pharmacy</td>
</tr>
<tr>
<td>Susan M. Meyer, PhD</td>
<td>1</td>
<td>Journal of Research in Interprofessional Education</td>
</tr>
<tr>
<td>Thomas D. Nolin, PharmD, PhD</td>
<td>2</td>
<td>American Journal of Kidney Diseases</td>
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<td>Journal of Clinical Pharmacology</td>
</tr>
<tr>
<td>Ty A. Ridenour, PhD</td>
<td>1</td>
<td>Current Drug Abuse Reviews</td>
</tr>
<tr>
<td>Lisa C. Rohan, PhD</td>
<td>1</td>
<td>AIDS Research and Therapy</td>
</tr>
<tr>
<td>Amy L. Seybert, PharmD</td>
<td>1</td>
<td>American Journal of Pharmacy Education</td>
</tr>
<tr>
<td>Ralph E. Tarter, PhD</td>
<td>8</td>
<td>Directions in Substance Abuse Counselling (Advisory Board)</td>
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<tr>
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<td>Journal of Developmental and Physical Disabilities</td>
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<td>American Journal on Addictions</td>
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<tr>
<td></td>
<td></td>
<td>Journal of Child and Adolescent Substance Abuse (Book review editor)</td>
</tr>
</tbody>
</table>
### Faculty Member | Number | Editorial Board
--- | --- | ---
Gordon J. Vanscoy, PharmD, CACP, MBA | 3 | American Journal of Oncology Review
| | | Journal of Thrombosis and Thrombolysis
| | | Drug Formulary Review
Raman Venkataramanan, PhD | 6 | Journal of Clinical Pharmacology
| | | Therapeutic Drug Monitoring
| | | The Open Clinical Chemistry Journal
| | | The Open Pharmacology Journal
| | | Current Clinical Pharmacology
| | | The Journal of Transplantation
Regis R. Vollmer, PhD | 1 | Editor, Clinical and Experimental Hypertension
Wen Xie, MD, PhD | 5 | Current Drug Metabolism
| | | World Journal of Gastroenterology
| | | Drug Metabolism Letters
| | | Drug Metabolism Reviews
| | | Molecular Endocrinology

### Faculty Participation in NIH Review Committees and Panels

<table>
<thead>
<tr>
<th>Faculty Member</th>
<th>No. of Panels</th>
</tr>
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<tbody>
<tr>
<td>Billy W. Day, PhD</td>
<td>1</td>
</tr>
<tr>
<td>Alexander Doemling, PhD</td>
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</tr>
<tr>
<td>Barry Gold, PhD</td>
<td>1</td>
</tr>
<tr>
<td>Levent Kirisci, PhD</td>
<td>2</td>
</tr>
<tr>
<td>Song Li, MD, PhD</td>
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<tr>
<td>Dexi Liu, PhD</td>
<td>4</td>
</tr>
<tr>
<td>Samuel M. Poloyac, PharmD, PhD</td>
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<tr>
<td>Ty A. Ridenour, PhD</td>
<td>1</td>
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<tr>
<td>Lisa C. Rohan, PhD</td>
<td>1</td>
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<tr>
<td>Michael M. Vanyukov, PhD</td>
<td>6</td>
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<tr>
<td>Raman Venkataramanan, PhD</td>
<td>3</td>
</tr>
<tr>
<td>Wen Xie, MD, PhD</td>
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<tr>
<td>Xiang-Qun (Sean) Xie, PhD</td>
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</table>

### Invited Research Presentations


• University of Kentucky. Lexington, KY. The impact of therapeutic hypothermia on drug metabolism and transport following critical injury. March 18, 2011. Empey PE.


• American Chemical Society. Boston, MA. The effect of site-specific modifications of DNA on thermodynamic stability, ion binding and hydration. August 22, 2010. Gold B.


• University of Minnesota. Minneapolis, MN. Pharmacy’s Role in Advancing Clinical and Translational Research: Examples in Critical Care Illness. April 26, 2011. Poloyac SM.


• Association for Medical Education and Research in Substance Abuse. Bethesda, MD. Teaching and Assessing Clinical Skill in Screening, Brief Intervention, and Referral to Treatment (SBIRT). November 3, 2010. Pringle JL.

• SAMHSA. Washington, DC. Screening and Brief Intervention (SBI) for Medication Adherence: Background and the PA Collaborative Project. May 11, 2011. Pringle JL.


• Morehouse School of Medicine. Atlanta, GA. Screening, Brief Intervention, and Referral to Treatment Methods. September 22, 2010. Pringle JL.


• Western Psychiatric Institute and Clinic. Pittsburgh, PA. Developmental Momentum and Risk for Substance Use Disorder in Youth Experiencing Chronic Stress. October 22, 2010. Ridenour TA.


• Centers for Disease Control (CDC). Atlanta, GA. The development of rectal microbicides for HIV prevention. April 20, 2011. Rohan LC.


• Endocrine Division Research Conference, Division of Endocrinology, Diabetes, and Metabolism, University of Pittsburgh. Pittsburgh, PA. Orphan Nuclear Receptors in Metabolic Diseases. January 6, 2011. Xie W.

• Center for Molecular Toxicology and Carcinogenesis, Penn State University. University Park, PA. The Endobiotic Functions of the Xenobiotic Receptors. October 13, 2010. Xie W.

• Department of Physiology and Pharmacology and the Interdisciplinary Toxicology Program, University of Georgia. Athens, GA. The Xeno- and Endobiotic Functions of Orphan Nuclear Receptors. March 28, 2011. Xie W.


• School of Pharmaceutical Sciences, Sun Yat-Sen University. Guangzhou, China. Nuclear Receptor-Mediated Crosstalk between Drug Metabolism and Energy Metabolism. April 27, 2011. Xie W.

• School of Medicine, Sun Yat-Sen University. Guangzhou, China. Nuclear Receptor-Mediated Gene Regulation and its Implications in Pathophysiology. April 26, 2011. Xie W.

Patient Care Invited Talks


• HRSA - PSPC. National Learning Session via Teleconference. HRSA Patient Safety and Clinical Pharmacy Services Learning Session #2 Mentoring Teams Round-Robin: The Five Strategies that Drive Change…It’s in the Bag! (Change Package, that is!). May 10, 2011. Connor SE.

• AACP. Chicago, IL. Patient Safety and Clinical Pharmacy Services Regional Meeting: Enhancing Diabetes Care through an Interprofessional Approach to Performance Improvement. September 13, 2010. Connor SE.

• UPMC Pathology Department, UPMC Presbyterian. Pharmacogenomics. January 7, 2011. Empey PE.


• European Association of Poisons Centres and Clinical Toxicologists XXXI International Congress. Dubrovnik, Croatia. Experience with the Use of PC Data for Public Health Purposes with a Focus on Non-Pharmaceuticals. May 26, 2011. Krenzelok EP.


• ASHP 45th Midyear Clinical Meeting. Anaheim CA. 10 Tips for Increasing the IQ of your smart pumps. December 6, 2010. Skledar SJ.

Invited Education Talks

• University of Pittsburgh Mobile Computing in Healthcare Conference. Pittsburgh, PA. Tools, not toys – How to use the iPad to enhance your productivity in an academic setting. October 29, 2010. Empey PE.

• University of Tennessee College of Pharmacy. Memphis, TN. It’s about the Research . . . and the People. April 27, 2011. Kroboth PD.

• APhA. Seattle, WA. Community Pharmacy Fellowship Experience. March 26, 2011. McGivney MS.

• University of Connecticut School of Pharmacy. Storrs, CT. An Unusual Journey with Lessons Learned. September 8, 2010. Meyer SM.


• NMA. Cincinnati, OH. Team-Based Learning Approach to Self-Care. September 17, 2010. Pater KS.


• American College of Clinical Pharmacy. Austin, TX. Barriers, Hurdles, and Lessons Learned in the Scholarship of Teaching and Learning. October 25, 2010. Seybert AL.


School of Pharmacy Publications in Peer-Reviewed Journals

Pre-clinical Research


• Ghonem N, Yoshida J, Stolz DB, Humar A, Starzl TE, Murase N, Venkataramanan R. Treprostinil, a Prostacyclin Analog, Ameliorates Ischemia-Reperfusion Injury in Rat Orthotropic


- Hammond R, **Gibbs RB.** GPR30 is positioned to mediate estrogen effects on basal forebrain cholinergic neurons and cognitive performance. *Brain Res.* 2011; 1379:53-60.


**CEDAR**


**Clinical and Translational Research**


**Education**


• Benedict NJ. Virtual Patient and Problem-Based Learning in Advanced Therapeutics. *American J Pharm Educ*. 2010; 74(8), Article 143.


RESEARCH OVERVIEW

Center for Pharmacogenetics

Faculty
Yong Tae Kwon, PhD, Associate Professor
Song Li, MD, PhD, Associate Professor
Yong Li, PhD, Assistant Professor
Wen Xie, MD, PhD, Professor
Xiang Gao, PhD, Research Assistant Professor
Jiang Li, PhD, Research Assistant Professor
Takafumi Tasaki, PhD, Research Assistant Professor
Tara Wada, PhD, Instructor

Graduate Students
Wenqing (Emily) Chen, BS, MS
Jie Gao, MS
Mohammed Ghazwani, BS
Chibueze Ihunnah, BS
Mengxi Jiang, BS
Sung Tae Kim, BS, MS
Jilong Li
Jianqin Lu, BS
Shashi Sriram, MS
Peng Zhang, BS, MS
Yifei Zhang, BS, MS

Postdoctoral Fellows
Jinhan He, PhD
Yuka Inaba, PhD
Xiongjie Shi, PhD

Major Accomplishments
• Takafumi Tasaki and colleagues in the Kwon lab found that UBR4, the recognition component of the N-end rule pathway, is a new component of autophagy machinery, called phagophore, and regulates the activity of the autophagy-lysosomal system.

• Takafumi Tasaki and colleagues in the Kwon lab constructed knockout mice lacking UBR4 and found that UBR4-deficient mouse embryos die at midgestation due to impaired angiogenesis and vascular smooth muscle cell functions.

• Takafumi Tasaki in collaboration with the University of Oxford group found that the ubiquitin ligase UBR3 regulates cellular levels of the essential DNA repair protein APE1 and is required for genome stability. (Meisenberg et al., Nuc. Acids Res., 2011).

• Jee Young An, a previous student in the Kwon lab, in collaboration with the University of Pennsylvania group found that UBR2, the ubiquitin E3 ligase of the N-end rule pathway, interacts with and stabilizes a stem cell-specific protein, TEX19. (Yang et al., PLOS One 5:e14017, 2010).
• Shashi Sriram in the Kwon lab established the molecular principles of substrate recognition in the N-end rule pathway. (Sriram et al., Nat. Struct. Mol. Biol. 17:1164-1165, 2010).

• Song Li’s lab has identified novel mechanisms by which FXR/FXR ligands exert antifibrotic and anti-portal hypertensive effect in hepatic stellate cells.

• Song Li’s lab has developed a new ligand that is effective in targeted delivery of lipidic vectors to various types of cancers that overexpress sigma 2 receptor.

• Song Li received NIH funding (01/01/11-12/31/12, DC: $275,000) “Polymeric System for Synergistic Targeting of AR Signaling in Prostate Cancer” (R21 CA155983).

• Song Li received DOD funding (09/15/10-10/14/11, DC: $75,000) “Targeted Codelivery of Synthetic microRNA and microRNA Expression Vector for Rapid and Sustained Inhibition of Breast Cancer” (BC096039).

• Wen Xie received a 2-year (01/01/11 – 12/31/12) $416,625 NIH R21 grant titled “The Regulation of Human Hydroxysteroid Sulftotransferase by Nuclear Receptor ROR.” The goal of this project is to study the regulation of human hydroxysteroid sulfotransferase by nuclear receptor ROR.

• Wen Xie was invited to serve as Session Chair for the Oral Presentation Session #5 “Herb & Drug Interaction,” 4th Asia-Pacific ISSX (APISSX) Meeting, Tainan, Taiwan, April 23-25, 2011.

• Wen Xie was invited to serve as a member of the Scientific Advisory Board, 17th North American ISSX Regional Meeting, Atlanta, GA. October 16-20, 2011.

• Wen Xie was invited to serve as an ad hoc member of the NIH special emphasis panel “Developmental Pharmacology.” July 2011.

• Wen Xie was invited to serve as an ad hoc member of the DOD Prostate Cancer Research Program. June 2011.

• Wen Xie was invited to serve as Ad hoc Reviewer, NIH/NIEHS Intramural Program, Laboratory for Reproductive and Developmental Toxicology (October 17-19, 2010).

• Wen Xie was invited to serve as Ad hoc Reviewer, NIH/NIEHS, Annual Superfund Basic Research Program (P42) Review Meeting (October 26-28, 2010).

Selected Publications


• Gao J, Xie W. PXR and CAR at the crossroad of drug metabolism and energy metabolism. Drug Metab Dispos. 2010; 38:2091-5.


Selected Invited Research Presentations


• NIEHS workshop on Dose-Response Approaches For Nuclear Receptor-Medicated Modes of Action. CAR-Current State of Knowledge and Role In Biology/Physiology. September 28, 2010. Xie W.
• Center for Molecular Toxicology and Carcinogenesis, Penn State University. The Endobiotic Functions of the Xenobiotic Receptors. October 13, 2010. Xie W.

• Endocrine Division Research Conference, Division of Endocrinology, Diabetes, and Metabolism, University of Pittsburgh. Orphan Nuclear Receptors in Metabolic Diseases. January 6, 2011. Xie W.

• Department of Physiology & Pharmacology and the Interdisciplinary Toxicology Program, University of Georgia. The Xeno- And Endobiotic Functions of Orphan Nuclear Receptors. March 28, 2011. Xie W.


• School of Pharmaceutical Sciences, Sun Yat-Sen University, Guangzhou, China. Nuclear Receptor-Mediated Crosstalk between Drug Metabolism and Energy Metabolism. April 27, 2011. Xie W.

• School of Medicine, Sun Yat-Sen University. Guangzhou, China. Nuclear Receptor-Mediated Gene Regulation and its Implications in Pathophysiology. April 26, 2011. Xie W.

• Beijing Proteome Research Center (BPRC). Beijing, China. Nuclear Hormone Receptors in Hepatobiliary Diseases. June 10, 2011. Xie W.


• School of Public Health, Peking University Health Science Center. Beijing, China. Nuclear Receptor-Mediated Crosstalk between Xenobiotic Metabolism and Lipid Metabolism. June 15, 2011. Xie W.

**Drug Discovery Institute**

**Faculty**
Billy Day, PhD, Professor
Alex Doemling, PhD, Professor
Barry Gold, PhD, Professor
Paul Johnston, PhD, Research Associate Professor
Xiangqun (Sean) Xie, PhD, Professor
The Drug Discovery Institute (DDI) is an interdepartmental institute with faculty, pre-doctoral and postdoctoral students from the Departments of Pharmaceutical Sciences, Chemistry, Pharmacology and Chemical Biology, and Computational and Systems Biology. The focus of the DDI is to identify small molecules that can be used as chemical probes for biological activities and as leads for new therapies for human diseases.

**Major Accomplishments**


- Established Computational Chemical Genomics Screening (CCGS) Center that promotes interdisciplinary research, education and training, and foster collaborations by providing state-of-the-art computational-chemical-genomics-based in-silico drug design approaches developed by School of Pharmacy faculty members.

- Awarded new NIH grant to conduct computational chemical genomics studies for STAT3 lead discovery and structurally-diverse library design.

- Conducted the first pre-clinical development studies of pharmacokinetics, drug metabolism, and proof of concept for lead chemicals discovered in the DDI. The first targets were potential cancer therapy; evaluation of two novel inhibitors of MDM-xx binding to P-53 in mice.

- Licensed Anchor Query, created by Alex Doemling (Pharmacy) and Carlos Comacho (Structural Biology), to a new startup company that will provide services to pharmaceutical companies in computational discovery of molecules to block protein-protein interactions.

- Completed the development, optimization and validation of a high throughput screening assay to identify small molecule inhibitors of the HIV Nef-dependent activation of Hck tyrosine kinase activity. Six Nef:Hck leads have been identified that reproducibly block Nef-dependent HIV-1 replication, dock to a site in the Nef dimerization interface model, and work against SIV in the same concentration range.

- Developed and validated a panel of biochemical assays to investigate the more likely intracellular target(s) of the Dex-induced GR-GFP translocation inhibitors.
Selected Publications


**Selected Invited Research Presentations**


• University of Calicut, Kerala, India. January 2011. *Doemling A.*

• UBCI Satellite Conference MTDDP. June 15, 2011. Doemling A.


• American Chemical Society. Boston, MA. The effect of site-specific modifications of DNA on thermodynamic stability, ion binding and hydration. August 22, 2010. Gold B.


