Dear Friends,

Today, I can confidently say that our School of Pharmacy offers one of the best professional pharmacy degree programs in the country. At a time when the value of higher education has been questioned, we have worked to increase the value of a PittPharmacy education by "personalizing education," guiding students to "get to expert faster," and facilitating summer course work. Like our PharmD Program, our PhD and MS graduate programs and our residency programs have also grown in excellence and in size. Pitt Pharmacy now has the largest number of enrolled students in our history.

Our foundation is strong in research and discovery. The endeavors of our outstanding faculty members have resulted in the largest dollar amount of grant funding in PittPharmacy history. We enjoy the financial support of federal, foundation, and corporate entities to finance the research that extends from computational and molecular discovery to research that improves the health of people in the community.

As you review this School of Pharmacy Annual Report for FY 14 (July 1, 2013 through June 30, 2014), you will see the progress Pitt Pharmacy has made in increasing the health of communities “where we live and work” and in growing international collaborations and partnerships at a time when the University of Pittsburgh is seeking to extend its global reach.

As we start this new fiscal year, I am excited and proud as I look to our immediate future. After years of planning and watching as the first new construction in our 136 years took shape, many research programs will move into Salk Pavilion. In the wake of the move, we have the amazing opportunity to repurpose vacated space into imaginative spaces for teaching and learning and into research neighborhoods that are inviting environments for computational and office-based research.

We look to you, members of our PittPharmacy family, to help us as we move on to this next phase of program building. It is a wonderful time when approaches to education are rapidly evolving and opportunities for innovative research are abundant.

I invite you to “Honor our Past and Shape our Future” and join me in building our future.

Sincerely,

Patricia D. Kroboth, Dean
# Table of Contents

**Leading Pharmacy Education**
- Education by the Numbers for FY14...
- PharmD Program
- Residency Program
- Graduate Program
  - The PharmD Program
    - Increasing the Value of a PharmD Education: Getting to Expert Faster
    - Increasing the Value of a PharmD Education: Personalizing Education
  - Students
  - Graduating Class of 2014
  - Professional Development: Educating the Next Generation of Practitioners
    - Residency Program: Educating the Next Generation of Practitioners
    - Graduate Program: Educating the Next Generation of Scientists
    - Graduate Program in Pharmaceutical Sciences Details
    - Combined PharmD–PhD Program
- Postdoctoral Fellows

**Advancing Human Health Through Research**
- Research by the Numbers for FY14
- Research Funding
- Research Details
- Research Recognition of Faculty
- Research Overview
  - Center for Pharmacogenetics
  - Center for Clinical Pharmaceutical Sciences
  - Computational Chemical Genomics Screening (CCGS) Center
  - Pharmaceutics Group and Microbicide Clinical Trials Network
  - Central Laboratory Core
  - Center for Education and Drug Abuse Research (CEDAR)

**Enhancing the Health of the Communities in Which We Live and Work**
- Patient Care by the Numbers for FY14
- Community-Based Programs
  - Community Chain Partnerships
  - University Diabetes Care Associates
  - Program Evaluation Research Unit (PERU)
  - The Grace Lamsam Pharmacy Program for the Underserved
- UPMC Clinics and Retail Pharmacies
  - UPMC Presbyterian Ambulatory Clinics and Falk Pharmacy
  - UPMC St. Margaret Family Medicine
  - Transitions of Care
- Hospital-Based Programs
  - UPMC Pharmacy Transplant Group
  - UPMC Pharmacy Critical Care Group
  - UPMC Pharmacy General Inpatient Group
  - UPMC Infectious Diseases and Antibiotic Management Program (AMP)
  - Health System Formulary Management and Drug Use Policy
  - Geriatrics (Benedum and Shadyside Senior Care Institute) Program
  - UPMC Oncology Magee-Womens Hospital of UPMC
  - UPMC–Western Psychiatric Institute and Clinic
- Students Impacting Patient Care in Communities
## Securing an Adequate Resource Base

<table>
<thead>
<tr>
<th>Resources by the Numbers for FY14</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Resources</td>
<td>2</td>
</tr>
<tr>
<td>Budget</td>
<td>2</td>
</tr>
<tr>
<td>Institutional Advancement</td>
<td>2</td>
</tr>
<tr>
<td>Physical Facilities</td>
<td>5</td>
</tr>
<tr>
<td>The Resource of People</td>
<td>5</td>
</tr>
<tr>
<td>Faculty</td>
<td>5</td>
</tr>
<tr>
<td>Alumni and Alumni Engagement</td>
<td>9</td>
</tr>
<tr>
<td>Board of Visitors</td>
<td>11</td>
</tr>
<tr>
<td>Enhancing Our Resource Base</td>
<td>12</td>
</tr>
<tr>
<td>Through Efficiency and Effectiveness</td>
<td>12</td>
</tr>
<tr>
<td>Staff</td>
<td>12</td>
</tr>
<tr>
<td>Information Technology</td>
<td>12</td>
</tr>
<tr>
<td>Communications</td>
<td>12</td>
</tr>
</tbody>
</table>

## Extending Our Global Reach

<table>
<thead>
<tr>
<th>Global Reach by the Numbers for FY14</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing a Supportive Infrastructure</td>
<td>2</td>
</tr>
<tr>
<td>Global and International Partnerships</td>
<td>2</td>
</tr>
<tr>
<td>Partnerships</td>
<td>2</td>
</tr>
<tr>
<td>Programs</td>
<td>5</td>
</tr>
<tr>
<td>PharmD Student International Learning and Experiences</td>
<td>5</td>
</tr>
<tr>
<td>Global Health Residency and Rotations</td>
<td>6</td>
</tr>
<tr>
<td>International Visiting Scholars</td>
<td>8</td>
</tr>
<tr>
<td>International Invited Presentations</td>
<td>8</td>
</tr>
</tbody>
</table>

## Long-Range Plan 2018

<table>
<thead>
<tr>
<th>Long-Range Plan 2018</th>
<th></th>
</tr>
</thead>
</table>
Leading Pharmacy Education
Leading Pharmacy Education

The School builds on its rich tradition of excellence in education, continuing to provide the innovators to solve the complex medication-based problems of today and tomorrow and 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 program.

The School of Pharmacy has adopted two broad goals for our programs: personalizing education and getting to expert faster. These goals serve as the overall objective for the PharmD, residency, and graduate programs for the School of Pharmacy.
EDUCATION BY THE NUMBERS FOR FY14

Total Number of Students Enrolled

- Total enrollment has grown by 32.7% since FY02 to a total of 519 students enrolled in FY14.
- The number of faculty members has decreased from 79 in to our present number of 72 in FY14.

PharmD Program
In FY14:
- 113 students enrolled in the PharmD class of 2018 with an average SAT score of 1410 and GPA and PCAT scores of 3.58 and 81%, respectively.
- 7.3—the number of applicants per seat through open admission.
- 203 scholarships totaling $506,615 were awarded to 181 PharmD students.
- University of Pittsburgh pharmacy student organizations won 5 national or regional awards.
- PharmD students presented 55 posters at national and regional meetings.
- 335 pharmacists in 21 states and 6 countries provided 738 APPE rotations for 106 fourth professional year students.
- 104 students in the class of 2014 received PharmD degrees and 89 students received the BS in pharmaceutical sciences.