**Microbicide Product Pharmaceutics Group and Microbicide Clinical Trials Network Central Laboratory Core**

The Pharmaceutics Group is involved with formulation development and design of drug delivery systems for microbicide products to prevent the spread of HIV and other sexually transmitted infections. This group also contributes to the development of in vitro models for formulation assessment to predict clinical outcome. The laboratory has experience with the development of microbicide products utilizing many dosage form platforms. Delivery systems are being designed for small molecule, protein and peptide, and genetically modified bacteria microbicide drug candidates.

**Faculty**
Lisa C. Rohan, PhD, Associate Professor

**Research Staff**
Marilyn R. Cost
Phillip W. Graebing
Lin Wang
Yuan Shi

**Graduate Students**
Ayman Akil, BS
Lindsay M. Ferguson, PharmD
Tiantian Gong, BS, MS
Sheila M. Grab
Minlu Hu, BS
Galit Regev
Tian Zhou, BS, MS

**Postdoctoral Fellows**
Hrushikesh Agashe, PhD
Wei Zhang, PhD
**Major Accomplishments**

- Developed a film product for vaginal delivery of the potent anti-HIV agent Dapivirine. Clinical evaluation with the product developed in the Pharmaceutics lab will be initiated next year.

- Developed a rectal specific microbicide product for HIV prevention containing the antiviral tenofovir which will be the first rectal specific microbicide to be evaluated in the clinic. The IND is currently being filed and clinical trial initiation is planned for the beginning of next year.

- Funding for the Pharmaceutics Group over the past year has been provided through 10 separate NIH grants and several grants from not for profit organizations, foundations, and individual donors. Newly funded projects within the past year include 3 NIH grants to support work toward a novel nanoparticle pyrimidinedione anti-HIV product, development of reverse transcriptase inhibitors as microbicides, and the development of thermostable vaginal probiotic microbicides.

- In collaboration with Kate Morrow at Brown University the group is evaluating the acceptability of the film dosage form as compared to vaginal films. This clinical trial has already begun and will be completed next year. A focus group study evaluating perceptions of women of the vaginal film dosage form relative to other vaginal dosage forms was completed in collaboration with Maria Fan. In this study the film dosage form was identified as an acceptable product form for women to administer HIV prevention products.

**Selected Publications**


Selected Invited Presentations
• CDC. Atlanta, GA. The development of rectal microbicides for HIV prevention. April 20, 2011. Rohan LC.


International Impact
The Pharmaceutics Group continues to have international impact. Major activities over the past year include hosting visitors from Peoples Republic of China whose visit was coordinated by Global Pittsburgh for project Public Health. The presentation to the group was entitled “MWRI Pharmaceutics Laboratory Activities toward HIV Prevention.” Additionally the lab continues to train international scientists in the field, the most recent trainee was Nicholas Obitte, PhD – Lecturer, Nsukka Department of Pharmaceutical Technology and Industrial Pharmacy, Faculty of Pharmaceutical Sciences, University of Nigeria, Enugu State Nigeria, Africa.

Center for Education and Drug Abuse Research
The year 2011 marked the 21st anniversary of the Center for Education and Drug Abuse Research (CEDAR). The Center has enrolled 775 families from the Pittsburgh metropolitan area in a longitudinal study of substance abuse. These families are in varying stages of follow-up.

Faculty
Ralph E. Tarter, PhD, Professor and Center Director
Galina P. Kirillova, PhD, Research Assistant Professor
Levent Kirisci, PhD, Professor
Maureen D. Reynolds, PhD, Research Assistant Professor
Ty A. Ridenour, PhD, Research Associate Professor
Michael Vanyukov, PhD, Professor

Graduate Student
ZuWei Zhai, BA

Postdoctoral Fellow
Michelle Horner, DO
Major Accomplishments

• **Maureen Reynolds** was awarded a subcontract with the University of Michigan funded by NIDA.

• **Levent Kirisci** received an SBIR contract funded by NIDA.

Selected Publications


Selected Invited Presentations

• 4th Geneva Conference on Person-Centered Medicine, Geneva, Switzerland. Person Centered Care for People Abusing Substances. **Kirisci L**, Ridenour TA, Bogen D, Tarter RE.

Center for Clinical Pharmaceutical Sciences

**Faculty**

Samuel M. Poloyac, PharmD, PhD, Associate Professor and Center Director
Kerry M. Empey, PharmD, PhD, Assistant Professor
Philip E. Empey, PharmD, PhD, Assistant Professor
Mary M. Folan, PhD, Assistant Professor
Margaret Beth Minnigh, PhD, Assistant Professor
Thomas D. Nolin, PharmD, PhD, Assistant Professor
Lisa C. Rohan, PhD, Associate Professor
Ryan K. Shields, PharmD, Instructor, School of Medicine
Susan J. Skledar, MPH, Associate Professor
Raman Venkataramanan, PhD, Professor
Graduate Students
Osama Y. Alshogran, BS, MS  Jeremiah D. Momper, PharmD
Kacey B. Anderson, BS  Robert A. Parise, BS
Jennifer J. Bonner, BA, PharmD  Diana N. Pinchevsky, PharmD
Mark K. Donnelly, BS  Sadik Basha Jafar Shaik, MPharm
Lindsay M. Ferguson, PharmD  Mohammad S. Shawaqfeh, MS, PharmD
Nisanne S. Ghonem, PharmD  Jiangquan (Jocelyn) Zhou, MA
Tiantian Gong, BS, MS

Major Accomplishments
- Center members have given a total of 33 presentations and have published 55 peer reviewed papers over the past year.

- Lisa Rohan has served as a reviewer over the past year for the NIH-NIDA Avant Garde Award for HIV/AIDS Research (ZDA1 NXR-B16) and the Bill & Melinda Gates Foundation – Global Health Proposal. She was also appointed to the Editorial Board for AIDS Research and Therapy Journal and assisted with the Organization of the International Microbicides 2010 meeting held in Pittsburgh, PA May 22-25, 2010.

- Ryan Shields was awarded an NIH KL2 Career Development Award from the Clinical Research Scholars Program in the Clinical and Translational Science Institute. This makes Ryan the third recipient of the KL2 Career Development Award along with current Scholars Kerry Empey and Philip Empey.

- Philip Empey helped lead an initiative with ACCP to develop a guide for health professionals on “Educating Patients About Pharmacogenomics and Genetic Testing” that provides health professionals with guidance on how to educate their patients about this emerging subject matter and its role in pharmacotherapeutic decision-making.

- Margaret Beth Minnigh and Samuel Poloyac have established the Small Molecule Biomarker Core Analytical Facility. This facility has provided analytical assessment necessary for the funded research 9 investigators and established 6 new assays in support of translational research. The core has also provided letters of support and consultation to 7 additional investigators of which 4 have currently pending R21 or R01 grant submissions.

Selected Publications


**Selected Invited Presentations**

• CDC. Atlanta, GA. The development of rectal microbicides for HIV prevention. April 20, 2011. **Rohan LC**.


• ACRT/SCTS Joint Annual Meeting in Washington, DC. Effect of mild therapeutic hypothermia on fentanyl and midazolam clearance in a rat model of cardiac arrest. **Empey PE**, Miller TM, Melick JA, Kochanek PM, **Poloyac SM**.


• International Pediatric Intestinal Transplant Conference. Chicago, IL. Medication Use in Pediatric Intestinal Transplant patients. September 2010. **Venkataramanan R**.
Gibbs Laboratory

Faculty
Robert B. Gibbs, PhD, Professor

Graduate Student
Rebecca L. Hammond, BS

Major Accomplishments

- Demonstrated that glanathamine, a cholinesterase inhibitor used to treat Alzheimer’s-related dementia, can enhance beneficial effects of estrogen replacement on cognitive performance in aged rats similar to the effect of donepezil.

- Provided evidence that the ability to enhance the effects of estrogen replacement by using a cholinesterase inhibitor is dependent on the degree of cholinergic cell loss, such as loss associated with aging and Alzheimer’s disease.

- Generated new data showing that orexin-containing cells in the hypothalamus express the novel estrogen receptor GPR30. Is consistent with hypothesis that one mechanism by which estrogen replacement may enhance cognitive performance is via activation of orexin-containing cells, which in turn should enhance alertness and attention.

Selected Publications


Advancing the Health of the Public Through Partnerships
Advancing the Health of the Public Through Partnerships

The School of Pharmacy is committed to improving health by developing and standardizing models of patient-focused practice, working in conjunction with our primary partner, UPMC, and other partners. This component of the School’s mission is primarily driven by members of the Department of Pharmacy and Therapeutics. Our faculty members serve a broad spectrum of patients including ambulatory clinics, physician practices, underserved care settings, pharmacist run diabetes services, inpatient medicine, critical care units, and transplant services. We are committed to advancing optimal patient care by leading medication therapy.

By 2012, the School of Pharmacy will have:

• Become a leader in standardizing the elements of practice so that pharmacists enhance the care of patients in the community, in institutions, and during transitions of care.

Patient Care by the Numbers for FY11

In FY11, School of Pharmacy faculty members:

• Provided care to more than 7,000 underserved and underinsured patients through the Grace Lamsam Pharmacy Program for the Underserved.

• Gave 85 invited presentations on patient care or professional training.

• Published 30 peer-reviewed papers on patient care.

• Graduated the first Geriatrics Pharmacy Fellow in the country.

• Competed and received 1 of 20 PGY1 Expansion Grants from the American Society of Health-System Pharmacists (ASHP) Research and Education Foundation to establish a new pharmacy practice residency position at WPIC (WPIC Pharmacy Department and UPMC Presbyterian Shadyside).

• Developed 1 new PGY2 residency program in underserved care in a partnership with UPMC Matilda Theiss Health Center, a federally qualified health center.

• Continued to lead the expansion of facilities using more than 5,000 intravenous intelligent infusion (“smart”) pump devices across 19 UPMC facilities, preventing > 400 potential intravenous infusion-related adverse events per month.

• Developed 2 patient educational videos, viewed on iPad technology, that are being used to teach inpatients. Licensed 1 video, the warfarin video, to the UPMC SmartRoom, which will enable it to be viewed by hospitalized patients “on-demand” on the television screen in their room.

• Led the program that administered > 3,000 seasonal influenza vaccines during influenza season.
• Developed 62 protocols and e-record sets to improve medication outcomes for UPMC patients.

• Won 6 awards in the UPMC Quality Fair.

• Mentored 2 Clinical Pharmaceutical Sciences Associate graduate students on Fellowship Award projects from the Jewish Healthcare Foundation.

• Educated more than 1,600 high-risk hospitalized patients including more than 700 patients newly started on warfarin and 150 patients newly started on insulin.

PROGRAMS FOR COMMUNITY-DWELLING PATIENTS

Faculty
Sharon E. Connor, PharmD, Assistant Professor
Scott R. Drab, PharmD, Assistant Professor
Deanne L. Hall, PharmD, Assistant Professor
Lauren J. Jonkman, PharmD, Instructor
Melissa S. McGivney, PharmD, Associate Professor
Stephanie H. McGrath, PharmD, Assistant Professor
Karen S. Pater, PharmD, Associate Professor
Janice L. Pringle, PhD, Research Associate Professor

Residents
Anthony M. DiCriscio, PharmD, PGY1 Community Practice Resident
Yardlee S. Kauffman, PharmD, PGY1 Community Practice Resident
Ted J. Turner, PharmD, PGY1 Community Practice Resident

Major Accomplishments
In FY11, School of Pharmacy faculty members:
• Won 2 awards for work in the underserved:
  • HRSA Patient Safety and Clinical Pharmacy Services Collaborative Health Outcome Management Award: Jonkman LJ.
  • Clinical Pharmacy Services Improvement Award (for work in improving diabetes care at the Birmingham Free Clinic): Jonkman LJ.

• Worked on active grants totaling $1,182,152 and published 5 manuscripts in peer-reviewed journals.

• Developed a partnership with UPMC Matilda Theiss Health Center (a Federally Qualified Health Center), and developed a new PGY2 residency program in underserved care. Jonkman LJ.

• Initiated standardized patient baseline and follow-up evaluation of incoming residents’ patient care skills (18 residents participated). Pater KS, McGivney MS.

• Worked on the Pennsylvania Project, a statewide initiative for pharmacist training in medication therapy management services:
  • Completed Phase II of the Project.
  • Trained more than 190 pharmacists trained via one-day live training sessions.
• Neared completion of Phase 3, the delivery of the statewide curriculum, which will be made available August, 2011. McGivney MS, Hall DL, Meyer SM.

• Served as invited panelist for two national 2010–2011 committees:
  • APhA/AACP Medication Therapy Management (MTM) Curricular Project Expert Advisory Panel. McGivney MS.
  • APhA/ASHP Ambulatory Care Preparatory Review Course Content Development Team and Content Matter Expert. McGivney MS.

• Tailored the delivery of a diabetes education program for pharmacists in the state of Bahia, Brazil.
  • The intended goal of the project is to engage as many practicing pharmacists possible in the use of an existing, online diabetes education program, DM Educate®. The qualitative study is specifically aimed at determining key characteristics of pharmacists, namely their learning styles, desired communication profiles and their access to technology in order to tailor the delivery of DM Educate® so as to further enhance pharmacists’ ability to obtain continuing health education that underscores the most cutting edge treatment and management of diabetes mellitus. Copozzolo N, Smith RB, Drab SR.

• Created a student rotation in Brazil. Drab SR.

• Established a new clinical pharmacist position within the Cardiovascular Institute at University Center. In FY11, more than 270 anticoagulation patients with more than 4,000 INRs were managed. Hall DL.

• Established a Smoking Cessation Collaborative Practice that will begin in July 2011 within the Cardiovascular Institute. Hall DL.

• Anticoagulation Service. Managing 1,235 chronic patients in 2011 resulting in 22,779 INRs managed with a 71% in-range percentage. Hall DL.

• Administered 3,089 influenza vaccinations to University faculty/staff (1,168), students (670; majority were medical students), UPMC employees (556), non-employees (195) from September 2010 through January 2011 as part of the Falk Pharmacy Based Immunization Program. Pharmacy students in the P4, P3 and P2 years participated within the scheduled clinics accounting for 160 experiential learning hours in the P2 year and 67 within the P3 year. Hall DL.

Selected Community Practice Publications


• **McGrath SH**. Getting started with medication therapy management services. *Drug Store News.* 2010; (5)29-33.


• **Hall DL**, Pater KS. Implementation of a Medication Therapy Management in a Hospital-Based Outpatient Pharmacy. *Hospital Pharmacy.* 2011; 46(7):512–18.


• Johnjulio J, **Pringle JL**. Developing and Evaluating SMaRT: SBIRT Medical and Residency Training in Medical Residency. *Substance Abuse.* 2010; 31(3).

**Selected Presentations**

**Invited Presentations**


• Students for Sensible Drug Policy Meeting. Baltimore, MD. Recent Evidence of SBIRT’s Effectiveness. August 2010. **Pringle JL.**

• Merck & Co., Inc. Center Valley, PA. Reflections on Our SBIRT Experience. Presentation at Continuing Medical Education. September 2010. **Pringle JL.**

• Grand Rounds Morehouse School of Medicine. Atlanta, GA. Screening, Brief, Intervention, and Referral to Treatment Methods. September 2010. **Pringle JL.**
• Kerr Drugs, Inc. Raleigh, NC. Study of Medication Adherence and Its Relationship to Therapeutic Alliance. September 2010. Pringle JL.

• Association for Medical Education and Research in Substance Abuse (AMERSA), 34th Annual National Conference. Bethesda, MD. Teaching and Assessing Clinical Skill in Screening, Brief Intervention, and Referral to Treatment (SBIRT). November 2010. Pringle JL.


• Substance Abuse and Mental Health Services Administration. Washington, DC. Screening and Brief Intervention (SBI) for Medication Adherence: Background and the PA Collaborative Project. June 2011. Pringle JL.


• Out Intervention Pharmacy Quality Alliance. Pittsburgh, PA. November 2010. Pringle JL.

• Substance Abuse and Mental Health Services Administration Site Visit. Pittsburgh, PA. SMaRT Medical Residency Training. February 2011. Pringle JL.

**Continuing Education Presentations**

- AACP’s Enhancing Diabetes Care through an Interprofessional Approach to Performance Improvement Regional Meeting, University of Pittsburgh School of Pharmacy. Case Study–A Local Organization in Action. July 2010. Jonkman LJ.


• APhA Annual Meeting. Seattle, WA. Community Pharmacy Fellowship Experience. March 2011. Snyder MS, McGivney MS.


• Peninsula Pharmacists Association. Williamsburg, VA. Role of Insulin Analogs in Type 2 Diabetes. September 19, 2010. Drab SR.


• Washington County Pharmacists Association. Hagerstown, MD. New Treatment Options for Type 2 Diabetes: Incretin-Based Therapy. October 6, 2010. Drab SR.


Motivating Our Patients to Monitor Blood Glucose Update 2010: Issues to Discuss During a Two-Minute Consult. Drab SR.
- Durham/Orange County Pharmaceutical Association; Durham, NC, January 27, 2011.
- The 2011 American Pharmacists Association Annual Meeting; Seattle, WA, March 26, 2011.
- Washington State Pharmacist’s Association; Coeur d’Alene, ID, June 4, 2011.
- North Dakota Pharmacist’s Association; Grand Fork, ND, June 11, 2011.


Pennsylvania Project MTM Training. Hall DL. 275 Pennsylvania Pharmacists to date completed online training. 183 Participated in the Live MTM Training dates:
- 8/10/11: Erie/LECOM; 14 participants; Trainers: Stephanie Harriman, Deanne Hall; Randy Heemer (LECOM), Abby Kahala (LECOM)
- 9/30/11: Mars (PPA): 22 participants; Trainers: Melissa McGivney, Pam Kroener (DU), Justin Scholl (Rite Aid at the time)
- 11/16/11: Lehigh Medical Center; 25 participants; Trainers: Melissa McGivney; Adam Welch (Wilkes), Gladys Garcia (Jefferson)
- 2/3/11: Camp Hill (PPA); 24 participants; Trainers: Deanne Hall; Ted Turner
- 5/16/11: Conemaugh Medical Center, Johnstown; 23 participants; Trainers: Melissa McGivney; Rob Maher (DU) and Justin Scholl (LECOM)

Posters
- American College of Clinical Pharmacy Annual Meeting. Austin, TX. Comparison of health spending resources and therapeutic outcomes of a pharmacist-managed anticoagulation service


Community Practice Grants Awarded
- To Drab SR:
  • Diabetic Monitoring and Education Grant. $686.00, LifeScan Inc, a Johnson & Johnson Company, Milpitas, CA, 2010.
  • Diabetic Monitoring and Education Grant. $472.00, Roche Diagnostics, Indianapolis, IN, 2010.
  • Diabetic Monitoring and Education Grant. $350.00, Abbott Diabetes Care, Alameda, CA, 2010.
  • Diabetic Monitoring and Education Grant. $625.00, Bayer Corp, Pittsburgh, PA, 2010.
  • Diabetic Monitoring and Education Grant. $380.00, Novo Nordisk, Pittsburgh, PA, 2010.

Hospital-Based Programs

UPMC Pharmacy Transplant Group

Faculty
Michael A. Shullo, PharmD, Assistant Professor
Heather J. Johnson, PharmD, Assistant Professor
Kristine S. Schonder, PharmD, Assistant Professor
Raman Venkataramanan, PhD, Professor

Graduate Students
Yahia S. Alghazwani, PharmBs
Jennifer J. Bonner, BA, PharmD
Nisanne S. Ghonem, PharmD, PhD
Kelong Han, MS
Jeremiah D. Momper, PharmD
Mohammed S. Shawaqfeh, PharmD, MS

Resident
David Johnson, PharmD, PGY2 Transplant Resident
Major Accomplishments
In FY11, School of Pharmacy faculty members:

- Served as co-chair of the National Quality Forum End-Stage Renal Disease Steering Committee. The committee evaluates measures for public reporting and quality improvement addressing quality of care for patients with end-stage renal disease (ESRD). Measures recommended for endorsement by the Steering Committee are used by national organizations, such as the Centers for Medicare and Medicaid Services (CMS) and the Centers for Disease Control (CDC). Schonder KS.

- Served as a session co-chair for Complications Associated With Drugs And Antibodies Following Heart Transplantation at the 31st Annual Meeting and Scientific Sessions of the International Society of Heart and Lung Transplant. Shullo MA.

Selected Publications


**Selected Presentations**

**Posters**


**UPMC Pharmacy Critical Care Group**

**Faculty**
Amy L. Seybert, PharmD, Associate Professor
Sandy L. Kane-Gill, PharmD, MSc, Associate Professor
Neal J. Benedict, PharmD, Assistant Professor
Bonnie A. Falcione, PharmD, Assistant Professor
Pamela L. Smithburger, PharmD, Assistant Professor
Philip E. Empey, PharmD, PhD, Assistant Professor
Samuel M. Poloyac, PharmD, PhD, Associate Professor

**Residents**
Michael J. Armahizer, PharmD, PGY2 Critical Care Resident
Sandeep Devabhakthuni, PharmD, PGY2 Cardiology Resident

**Major Accomplishments**

- Committee chair of sedation guideline and interruption protocol development for Medical Intensive Care Unit Mobility Project. Smithburger PL.

- 2010 Alcohol Withdrawal Guidelines co-author; Guidelines for the management of alcohol withdrawal for nursing and medical staff of the Surgical/Trauma ICU for use in patient care. Benedict NJ.


- Served as invited reviewer for the AHRQ Special Emphasis Panel/Scientific Review Group-Advancing Patient Safety with Simulation Research. Kane-Gill SL.
• Served as appointed vice chair of the Paragon Quality Improvement Committee of the Society of Critical Care Medicine. **Kane-Gill SL.**

• Improved patient safety by developing the Continuous Infusion Information Sheet for bedside nurses regarding standard drip rates, concentrations, adverse reactions, and onset and duration of action of the commonly utilized medications in the Medical Intensive Care Unit. **Smithburger PL.**

• Worked with a multidisciplinary team from the Critical Care Service Committee to implement an electronic standardized sedation assessment scale to assure compliance with hospital regulatory accreditation standards. **Falcione BA.**

• Co-directed the ACCP initiative to develop a guide for health professionals on “Educating Patients About Pharmacogenomics and Genetic Testing” that provides health professionals with guidance on how to educate their patients about this emerging subject matter and its role in pharmacotherapeutic decision-making. **Empey PE.**

**Selected Critical Care Publications**


• Crago EA, Thampatty BP, Sherwood PR, Kuo CWJ, Bender C, Balzer J, Horowitz M, **Poloyac SM.** Cerebrospinal Fluid 20-HETE is Associated with Delayed Cerebral Ischemia and Poor Outcomes after Aneurysmal Subarachnoid Hemorrhage. *Stroke*. 2011; 42(7):1872-7.

• Zhou J, **Poloyac SM.** The Effect of Therapeutic Hypothermia on Drug Metabolism and Response: Cellular Mechanisms to Organ Function. *Expert Opin Drug Metab Toxicol*. April 8, 2011 [Epub ahead of print].


Selected Critical Care Presentations

Posters


• American College of Clinical Pharmacy Annual Meeting. Austin, TX. Comparing clinician opinion and proprietary database severity ratings for drug-drug interactions in the ICU. October 2010. Smithburger PL, Kane-Gill SL, Benedict NJ, Falcione BA, Seybert AL.


• 40th Society of Critical Care Medicine Congress, San Diego, CA. Prevention without Perfection: CPOE and Clinical Decision Support Knowing the Limits. Kane-Gill SL.


Presentations
Invited Presentations
• PSHP 42nd Annual Conference. Pittsburgh, PA. Dabigatran and Extended-Duration Low Molecular Weight Heparins. November 2010. Benedict NJ.


• University of Minnesota College of Pharmacy End of the Year Awards Ceremony. Minneapolis, MN. Pharmacy’s Role in Advancing Clinical and Translational Research: Examples in Critical Care Illness. April 2011. Poloyac SM.


• Invited presentation at the University of Kentucky College of Pharmacy in Lexington, KY. The impact of therapeutic hypothermia on drug disposition following critical injury. March 2011. Empey PE.
Other

- University of Pittsburgh Multidisciplinary Clinical Research Scholar Program. The impact of therapeutic hypothermia on drug disposition following critical injury. April 2011. Empey PE.

- UPMC Pathology Department. Pittsburgh, PA. Pharmacogenomics. January 2011. Empey PE.

- Mobile Computing in Healthcare Conference. Pittsburgh, PA. Tools, not toys—How to use the iPad to enhance your productivity in an academic setting. October 2010. Empey PE.


Awards and Honors

- Grant Total: $250,000. "Using Medical Records Repositories to Improve the Alert System Design," National Library of Medicine, National Institute of Health R01 Grant Award, 2009, Co-investigator. Seybert AL.

- 2011 American Society of Health System Pharmacists Fellow. Seybert AL.

- BCPS certification from the Board of Pharmacy Specialties. Smithburger PL.

- Preceptor of the Year for the PharmD program. Smithburger PL.

- SCCM CPP Patient Safety Committee chair-elect. Smithburger PL.

UPMC Pharmacy General Inpatient (Internal Medicine and Medication Education Program) Group

School of Pharmacy faculty members provide care to patients on the general units at UPMC Presbyterian in a variety of ways. They precept students and residents on internal medicine units, where they manage patients’ medication therapy as members of the patient care team. They lead the hospital-wide Medication Education Program that involves a team of pharmacists and pharmacy students who provide medication education for hospitalized patients with complex medication regimens and those who are newly started on anticoagulants and insulin. They contribute to system-wide interdisciplinary teams with the goal of optimizing the inpatient management of patients, such as those with diabetes or at risk for hyperglycemia.

Faculty
Amy Calabrese Donihi, PharmD, Associate Professor
Rima A. Mohammad, PharmD, Assistant Professor
Kim C. Coley, PharmD, Professor

Resident
Jenny J. Kim, PharmD, PGY2 Internal Medicine Resident
Major Accomplishments
In FY11, School of Pharmacy faculty members:

- Developed and implemented a pharmacist-led transitions of care program at UPMC Presbyterian hospital through a grant funded by the Jewish Healthcare Foundation. **Coley KC, Mohammad RA, Donihi AC, Kim J.**

- Recruited for and successfully initiated a new pharmacy residency program in internal medicine with a focus on transitions of care. **Coley KC.**

- Was appointed to the Pennsylvania Pharmacists Association Transitions of Care Task Force. **Coley KC.**

- Received a grant funded by Takeda Pharmaceuticals for the study entitled, “Evaluation of Comorbidities, Prescribing Patterns, and Resource Use in Patients Presenting with Gout in a Large, Healthcare System.” $85,625. **Coley KC.**

- Developed and implemented a protocol for the perioperative management of patients using CSII (insulin pumps) and a clinical pathway for patients admitted with diabetes or hyperglycemia. **Donihi AC.**

- Led efforts to create a process for pharmacist documentation in patients’ permanent electronic medical record. **Donihi AC.**

- Educated more than 1,600 high-risk hospitalized patients including more than 700 patients newly started on warfarin and 150 patients newly started on insulin. **Donihi AC, Colega C.**

- Developed patient educational videos that can be used to teach patients in the hospital. These videos are shown to patients on an iPad. The warfarin video was also licensed to SmartRoom which will enable it to be viewed by hospitalized patients “on-demand” on the television screen in their room. **Donihi AC, pharmacy students.**

Selected Publications


• Mohammad RA. Use of granulocyte colony-stimulating factor in critically ill patients with severe sepsis and septic shock. AJHP. 2010; 67:1238-45

Selected Presentations
Posters
• American College of Clinical Pharmacy. Austin, TX. Risk of hypoglycemia in hospitalized patients prescribed a sulfonylurea. October 2010. Hedrick CM, Donihi AC, Coley KC.


Invited Presentation
• American College of Clinical Pharmacy. Austin, TX. Review of the management of hepatic encephalopathy. October 2010. Mohammad RA.

UPMC Infectious Diseases and Antibiotic Management Program (AMP)

Faculty
Brian A. Potoski, PharmD, Assistant Professor and Associate Director AMP
Gregory A. Eschenauer, PharmD, AMP Pharmacist
Ryan K. Shields, PharmD, Instructor, School of Medicine, and AMP Pharmacist

Resident
Anthony M. Casapao, PharmD, PGY2 Infectious Diseases Resident

Selected Publications


Selected Presentations

Poster


Drug Use and Disease State Management (DUDSM) Program

School of Pharmacy faculty members lead the DUDSM program to develop evidence-based guidelines to promote safe and cost-effective use of medications for patients at UPMC. Faculty and hospital-based pharmacists in DUDSM are critical in designing and implementing strategies to incorporate guidelines into daily practice. Pharmacists at UPMC, including the clinical faculty, unit-based clinical pharmacists, operations-based pharmacists, and PGY1 and PGY2 UPMC residents, use these guidelines in the care of patients at all UPMC hospitals.

Faculty

Susan J. Skledar, RPh, MPH, Associate Professor and Director
Colleen M. Culley, PharmD, Associate Professor
Shelby L. Corman, PharmD, MS, Assistant Professor
Tara L. Pummer, PharmD, Assistant Professor

Graduate Students

Jeremiah D. Momper, PharmD
Nisanne S. Ghonem, PharmD
Mohammad S. Shawaqfeh, PharmD
Lindsay M. Ferguson, PharmD
Dana M. Roman, PharmD

Major Accomplishments

In FY11, DUDSM:

- Received the PSHP Innovative and Collaborative Practice Award of the Pennsylvania Society of Health System Pharmacists for “The impact of centralized distribution of barcode readable medications and daily review of scanning failures on scanning compliance in the health-system pharmacy setting.” Mulvanity M, Wasicek KA, Culley CM, Skledar SJ, Mark SM.


- Faculty member was the focus of an American Society of Health-System Pharmacists Career Profile. Skledar SJ.

- Designed and implemented 39 guidelines and 23 electronic health record protocols for use of medications in the hospital setting. Skledar SJ, Corman SL, Culley CM, Pummer TL, other faculty.
Highlights of translating evidence into protocols include:

• Developed multidisciplinary guidelines for the diagnosis and management of pulmonary hypertension, to be implemented at inpatient and outpatient sites across UPMC in collaboration with physicians, nurses, pharmacists, and members of the UPMC Health Plan. **Corman SL, Skledar SJ, Culley CM.**

• Developed a process for evaluating the efficacy and safety of dietary supplements and complementary and alternative medicines for the formulary, including the test case of citicoline for acute ischemic stroke. **Corman SL, Skledar SJ.**

• Developed a process for procurement, safe administration, and compliance with FDA-mandated Risk Evaluation and Mitigation Strategies (REMS) for alglucosidase alfa (Lumizyme®) for lysosomal storage disorders in collaboration with physicians, pharmacists, nurses, and insurers. **Skledar SJ, Gross PR, Guttendorf S.**

• Designed UPMC health system process for ensuring medication safety with FDA REMS medications (ex. erythropoiesis-stimulating agents). **Skledar SJ.**

• Led the successful expansion of intravenous intelligent infusion (“smart”) pump devices and safety technology to 10 UPMC Cancer Center sites. Safety functionality of pumps now spans more than 5,000 pumps across 19 UPMC facilities.

• More than 400 potential adverse events are alerted per month via the pump safety alerts, alarms, and advisories. **Skledar SJ, Niccolai CS.**

• Averaged 99% compliance with Surgical Care Improvement Project (SCIP) national core quality measure for the postoperative duration of antibiotics for UPMC Presbyterian inpatients through daily surveillance and intervention (top national compliance tier is 100%). **Culley CM, Carroll BA, Skledar SJ.**

• Continued HealthSystem (HS) leadership for TheraDoc® ADE Surveillance Tool for UPMC. **Culley CM.** (UPMC Pharmacy Supertrainer)

  • Implemented Anticoagulation Assistant module across HS hospitals.

  • Created 19 custom alerts in categories such as antibiotic stewardship, new medications, safety triggers (ex. Ketamine), and REMS program for erythropoiesis-stimulating agents.

  • Leading workgroup of TheraDoc®, Framework®, Rx Partners and UPMC representatives to improve and repair data from skilled nursing facilities (SNF) that cross to TheraDoc® that will be used in patient care and ongoing surveillance research in UPMC-owned SNFs.

**Selected Publications**


**Selected Presentations:**

**Posters**


Invited Presentations

Other Presentations
• Bristol Myers Squibb Information Technology Site Visit. Pittsburgh, PA. Promoting Safe and Effective Use of Medications, Sponsored by the University of Pittsburgh Medical Center. April 27, 2011. Skledar SJ.


Geriatrics (Benedum and Shadyside Senior Care Institute) Program

The mission of care is the:
• identification and resolution of drug-related problems in the population that is highly susceptible to adverse drug outcomes
• enhanced adherence of medication regimens through education of patients and family members
• improved drug prescribing by physicians through pharmacy faculty advice and intervention

Faculty
Christine M. Ruby-Scelsi, PharmD, Assistant Professor
Joseph T. Hanlon, PharmD, MS, Professor (secondary pharmacy appointment)

Pharmacy Fellows
Zachary A. Marcum, PharmD, Pharmacy Geriatrics Fellow
Emily P. Peron, PharmD, Pharmacy Geriatrics Fellow
Major Accomplishments

- Expanded pharmacist-provided patient care from Benedum to Shadyside Senior Care. Ruby CM.
- Created one of two existing pharmacy geriatrics fellowships in the country, with first graduate in June 2011. Ruby CM, Hanlon JT.