Residency Program
In FY14:
- 47 residents (31 PGY1 and 16 PGY2) came from 26 schools of pharmacy in 16 states.
- Our 13 programs were in partnership with 11 institutions/entities.
- 35 residents presented their research results at national or regional meetings.
- 29 residents participated in training programs to enhance their teaching and clinical precepting—15 residents completed the “Mastery of Teaching Program” and 14 completed “Orientation to Learning and Teaching Program.”
- 19 residents were accepted into PGY2 specialty residency programs and 4 were accepted into a fellowship or stewardship programs.
- 5 residents accepted faculty positions at schools of pharmacy.
- 8 residents achieved board certification as pharmacotherapy specialists during their residencies.
• 10 PGY2 residents accepted a clinical position at an academic medical center, 2 of which were at the UPMC Health System.

**Graduate Program**

In FY14:

• 83 students were enrolled: 54 PhD students; 7 Master of Science students; 22 Non Thesis Master of Science students.

• 34 new students matriculated: 12 PhD students (4 of whom previously completed the Non-Thesis Master of Science); 4 Master of Science students; 18 Non Thesis Master of Science students.

• 17 students received degrees in pharmaceutical sciences; 5 students graduated with PhD degree, 4 students graduated with Master of Science degrees, and 8 students graduated with Non Thesis Master of Science degrees.

• 31% (17/53) of the full-time PhD students are U.S. citizens or permanent residents.

• 50% (27/53) of the full-time PhD students have degrees from schools of pharmacy, of which 5 of 53 (11%) have PharmD degrees.

• 3 students received regional or national awards for excellence in research and 1 PhD student is in her second year of a competitive national fellowship.

• 54 peer-reviewed manuscripts or book chapters were published by graduate students.

• Graduate students gave 58 presentations at regional and national scientific meetings.

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

**BS in Pharmaceutical Sciences**

In April 2014, 89 students received the BS in pharmaceutical sciences at the end of their second professional year.

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. With the degree, students are eligible to earn credit through selected electives toward University-approved certificates and graduate programs. The BSPS degree also provides eligibility for NIH training programs such as T32 awards for individuals who are training for careers in specified areas of biomedical, behavioral, and clinical research.

**The PharmD Program**

As a recognized national leader in pharmacy education, the School of Pharmacy offers world-class learning opportunities for students. The School of Pharmacy:

• contributes to the national dialogue about the scholarship of teaching, learning, and assessment through publications and presentations;

• provides students with a rich array of opportunities to personalize their education, including areas of concentration; elective courses; independent study; research engagement; experiential rotations; travel to state, regional, and national meetings; and international pharmacy travel;

• empowers 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; and

• provides student pharmacists and graduate pharmacists with support and resources through a lifetime 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 January 31, 2017.

Increasing the Value of a PharmD Education: Getting to Expert Faster

Members of the faculty and staff have taken steps to increase the value of a PharmD education at Pitt through five mechanisms:

A. Adopting the philosophy of “cost of PharmD education” vs. the credit-based tuition. Students were permitted to take courses above a standard credit limit and during the summer with no additional tuition for the first time in FY14.

B. “Personalizing education.” See next major section.

C. Accelerating learning through active engagement.
   1. Opened the Novo Nordisk Learning Center in Salk Hall in fall of 2013. The state-of-the-art classroom that facilitates active and small-group learning in a large group setting.

   Up to 120 students can work in groups of six, each with its own work table and video monitor. The new Learning Center has outstanding acoustics and contemporary technology that allows the instructor to project to the monitors while also allowing students to connect laptops and mobile devices to the monitors for targeted group work. Faculty have changed the way they teach to maximize the instructional capabilities in the Learning

D. Developing, implementing and increasing the number of controlled clinical environments that simulate clinical situations and accelerate the development of clinical decision making skills.
   1. Standardized Patients (Trained Actors)
   2. Standardized Colleagues (Trained Actors)
   3. Computer Cases with Branched Questions that utilize game theory
   4. Human patient simulator

Simulated patient experiences have tremendous value for learning because each of the above:
   • Provides immediate feedback to the student on performance.
   • Protects patients from medication errors or students practicing first-time communication skills.
   • Provides a known safe environment for student learning.
   • Has “known correct” answers to patient situations.

1. Standardized Patients. 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 and to receive detailed feedback from faculty focused on continued development and refinement of skills.

2. Standardized Colleagues. Additionally, professionals trained as standardized physicians and other health professionals provide student opportunities to practice communication skills to effectively engage in collaborative team-based care delivery and navigate potentially difficult conversations.
All P1 students also participate in the fall Interprofessional Forum to learn alongside first-year students in other health sciences programs on campus about the emerging importance of interprofessional collaborative care in the current era of health care reform.

3. Virtual Patient Simulation. PittPharmacy faculty members are nationally recognized for their development and use of computer-based, virtual patients to integrate case-based teaching of complex therapeutic concepts and clinical decision-making processes into the curriculum. Their award-winning work with a branched-outcome decision-making model is based on game theory. These cases have enhanced clinical decision making in the therapeutics component of the curriculum.

4. Human Patient Simulators. The Peter M. Winter Institute for Simulation, Education and Research (WISER) center remains a valuable resource for use in pharmacy 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 a full-time director of simulation, two simulation mannequins, four arms to train in blood pressure monitoring, and a wound care foot that are housed in Salk Hall for students’ use to improve their clinical skills.

E. Optimizing the use of required Introductory Pharmacy Practice Experiences (IPPEs) and Advanced Pharmacy Practice Experiences (APPEs), which require interactions with patients and other health care providers.

**REAL PATIENT CARE EXPERIENCES: Introductory Pharmacy Practice Experiences (IPPEs)**

The experiences with patients depend greatly on preceptors, some of whom are faculty, who share their skill.

- 35 preceptors supervised 113 P1 students.
- 75 preceptors supervised 109 P2 students.
- 107 preceptors supervised 108 P3 students

Students interact with real patients in the P2 and P4 year; the focus in the P3 year is on operational aspects of pharmacy.

**SilverScripts** is a program through which Pitt student pharmacists interact with seniors at senior centers throughout the city. During the first visit, students talk with patients about their drug therapy. Two weeks later, after developing and reviewing a plan for the patient, each student pharmacist returns to visit with the same senior to talk with them and make recommendations. Students first meet their patients in the spring of the P1 year, see them again in the fall of their P2 year, then transition the patients to the P1 students in the following spring.
SilverScripts Program Impact during FY14

<table>
<thead>
<tr>
<th>SilverScripts Fall 2013</th>
<th>SilverScripts Spring 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P2 Students</strong></td>
<td><strong>P1 Students</strong></td>
</tr>
<tr>
<td>New Patient Total</td>
<td>286</td>
</tr>
<tr>
<td>Follow-up Patient Total</td>
<td>43</td>
</tr>
<tr>
<td><strong>Total Patients</strong></td>
<td>329</td>
</tr>
<tr>
<td>Blood pressure checks</td>
<td></td>
</tr>
<tr>
<td>BP only (no med review)</td>
<td>205</td>
</tr>
<tr>
<td>BP w/ med review</td>
<td>174</td>
</tr>
<tr>
<td>Total</td>
<td>375</td>
</tr>
<tr>
<td>Total Med Reviews</td>
<td>166</td>
</tr>
<tr>
<td>Medication Education w/out med review</td>
<td>56</td>
</tr>
<tr>
<td>Drug Therapy Problems Identified</td>
<td></td>
</tr>
<tr>
<td>Unnecessary Drug Therapy</td>
<td>21</td>
</tr>
<tr>
<td>Needs Additional Drug Therapy</td>
<td>107</td>
</tr>
<tr>
<td>Needs Different Drug Product</td>
<td>20</td>
</tr>
<tr>
<td>Dosage Too Low</td>
<td>16</td>
</tr>
<tr>
<td>Adverse Drug Reaction</td>
<td>26</td>
</tr>
<tr>
<td>Dosage Too High</td>
<td>15</td>
</tr>
<tr>
<td>Noncompliance</td>
<td>62</td>
</tr>
<tr>
<td>Referral to other health care provider</td>
<td>43</td>
</tr>
<tr>
<td><strong>Total Number of Drug Therapy Problems</strong></td>
<td>267</td>
</tr>
</tbody>
</table>