Selected Publications


Selected Presentations and Reviews

Posters


Other Presentations


Invited Review

UPMC – Western Psychiatric Institute and Clinic

Faculty
Tanya J. Fabian, PharmD, PhD, Assistant Professor

Graduate Student
Diana N. Pinchevsky, PharmD

Major Accomplishments
During FY11:
- WPIC partnered with the University of Pittsburgh School of Pharmacy to establish Forbes Pharmacy as the primary practice site for a PGY1 Community Practice Resident. Fabian TJ.
- WPIC Pharmacy Department in partnership with UPMC Presbyterian Shadyside competed for and was awarded one of twenty PGY1 Expansion Grants from the American Society of Health-System Pharmacists (ASHP) Research and Education Foundation. Fabian TJ.
- The WPIC Transitional Care team continued to expand the role of pharmacists in transitional care in FY11. During this fiscal year, the team has facilitated discharge planning and addressed issues related to medication access, adherence and reconciliation for 457 patients. Fabian TJ.
- Four transition of care pharmacists:
  - Made 2,540 medication-related interventions including 704 medication insurance verification and 446 interventions related to medication reconciliation.
  - Provided a total of 2,067 thirty-day supply prescriptions to 322 patients who have been discharged from WPIC.
  - To date, pharmacists have been directly involved in the discharge planning process for more than 1,500 patients at WPIC. Through this collaborative, multidisciplinary approach we aim to increase medication adherence and attendance of first outpatient appointment and reduce hospital readmissions due to medication-related events.
  - Garnered support to expand the program with an additional FTE, based on the sustained success and increased demand for this patient-centered program.

Select Presentations
Posters


Other Presentations
- Western Psychiatric Institute and Clinic Medical Staff Meeting. Pittsburgh, PA. Evidence Based Psychiatry: Practice What We Teach. November 30, 2010. Fabian TJ.


• UPMC Passavant Hospital. Pittsburgh, PA. Psychopharmacology Update Conference. May 18, 2011. Fabian TJ.


OTHER PROGRAMS

Pittsburgh Poison and Drug Information Center (PPDIC)

Faculty
Edward P. Krenzelok, PharmD, Professor
Tara L. Pummer, PharmD, Assistant Professor

Major Accomplishments
In FY11, the Poison Center faculty and staff:

• Managed 116,790 poison exposure and poison information calls.

• Completed a senior citizen outreach program by working with community senior citizen agencies. 86,885 pieces of poison prevention and poison center awareness materials were distributed free of charge.

• Held PPC exhibits at 43 local and regional health fairs and county fairs.

• Responded to more than 2,500 requests for poison prevention materials and provided in excess of 750,000 sheets of Mr. Yuk stickers, brochures, and other materials to the residents of the PPC 44 county service region.

• Partnered with Giant Eagle pharmacies to distribute Mr. Yuk poison prevention and poison center awareness materials at 177 stores.

• Mailed 3,000 letters to callers and requested that they contact their Pennsylvania legislator to voice support for poison center funding which was eliminated by Governor Corbett.

• Were successful in having state funding increased from zero to $350,000 for FY12.

In FY11, the Drug Information faculty and staff:

• Responded to 834 calls with nearly 90% resulting in a patient care intervention the majority of which included management or prevention of an adverse event/medication error, the prevention of therapy interruption, and avoidance of inappropriate therapy.
• Produced 6 newsletters containing important practice information including new medication approvals, adverse drug event alerts, and a selected drug information question response developed to help practitioners stay abreast of recent medication information developments. These newsletters were distributed to all health care practitioners throughout the UPMC Health System.

• Provided experiential experiences for 108 P1 students, 7 P4 students, and 9 pharmacy residents.

• Produced 5 evidence-based medication reviews through the P&T Committee/DUDSM Program formulary development process.

Publications (Refereed)


• Pummer TL, Krenzelok EP. Authors’ response to letter “Intravenous and enteral N-acetylcysteine can be both cost-effective” by Tomaszewski, Cantrell, and Clark. *Clin Toxicol.* 2010; 48:399-400.


Invited Presentations


• European Association of Poisons Centres and Clinical Toxicologists XXXI International Congress. Dubrovnik, Croatia. Experience with the Use of PC Data for Public Health Purposes with a Focus on Non-Pharmaceuticals. May 24-27, 2011. Krenzelok EP.


• North American Congress of Clinical Toxicology. Denver, CO. Friends and Foes in the Plant World. October 7-12, 2010. Krenzelok EP.

• North American Congress of Clinical Toxicology Meeting. Denver, CO. The impact of federal pseudoephedrine regulations on methamphetamine exposures. October 10, 2010. Pummer TL.

Poster Presentations
• North American Congress of Clinical Toxicology Meeting. Denver, CO. The impact of pseudoephedrine regulations on methamphetamine exposures. October 9, 2010. Pummer TL, Krenzelok EP.


Publications (Non-Refereed)


The Grace Lamsam Pharmacy Program for the Underserved

Under the leadership of Director Sharon Connor, PharmD, and faculty member Lauren Jonkman, PharmD, the Grace Lamsam Pharmacy Program for the Underserved provides pharmaceutical care at community health centers, free primary care clinics, and at shelters and “drop-in” centers in Pittsburgh. The program depends on volunteer pharmacists and students from the Pittsburgh area. The Program serves primarily homeless and low-income patients. Pharmacists work in an interdisciplinary model of
care with a team that includes physicians, nurses, and other health professionals. The Grace Lamsam Pharmacy Program partners with Health Care for the Homeless (HCH), North Side Christian Health Center, and UPMC Matilda Theiss and collaborates with the Program for Health Care to Underserved Populations (PHCUP). The Grace Lamsam Pharmacy Program works to enhance access to cost-effective medicines for patients served by our collaborator groups. The program contributes expertise to reduce cost and assure safe and effective drug therapy.

Faculty
Sharon E. Connor, PharmD, Assistant Professor
Lauren J. Jonkman, PharmD, Instructor

Major Accomplishments
In FY11, the Grace Lamsam Pharmacy Program for the Underserved:

• Was selected to host a regional HRSA Collaborative (Patient Safety and Clinical Pharmacy Services) meeting in Pittsburgh.

• Was selected to present its work in the HRSA Collaborative at the Regional Meeting: Enhancing Diabetes Care through an Interprofessional Approach to Performance Improvement in Pittsburgh, Pa., in July 2010 and in Chicago, Ill., in September 2010.

• Received $50,000 from The Rite Aid Foundation to manage patients with diabetes and hypertension at the Birmingham Free Clinic and North Side Christian Health Center in December 2010.

• Received three HRSA Patient Safety and Clinical Pharmacy Services 2.0 Awards in October 2010:
  • Clinical Pharmacy Services Improvement Award and Health Outcome Management Award in collaboration with the Birmingham Free Clinic.
  • Outstanding Performance Award in collaboration with North Side Christian Health Center.

Publications


Presentations

• HRSA Patient Safety and Clinical Pharmacy Services Learning Session #2 Mentoring Teams Round-Robin: The Five Strategies that Drive Change…It’s in the Bag! (Change Package, that is!) Session. Invited presenter on Measureable Improvement. May 10, 2011. Connor SE.


Health Care for the Homeless Clinics
During FY11, the faculty and volunteer pharmacists:
• Provided oversight of the pharmacy program for HCH dispensing almost 7,000 prescriptions to uninsured patients.

• Provided experiences in the community for four pharmacy practice residents and one community practice resident. They also provided experiences for 217 PharmD students.

• Received the HRSA Patient Safety and Clinical Pharmacy Services 2.0:
  • Clinical Pharmacy Services Improvement Award in collaboration with the Birmingham Free Clinic October 2010.
  • Health Outcome Management Award in collaboration with the Birmingham Free Clinic. October 2010.

Alumni and faculty members who provide care at the clinics include: Grant Bender, pharmacist; Sharon Connor, director and assistant professor; Tami Coppler, pharmacist; Shelby Corman, assistant professor; Dana Roman, pharmacist; Lauren Jonkman, instructor; Laura Krugger, pharmacist; Yardlee Kauffman, community care resident; Ana Lupu, pharmacy resident; Erin McCann, pharmacist; Alisa Michaels, pharmacist; Nick Owens, pharmacy resident; Kristine Schonder, assistant professor; Amanda Simpson, pharmacist; Kara Sperandeo, pharmacist; and Jen Tkocs, pharmacist.

North Side Christian Health Center
The Pharmacy Services Clinic at this site began in the fall of 2003 at North Side Christian Health Center. This pharmacist-managed clinic is designed to screen patients for eligibility for Pharmaceutical Manufacturers Patient Assistance Programs. Medication therapy management also takes place.
During FY11, pharmacists:

- Provided care for approximately 400 patient care visits.
- Evaluated patients for eligibility for various assistance programs available in the city, county, state and through Indigent Programs.
- Evaluated drug therapy for appropriateness and made recommendations that integrate the resources available to attain the best treatment for the patient.
- Provided experiences for sixteen P4 students, three P3 students, and eight P1 students.
- Provided longitudinal experiences for two community care residents and rotations for one pharmacy practice resident.
- Received the HRSA Patient Safety and Clinical Pharmacy Services 2.0:
  - Outstanding Performance Award in collaboration with North Side Christian Health Center. October 2010.

**UPMC Matilda Theiss Health Center (New Clinical Service in 2010)**

Pharmacists provide care through collaborative care practice to patients at this federally qualified community health center.

In FY11, faculty:

- Provided care for patients during approximately 200 patient care visits.
- Evaluated drug therapy for appropriateness and made recommendations that integrate the resources available to attain the best treatment for the patient.
- Participated in the HRSA Patient Safety and Clinical Pharmacy Services Collaborative.

The table on the next page summarizes the care provided through the Grace Lamsam Pharmacy Program in collaboration with the specific entity identified.
## Grace Lamsam Pharmacy Program Summary

<table>
<thead>
<tr>
<th>Service</th>
<th>Description of Service Activities</th>
<th>Location</th>
<th>How often is service provided and at what times</th>
<th>Providers involved in delivering service</th>
<th># of individuals served/ # attendees</th>
</tr>
</thead>
</table>
| Health Care for the Homeless Pharmacy Partnership   | • On-site pharmacy services  
• Pharmaceutical Care Quality Assurance  
• Formulary development and maintenance  
• Cost-effectiveness Outcomes  
• Inventory Management Protocols  
• Development of Clinical Practice Guidelines-Best Practices  
• Train HCH providers to utilize the patient assistance programs | Birmingham Free Clinic Women’s Center and Shelter Pleasant Valley Shelter Bethlehem Haven Shelter Wellspring Drop-in-Center Salvation Army North Side Drop-in-Center McKeesport 9th Street Clinic | Monday – Saturday Twelve clinics which meet half-day at various times | Community  
• Volunteers  
• P1, P2, P3 and P4 students  
• SOP Faculty Pharmacy residents  
• 13 volunteer pharmacists | Total patient encounters: approximately 3,200 |
| Preventive Care Clinic (Smoking Cessation)          | - Blood pressure screening  
- Consultation  
- Smoking cessation counseling  
- Blood glucose testing  
- Heart disease screening  
- Diabetes screening | Birmingham Free Clinic | Thursdays 9am–11:30am | • Pharmacy students  
• SOP faculty  
• Pharmacy residents | Total patients: 27  
Patient encounters: 104 |
| North Side Christian Health Center                  | • Medication Therapy Management Service  
• Access to medications through Pharmaceutical Manufacturer Patient Assistance Programs | North Side Christian Health Center, Community Health Center | Tuesday from 1:00pm–5:00pm  
Wednesday from 9:00am–12noon | 2 Pharmacists  
3 Pharmacy Residents  
P4 students on rotation  
P3 Students on rotation | Total patient encounters: 400 |
| UPMC Matilda Theiss Health Center                   | • Medication Therapy Management Service  
• Smoking cessation program with counseling | Matilda Theiss Health Center | Tuesday/ Wednesday 1:00-4:00pm | Internal Medicine pharmacy resident and Transplant Specialty Pharmacy Resident  
P1 students | Total patient encounters: 200 |
| Salvation Army Harbor Light Center                  | Medication Therapy Management Service | Salvation Army Harbor Light Rehabilitation Center | Friday 8:00am – 12:00pm | Pharmacist  
P4s | Total patient encounters: 150 |
Securing an Adequate Resource Base
Securing an Adequate Resource Base

Achieving the vision of the School of Pharmacy requires a financial and space resource base that supports faculty, staff, and students in their endeavors. The people of the School of Pharmacy are one of its greatest resources. This section includes the resource of people—the faculty, staff, and alumni of the School.

By 2012, the School of Pharmacy will have:
• Increased the resource base of the School of Pharmacy.

Resources by the Numbers for FY11

• $20.71 million: The total School of Pharmacy expenditures in FY11 from all sources.

• $18,844,917: The market value of the School’s endowment at the end of FY11.

• $22,200,019: The Capital Campaign total at the end of FY11.

• Gifts in FY11 totaled $2,624,532, 65% of which was contributed by corporations.

• Of the total FY11 gifts, $261,362 was from annual gifts.

• The School of Pharmacy has an allocation of and/or leases a total of 82,505 SF of space in 10 locations in Oakland and the South Side. Space allocation has decreased by 2.6% (-2,281 SF) since FY08.

• In FY11, the School of Pharmacy had 75 full-time faculty members who received:
  • 9 national recognitions/awards for educational accomplishments
  • 13 recognitions/awards for research
  • 7 recognitions/awards for practice
  • 2 national recognitions/awards for service

Of our 75 faculty members,
• 17 (22.7%) have been elected to fellowship in one or more organization.
• 23 (30.7%) are board certified.
• 36 (48.0%) are either board certified or fellows, or both!

• Number of staff: 62: 33 are administrative staff and 29 are research staff

• Number of living alumni: 4,887

• The School of Pharmacy’s alumni ranked:
  • #1 in life memberships in the Pitt Alumni Association in schools and programs with more than 100 alumni
  • #3 among all University schools and programs in alumni engagement
  • 36.14 percent of the alumni were engaged with the School of Pharmacy and/or University in some way
FINANCIAL RESOURCES

Budget

Sources of funding for the School of Pharmacy include allocation from the University of Pittsburgh, UPMC, continuing education and auxiliary accounts, gifts and endowments, and sponsored project awards. The graph below represents financial expenditures for fiscal years ’00 through ’11.

The graph demonstrates the overall growth of financial resources, particularly since 2000. The total expenditures for FY11 were $20,707,566 with sponsored projects accounting for 33.5% of the expenses. Together, the University (38.1%), sponsored project awards (33.5%), and UPMC (17.4%) accounted for over 89% of the School’s funding.

Institutional Advancement

The value of the School of Pharmacy is recognized in many ways, including philanthropic support.

Capital Campaign

On July 1, 1997, the University launched the Capital Campaign to support students, teaching and learning, and the research of faculty. To date, the School of Pharmacy has raised $22,200,019 in gifts and pledges for the School’s portion of the Capital Campaign.

Securing endowed funds to provide scholarship and professorship support is the primary goal for the School of Pharmacy’s Capital Campaign.
School of Pharmacy Capital Campaign by Gift Designation
Gifts and Pledges*
July 1, 1997 – June 30, 2011

<table>
<thead>
<tr>
<th>Designation</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endowed Scholarships and Awards</td>
<td>$5,294,710</td>
</tr>
<tr>
<td>Endowed Professorships (2)</td>
<td>3,000,000</td>
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<tr>
<td>Renovation: Seminar, Student Lounge, Labs</td>
<td>1,733,404</td>
</tr>
<tr>
<td>Programs and Research</td>
<td>6,612,574</td>
</tr>
<tr>
<td>Other</td>
<td>5,559,331</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$22,200,019</strong></td>
</tr>
</tbody>
</table>

*Includes Voluntary Support (gifts) received during FY11

The book value of the School of Pharmacy endowment has continued to grow through gifts as shown in the graph below. It is not surprising that the market value of the endowment has fluctuated with the economic situation of the nation. As the economy has begun to recover, so has the market value of the endowment. Notably, some of the increase is also due to the increase in book value through new gifts.
In FY11, the School of Pharmacy raised more money than in any year since 1999. The School of Pharmacy received charitable gifts, pledges, and grants totaling $2,624,532 from a total of 910 individuals, foundations, corporations, and other organizations. This is more than double the total dollars raised in FY10. The total number of donors also increased in FY11.

![Total Gifts & Pledges by Year](image)

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Dollars (Thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>'97</td>
<td>0</td>
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<tr>
<td>'98</td>
<td>500</td>
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<tr>
<td>'99</td>
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<tr>
<td>'11</td>
<td>5000</td>
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</table>

<table>
<thead>
<tr>
<th>FY11 Giving to the School of Pharmacy by Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Amount</strong></td>
</tr>
<tr>
<td>------------</td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>Percentage</strong></td>
</tr>
</tbody>
</table>

The total dollar amount in gifts and pledges increased—a change due largely to increases in corporate and foundation support. As shown in the graphs below, the annual gift amount was $261,362; though lower than the previous year, it is higher than any year prior to 2008. The total number of annual donors in FY11 increased slightly to 840.