| New Patient Total      | 357                      |
| Follow-up Patient Total| 33                       |
| **Total Patients**     | 390                      |
| Blood pressure checks  |                          |
| BP only (no med review)| 223                      |
| BP w/ med review       | 164                      |
| Total                  | 390                      |
| Total Med Reviews      | 166                      |
| Medication Education w/out med review | 29          |
| Drug Therapy Problems Identified |       |
| Unnecessary Drug Therapy | 21                |
| Needs Additional Drug Therapy | 107             |
| Needs Different Drug Product | 21             |
| Dosage Too Low         | 13                       |
| Adverse Drug Reaction  | 20                       |
| Dosage Too High        | 12                       |
| Noncompliance          | 55                       |
| Referral to other health care provider | 21          |
| **Total # DTPs Identified on Both Visits** | 249 |

P2 Community IPPE Patient Interactions and Collective Impact on Patients

<table>
<thead>
<tr>
<th>Year</th>
<th># Students</th>
<th># Patient Encounters</th>
<th># Drug Therapy Problems Identified</th>
<th># Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>109</td>
<td>3,542</td>
<td>1,400</td>
<td>883</td>
</tr>
</tbody>
</table>

REAL PATIENT CARE EXPERIENCES: ADVANCED PHARMACY PRACTICE EXPERIENCES (APPEs)

In their P4 year, students interact with patients in a variety of settings. Results from the PITT form for tracking show the impact of students on patients in various settings.

<table>
<thead>
<tr>
<th>P4 Class Patient Impact FY14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Interactions</td>
</tr>
<tr>
<td>Drug Therapy Problems Identified</td>
</tr>
<tr>
<td>Drug Therapy Recommendations</td>
</tr>
<tr>
<td>Adverse drug events identified</td>
</tr>
<tr>
<td>Adverse drug events averted</td>
</tr>
</tbody>
</table>
In FY14, 335 preceptors supervised 106 P4 students during 738 five- or six-week rotations. They types of proportions of rotations are shown in the pie chart below.

**APPE Distribution by Rotation Type**

- Acute Care: 25%
- Hospital: 21%
- Community: 17%
- Ambulatory: 14%
- Elective: 23%

The figure below shows that in the P1, P2, and P3 years, students are required to have a minimum of 214 real or simulated patient experiences. The number of interactions (156) for P4 students represents an average of the number of patient interactions.

**Required Clinical Experiences During PharmD Program = 370**

<table>
<thead>
<tr>
<th>Year of PharmD Program</th>
<th>Experiences per Student (#)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>51</td>
</tr>
<tr>
<td>P2</td>
<td>92</td>
</tr>
<tr>
<td>P3</td>
<td>71</td>
</tr>
<tr>
<td>P4</td>
<td>156</td>
</tr>
</tbody>
</table>

Data were collected using the Pharmacist Interaction Tracking Tool (PITT form) for real-time tracking of patient interactions—both simulated and actual patients.
Increasing the Value of a PharmD Education: Personalizing Education

We believe that personalized education will enrich individual student experiences and will better prepare them for success as they navigate the rapidly changing health care landscape and post-graduate environment.

Long Range Plan 2018

The faculty is enabling students to personalize their education through a growing array of opportunities.

A. Areas of Concentration
B. Special Topics
C. Presentations of Research at Regional or National Meetings
D. International Rotations
E. Professional Development through Advising

A. AREAS OF CONCENTRATION (ARCOs)

During FY14, three additional areas of concentration (ARCOs) were approved, bringing the total number offered to six.

By spring 2014, a total of 77 students were enrolled, including 34 new students. Enrolled are:
- Sixteen students in the ARCO-Global Health (3 P2, 5 P3, 8 P4).
- Sixteen students in the ARCO-Research (5 P2, 5 P3, 6 P4).
- Twelve students in the ARCO-Pharmacy Business Administration (6 P3, 6 P4).
- Three students in the ARCO-Pediatrics (3 P3).
- Twenty students in the ARCO-Community Leadership, Innovation, and Practice (10 P3, 10 P4).
- Ten students in the ARCO-Pharmacotherapy Scholars (10 P4).

B. SPECIAL TOPICS

Special Topics elective courses allow students the opportunity to personalize their education by engaging a mentored experience in a particular area of pharmaceutical science, pharmacy practice, or pharmacy education through individual or small group work under the direction of a faculty member. Special Topics may take the form of immersion in a laboratory, a defined literature review, or other longitudinal experience, activity, or course co-designed by a student and a faculty mentor. Special Topics courses may be designed for one, two, or three credits each, depending on the nature of the experience, expected commitment of the student, and stated outcomes of the course.

Student engagement in Special Topics courses has grown tremendously and increased almost 700% from FY08 to FY13. Fall 2014 will see the largest number of students to date (n=45) registered to complete such courses in a single term.

Students Enrolled in Special Topics

<table>
<thead>
<tr>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>80</td>
</tr>
</tbody>
</table>

8 UNIVERSITY OF PITTSBURGH | SCHOOL OF PHARMACY
### Student Presentations at National and Regional Meetings

<table>
<thead>
<tr>
<th>American Society of Health-System Pharmacists Midyear Clinical Meeting</th>
<th>Poster Title</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Author</strong></td>
<td><strong>Poster Title</strong></td>
</tr>
<tr>
<td>Anthony Boyd (P3)</td>
<td>Pharmacy distribution model change: improving the medication distribution from a centralized location at a large academic teaching hospital</td>
</tr>
<tr>
<td>Frank Cintineo (P4)</td>
<td>Off-label medication use in elderly patients in a medical intensive care unit</td>
</tr>
<tr>
<td>Stephanie Cotugno (P3)</td>
<td>Prevalence of hypokalemia in patients taking thiazide diuretics at an urban free clinic</td>
</tr>
<tr>
<td>Julia DiNardo (P2)</td>
<td>Redesigning the medication distribution model at a large academic teaching hospital</td>
</tr>
<tr>
<td>Allison Doherty (P3)</td>
<td>Development and implementation of contraception education for undergraduate sororities</td>
</tr>
<tr>
<td>Matthew Dukewich (P3)</td>
<td>Analysis of antibiotic resistance in a cardiothoracic intensive care unit to determine appropriateness of a restriction program</td>
</tr>
<tr>
<td>Cristina Elgin (P4)</td>
<td>Evaluation of a student pharmacist-led smoking cessation program at an inpatient drug and alcohol treatment program</td>
</tr>
<tr>
<td>Nicholas Farina (P3)</td>
<td>Implementation and utilization of barcode scanning to prevent medication restocking errors in automated medication stations at a large tertiary academic institution</td>
</tr>
<tr>
<td>Maria Felton (P3)</td>
<td>Impact of pharmacy intern involvement on decreasing medication errors during medication reconciliation at an academic teaching facility</td>
</tr>
<tr>
<td>Rachel Filiaggi (P3)</td>
<td>Evaluation of the intensive care delirium screening checklist (ICDSC) as a delirium screening protocol in a medical intensive care unit</td>
</tr>
<tr>
<td>Emily Graham (P4)</td>
<td>Most common reasons for admission to the intensive care unit</td>
</tr>
<tr>
<td>Jocelyn Hatfield (P3)</td>
<td>Development of videos to educate patients on inhalers prior to hospital discharge</td>
</tr>
<tr>
<td>Samantha Holliday (P3)</td>
<td>Successful implementation of a sedation algorithm in a medical intensive care unit (MICU)</td>
</tr>
<tr>
<td>Lukas Martin (P4)</td>
<td>Bleeding risk assessment among patients receiving antithrombotics for hip and knee replacement surgery</td>
</tr>
<tr>
<td>Cara Mazzarisi (P4)</td>
<td>Identification and design of interprofessional advanced pharmacy practice experiences</td>
</tr>
<tr>
<td>Cody Moore (P4)</td>
<td>Characteristics of solid organ transplant patients more likely to receive vaccinations after pharmacist recommendation</td>
</tr>
<tr>
<td>Jose Nery (P4)</td>
<td>Evaluation of intravenous chlorothiazide use in a large tertiary care academic medical center</td>
</tr>
<tr>
<td>Kevin Ordons (P3)</td>
<td>Evaluating the efficiency of a robot rx renovation in a large academic teaching hospital pharmacy</td>
</tr>
<tr>
<td>Lindsey Rihrtarchik (P3)</td>
<td>Analyzing the efficiency and feasibility of a one technician narcotic delivery model in a large academic teaching facility</td>
</tr>
<tr>
<td>Ellen Rubin (P4)</td>
<td>Pharmacokinetic changes in critically ill patients and the potential for adverse drug events</td>
</tr>
<tr>
<td>Primary Author</td>
<td>Poster Title</td>
</tr>
<tr>
<td>----------------</td>
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</tr>
<tr>
<td>Ukwen Akpoji (P3)</td>
<td>Non-adherence in rheumatoid arthritis patients: Influence of patient-centered factors on disease-modifying antirheumatic drugs and laboratory compliance</td>
</tr>
<tr>
<td>Tara Bastawrous (P3)</td>
<td>Impact of first fill interviewing on subsequent refills and patient satisfaction</td>
</tr>
<tr>
<td>Stephanie Cotugno (P3)</td>
<td>Optimizing a medication use process to improve safety for a special-needs patient population</td>
</tr>
<tr>
<td>Amanda Jaber (P3)</td>
<td>Evaluation of return-to-stock medications in two community pharmacies</td>
</tr>
<tr>
<td>Cara Mazzarisi (P3)</td>
<td>Teaching student pharmacists the implications of oral health on chronic disease state management</td>
</tr>
<tr>
<td>Matthew Rinkus (P3)</td>
<td>Implementing a telepharmacist service for behavioral health patients within an integrated care system</td>
</tr>
<tr>
<td>Courtney Yacko (P3)</td>
<td>Implementation and evaluation of specialized workflow for targeted interventions in a grocery store chain pharmacy</td>
</tr>
<tr>
<td>Julia Zecchini (P3)</td>
<td>Increasing over-the-counter analgesic sales by meeting customer needs in an independent pharmacy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Primary Author</th>
<th>Poster Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ukwen Akpoji (P3)</td>
<td>Non-adherence in RA: Patient-centered factors’ influence on DMARD and laboratory monitoring compliance</td>
</tr>
<tr>
<td>Amanda Antosz (P2)</td>
<td>Preventing disease state specific vitamin deficiencies through OTC outreach program</td>
</tr>
<tr>
<td>Tara Bastawrous (P3)</td>
<td>Impact of first fill interviewing on subsequent refills and patient satisfaction</td>
</tr>
<tr>
<td>Joni Carroll (P3)</td>
<td>Participation-base algorithm to systematically allocate funds to professional organization members for a national conference</td>
</tr>
<tr>
<td>Stephanie Cotugno (P3)</td>
<td>An overview of the practice of pharmacy at a clinic in Cap Haïtien, Haiti</td>
</tr>
<tr>
<td>Aaron Devanathan (P2)</td>
<td>An innovative approach: Collecting and tracking patient data to facilitate counseling in patients with hypertension and diabetes</td>
</tr>
<tr>
<td>Katelyn Emhoff (P3)</td>
<td>Over-the-counter medication use in college-aged individuals</td>
</tr>
</tbody>
</table>
D. INTERNATIONAL APPE ROTATIONS

P4 students may complete APPE rotations at international sites as long as they are fulfilling an elective experience. This year a total of 14 students had 15 international APPE rotation experiences, more than double the number the previous year.

<table>
<thead>
<tr>
<th>Student</th>
<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jennifer Fever (P1)</td>
<td>Wisconsin Pharmacy Quality Collaborative: Applications to Pennsylvania</td>
</tr>
<tr>
<td>Adam Gonyeau (P3)</td>
<td>Implementing a telepharmacist service for behavioral health patients within an integrated care system</td>
</tr>
<tr>
<td>Kaleen Hayes (P1)</td>
<td>Osterhaus Pharmacy: The power of provider status</td>
</tr>
<tr>
<td>Amanda Jaber (P3)</td>
<td>Evaluation of return-to-stock medications in two community pharmacies</td>
</tr>
<tr>
<td>Crystal Jennings (P2)</td>
<td>Compliance improvement within the mental health population</td>
</tr>
<tr>
<td>Emily Linville (P2)</td>
<td>Community pharmacy health fairs: Improving patient awareness and building provider relationships</td>
</tr>
<tr>
<td>Vivian Nguyen (P2)</td>
<td>Implementation of medication reconciliation discharge in a pediatric outpatient hospital setting</td>
</tr>
<tr>
<td>Ravi Patel (P4)</td>
<td>Student-created education artifacts to supplement didactic instruction</td>
</tr>
<tr>
<td>Neil Turco (P2)</td>
<td>Scriptsync: Improving compliance, improving outcomes</td>
</tr>
<tr>
<td>Evan Williams (P4)</td>
<td>The effects of carousel dispensing technology on safety, efficacy, and inventory control in a 300-bed psychiatric hospital</td>
</tr>
<tr>
<td>Courtney Yacko (P3)</td>
<td>Implementation and evaluation of specialized workflow for targeted interventions in a grocery store chain pharmacy</td>
</tr>
<tr>
<td>Julia Zecchini (P3)</td>
<td>Increasing over-the-counter analgesic sales by meeting customer needs in an independent pharmacy</td>
</tr>
</tbody>
</table>

P4 International Rotations FY10 – FY15 (Current Year)
Locations of the P4 rotations and students who participated:
- Addo & Son’s Pharmacy in Ghana, Africa (1 student, Sandra Kwarteng).
- Austin Health in Australia (2 students, Felix Fisher and Jessa Koch).
- Kamuzu Central Hospital in Malawi (1 student, Cristina Elgin).
- Beacon Hospital in Dublin, Ireland (2 students, Daniel Greer and Cayla Jones).
- Co-Operative Pharmacy in Dunfermline, Scotland (2 students, Chelsee Claar and Erin Diehl).
- Farmer’s Pharmacy in Dublin, Ireland. (3 students, Michelle Bucci, Lindsay Fakete and Nicole Pezzino).
- Hombro a Hombro, Honduras. (2 students, Vantonile Bui and Jessa Koch).
- Sir Charles Hospital in Australia (2 students, Julie Cusatis and Sarah Ward).