![Annual Gift Amount](image)

![Annual Donors](image)
PHYSICAL FACILITIES

By 2012, we will have:

- Increased the physical space allocated to the School of Pharmacy.

At the close of FY11, the School of Pharmacy occupied a total of 82,505 SF, including:

- 46,989 SF in Salk Hall
- 4,297 SF in BSTIII
- 2,704 SF in UPMC Montefiore
- 6,514 SF in UPMC Presbyterian
- 1,091 SF in Falk Clinic
- 1,110 SF (leased) on Craig Street
- 13,590 SF (leased) in Birmingham Towers
- 1,896 SF (leased) in Parkvale Building
- 3,557 SF in Victoria Street offices
- 757 SF in South Presby Tower

As shown in the graph below, the space allocation to pharmacy has decreased by 2.6% since 2008.
THE RESOURCE OF PEOPLE

We formally recognize that the people of the School are its most valuable resource, and therefore include people in this section.

Faculty

There are 75 full-time and 9 part-time faculty members in the School of Pharmacy, all of whom hold faculty appointments in either the Department of Pharmaceutical Sciences or the Department of Pharmacy and Therapeutics. The changes in number of faculty since 1984 are shown in the graph.

In the Department of Pharmaceutical Sciences, two faculty members earned promotions during FY11; both Alexander Doemling and Wen Xie were promoted to professor with tenure. Paul Johnston was hired as a research associate professor in January 2011. The department and School honored Ada Mezzich, PhD, who retired in December 2010 and David Edwards, PhD, who retired in June 2011. After many years with the University of Pittsburgh, Dexi Liu, PhD, accepted the position of department chair at another university.

In the Department of Pharmacy and Therapeutics, Brian Potoski, PharmD, was promoted to associate professor. Departing during FY11 were Rafael Saenz, PharmD, and Scott Mark, PharmD. The Department of Pharmacy and Therapeutics collaborated with the VA Healthcare System’s Center for Health Equity Research and Promotion in the recruitment of Carolyn Thorpe, PhD, and Joshua Thorpe, PhD, who will join the faculty in September 2011; both conduct research in comparative effectiveness in geriatric patients and/or caregivers.
### Full-Time Faculty Rank by Department of Primary Appointment*

<table>
<thead>
<tr>
<th>Faculty Rank</th>
<th>Pharmaceutical Sciences</th>
<th>Pharmacy and Therapeutics</th>
<th>Total for School of Pharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>19</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>5</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>3</td>
<td>23</td>
<td>26</td>
</tr>
<tr>
<td>Instructor</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Senior Lecturer</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Research Associate Professor</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Research Assistant Professor</td>
<td>7</td>
<td>0</td>
<td>7</td>
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<tr>
<td>All Faculty</td>
<td>37</td>
<td>38</td>
<td>75</td>
</tr>
</tbody>
</table>

*Part-time Faculty (numbers not in table) include:
- Department of Pharmaceutical Sciences: 2
- Department of Pharmacy and Therapeutics: 7

### Fellowships in Organizations and Board Certification

Election to fellowship and board certification are two characteristics of faculty members who have distinguished themselves. Of the 75 faculty members, 17 (22.7%) have been elected to fellowship in one or more organization, 23 (30.7%) are board certified, and 36 (48.0%) are elected fellows, board certified, or both. The names, letters indicating the fellowship, and department of affiliation are shown in the table. The organization of the fellowship is indicated at the first use of the initials in the table.

#### FY11: Faculty Elected to Fellowship in Professional or Scientific Organizations

<table>
<thead>
<tr>
<th>Name</th>
<th>Fellowship</th>
<th>Department</th>
</tr>
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<tbody>
<tr>
<td>Kim Coley</td>
<td>FCCP</td>
<td>American College of Clinical Pharmacy</td>
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<td></td>
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<td>Judith Gavaler</td>
<td>FACN</td>
<td>American College of Nutrition</td>
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<tr>
<td>Barry Gold</td>
<td>AAAS</td>
<td>American Association for the Advancement of Science</td>
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<td>Randy Juhl</td>
<td>FAPhA</td>
<td>American Pharmacists Association</td>
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<td>Sandra Kane-Gill</td>
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<tr>
<td></td>
<td>FCCP</td>
<td>American College of Clinical Pharmacy</td>
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<tr>
<td>Joanne Kowiatek</td>
<td>FASHP</td>
<td>American Society of Health-Systems Pharmacists</td>
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<tr>
<td></td>
<td></td>
<td>Pharmacy and Therapeutics (Adjunct)</td>
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<tr>
<td>Edward Krenzelok</td>
<td>FAACT</td>
<td>American Association of Clinical Toxicology</td>
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<td>Patricia Kroboth</td>
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<td>FAAPS</td>
<td>American Association of Pharmaceutical Scientists</td>
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<tr>
<td>Scott Mark</td>
<td>FASHP</td>
<td>American Society of Health-System Pharmacists</td>
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<td>FACHE</td>
<td>American College of Healthcare Executives</td>
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<td>FABC</td>
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<tr>
<td>Melissa Somma McGivney</td>
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<tr>
<td>Christine Ruby-Scelsi</td>
<td>FASCP</td>
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<table>
<thead>
<tr>
<th>Name</th>
<th>Fellowship</th>
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<tbody>
<tr>
<td>Paul Schiff</td>
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<tr>
<td>Amy Seybert</td>
<td>FASHP</td>
<td>Pharmacy and Therapeutics</td>
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<td>Susan Skledar</td>
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<td>Randall Smith</td>
<td>FAAPS</td>
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<tr>
<td>Ralph Tarter</td>
<td>FAPS</td>
<td>Pharmaceutical Sciences</td>
</tr>
<tr>
<td></td>
<td>FAPA</td>
<td>American Psychopathological Association</td>
</tr>
<tr>
<td>Raman Venkataramanan</td>
<td>FACCP</td>
<td>Pharmaceutical Sciences</td>
</tr>
<tr>
<td></td>
<td>FAAPS</td>
<td>American Association of Pharmaceutical Scientists</td>
</tr>
</tbody>
</table>

**FY11: Faculty Board Certifications**

<table>
<thead>
<tr>
<th>Name</th>
<th>Certification</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Janet Amico</td>
<td>ABIM</td>
<td>Internal Medicine</td>
</tr>
<tr>
<td>Sherrie Aspinall</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>Shelby Corman</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>Colleen Culley</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>Amy Calabrese Donihi</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>Scott Drab</td>
<td>BC-ADM</td>
<td>Advanced Diabetes Management</td>
</tr>
<tr>
<td>Philip Empey</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>Tanya Fabian</td>
<td>BCPP</td>
<td>Psychiatric Pharmacy</td>
</tr>
<tr>
<td>Bonnie Falcone</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>Roberta Farrah</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>Deanne Hall</td>
<td>CDE</td>
<td>Diabetes Educator</td>
</tr>
<tr>
<td>Heather Johnson</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>Lauren Jonkman</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>Edward Krenzelok</td>
<td>DABAT</td>
<td>Toxicology</td>
</tr>
<tr>
<td>Lindsay Lippman</td>
<td>BCOP</td>
<td>Oncology</td>
</tr>
<tr>
<td>Scott Mark</td>
<td>CHE</td>
<td>Certified Healthcare Executive</td>
</tr>
<tr>
<td>Rima Mohammad</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>Karen Pater</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td></td>
<td>CDE</td>
<td>Diabetes Educator</td>
</tr>
<tr>
<td>Brian Potoski</td>
<td>BCPS (AQ-ID)</td>
<td>Pharmacotherapy/Added Qualification in Infectious Diseases</td>
</tr>
<tr>
<td>Christine Ruby-Scelsi</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>Pamela Smithburger</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>Ralph Tarter</td>
<td>ABPP</td>
<td>Clinical Psychology</td>
</tr>
<tr>
<td>Lauren Trilli</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
</tbody>
</table>
### Faculty Honors, Recognition, and Professional Affiliations

Faculty of the School of Pharmacy have received honors and recognitions for their efforts in education (E), research (R), practice (P), and service (S) as indicated in the table below.

<table>
<thead>
<tr>
<th>Faculty Member</th>
<th>Recognition/Affiliation</th>
<th>Type*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neal Benedict</td>
<td>Received Innovation in Education Award from Provost’s Advisory Council on Instructional Excellence for “Innovative Instructional Approach to Foster Self-Directed Learning (with Kristine Schonder, School of Pharmacy, and James McGee, School of Medicine)</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>Received Rho Chi Innovation in Teaching Award</td>
<td>E</td>
</tr>
<tr>
<td>Billy Day</td>
<td>Elected chairperson-elect of the Steering Committee of the Chemistry in Cancer Research Working Group of the American Association for Cancer Research</td>
<td>R</td>
</tr>
<tr>
<td></td>
<td>Appointed associate editor for <em>Toxicology in Vitro</em></td>
<td>R</td>
</tr>
<tr>
<td>Balwant Dixit</td>
<td>Chaired a forum on Mental Illness and Substance Abuse in Indian Immigrants in North America at the 2011 Bruhan Manarashtra Mandal Convention</td>
<td>S</td>
</tr>
<tr>
<td>Alexander Doemling</td>
<td>Invited to teach MCR chemistry and drug discovery for one week at University of Calicut, Kerala, South India</td>
<td>R</td>
</tr>
<tr>
<td></td>
<td>Invited as keynote speaker at 5th International Conference on Multi-Component Reactions, Hangzhou PR China</td>
<td>R</td>
</tr>
<tr>
<td>Barry Gold</td>
<td>Elected as Fellow in American Association for the Advancement of Science</td>
<td>R</td>
</tr>
<tr>
<td>Levent Kirisci</td>
<td>Participated as statistical consultant on WHO Project on Assessing Health Systems Toward Person-Centered Care</td>
<td>R</td>
</tr>
<tr>
<td>Patricia Kroboth</td>
<td>Participated as a panel member of healthcare experts for Kerr Drug: “Kerr Drug and the Future of Pharmacy in America”</td>
<td>P</td>
</tr>
<tr>
<td>Melissa Somma McGivney</td>
<td>Selected to receive the National Association Chair Drug Store’s Faculty of the Year Award in August 2011</td>
<td>P</td>
</tr>
<tr>
<td>Stephanie McGrath</td>
<td>Selected as one of ten honorable mention awardees for the American Pharmacists Association One-To-One Counseling Program</td>
<td>P</td>
</tr>
<tr>
<td>Susan Meyer</td>
<td>Elected secretary of the American Association of Colleges of Pharmacy Council of Deans</td>
<td>S</td>
</tr>
<tr>
<td></td>
<td>Voted School’s 2010 APhA-ASP Faculty Member of the Year</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>Invited to participate in &quot;Team-Based Competencies: Building a Shared Foundation for Education and Clinical Practice&quot; meeting in Washington, DC</td>
<td>E</td>
</tr>
<tr>
<td>Thomas Nolin</td>
<td>Co-chaired symposium “Assessing the effect of impaired kidney function on drug exposure, response, and dosing: Challenges and opportunities,” at the American Society for Clinical Pharmacology and Therapeutics Annual Meeting</td>
<td>R</td>
</tr>
<tr>
<td></td>
<td>Participated in Acute Dialysis Quality Initiative International Consensus Conference on Blood Purification in Toxicology</td>
<td>P</td>
</tr>
<tr>
<td>Karen Pater</td>
<td>Fellow in 2011 Provost’s Faculty Diversity Seminar</td>
<td>E</td>
</tr>
<tr>
<td>Amy Seybert</td>
<td>Elected as a Fellow of the American Society of Health-System Pharmacists</td>
<td>P</td>
</tr>
<tr>
<td>Susan Skledar</td>
<td>Awarded the School’s Residency Preceptor of the Year Award</td>
<td>E</td>
</tr>
<tr>
<td>Paul Schiff</td>
<td>Voted School’s Stanford I. Cohen Teacher of the Year</td>
<td>E</td>
</tr>
<tr>
<td>Randall Smith</td>
<td>Participated in Biomedical Health and Wellness Main Salon in Cannes, France</td>
<td>R</td>
</tr>
<tr>
<td>Pamela Smithburger</td>
<td>Awarded School’s Faculty Preceptor of the Year Award</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>Received Board Certification as Pharmacotherapy Specialist</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>Appointed chair-elect of Safety Committee of Clinical Pharmacy and Pharmacology Section of Society of Critical Care Medicine</td>
<td>P</td>
</tr>
<tr>
<td>Faculty Member</td>
<td>Recognition/Affiliation</td>
<td>Type*</td>
</tr>
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<td>--------------------------</td>
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</tr>
<tr>
<td>Gordon Vanscoy</td>
<td>Invited as commencement speaker for Katz Graduate School of Business</td>
<td>E</td>
</tr>
<tr>
<td>Raman Venkataramanan</td>
<td>Received American Pharmacists Association Tyler Prize for Stimulation of Research</td>
<td>R</td>
</tr>
<tr>
<td></td>
<td>Appointed editor in chief of the American Journal of Analytical Chemistry</td>
<td>R</td>
</tr>
<tr>
<td>Wen Xie</td>
<td>Invited to attend FASEB translation research symposium on behalf of ASPET</td>
<td>R</td>
</tr>
<tr>
<td>Xiang-Qun (Sean) Xie</td>
<td>Invited to serve as member of NIH Biophysics of Neural Systems Study Section, Center for Scientific Review (four-year term)</td>
<td>R</td>
</tr>
</tbody>
</table>

*Type indicates E (Education), R (Research), P (Practice), S (Service).

Alumni and Alumni Engagement

In the five years that the University of Pittsburgh has been ranking its 18 schools and programs in alumni engagement, the School of Pharmacy has held the #1 spot in FY07 and FY09, ranking second in FY08 and FY10 and third in FY11. The term “engagement” includes contributions to the University and participation in events, University support functions, percentage of email addresses available, and online participation.

In FY11:

- 36.14 percent of the 4,887 School of Pharmacy living alumni were engaged with the School of Pharmacy and/or University in some way.

- School of Pharmacy alumni ranked:
  - first (12.44 percent) in life and in regular memberships in the Pitt Alumni Association in schools and programs with more than 100 alumni.
  - third (36.13 percent) in participation in School and University programs in schools and programs with more than 100 alumni.

- Alumni demonstrated their commitment to the University and the School in many ways, including participation in events sponsored by the School and/or the Alumni Society:
  - Alumni Day speaker, Richard Kruzynski (BS ’77), gave a presentation to pharmacy students.
  - Pharmacy alumni celebrated Homecoming 2010 with a Banana Split Homecoming Party.

- The School of Pharmacy hosted three receptions at national professional and scientific meetings:
  - American Pharmacists Association Annual Convention, Pennsylvania Pharmacy Association Reception (jointly hosted by the Pennsylvania Schools of Pharmacy), March 27, 2011, Seattle, Wash.

- The School of Pharmacy also hosted:
  - The Nineteenth Annual Career Roundtables, February 23, 2011, William Pitt Union Ballroom. Thirty-six alumni participated in this student event. Alums from 21 practice areas met with the P1 students and answered questions about their individual practice area giving the students a better perspective of the many opportunities a degree in pharmacy can offer.
• The School of Pharmacy Golf Invitational, June 10, 2011, Quicksilver Golf Course. Sixty-six golfers participated, and the event raised $16,587 for the Alumni Scholarship Fund. In the past eight years, more than $139,000 has been raised for student scholarships.

• *R extravaganza Gala 2011...This Magic Moment*, an annual celebration for alumni and friends, May 14, 2011, Omni William Penn Hotel in Pittsburgh. More than 200 alumni and friends enjoyed the Saturday evening dinner and dancing extravaganza to benefit scholarships. Through the event, an additional $24,000 was raised.

• The School’s Alumni Society recognized two alumni as Distinguished Alumni:
  • Clyde Cressler, BS ’69, owner of 15 Medicine Shoppe pharmacies and CL Cressler Inc.
  • Karen Habucky, PhD ’87, executive director in Drug Regulatory Affairs at Novartis Pharmaceuticals Corporation

**Board of Visitors**

Dean Patricia Kroboth and the faculty hosted the School of Pharmacy Board of Visitors on April 4 and 5, 2011. The overarching theme of the visit was the research-to-patient care continuum with a focus on program quality, availability of resources, and opportunities to generate new revenue. Board members held a series of discussions with faculty and students regarding progress toward achieving the strategic goals in these areas.

The visit culminated with a summary meeting of Board members and Senior Vice Chancellor for the Health Sciences Arthur Levine.