Students also travel after their P1 and P2 years. Those data are not included here.

E. STUDENT PROFESSIONAL DEVELOPMENT

Advising and career development are key to the School’s goal of personalizing education. The School has a tradition of students using portfolios to demonstrate achievement since the 1990s. The School maintains 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. Students also use the platform to create a professional portfolio as they approach graduation and prepare for interviews. Robust processes for faculty and peer evaluation of portfolios have been implemented, including rubrics to clearly communicate expectations and direct feedback. Standardized training is provided for individuals serving as portfolio reviewers. Each term, every student in the P1 and P2 years meets individually with a faculty member to discuss progress in the curriculum. Every P3 and P4 student meets with either a faculty member or practitioner for focused career planning and mentoring.

INDICATORS of EXCELLENCE

CURRICULAR IMPROVEMENT AND OVERSIGHT
The School has become nationally recognized for its assessment approaches and commitment to a culture of assessment. School faculty members received the Award for Excellence in Assessment from the American Association of Colleges of Pharmacy in 2012. In addition, three projects were selected over two years (2013 and 2014) for presentation at the annual Assessment Institute, the nation’s oldest and largest event focused exclusively on outcomes assessment in higher education. The School’s Curriculum Assessment Committee is responsible for monitoring the effectiveness of the PharmD curriculum and the achievement of student learning outcomes.

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.
Students

RECRUITMENT AND ENROLLMENT
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 innovators and 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 113 students for the class of 2018.

In previous years, the Annual Report captured the average SAT scores for the entering PharmD students who submitted SAT scores. However, the SAT is not required for the School of Pharmacy open admission application. Our conditional acceptance program, which allows students to apply to the pre-Pharmacy program when applying to the University of Pittsburgh as freshman, does require an SAT score from applicants. The SAT requirements for conditional admission include a minimum SAT total score of 1300. For accuracy, we have chosen to report the average scores for the conditional acceptance matriculated students.
During FY14, we recruited the class of 2018 for fall enrollment.

- Conditional admission to the class of 2018
  - 4 students applied for the PharmD program after freshman year.
  - 47 students applied for PharmD program after sophomore year.
  - 51 were interviewed.
  - 44 were qualified and were offered admission.
  - 43 accepted the offers.

- Open admission to the class of 2018
  - 518 applied to the PharmD program.
  - 157 were interviewed.
  - 103 were offered admission.
  - 71 accepted the offers.

Data for entering classes over time are summarized in the table below. Of the students in the class of 2018, 31% are men and 69% are women (36% and 64%, respectively, in the class of 2017); and 5% are from an underrepresented minority (6% in the class of 2017). The data in the table and figures show a steady increase in the percentage of students with a previous four-year degree.

**First-Year (P1) Class Enrollments 2002-2014**

<table>
<thead>
<tr>
<th>Fall Term</th>
<th>Residency Status</th>
<th>Conditional Acceptance</th>
<th>Application Pathway*</th>
<th>Students with 4-Year Degree (% of class)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PA (%)</td>
<td>Non-PA (%)</td>
<td>Pitt</td>
<td>Community College</td>
</tr>
<tr>
<td>2002</td>
<td>92</td>
<td>8</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>2003</td>
<td>86</td>
<td>14</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>2004</td>
<td>85</td>
<td>15</td>
<td>52</td>
<td>28</td>
</tr>
<tr>
<td>2005</td>
<td>92</td>
<td>8</td>
<td>60</td>
<td>28</td>
</tr>
<tr>
<td>2006</td>
<td>87</td>
<td>13</td>
<td>50</td>
<td>44</td>
</tr>
<tr>
<td>2007</td>
<td>88</td>
<td>12</td>
<td>42</td>
<td>53</td>
</tr>
<tr>
<td>2008</td>
<td>86</td>
<td>14</td>
<td>47</td>
<td>42</td>
</tr>
<tr>
<td>2009</td>
<td>85</td>
<td>15</td>
<td>51</td>
<td>39</td>
</tr>
<tr>
<td>2010</td>
<td>81</td>
<td>19</td>
<td>47</td>
<td>51</td>
</tr>
<tr>
<td>2011</td>
<td>73</td>
<td>27</td>
<td>49</td>
<td>44</td>
</tr>
<tr>
<td>2012</td>
<td>77</td>
<td>23</td>
<td>54</td>
<td>46</td>
</tr>
<tr>
<td>2013</td>
<td>71</td>
<td>29</td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td>2014</td>
<td>75</td>
<td>25</td>
<td>43</td>
<td>46</td>
</tr>
</tbody>
</table>

*Total across Applications Pathway sums to the total students enrolled.
SCHOLARSHIP SUPPORT FOR STUDENTS
The amount of scholarship funds awarded by the School of Pharmacy in FY14 was 176% more than the amount awarded FY04 as shown in the figure below.

GRADUATING CLASS OF 2014
104 students received their PharmD diplomas at the May 2014 Commencement Ceremony.

In calendar year 2013, 97.2% of students passed the North American Pharmacist Licensure Exam on their first attempt and 98.8% 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.

Thirty-six percent (36%) of the class of 2014 continued training in a post-PharmD residencies or fellowships. Other graduates obtained employment in a variety of pharmacy practice settings.
Class of 2014

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community/Specialty Pharmacy</td>
<td>46%</td>
</tr>
<tr>
<td>Residency/Fellowship</td>
<td>36%</td>
</tr>
<tr>
<td>Hospital/Long-term Care</td>
<td>5%</td>
</tr>
<tr>
<td>Military</td>
<td>2%</td>
</tr>
<tr>
<td>Unknown</td>
<td>11%</td>
</tr>
</tbody>
</table>

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>
</tr>
</thead>
<tbody>
<tr>
<td>2014*</td>
<td>1/1</td>
<td>100</td>
<td>90.9</td>
<td>83.2</td>
</tr>
<tr>
<td>2013</td>
<td>104/107</td>
<td>97.2</td>
<td>96.9</td>
<td>95.4</td>
</tr>
<tr>
<td>2012</td>
<td>106/106</td>
<td>100</td>
<td>98.0</td>
<td>96.4</td>
</tr>
<tr>
<td>2011</td>
<td>103/105</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>
</tbody>
</table>

*Jan–April scores

Comparison Multistate Pharmacy Jurisprudence Examination® (MPJE®) Results:

<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>2014*</td>
<td>7/7</td>
<td>100</td>
<td>93.7</td>
<td>90.9</td>
</tr>
<tr>
<td>2013</td>
<td>83/84</td>
<td>98.8</td>
<td>95.0</td>
<td>92.8</td>
</tr>
<tr>
<td>2012</td>
<td>91/91</td>
<td>100</td>
<td>95.1</td>
<td>92.5</td>
</tr>
<tr>
<td>2011</td>
<td>89/89</td>
<td>100</td>
<td>96.6</td>
<td>95.6</td>
</tr>
<tr>
<td>2010</td>
<td>70/73</td>
<td>95.9</td>
<td>93.9</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>77/77</td>
<td>100</td>
<td>92.1</td>
<td></td>
</tr>
</tbody>
</table>

* Includes University of Pittsburgh School of Pharmacy graduates taking the MPJE® in Pennsylvania as a first-time candidate.
** State pass rates by calendar year not able to be calculated prior to 2011.
* Jan–April scores
## Recognitions and Awards

### Recognition and Awards: Student Organizations

<table>
<thead>
<tr>
<th>Organization</th>
<th>Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Pharmacists Association-Academy of Student Pharmacists (APhA-ASP)</td>
<td>Cardinal Health Foundation Prescription Drug Abuse and Misuse Prevention Grant Region 2 Generation Rx Award</td>
</tr>
<tr>
<td>Pennsylvania Pharmacists Association</td>
<td>Membership Award for excellence in membership recruitment, retention, and involvement.</td>
</tr>
<tr>
<td>Rho Chi</td>
<td>Chapter Project Award for Posters, Professors, and Progress</td>
</tr>
<tr>
<td>Lambda Kappa Sigma</td>
<td>Chrysanthemum Award for member retention Northeast Region Chapter of the Year</td>
</tr>
<tr>
<td>Phi Lambda Sigma</td>
<td>Chapter of the Year Runner-Up</td>
</tr>
</tbody>
</table>

### Recognition and Awards: Individual Students

<table>
<thead>
<tr>
<th>Student</th>
<th>Award</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adrienne Jantzi (P3)</td>
<td>Placed in the top 10 in National Patient Counseling Competition</td>
<td>Competition hosted by the American Pharmacists Association-Academy of Student Pharmacists</td>
</tr>
<tr>
<td>Pamela Lyons (P4)</td>
<td>Placed in top 10 in National Clinical Skills Competition</td>
<td>Competition hosted by the American Society of Health-System Pharmacists</td>
</tr>
<tr>
<td>Evan Williams (P4)</td>
<td>Placed in top 10 in National Clinical Skills Competition</td>
<td>Competition hosted by the American Society of Health-System Pharmacists</td>
</tr>
<tr>
<td>Kyle McCormick (P3)</td>
<td>Elected to state-level office (director)</td>
<td>Student member of the Pennsylvania Pharmacists Association Board of Directors</td>
</tr>
<tr>
<td>Cara Mazzarisi (P3)</td>
<td>Paul Ambrose Scholar</td>
<td>Competitive interprofessional program focused on public and population health issues</td>
</tr>
<tr>
<td>Rachel Jansen (P3)</td>
<td>Student Poster Award Winner</td>
<td>Awarded to 3 students internationally for posters presented at All Together Better Health VII</td>
</tr>
<tr>
<td>Shea Liput (P2)</td>
<td>Gateway to Research Scholarship</td>
<td>Awarded by the American Foundation for Pharmaceutical Education</td>
</tr>
<tr>
<td>Erin Resetar (P3)</td>
<td>Presented research at Immunology 2013</td>
<td>Immunology is the annual conference of the Association for Prevention Teaching and Research</td>
</tr>
<tr>
<td>Natalie Valentino (P3)</td>
<td>Ruth Davies Flaherty Award</td>
<td>Lambda Kappa Sigma chapter member selected for exemplary service</td>
</tr>
<tr>
<td>Amanda Jaber (P3)</td>
<td>Selected to participate in Government Relations Advocacy for Student Pharmacists (GRASP)</td>
<td>Advocacy training seminar hosted by the Pennsylvania Pharmacists Association</td>
</tr>
<tr>
<td>Sophia Yang (P2)</td>
<td>Selected for JRCOSTEP</td>
<td>Junior Commissioned Officer Student Training and Extern Program (JRCOSTEP), Division of the Civilian Volunteer Medical Reserve Corps under Office of the Surgeon General</td>
</tr>
</tbody>
</table>
### Student Awards at Graduation

<table>
<thead>
<tr>
<th>Award Title</th>
<th>Student Awardee</th>
</tr>
</thead>
<tbody>
<tr>
<td>APhA Academy of Student Pharmacists Recognition Certificate</td>
<td>Kyle McCormick</td>
</tr>
<tr>
<td>Facts and Comparisons Award of Excellence in Clinical Communication</td>
<td>Samantha Holliday</td>
</tr>
<tr>
<td>John Herman Wurdack Award</td>
<td>Deanna Rowe</td>
</tr>
<tr>
<td>Lilly Achievement Award</td>
<td>Pamela Lyons</td>
</tr>
<tr>
<td>Merck Award</td>
<td>Paul Bowers, Cristina Elgin, Evan Williams</td>
</tr>
<tr>
<td>Mylan Pharmaceutical Excellence in Pharmacy Award</td>
<td>Cody Moore</td>
</tr>
<tr>
<td>Natural Medicines Comprehensive Database Recognition Award</td>
<td>Emily Graham</td>
</tr>
<tr>
<td>Pennsylvania Pharmacists Association Outstanding Student Award</td>
<td>Brandon Antinopoulos</td>
</tr>
<tr>
<td>Robert W. Taylor Award for Outstanding Performance in Patient Care Rotation</td>
<td>Nicole Pezzino</td>
</tr>
<tr>
<td>TEVA Pharmaceuticals Outstanding Student Award</td>
<td>Ravi Patel</td>
</tr>
<tr>
<td>U.S. Public Health Service Award for Excellence in Public Health Pharmacy Practice</td>
<td>Jessa Koch</td>
</tr>
<tr>
<td>University of Pittsburgh School of Pharmacy Patient Care Award</td>
<td>Emily Mallit</td>
</tr>
<tr>
<td>University of Pittsburgh School of Pharmacy – Pharmacy Communications Award</td>
<td>Eric Emerson</td>
</tr>
<tr>
<td>Natural Standard Academic Award</td>
<td>Kinley Sepkovic</td>
</tr>
</tbody>
</table>

### Student Selections of Faculty for Awards

Students in the P4 year select 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 2013-14 awardees were:

<table>
<thead>
<tr>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brandon Antinopoulis (P4)</td>
</tr>
<tr>
<td>Kyle McCormick (P4)</td>
</tr>
<tr>
<td>Kyle McGrath (P3)</td>
</tr>
<tr>
<td>Andrew Nguyen (P3)</td>
</tr>
</tbody>
</table>
• Dr. Scott Drab, Assistant Professor, Department of Pharmacy and Therapeutics. Dr. Drab provides ambulatory care rotations at the University Diabetes Care Associates (UDCA) located in Greensburg, PA. This was one of the first pharmacist run diabetes care centers located in a community independent pharmacy. The Center is committed to providing patients with diabetes and their families with the highest quality of education, support, and tools necessary to increase quality of life and prevent diabetes related morbidity and mortality. Dr. Drab offers rotations for P3 and P4 students.

• Dr. Heather Sakely offers ambulatory care rotations providing direct patient care to older adults at all levels of care. Two geriatric clinical pharmacists care for patients alongside physicians in the following locations: UPMC St. Margaret Division of Geriatric Medicine (DGM) practice, Geriatric Care Center Oakmont and Presbyterian Senior Care, in Oakmont, PA. Dr. Sakely offers rotations for P1 and P4 students.

P4 students also elect a Stanford I. Cohen Teacher of the Year.

• Dr. Neal J. Benedict, Associate Professor, Department of Pharmacy and Therapeutics, was the 2013-2014 recipient.

All students vote on a Faculty Member of the Year and present it at the APhA-ASP Student Formal.

• Dr. Lauren J. Jonkman, Assistant Professor, Department of Pharmacy and Therapeutics, was the 2013-2014 Recipient.

PROFESSIONAL DEVELOPMENT: EDUCATING THE NEXT GENERATION OF PRACTITIONERS

DM Educate® - 3rd Edition: Comprehensive Diabetes Management
After significantly updating DM Educate® to the 3rd edition in FY13, revised content was distributed to over 1,500 individuals. Approximately 250 health professionals registered for continuing education credit: 613 pharmacists, 21 nurses, and 19 registered dieticians. Over 1,000 students were reached by the program at 46 different schools in the US and abroad.