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**Board of Visitors 2010–11**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position and Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>William L. Bailey, PharmD</td>
<td>Senior Director, Medical Affairs, Head, Clinical Operations &amp; Biometrics, Daiichi Sankyo, Inc.</td>
</tr>
<tr>
<td>Richard J. Bertz, PhD</td>
<td>Executive Director, Virology and Neurosciences, Discovery Medicine and Clinical Pharmacology Research and Development, Bristol-Myers Squibb</td>
</tr>
<tr>
<td>Daniel J. Cobaugh, PharmD, FAACT, DABAT</td>
<td>Vice President, ASHP Research &amp; Education Fdn.</td>
</tr>
<tr>
<td>John P. Innocenti, MBA</td>
<td>President, UPMC Presbyterian Shadyside</td>
</tr>
<tr>
<td>Krista M. Pedley, PharmD, MS, CDR, USPHS</td>
<td>Director, Office of Pharmacy Affairs, Health Resources and Services Administration</td>
</tr>
<tr>
<td>Patrick Quinn</td>
<td>Senior Director of Trade, Novo Nordisk Inc.</td>
</tr>
<tr>
<td>David P. Rotella, PhD</td>
<td>Margaret and Herman Sokol Chair of Chemistry and Biochemistry, Professor, Department of Chemistry and Biochemistry, Montclair State University</td>
</tr>
<tr>
<td>Karen S. Fisher, RPh, JD</td>
<td>Senior Director and Senior Policy Counsel, Association of American Medical Colleges</td>
</tr>
<tr>
<td>Leaf Huang, PhD</td>
<td>Fred N. Eshelman Distinguished Professor and Chair, Division of Molecular Pharmaceutics, Eshelman School of Pharmacy</td>
</tr>
<tr>
<td>John T. Tighe III</td>
<td>Founder, President and CEO, TMG Health, Inc.</td>
</tr>
<tr>
<td>John T. Innocenti, MBA</td>
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<td>Leaf Huang, PhD</td>
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</tr>
<tr>
<td>John T. Tighe III</td>
<td>Founder, President and CEO, TMG Health, Inc.</td>
</tr>
</tbody>
</table>
ENHANCING OUR RESOURCE BASE THROUGH EFFICIENCY AND EFFECTIVENESS

By 2012, the School of Pharmacy will have:
• Increased effectiveness and efficiency and will have enhanced the personal growth and professional development of the staff.

Fostering philanthropic support, assuring the efficient utilization of space, acquiring space for new and/or growing programs, and providing the faculty and students with the best teaching technologies are critical to our future success. Those elements are core to the goals of efficiency and effectiveness.

Staff

Sixty-two staff members served in the following roles:
• administrative staff (33)
• research staff (29)

In FY11:
• All 33 administrative staff members met the goal of attending at least one internal professional development program and one external professional development program. The goal was set to enhance the administrative and technical capabilities of the staff as well as the potential for personal job satisfaction.

• Administrative staff implemented iPad technology, which included attending and offering training sessions and restructuring the mechanism for distributing course materials.

• Administrative staff enhanced the reputation of the School by attending meetings, presenting at meetings, serving on committees, and conducting training sessions both within the University and at the national level.

• Staff members implemented a number of “green” initiatives, including:
  • distribution of course handouts electronically
  • online submission of time records, travel and business reports
  • online access/review of accounting reports
  • development of Web applications for gathering information about graduating seniors

Information Technology

In FY11, the Information Technology (IT; administrative) staff:
• Handled 1502 Technology Help Tickets
  • Web and online technology: 388
  • Network/Server Administrator: 382
  • Desktop and Classroom Support: 732

• Created skill enhancement program: iPad Coffee Hour. At weekly coffee hours:
  • Nearly 100% of faculty and staff participated in one or more session.
• IT staff conducted sessions for peer-to-peer mentoring/training to assist faculty and staff to increase their skills and efficiency using iPads and new cloud-based apps such as Drobox and Evernote.

• During the summer, IT staff combined innovative training techniques as well as practical information to encourage expanded use of new media and technologies.

• Implemented Wiki and blog software to create Web pages for all standing committees, councils, and other formal groups within the School.
  • Content was made easily searchable and able to be managed by committee chairs and made available to all faculty and staff.

• Increased blogging by faculty, students and staff; blogs include:
  • The Daily Dose, Dr. Tara Pummer/students
  • Infectious Disease Blog, Dr. Brian Potoski
  • Social Media Blog, Thomas Waters
  • iPadRx Blog, Thomas Waters
  • Apps Blog, Thomas Waters

• Created dynamic curricular map.
  • A curricular map was created with a database to link courses with learning objectives, teaching and assessment strategies, keywords/topics, and faculty. The “map” is searchable and accessible by faculty, staff, and students via a web interface.
  • Presentations about the map were also made at the American Association of Colleges of Pharmacy meeting and at Howard University.

• Created graduating PharmD student Web application to capture student information. Previously, a paper form that required more than 100 sheets of information to be manually entered into the computer, the Web app provided students with an easy-to-use interface and eliminated 40 FTE’s of staff time. The new system will allow data to be tracked from year to year easily, which wasn’t possible using the older system.

• Implemented a PharmD Tech Resource Team.
  The team is made up of at least two students from each class, who agree to assist the faculty or guest speaker if a technology problem disrupts the class. The team members receive some basic trouble-shooting training, and have a manual of common problems and their solutions. Use of the team has decreased the amount of interrupted classroom time as well as provided more qualitative data so that the School can better maintain all classroom technology.

Communications

The responsibility of the Communications Team at the School of Pharmacy is to inform, update, promote, and report to our 5,800 stakeholders. Communications of the School of Pharmacy include:

• Print communications
• Web site
• Facebook Fan page
The School’s constituents include alumni, faculty, staff, students and their parents, donors, and potential donors. Print pieces are developed consistent with the School’s “brand” developed in 2003 as well as with the University of Pittsburgh brand.

During FY11, the School of Pharmacy Communications Team:

- Developed and coordinated the production and delivery of 23 print pieces with distribution within the University of Pittsburgh and School of Pharmacy and externally to our constituent base of 5,800.

- Developed, produced, and distributed fundraising materials to alumni and friends, resulting in the following contributions:
  - Golf Invitational with support to scholarship in the amount of $16,000.
  - RxTravaganza 2011 with support to scholarship in the amount of $24,000.
  - The Phonathon with support for scholarships in the amount of $9,000.

- Continued the transition of appropriate print pieces for electronic distribution.

- Used Facebook as social media to connect with constituents. Site statistics show 308 new “likes,” 78,022 post views, and an average of 345 visitors weekly.

- Maintained and coordinated the secure online registration for RxTravaganza 2011 with 11 percent of the guests using the Web registration.
During FY06, faculty and staff of the School of Pharmacy adopted revised mission, vision, and values statements and finalized a long-range strategic plan that extended through 2011; modifications were made with the input of faculty and staff to extend the plan through 2012.

**Mission**

The School of Pharmacy is committed to improving health through excellence, innovation, and leadership in education of pharmacists and pharmaceutical scientists, in research and scholarship, in care of patients, and in service to our communities.

_Adopted July 2006, Revised July 2009_

**Vision**

To be an outstanding school of pharmacy renowned for excellence in discovery and advancement of science-based use of medicines and other interventions to enhance the vitality and quality of life.

_Adopted July 2006_

**Values**

Integrity guides our daily work. We foster:
- Passion, commitment, and diligence;
- Creativity and personal growth;
- Collaboration and teamwork;
- A culture of respect for the individual.

_Adopted July 2006_
The School of Pharmacy first embarked on a new long-range planning process in 2001. The plan was developed and implemented with extensive faculty and staff participation, as well as input from students and other stakeholders. By design, the 2001 plan was outcome and mission driven, and closely aligned with the strategic focus areas of the University.

Based on the successful execution of the 2001 - 2006 Long-Range Plan, the leadership of the School of Pharmacy committed to continuing the disciplined planning process. In 2005, the faculty and staff embarked on planning for the current plan that originally extended through 2011, and was subsequently extended to 2012 to coincide with University planning. The Plan serves as a guide for our decisions; it determines what we aspire to become and what we are committed to achieving. Since 2001, the Long-Range Plan has helped our extended School of Pharmacy family discuss opportunities using common language, and make choices based on a common set of strategic priorities and values. The Plan is our framework for resource allocation and ensures that everyone is working toward the same outcomes.

The strategic outcomes are expressed in terms of what we will have become. By 2012, we will have become:

- A leader in pharmacy education;
- A research school of distinction;
- A leader in standardizing the elements of practice so that pharmacists enhance the care of patients in institutions, in the community, and during transitions of care.

**Long-Range Plan Organization**

Recognizing the wisdom of aligning our School with the University, our Plan coincides with the University’s five strategic outcome areas. Our focus areas include:

- Educating the next generation of practitioners and scientists;
- Advancing human health through research;
- Enhancing the health of the community through partnerships;
- Increasing our capabilities by enhancing our efficiency and effectiveness;
- Assuring an adequate resource base.

The strategic outcomes within the Plan are organized using the subheadings of excellence, and innovation and leadership, where excellence refers to the organizational or operational recurring outcomes; innovation and leadership outcomes are strategic. The exception is “assuring an adequate resource base,” which is exclusively focused on excellence.
Annual retreats at the Johnstown and Greensburg campuses and at Southpointe along with half-day sessions on campus have been the major force for developing the Plan, measures, and tactics. PharmD student leaders engage with the process at their selected Annual Student Leadership Retreats and through the Dean’s Advisory Board. It has been the firm belief of the School of Pharmacy leadership that the engagement of faculty, staff, students and trainees, and alumni of the School will result in the best possible chances for achieving the stated outcomes of our Long-Range Plan.

Environment: Assessment and Opportunities

Healthcare Issues

Despite technological advances in the ability to diagnose disease and the myriad of sophisticated and expensive medications available, there is a need for increased attention to the care management of individual patients, particularly those with chronic illnesses. Reports on the current state of health care in the United States show that:

- Only about 50% of individuals with chronic illness are treated according to accepted standards, and therapeutic outcomes are often suboptimal.
- 40% to 50% of patients discontinue their medications for chronic disease within one year of initiation of treatment.
- 34% of English-speaking adults aged 65 or older have inadequate health literacy to effectively use the U.S. healthcare system.
- 65% of U.S. adults are either overweight or obese.
- 10% of Americans suffer from chronic disabling conditions.
- The number of persons aged ≥65 years is expected to increase from approximately 35 million in 2000 to an estimated 71 million in 2030, and the number of persons aged ≥80 years is expected to increase from 9.3 million in 2000 to 19.5 million in 2030.
- Medical errors result in nearly 100,000 deaths annually, with medication errors claiming 7,000 lives yearly. Insulin, narcotics (pain killers), antibiotics, and anticoagulants are responsible for over 50% of those medication-related deaths.

In the report “Crossing the Quality Chasm: A New Health System for the 21st Century” (2001, p 117), the Institute of Medicine identified six redesign imperatives for health care organizations:

- Redesigning care processes;
- Effective use of information technologies;
- Knowledge and skills management;
- Development of effective teams;
- Coordination of care across patient conditions, services, and settings over time;
- Use of performance and outcome measurement for continuous quality improvement and accountability.
Currently, the predominant form of interaction between pharmacists and patients does not meet the needs of people with chronic diseases, particularly those with complicated and expensive drug regimens. In order for therapy to be effective, patients must understand the regimen, accept the responsibility for appropriate self-care, know how to monitor their response to therapy, and have the confidence to communicate with their various healthcare providers. Pharmacists have the knowledge and skill to make a difference, but are currently working in a service delivery model that focuses on the product, not on the information or care process.

Opportunities for the School of Pharmacy:

- Take the lead on a national basis to standardize the pharmacy patient care practice and prepare practicing pharmacists and student pharmacists to care for patients in a standardized way.
- Develop multi-disciplinary training programs for health professionals and disseminate nationally.
- Improve pharmacists’ patient-education skills so that patients understand their drug therapies and leading health indicators.
- Partner with nurses and physicians to develop strategies and tactics to improve patient adherence and safety.
- Develop systems and practice models that:
  - improve access to health care;
  - educate consumers about the leading health indicators;
  - are team based;
  - reduce medication errors and increase safety;
  - empower patients to take responsibility for their daily care;
  - improve health outcomes.

Health Disparity

There is disparity in access to and quality of health care for racial and ethnic minorities and low socioeconomic status patients. For example:

- Patients of low socioeconomic position are less likely to receive recommended diabetes services and more likely to be hospitalized for diabetes and its complications.
- Many racial and ethnic minorities and persons of low socioeconomic position are more likely to die from HIV than others in the population. Minorities also account for a disproportionate share of new AIDS cases.
- African Americans and poorer patients have higher rates of avoidable hospital admissions (i.e., hospitalizations for health conditions that, in the presence of comprehensive primary care, rarely require hospitalization).

The Institute of Medicine (IOM) reported that the makeup of healthcare providers does not reflect the diversity in the population in the United States. Although 12% of the population is Latino, only 3.5% are physicians and less than 2% are nurses and pharmacists. African Americans make up 12.5% of our population, but only 5% are physicians and pharmacists. (IOM Report: “In the Nation's Compelling Interest: Ensuring Diversity in the Health Care Workforce”, 2004).
Opportunities for the School of Pharmacy:

- Develop a curriculum that promotes cultural competency
- Recruit a more diverse faculty and student population.
- Develop patient awareness and education tools for patients with low health literacy, language barriers, and cultural diversity issues.
- Develop pharmacy care programs for diverse population.

Global Health Issues

The global nature of health care and health products was dramatically demonstrated by the shortfall in influenza vaccine in 2004 resulting from an American company’s production facility in the United Kingdom being closed by regulatory actions. The differential cost of drugs among countries has made re-importation of drugs a high visibility political issue in the United States. Harmonization of regulatory requirements for drug development has been on-going for more than 15 years. Now the discovery and development process of new drugs by pharmaceutical companies is international. Most drugs are available globally within a few years of their introduction.

Health care in the United States is also affected by international health issues and developments such as the potential for a global epidemic of a new infection, including SARS, avian influenza, or pandemic influenza. Most experts agree that an influenza pandemic is inevitable and possibly imminent. (WHO report: Avian Influenza). In addition, recent outbreaks of Marburg virus in Africa represent potential future threats given the ease and rapidity of travel between countries. It is also important for United States health and government organizations to continue to partner with international agencies and sister organizations in other countries to address global health issues such as AIDS, tuberculosis and malaria. These partnerships can help improve health and well-being globally.

The terrorist activities in the world over the past decade and particularly the events on September 11, 2001, have greatly increased attention and resources to preparations for biological or chemical terrorism. Pharmacists play a key role in these activities ranging from detection, maintenance of stockpiles of antidotes and drugs for treating patients, and participation in the emergency response. The need for these activities and responsibilities will not, unfortunately, decline over the next five years.

Opportunities for the School of Pharmacy:

- Create international training experiences and partner with other schools on campus to enhance understanding of the threats to global health.
- Exchange faculty and students with universities in other countries.
- Create programs for faculty to experience teaching, research, and practice internationally.
- Include training for management of infectious disease outbreaks.
- Enhance the School of Pharmacy’s role in regional emergency preparedness.
- Develop systems and training to assist pharmacists in taking a major role in immunizations.
Research

The National Institutes of Health (NIH) has a major role in setting the national research agenda and is the primary source of competitive research funding. The NIH will be faced with difficult budgeting issues over the next five years with the government’s goal to cut the national deficit in half. In FY 2006, NIH has proposed a budget increase of only 0.7%, and it is unlikely that increases over the next five years will be much larger. This comes after a decade during which the NIH budget doubled. A review of the budget allocations by disease area over the last four years indicates that there have not been major shifts in the allocations over this time, and for the most part this will remain true. The NIH Director has begun a process of focusing on multidisciplinary approaches to problem solving, NIH Roadmap Initiative, and two other strategic initiatives—the NIH strategic plan for obesity research and the NIH neuroscience blueprint. Each of these initiatives will affect distribution of funds and have priority over some existing programs.

The progress made by the Human Genome Project has laid the groundwork for a better understanding of how genetics influences disease processes. Over the next five years, research on new technologies is needed to identify and validate functional elements that do not encode protein; monitor gene expression and gene products in real time; determine modulation of gene products in relevant cell types; determine protein abundance; develop non-invasive molecular phenotyping; and correlate genetic variation to human health and disease using haplotype information.

The existing and new methods will generate extensive databases of information requiring new computational biology approaches to effectively manage and use data. There will be increasing focus on identifying genetic contributions to disease and drug response.

The NIH Director has asked for increased funding for research project grants to preserve the ability of scientists to obtain individual funding. The small increase in funding will greatly intensify competition for the available grants. Increases in NIH funding at the School will require careful selection of new faculty to ensure competitiveness and focus on support mechanisms to enhance their chances of funding. The School will need to engage in interdisciplinary research programs and projects with other schools of the health sciences and departments in the University. Research developments in the schools of the health sciences and the new research infrastructure will facilitate the development of these interdisciplinary programs.

The increased competitiveness will make other peer-reviewed research funding sources more attractive to faculty. The Department of Defense, National Science Foundation, and other federal agencies will become more important.

Health services research will be very important in evaluating new pharmacy services, economic impacts, and outcomes from the application of evidence-based medicine. This interdisciplinary research will require expertise in operations, clinical and economic outcomes, business, education, and health policy.

Opportunities for the School of Pharmacy:

• Increase NIH-funded research awards to the School of Pharmacy by recruiting new faculty members who are prepared to be independent or who already are funded investigators to participate in pharmacogenetics, the multi-disciplinary drug discovery program, and other emphasis areas of the school.
• Increase the scope and funding for translational and clinical research, especially hospital-based research conducted by faculty members who have clinical backgrounds.
• Develop health services and health economics research programs on pharmacy care and systems.
• Enhance partnerships with other schools on campus to better position the faculty of the School of Pharmacy and the schools of the health sciences to compete for federal and foundation funding.

The Changing Role of Pharmacists

The Pharmacy Manpower Project reported that community pharmacists in the United States filled three billion prescriptions in 2001. Another 1.98 billion drug orders were fulfilled in hospitals. The number of prescriptions filled by community pharmacists is expected to reach 4 billion by 2010. While the number of prescriptions has continued to increase, there has been a shortage of community pharmacists to provide the service.

One report estimates the community pharmacist shortage today is about 7%-8% and could increase to 25%-27% (38,000) by 2010; this projection was based solely on fulfillment of prescriptions. Currently, the role of the pharmacist is diversifying to include not only order fulfillment, but also drug utilization review, administration, and direct patient care to enhance medication safety and effectiveness. The Pharmacy Manpower Project took into account the changing roles of pharmacists in its projections. The table shows that the increased number of prescriptions is expected to be filled by fewer pharmacists and that by 2020, a projected shortfall of 157,000 pharmacists is expected.

<table>
<thead>
<tr>
<th>2001 Estimated Deployment</th>
<th>2020 Forecast Need for Pharmacists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order Fulfillment</td>
<td></td>
</tr>
<tr>
<td>(Dispensing)</td>
<td>136,400</td>
</tr>
<tr>
<td>Patient Care</td>
<td>48,000</td>
</tr>
<tr>
<td>Other</td>
<td>12,300</td>
</tr>
<tr>
<td>Total Need</td>
<td>196,700</td>
</tr>
<tr>
<td>Total Supply</td>
<td>N/A</td>
</tr>
<tr>
<td>Projected Shortfall</td>
<td></td>
</tr>
</tbody>
</table>

The dramatic change in forecast is due to the number of pharmacists involved in patient care in community and institutional settings.

The shortfall in pharmacists has been addressed to some extent by increasing the number of pharmacists graduated each year. Fifteen new schools of pharmacy have been created since 1996, and more new schools are currently in development. In addition to new schools of pharmacy, at least four schools have increased to two or more campuses. There are currently six schools of pharmacy in Pennsylvania. One additional program will be developed in Philadelphia.

The shortage of pharmacists is also being addressed by application of technology and technical staff to prescription order fulfillment. The goal of the application of technology is to reduce the need for a pharmacist in the dispensing function and to provide decision support for drug interactions and
potential adverse drug events. An Arthur Anderson report (Pharmacy Activity Cost and Productivity Study on pharmacist activity suggested that 68% of a community pharmacist time was spent on order fulfillment and recommended the industry seek ways to reduce the amount of time spent by pharmacists in prescription processing. As much as 60%-80% of a pharmacist’s time could be freed to apply to patient care. Technology applications include computer physician order entry (CPOE), e-health records, automated fill stations, bar coding, and robotics. In addition to technology, employment of pharmacy technicians to assist in prescription processing is increasing.

Community Pharmacy in Transition
Applications of technology and technical support staff may permit the pharmacist to spend more time on patient-care activities. How the pharmacist will use the time and identify the appropriate parameters of patient care are issues currently being discussed by pharmacy organizations. This discussion has been fueled by recent legislation. The Medicare Prescription Drug Improvement and Modernization Act of 2003 requires the provision of Medication Therapy Management (MTM) services as part of the Medicare part D drug benefit effective January 2006. MTM services must be available to patients with multiple chronic conditions or multiple medications to ensure appropriate medication use and to reduce adverse drug events. The Center for Medicare and Medicaid Services (CMS) is allowing providers to propose the services to be provided. No generally accepted model providing these services in the community currently exists. Parameters of the services and measures to evaluate results including reimbursement and financial issues need to be quickly established.

Opportunities for the School of Pharmacy:
• Develop systems and practice models that:
  o create a healthcare team in the community
  o improve awareness of health concerns;
  o improve access to health care;
  o reduce medication errors and increase safety;
  o improve health outcomes;
  o empower patients to take responsibility for their daily care.
• Provide leadership in defining MTM.
• Develop educational programs for practicing pharmacists to enhance their ability to provide patient care and MTM.
• Enhance the current PharmD curriculum to improve graduates readiness to provide care and improve patient interactions.
• Develop systems and training mechanisms to enable pharmacists to take a major role in immunizations.
• Evaluate alternative service models that include pharmacy service extenders to improve efficiency and volume of patients served.

Institutional Pharmacy Developments
Pharmacists in institutional practice have become the driving force for evidence-based medication usage and medication safety. Drug use review (DUR) programs will increase with the emphasis on defining the evidence-based use of new drugs and countering the advertising and detailing efforts of the pharmaceutical companies. Pharmacists will be under pressure to hold drug budget increases to a minimum and to maintain the quality of clinical outcomes.
Growing evidence of the number of medical errors that occur throughout the U.S. healthcare system has prompted increased interest in using technology to improve safety. A significant concern of patients, healthcare organizations and clinicians is medication errors, that occur at a rate ranging from 19%-36% in hospitals; over half of these errors occur during medication administration. In the United States Pharmacopeia Convention’s recently published report, almost 2% of all medication errors (approximately 4,000) reported in hospitals during 2003 resulted in significant harm to patients. Pharmacists in hospitals are uniquely positioned to implement and evaluate technology to improve safety. Examples of this technology include bar coding systems, automated dispensing devices, and computerized physician order entry.

Specifically, the Food and Drug Administration’s voluntary recall of the COX-2 inhibitors seriously questions the rigor of post-marketing safety monitoring required by the FDA. To respond to these pressures, government and the public will demand more safety data than could ever be collected in clinical trials. Effective post-marketing safety data collection methods will be developed to meet this demand. It is likely that institutional pharmacists will be recruited to monitor side effects and adverse drug events as new drugs enter the market and their health systems. Automation of drug distribution and improved information systems will allow large integrated institutions such as UPMC to develop databases with large numbers of patients for newly approved drug products that will provide an important source for safety analyses.

The increasing complexity of drug therapy and number of drugs prescribed for patients have increased the incidence of adverse drug events and created a need for effective medication management for inpatients. Clinical pharmacists’ review and management of medication therapy will be increasingly required for safe and effective therapy. Efficient staffing, combined with effective strategies for determining the level of intervention needed based on medication parameters and patient acuity, will be developed to meet this need.

The American Society of Health System Pharmacists has created a long-range plan called “ASHP 2015”, patterned after Healthy People 2010. This plan is based on six strategic goals with 31 objectives to address the medication effectiveness and safety issues. The six goals of this plan are to increase the extent to which:

1. Pharmacists help individual hospital inpatients achieve the best use of medications.
2. Pharmacists help individual non-hospitalized patients achieve the best use of medications.
3. Pharmacists actively apply evidence-based methods to the improvement of medication therapy.
4. Pharmacy departments in health systems have a significant role in improving the safety of medication use.
5. Health systems apply technology effectively to improve the safety of medication use.
6. Pharmacy departments in health systems engage in public health initiatives on behalf of their communities.

Pharmacy organizations and regulatory agencies will continue a national effort to increase the number of health systems that engage in pharmacy services that meet these objectives.
Opportunities for the School of Pharmacy:

• Become the leader in evaluating drug therapies and generating evidence-based guidelines for effective and safe use of medications. More importantly, the School, in partnership with the Schools of Nursing and Medicine, can develop and evaluate how to implement guidelines in different clinical settings.

• Become one of the first hospital systems in the country to achieve the objectives of ASHP 2015.

• Develop systems of care that ensure all patients receive appropriate pharmacist interventions and patient education.

• Develop a post-marketing surveillance program to track safety of FDA-approved medications.
Strategic Outcomes

Educating the Next Generation of Practitioners and Scientists

By 2012, the School of Pharmacy will have become a leader in pharmacy education.

Adopted 2005

PHARM D PROGRAM

By 2012, the School of Pharmacy will have:

**Excellence**

1. Met or exceeded the standards for accreditation by ACPE, earning accreditation for the maximum interval of six years.
   Measure:
   a. Years of accreditation granted

2. Consistently demonstrated the excellence of our students and their organizations by the awards and national recognitions they have received.
   Measures:
   a. national and regional awards to individual students (#)
   b. student organization applications for regional and national awards (#)
   c. regional and national awards to student organizations. (#)
   d. graduates who pursue residency training (#)
   e. graduates who pursue PhD or MS education (#)
   f. NAPLEX pass rate (%)
   g. MJPE pass rate (%)

3. Recruited and retained a diverse community of students.
   Measures:
   a. students admitted with degrees (%)
   b. men admitted (%)
   c. minorities admitted (%)
Innovation and Leadership

4. Developed a culture of innovation and scholarship in teaching and assessment.
   Measures:
   a. peer review publications (#)
   b. textbooks and chapters (#)
   c. presentations
   d. faculty total producing scholarly work (#)
   e. seeking grants (#)
   f. faculty learners in training programs through Pitt or other organizations (#)
   h. faculty teachers in training programs through Pitt or other organizations (#)

5. Developed credit-based opportunities for students to obtain international study experiences
   Measures:
   a. courses/rotations developed (#)
   b. students/year (#)

6. Created curricular tracks/areas of concentration for specialization within the PharmD program.
   Measures:
   a. created the opportunity for curricular tracks (yes/no)
   b. curricular tracks/areas of concentration (#)
   c. students enrolled in tracks (#)
   d. students who pursue additional training in AOC after graduation

7. Developed elective and required interprofessional education opportunities and courses within our curriculum.
   Measures:
   a. opportunities (elective, required) (#)
   b. courses (#)
   c. students who access interprofessional opportunities (#)

8. Been recognized as a leader in defining and providing innovative curricula that enhances pharmacy-provided patient care.
   Measures:
   a. pharmacy-patient care courses/modules developed/implemented (#)
   b. number of courses, degree programs, or certificate programs developed (e.g. CTSI, other non-pharmacy-care)
   c. schools who access the program(s) each year (#) (track each program developed)
   d. people who access the program(s) per year (#)
   e. joint degree programs developed (#)
   f. MTM curriculum developed: (yes / no)
   g. pharmacists utilizing curriculum as continuing education (#)

9. Explored and potentially developed an “out-of-Pittsburgh” curricular program
   Measure:
   a. opportunities explored (#)
GRADUATE PROGRAM

By 2012 the School of Pharmacy will have:

10. Achieved recognition for the quality of the graduate students and graduate program.
   Measures:
   a. PhD students in the program (#)
   b. competitive fellowships e.g. AFPE, NRSA, T32, F31 awarded (#)
   c. student awards and honors from external entities (#)
   d. peer-reviewed publications authored by graduate students (#)
   e. students who present at national or international meetings (#)
   f. PhD graduates per year (#)
   g. graduate students who take post-doctoral fellowships (#)
   h. graduate students who take academic, government and industry positions (#)
   i. publications about program (#)
   j. faculty as primary mentors (#)

11. Recruited and retained highly academically qualified graduate students.
    Measures:
    a. U.S. citizens or permanent residents admitted (%)
    b. stipend as a % of NIH stipend as a standard (%)

12. Educated graduate students who are highly sought after.
    Measures:
    a. graduate students who take positions in industry (#)
    b. graduate students who take positions in government (#)

13. Maintain the excellence of the Clinical Pharmaceutical Scientist Program as a national model for clinical and translational research in the pharmaceutical sciences.
    Measures:
    a. faculty as primary mentors in the program (#)
    b. graduate students in the program (#)
    c. invited presentations by faculty about the program (#)
    d. graduates who enter academia (#)
    e. graduate students receiving national awards (#)
    f. graduate students receiving fellowships (#)
    g. presentations at national or international meetings (#)
    h. publications about the program (#)
    i. graduate student publications (#)
Innovation and Leadership
14. Partnered with the Clinical and Translational Science Institute to develop learning opportunities for our students.
   Measures:
   a. opportunities available (#)
   b. participating students (#)
   c. courses attended by graduate students (#)

15. Developed MS program in pharmacy administrative sciences, including institutional and community practice administration.
   Measures:
   a. programs (#)
   b. students (#)

16. Advanced the graduate program in order to successfully compete for a PHS training grant.
   Measures:
   a. applications for a PHS training grant submitted (#)

Residency Program

By 2012 the School of Pharmacy will have:

Excellence
17. Participated in the creation of accredited residency program and training of residents.
   Measures:
   a. residency programs (#)
   b. programs accredited that are eligible for accreditation (%)
   c. partners for residency training (#)
   d. residents total (#)

18. Achieved national recognition for the excellence of our residency programs.
   Measures:
   a. universities from which residents were recruited (#)
   b. residents who present at a national/regional meeting (%)
   c. residents who published their research in peer-reviewed journals (%)
   d. first-year residents continuing to PGY-2 program (%)
   e. residents who earn an MS MPH or PhD (#)
   f. residents who take academic positions (%)
19. Trained residents who compete successfully for national grants and awards.
   Measures:
   a. # grants received by residents (#)

Innovation and Leadership
20. Defined the criteria for and established “Residencies of Excellence” in targeted areas of focus.
   Measures:
   a. develop criteria (yes / no)
   b. residencies that meet the criteria for a “Residency of Excellence” (#)

21. Partnered in the development and implementation of a residency program model that emphasizes the commonality of community and ambulatory programs.
   Measures:
   a. community/ambulatory program developed/implemented (yes / no)
   b. residents in community/ambulatory program

Advancing Human Health through Research

By 2012, the School of Pharmacy will become a research school of distinction.

Adopted 2005

By 2012 the School of Pharmacy will have:

Excellence

22. Enhanced our reputation of research excellence.
   Measures:
   a. ranking based on NIH funding (# rank)
   b. scientific conferences hosted (# per year)
   c. scientific organization program committees chaired by School faculty (#)
   d. faculty with peer-reviewed funding (%)
   e. peer reviewed publications (#)
   f. faculty participation in program committees of scientific organizations (#)

23. Diversified our portfolio of research funding.
   Measure:
   a. non-NIH funding (%)
      1. NSF
      2. DOE
      3. DOD
      4. industry
24. Trained a cadre of PhD and postdoctoral PhD fellows who are highly sought after for careers in academia, industry, and the government.
   Measures: postdoctoral fellows:
   a. in training annually (#)
   b. who take academic positions (#)
   c. who take positions in industry (#)
   d. who take positions in government (#)

Innovation and Leadership

25. Competed successfully for a PHS training grant.
   Measures:
   a. Funded faculty participating in the graduate program (#)

26. Competed successfully for a program project grant and center grants
   Measures:
   a. applications submitted (#)
   b. applications funded (#)

27. Established a program for research that focuses on pharmacy service models and health care outcomes to favorably improve patient care.
   Measures:
   a. publications (#)
   b. grants (#)

28. Developed research collaborations through the Clinical and Translational Science Institute at the University of Pittsburgh.
   Measures:
   a. grants to School faculty/students funded through the CTSI (#)
   b. programs funded (#)
By 2012, the School of Pharmacy will have:

• Become a leader in standardizing the elements of practice so that pharmacists enhance the care of patients in the community, in institutions, and during transitions of care.