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 FY14:

• Fall Continuing Education Seminar: “Substance Abuse and Addiction” featured presentations by Ralph E. Tarter, PhD, Dennis C. Daley, PhD, and Kathie E. Simpson, RN in the S100A, Biomedical Science Tower with 47 attendees. The intent of this continuing education program was to educate attendees about the origins, development, management, and recovery from addiction to drugs and/or alcohol, as well as the responsibilities and consequences specific to pharmacists in regard to substance abuse and addiction.

• Spring Continuing Education Seminar: “Issues and Opportunities in Current Practice” featured presentations by Sarah Krahe Dombrowski, PharmD, Amanda P. Wojtusik, PharmD, BCPS, Gerard P. Mascara, PharmD, and Jennifer M. Belavic, PharmD, BCPS, FASCP in the S100A, Biomedical Science Tower with 71 attendees. The intent of this continuing education program was to educate attendees about the opportunities for pharmacists in Pennsylvania surrounding collaborative practice agreements. In addition, the program addressed challenges for pharmacists and patients using oral chemotherapy treatments and safety issues involved in sterile compounding. The chemotherapy and compounding sessions count towards the Pennsylvania Patient Safety CE requirement.
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.

Residents 2013-2014

<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 FY15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ballman</td>
<td>Jennifer</td>
<td>Pharmacy</td>
<td>PGY1</td>
<td>Duquesne University</td>
<td>Clinical Pharmacist, Cleveland Clinic, Cleveland, OH</td>
</tr>
<tr>
<td>Bremmer</td>
<td>Derek</td>
<td>Pharmacy</td>
<td>PGY1</td>
<td>South Carolina College of Pharmacy</td>
<td>PGY2 Infectious Diseases, The Ohio State University Wexner Medical Center</td>
</tr>
<tr>
<td>Breslin</td>
<td>Teresa</td>
<td>Pharmacy</td>
<td>PGY1</td>
<td>Wayne State University</td>
<td>PGY2 Geriatrics, UPMC St. Margaret</td>
</tr>
<tr>
<td>Buehrle</td>
<td>Deanna</td>
<td>Pharmacy</td>
<td>PGY1</td>
<td>Duquesne University</td>
<td>PGY2 Infectious Diseases, UPMC Presbyterian</td>
</tr>
<tr>
<td>Butala</td>
<td>Jessica</td>
<td>Pharmacy</td>
<td>PGY1</td>
<td>University of Michigan</td>
<td>Clinical Pharmacist, West Penn</td>
</tr>
<tr>
<td>Cadwalader</td>
<td>John Carroll</td>
<td>Health System Pharmacy Administration</td>
<td>PGY2</td>
<td>Massachusetts College of Pharmacy and Health Sciences-Worcester</td>
<td>PGY2 Medication Safety, UPMC Presbyterian</td>
</tr>
<tr>
<td>Castelli</td>
<td>Gregory</td>
<td>Family Medicine</td>
<td>PGY2</td>
<td>Wilkes University Nesbitt School of Pharmacy</td>
<td>Assistant Professor, West Virginia University School of Pharmacy/Department of Family Medicine</td>
</tr>
<tr>
<td>Chitwood*</td>
<td>Sean D.</td>
<td>Managed Care</td>
<td>PGY1</td>
<td>Mercer University College of Pharmacy</td>
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<tr>
<td>Davies</td>
<td>Marie</td>
<td>Ambulatory Care</td>
<td>PGY2</td>
<td>Campbell University College of Pharmacy</td>
<td>Assistant Professor, Western University of Health Sciences, Pomona, Calif.</td>
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<tr>
<td>Dombrowski</td>
<td>Sarah Krahe</td>
<td>Family Medicine</td>
<td>PGY2</td>
<td>University of Pittsburgh</td>
<td>Assistant Professor, Lake Erie College of Osteopathic Medicine</td>
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<tr>
<td>Doyle,</td>
<td>Meaghan</td>
<td>Pharmacy</td>
<td>PGY1</td>
<td>Creighton University, Omaha, NE</td>
<td>Pharmacist, Bryan Health, Lincoln, NE</td>
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Total Residents: 47
Locations for the 3 PGY1 Programs: 11
Total Number of Types of Residency Programs: 13
Locations for the 10 PGY2 programs: 4
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<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Pitt Residency Program</th>
<th>Year</th>
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<th>Plans for FY15</th>
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<tbody>
<tr>
<td>Filip</td>
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<td>Pharmacy</td>
<td>PGY1</td>
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<td>Pharmacist, UPMC Shadyside</td>
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<tr>
<td>Gavini</td>
<td>Madhavi</td>
<td>Geriatrics</td>
<td>PGY2</td>
<td>University of Florida</td>
<td>Clinical Pharmacist SUNY Downstate Medical Center Brooklyn, NY</td>
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<td>PGY2 Cardiology, Michigan</td>
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<td>Harris</td>
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<tr>
<td>Harrison</td>
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<td>PGY1</td>
<td>Duquesne University</td>
<td>PGY2 Ambulatory Care, The Cleveland Clinic, Ohio</td>
</tr>
<tr>
<td>Haver</td>
<td>Amy</td>
<td>Geriatrics</td>
<td>PGY2</td>
<td>Duquesne University</td>
<td>Undecided</td>
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<tr>
<td>Hebda</td>
<td>Michele</td>
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<td>PGY1</td>
<td>Creighton University, Omaha, NE</td>
<td>Academic and Research Fellowship, Duquesne University</td>
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<td>Hedges</td>
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<td>PGY1</td>
<td>UNC Eshelman School of Pharmacy</td>
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<td>PGY1</td>
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</tr>
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<td>PGY1</td>
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<td>Critical Care</td>
<td>PGY2</td>
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<tr>
<td>Johnson</td>
<td>Amanda</td>
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<td>PGY2 Critical Care, UPMC Presbyterian</td>
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<td>Ko</td>
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<tr>
<td>Kudla</td>
<td>Nadia</td>
<td>Pharmacy</td>
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<td>University of Pittsburgh</td>
<td>Clinical Pharmacist, Forbes Regional Hospital</td>
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<tr>
<td>Lichvar</td>
<td>Alicia</td>
<td>Pharmacy</td>
<td>PGY1</td>
<td>University of Pittsburgh</td>
<td>PGY2 Transplant, UPMC Presbyterian</td>
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<tr>
<td>MacLasco</td>
<td>Adam</td>
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<td>PGY1</td>
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<td>PGY2 Emergency Medicine, University of Illinois-Chicago</td>
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<td>Erin</td>
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<td>University of Pittsburgh</td>
<td>PGY2 Psychiatry, William S. Middleton Memorial Veteran Hospital, Madison, WI</td>
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<tr>
<td>McCartney</td>
<td>Elizabeth</td>
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<td>PGY1</td>
<td>University of Pittsburgh</td>
<td>Assistant Professor for Community Pharmacy at Philadelphia College of Pharmacy</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 FY15</td>
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<td>University of Pittsburgh</td>
<td>PGY2 Critical Care, Greenville Health System, Greenville, SC</td>
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<td>Ossman</td>
<td>Kristine</td>
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<td>PGY1</td>
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<td>Clinical Pharmacist, RiteAid, Pittsburgh, PA</td>
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<tr>
<td>Pickering</td>
<td>Aaron</td>
<td>Infectious Disease</td>
<td>PGY2</td>
<td>Duquesne University</td>
<td>Infectious Disease/Antimicrobial Stewardship Pharmacist Baltimore-Washington Medical Center</td>
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<tr>
<td>Rashid</td>
<td>Chelsey</td>
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<td>PGY1</td>
<td>LECOM</td>
<td>Clinical Pharmacist, Olean General Hospital, Olean, NY</td>
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<tr>
<td>Riedy</td>
<td>Mary</td>
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<td>PGY1</td>
<td>Duquesne University</td>
<td>PGY2 Pediatrics, Boston Children’s Hospital, Boston, MA</td>
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<tr>
<td>Rindfuss</td>
<td>Sarah</td>
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<td>PGY2 Family Medicine, UPMC St. Margaret</td>
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<tr>
<td>Rivosecchi</td>
<td>Ryan</td>
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<td>University of Pittsburgh</td>
<td>PGY2 Critical Care, UPMC Presbyterian</td>
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<tr>
<td>Sacha</td>
<td>Lauren</td>
<td>Transplant</td>
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<td>Schwier</td>
<td>Nicholas</td>
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<td>Shigle</td>
<td>Terri Lynn</td>
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<td>Shutzberg</td>
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<td>University of Pittsburgh</td>
<td>Managed Care</td>
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<td>Sochacki</td>
<td>Marisa</td>
<td>Underserved and Global Health</td>
<td>PGY2</td>
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<td>Doctors Without Borders</td>
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<td>Tunney</td>
<td>Robert</td>
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<td>Whitman</td>
<td>Arin</td>
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<td>PGY1</td>
<td>Duquesne University</td>
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<td>Wilkening</td>
<td>Gwendolyn (Lucy)</td>
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<td>PGY2 Psychiatric Pharmacy, WPIC</td>
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<td>Wojtuskik</td>
<td>Amanda</td>
<td>Family Medicine</td>
<td>PGY2</td>
<td>University of Rhode Island</td>
<td>Clinical Pharm in Primary Care, Providence Health System, Portland, Oregon</td>
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<tr>
<td>Last Name</td>
<td>First Name</td>
<td>Pitt Residency Program</td>
<td>Year</td>
<td>PharmD School</td>
<td>Plans for FY15</td>
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<td>Wong</td>
<td>Adrian</td>
<td>Critical Care</td>
<td>PGY2</td>
<td>Northeastern University, Boston, MA</td>
<td>Clinical Specialist, Mountain View Hospital, Las Vegas</td>
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*Left program before completion.