Adopted 2007

Excellence

29. Engaged in significant corporate partnerships for the purpose of providing patient care.
   Measures:
   a. hospital partnerships e.g. UPMC Presby/Shadyside, Childrens, VA, St. Margaret, Magee (#)
   b. faculty who have patient-care practices at UPMC (#)
   c. faculty (total) who have patient-care practices (#)
   d. non-institutional partners for MTM and direct patient care (#)

30. Maintained and enhanced our reputation of practice excellence through honors and recognitions of our programs and our faculty.
   Measures:
   a. faculty invited to make presentations at national and regional meetings (#)
   b. faculty members invited to consult about patient-care programs (#)
   c. national/regional program awards and recognitions (e.g. Cheers) (#)
   d. UPMC Quality and other awards (#)
   e. peer-reviewed publications about patient care, service models, and/or outcomes (#)
   f. grants for pharmacy service models/patient outcomes (#)
   g. learning visits/calls to our programs (#)

31. Developed evidence-based medication protocols and collaborative practice agreements that improve clinical outcomes, enhance patient safety, and reduce costs.
   Measures:
   a. protocols developed (#)
   b. hospitals in which the protocols are implemented (#)
   c. UPMC collaborative practice agreements (#)
32. Provided poison and medication information to the public and to health professionals through our Pittsburgh Poison Center and Drug Information Center.
   Measures:
   a. calls answered by Poison Center (#)
   b. calls answered by Drug Information Center (#)

Innovation and Leadership

33. Provided leadership in the safe and effective use of medications for the care of all UPMC patients through development and implementation of a comprehensive system for hospital care and transition to the community.
   Measures:
   a. Immunizations administered (#)
   b. Anticoagulation patients treated (INRs handled) # thousands (# thousands)
   c. Medication use guidelines developed and approved (#)
   d. Surgical Care Improvement quality measures (SCIP-1, SCIP-2, SCIP-3) (#, #, #)
   e. Low-molecular weight heparin early discharges (#)

34. Created and implemented a pharmacy service model that integrates faculty and staff pharmacists in provision of care for UPMC patients.
   Measures
   a. Yes / no
   b. patient-care units served by the model (#)
   c. units served by the model per hospital (%)

35. Participated in the care of underserved patients in local and global communities through the Grace Lamsam Pharmacy Program for Underserved Patients.
   Measures:
   a. Lamsam Program patients and patient visits (# patients, # visits)
   b. patients who receive MTM/direct patient care (%)
   c. prescriptions provided (#)
   d. locations served (#)
   e. prevention and chronic disease programs (e.g. smoking cessation, immunizations) (#)
   f. collaborative practice agreements in place (#)
   g. grant and gift support ($ thousands)
   h. students who gain IPPE or APPE experiences through the Program (#)
   i. students who volunteer at Program sites (#)
   j. volunteer pharmacists (#)

36. Partnered to create a state-of-the-art combined Pittsburgh Poison Center and Drug Information Center.
   Measures:
   a. Created combined Poison and Drug Information Center: (yes / no)

37. Partnered to provide remote care for patients through technology.
   Measures:
   a. developed remote patient care program with a partner: (yes / no)
   b. program implemented: (yes / no)
Enhancing Our Capabilities through Increased Efficiency and Effectiveness

By 2012, the School of Pharmacy will have:
• increased effectiveness and efficiency and will have enhanced the professional growth of faculty and staff

Renewed 2005

By 2012 the School of Pharmacy will have:

Excellence

38. Efficiently applied technology to optimize utilization of staff and faculty time and financial resources.

Measures:
  a. programs offered for training faculty and staff on expanded use of technology (#)
  b. faculty and staff trained (#)
  c. applications of commercial and self-built programs and databases (#)
     (e.g. School-wide adoption of Outlook for scheduling meetings, room or equipment reservations, Coursecast for capturing video, PENS Software for experiential education, Admissions PharmCas/Pharmadmit, online view of applicant data for admissions committee, Department Manager, Task Stream, Blackboard, Turning Point)

39. Applied technology to effectively and efficiently deliver quality education to facilitate student learning.

Measures:
  a. software applications applied to teaching (#) (e.g. audience response, Pharmacal, Taskstream, Rotation assignment program)
  b. technological platforms (# courses in which they have been adopted)
  c. staff able to support adoption of technology within courses (#)

40. Improved efficiency and cost savings through initiatives identified and lead by the staff.

Measure:
  a. cost savings through bundling software and securing group licenses ($)
  b. costs saved through channeled spending and related opportunities ($)

41. Enhanced communication for internal stakeholders

Measures:
  a. Presence of a student portal: (yes / no)
  b. Presence of a faculty and staff portal: (yes / no)
42. Adopted a proven and effective technology platform that serves faculty, staff, students and others
   Measures:
   a. calls to technology help desk (#)
   b. satisfactory responses within 24 hours (%)
   c. utilization of School’s technology platform for support (# people)
   d. Web page visits(#)

   **Innovation and Leadership**

43. Enhanced faculty and staff knowledge of new technologies for teaching
   Measures:
   a. teaching technologies available (ARS, video taping, course cast, etc.) (#)
   b. training sessions offered (#)

44. Application of Lean and Toyota Productions System principles and practices, and value stream mapping for staff and some faculty processes.
   Measures:
   a. application of principles: (yes / no)
   b. work processes specified (total # of work specifications developed)
   c. work specifications revised (#)

45. Consistently partnered with CSSD in testing the application of technology.
   Measure:
   a. early adopter or beta-testing partnerships with CSSD (# times)
Securing an Adequate Resource Base

**By 2012, we will have increased the resource base of the School of Pharmacy.**

Renewed 2005

**HUMAN RESOURCES**

By 2012, the School of Pharmacy will have:

**Excellence**

**Faculty**

46. Recruited and retained faculty who are recognized for scholarly, educational, service and practice distinctions.

Measures:
   a. faculty (# full time, # part time)
   b. board certifications earned (# ever)
   c. elected fellows (# faculty ever, # fellowships)
   d. nominations of faculty for awards (#)
   e. research awards to faculty from external organizations (#)
   f. teaching/mentor awards to faculty from external organizations (#)
   g. patient care awards to faculty from external organizations (#)
   h. honors awards to faculty for outstanding service (#)
   i. distinguished alumnus designation, other awards from universities (# ever)
   j. faculty national or regional awards (# ever)
   k. faculty appointments to NIH study sections (#)
   l. editorial board appointments (#)
   m. faculty on non-industry advisory boards (#)
   n. faculty invited to give national/regional presentations (#)
   o. faculty who have received Chancellor’s Distinguished award (# ever)
   p. recipients of other Pitt awards/recognitions (#)

47. Enhanced faculty participation in programs that support achievement of professional and academic potential.

Measures:
   a. ACES and other skill development programs sponsored by the School (#)
   b. Faculty participation in University programs [e.g., survival skills program, K award series] (#)
   c. faculty who participate in Office of Research, CTSI and other training modules/programs within (name time) of joining the faculty (%)
   d. faculty who participate in University Teaching Excellence programs (#)
   e. faculty who participate in development programs of professional and scientific organizations (#)

48. Faculty who are engaged as citizens in serving the profession of pharmacy and the academic community.

Measures:
   a. faculty on at least one School of Pharmacy committee (%)
   b. faculty who participate in faculty governance, e.g. faculty assembly or senate (#)
   c. faculty members on University committees in past five years (#)
   d. faculty serving on committees in other Schools or Institutes at the University (#)
   e. elected leaders in local, regional and national organizations
   f. local, regional, and national committee memberships (#)
   g. publications or scholarly article concerning practice or service (#)
   h. presentations of educational programs to academic, institutional, industry, government, and community groups (#)
   i. # of honors and awards received in recognition of outstanding service contributions
   j. % of faculty pharmacists who volunteer for the Lamsam Program
Staff

49. Recruited and retained staff who contribute to the strategic goals of the School and to the culture of teamwork and collaboration.

   Measures:
   a. administrative staff who attend biannual staff retreats (# and %)
   b. administrative staff who attend faculty/staff retreats (# and %)

50. Created and implemented individualized development plans for all staff members.

   Measures:
   a. internal development programs offered (#)
   b. staff who have attended internal development programs (#)
   c. staff who have attended external development programs (#)

Alumni, Friends, and Other Constituencies

51. Delivered high-quality and timely print and digital publications to internal and external stakeholders

   Measures:
   a. times stakeholders received communication from the School (#)
   b. distinct print or electronic pieces developed (#)
   c. on-time production of communication materials (%) 
   d. event notifications submitted (#)
   e. press release placements (#)

52. Created a Web site that is easily navigated, features high-quality imaging and that provides up-to-date information.

   Measure:
   a. # of times error message on Web site

53. Retained our place among the top schools on campus for alumni engagement.

   Measure:
   a. alumni total (#)
   b. rank for alumni engagement
   c. alumni participating in School and University events (#)
   d. email addresses obtained (%)

54. Engaged and supported non-faculty preceptors who support our educational programs.

   Measures:
   a. non-faculty preceptors for at least one student (#)
   b. rotations offered by non-faculty preceptors (#)
   c. preceptors who attend preceptor development programs (#)
**FINANCIAL RESOURCES**

By 2012, we will have:

55. Met the goals for the Capital Campaign.
   Measure:
   a. total dollars raised toward the $27 million Capital Campaign School goal (total in millions)
   b. programs that develop new resource base/increase funding (#)

56. Increased the book value of the School of Pharmacy endowment from $11 million to $21 million.
   Measure:
   a. Book value of the endowment

57. Increased total dollars and number of contributors through all sources of gifts.
   Measures:
   a. total donors including organizations (#)
   b. annual giving ($) 
   c. total gifts and pledges ($ million)

**PHYSICAL RESOURCES**

By 2012, we will have:

58. Renovated and refurbished existing space to meet programmatic needs
   Measure:
   a. Sq ft renovated/refurbished (# SF)

59. Secured our place in the Master Plan for Oakland, assuring adequate space for the School’s programs.
   Measures:
   a. Total # assignable square feet of space allocated for School use
   b. Availability of state-of-the-art research space in immediate proximity to Salk Hall
## Progress At a Glance (PAGE)
### School of Pharmacy: Version 10 (as of Sept 2011)

### Measure | Target | FY02 - Strateg Plan 02 | FY06 - Strateg Plan 06 | FY08 | FY09 | FY10 | FY11
---|---|---|---|---|---|---|---
1a | Yes | - | - | - | 6 | 6 | -
2a | National and regional awards to individual students (%) | 15 | 3 | 3 | 19 | 30 | 2 | -
2b | Student organizations apply for regional/national awards | 12 | 10 | 15 | 15 | 14 | - | -
2c | Regional/national awards to student organizations (%) | track | 1 | 2 | 5 | 7 | 10 | 4
2d | Graduates who take residency position (%) | 25% | 16 (19%) | 11 | 13 | 21 | 26 (24%) | 22 (21%)
2e | Graduates who pursue PhD or MS training | 5% | 2 | 2 | 2 | 1 | 3 (3%) | 4 (4%)
2f | NAPLEX pass rate 1st attempt (%) | >=95% | 96.4% | 90.1% | 99.0% | N/A | 98.0% | pending
2g | NPE pass rate (%) | >=95% | 91.6% | 96.6% | 100.0% | 98.0% | pending
3a | Students admitted with degrees (%) | track data | 16% | 11% | 14.8% | 18.5% | 14.7% | 17 (15.7%)
3b | Students admitted to PharmD program (%) | track data | 31% | 36% | 38.9% | 34.3% | 52.3% | 37 (34.2%)
3c | Minority students admitted to PharmD program (%) | track data | 4% | 5.50% | 4.6% | 1.9% | 4.6% | 8 (7.4%)
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<thead>
<tr>
<th>Measure</th>
<th>Target</th>
<th>FY02</th>
<th>FY06</th>
<th>FY08</th>
<th>FY09</th>
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<tr>
<td>Students who publish residency projects within 3 years (%)</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>5</td>
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<td>8</td>
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<td>Students who present at national/international meetings (#)</td>
<td>15</td>
<td>7</td>
<td>16</td>
<td>21</td>
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<td>Students who publish residency projects within 3 years (%)</td>
<td>15</td>
<td>7</td>
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<td>17</td>
<td>14</td>
<td>18</td>
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<td>U.S. citizens or permanent residents in program (%)</td>
<td>Track data</td>
<td>30%</td>
<td>36%</td>
<td>35%</td>
<td>25%</td>
<td>47%</td>
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<td>Graduates who take positions in industry #</td>
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<td>11</td>
<td>15</td>
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<td>Affiliations with residency programs (#)</td>
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<td>Accredited programs (% of eligible programs)</td>
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<td>Residents (total #)</td>
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<td>13</td>
<td>22</td>
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<td>Universities from which residents were recruited (#)</td>
<td>Track data</td>
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<td>14</td>
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<td>Residents who present at a natl/intl meeting (%)</td>
<td>100%</td>
<td>11</td>
<td>(85%)</td>
<td>21</td>
<td>(95%)</td>
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<td>19.40%</td>
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<td>PGY-1 residents pursuing PGY-2 - incl management (%)</td>
<td>60%</td>
<td>3 (25%)</td>
<td>2 (50%)</td>
<td>8 (56%)</td>
<td>48.3%</td>
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<td>Residents who take academic positions (%)</td>
<td>25%</td>
<td>3 (17%)</td>
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<td>3 (21%)</td>
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<td>Innovation and Leadership</td>
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<tr>
<td>Residents in community/ambulatory pgm (#)</td>
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<tr>
<td>Measure</td>
<td>Target</td>
<td>FY02</td>
<td>FY06</td>
<td>FY08</td>
<td>FY09</td>
<td>FY10</td>
<td>FY11</td>
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<td>Excellence</td>
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<td>Total NIH Funds ($ millions)</td>
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<td>7.27</td>
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<td>9</td>
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<td>Scientific conferences hosted (# / year)</td>
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<td>Faculty with peer-reviewed funding (%)</td>
<td>33%</td>
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<td>30%</td>
<td>26%</td>
<td>36%</td>
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<td>118</td>
<td>137</td>
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<td>Funding other than NIH (%)</td>
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<td>32.40%</td>
<td>27.10%</td>
<td>18.40%</td>
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### Leader in Standardizing Pharmacy Patient Care in Community, Institutions, and During Transitions of Care

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<td>Faculty (total) who have patient-care practices (12)</td>
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<td>Faculty invited to present at national, regional meetings (39)</td>
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<td>Peer-reviewed publication - pt care/svc models/outcomes(#)</td>
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<td>Grants-pharm service model/MTM/direct care/outcome (#)</td>
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<td>Evidence-based medication protocols developed (#)</td>
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<td>Hospitals in which the protocols are implemented (#)</td>
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<td>53</td>
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<td>106.5</td>
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<td>Immunizations administered (#)</td>
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<td>1556</td>
<td>3004</td>
<td>3089</td>
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<td>Anticoagulation patients (INRs handled) (# thousands)</td>
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<td>1.06</td>
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<td>2.46</td>
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<td>22.77</td>
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<td>Medication use guidelines developed &amp; approved (#)</td>
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<td>Lamsam Program impact (# patients / # visits in thousands)</td>
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<td>1500</td>
<td>1400</td>
<td>1775</td>
<td>5000</td>
<td>1556</td>
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<td>Patients who receive MTM/direct pt care (%)</td>
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<td>24%(42%)</td>
<td>425</td>
<td>24%(584)</td>
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<td>Prescriptions provided (# thousands)</td>
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<td>7300</td>
<td>7000</td>
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### Increased Effectiveness and Efficiency

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<th>FY06</th>
<th>FY08</th>
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### Securing an adequate resource base

**Faculty Excellence**

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<th>FY08</th>
<th>FY09</th>
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### Staff Excellence

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<td>Staff who attend faculty/staff retreats (%)</td>
<td>30%</td>
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<td>48%</td>
<td>57%</td>
<td>58%</td>
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### Alumni, Friends, and Others

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### Financial Resources

#### Excellence

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<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dollars raised for capital campaign ($ cumulative total)</td>
<td>$27 million</td>
<td>-</td>
<td>$17,540</td>
<td>$18,810</td>
<td>$20,074</td>
<td>$22,200</td>
<td></td>
</tr>
<tr>
<td>Programs developed that generate new revenue (#)</td>
<td>-</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Book value of endowment ($ million)</td>
<td>$5.937</td>
<td>$11.00</td>
<td>$11.800</td>
<td>$13.841</td>
<td>$14.524</td>
<td>$16.204</td>
<td></td>
</tr>
<tr>
<td>Total donors including organizations (#)</td>
<td>-</td>
<td>-</td>
<td>928</td>
<td>1013</td>
<td>882</td>
<td>910</td>
<td></td>
</tr>
<tr>
<td>Annual giving amount ($ thousands)</td>
<td>-</td>
<td>-</td>
<td>0.303</td>
<td>0.261</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total gift and pledge contributions ($ million)</td>
<td>$0.67</td>
<td>$2.140</td>
<td>$2.044</td>
<td>$1.391</td>
<td>$1.077</td>
<td>$2.625</td>
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</tbody>
</table>

### Physical Resources

#### Excellence

<table>
<thead>
<tr>
<th>Measure</th>
<th>Target</th>
<th>FY02</th>
<th>FY06</th>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sq ft renovated/refurbished (#)</td>
<td>Track data</td>
<td>9627</td>
<td>3108</td>
<td>6008</td>
<td>1222</td>
<td>3029</td>
<td>2139</td>
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<tr>
<td>Assignable Sq Ft allocated for School use (#SF-thousands)</td>
<td>113.8</td>
<td>63.5</td>
<td>71.4</td>
<td>84.7</td>
<td>83.4</td>
<td>80.7</td>
<td>82.5</td>
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<tr>
<td>Space assigned for laboratory research (# SF)</td>
<td>51.4</td>
<td>18335</td>
<td>23121</td>
<td>23121</td>
<td>23121</td>
<td>21523</td>
<td>22025</td>
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</tbody>
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