### Residents Recruited for 2014-2015

Total Residents: 44  
Total Number of Types or Residency Programs: 13  
Locations for the 3 PGY1 programs: 13  
Locations for the 10 PGY2 programs: 5

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<th>Resident</th>
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<td>PGY1 Community Pharmacy</td>
<td>University of Pittsburgh School of Pharmacy</td>
<td>Kyle McCormick</td>
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<td></td>
<td>Giant Eagle</td>
<td>Christine Jordan</td>
<td>University of Pittsburgh</td>
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<td></td>
<td>University Pharmacy</td>
<td>Brandon Antinopoulous</td>
<td>University of Pittsburgh</td>
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<td>Rite Aid</td>
<td>Gale Gamong</td>
<td>Lake Erie College of Osteopathic Medicine</td>
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<td>PGY1 Managed Care Pharmacy</td>
<td>CVS-Caremark</td>
<td>William Wiberg</td>
<td>University of Minnesota</td>
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<td>UPMC Health Plan</td>
<td>Eric Emerson</td>
<td>University of Pittsburgh</td>
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<td>PGY1 Pharmacy Practice</td>
<td>UPMC Presbyterian, WPIC</td>
<td>Ayesha Ather</td>
<td>University of Montana</td>
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<td>Maxwell Brown</td>
<td>Sarathinkoon</td>
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<td>Emily Graham</td>
<td>Beverly</td>
<td>University of Pittsburgh</td>
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<td>Cody Moore</td>
<td>University of Pittsburgh</td>
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<td>Anh Vu</td>
<td>University of Colorado</td>
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<td>Cory Weaver</td>
<td>West Virginia University</td>
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<td>UPMC Mercy</td>
<td>Justin John Delic</td>
<td>Duquesne University</td>
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<td>Pamela Lyons</td>
<td>University of Pittsburgh</td>
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<td>Rachel Marini</td>
<td>Duquesne University</td>
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<td>Katherine Roberts</td>
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<td>Megan Zielke</td>
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<td>UPMC Hamot</td>
<td>Stephen Henderson</td>
<td>Ohio Northern University</td>
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<td>Hollins Kitts</td>
<td>Wingate University School of Pharmacy</td>
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<td></td>
<td>Angela Shick</td>
<td>Lake Erie College of Osteopathic Medicine</td>
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<tr>
<td>Children’s Hospital of Pittsburgh of UPMC</td>
<td>Anne Countway</td>
<td>Duquesne University</td>
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<tr>
<td>UPMC St. Margaret</td>
<td>Ashley Campbell</td>
<td>University of North Carolina Eshelman School of Pharmacy</td>
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<td>Raymond Durigan</td>
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<td>Matthew Joseph</td>
<td>University of Pittsburgh</td>
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<td></td>
<td>Nicole Payette</td>
<td>Philadelphia College of Pharmacy</td>
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<td>Mira Patel</td>
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<td>Gregory Trietley</td>
<td>University of Pittsburgh</td>
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<tr>
<td>UPMC Shadyside</td>
<td>Vivian Tang</td>
<td>Oregon State University</td>
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<td>Dan (Tina) Tran</td>
<td>University of California-San</td>
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<td>Alice Gahbauer</td>
<td>University of California</td>
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<td>Emily Chan</td>
<td>State University of New York at Buffalo</td>
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<td>PGY2 Critical Care Pharmacy</td>
<td>UPMC Presbyterian-Shadyside</td>
<td>Nathan Verlinden</td>
<td>Drake University</td>
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<td>PGY2 Family Medicine</td>
<td>UPMC St. Margaret</td>
<td>Amanda Johnson</td>
<td>University of Pittsburgh</td>
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<td>PGY2 Geriatrics</td>
<td>UPMC St. Margaret</td>
<td>Ryan Rivosecchi</td>
<td>University of Pittsburgh</td>
</tr>
<tr>
<td>PGY2 Infectious Disease Pharmacy</td>
<td>UPMC Presbyterian-Shadyside</td>
<td>Ashley Higbee</td>
<td>Virginia Commonwealth University</td>
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<tr>
<td>PGY2 Medication Safety</td>
<td>UPMC Presbyterian-Shadyside</td>
<td>Lucas Hill</td>
<td>University of Missouri- Kansas City</td>
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<tr>
<td>PGY2 Oncology Pharmacy</td>
<td>UPMC Presbyterian-Shadyside</td>
<td>Anand Shah</td>
<td>State University of New York at Buffalo</td>
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<tr>
<td>PGY2 Psychiatric Pharmacy</td>
<td>Western Psychiatric Institute and Clinic of UPMC</td>
<td>Gwendolyn (Lucy) Wilkening</td>
<td>Southwestern Oklahoma State University</td>
</tr>
<tr>
<td>PGY2 Solid Organ Transplant Pharmacy</td>
<td>UPMC Presbyterian-Shadyside</td>
<td>Alicia Lichvar</td>
<td>University of Pittsburgh</td>
</tr>
<tr>
<td>PGY2 Specialized Area of Pharmacy: Underserved Care</td>
<td>University of Pittsburgh School of Pharmacy</td>
<td>Rebecca Cope</td>
<td>Albany College of Pharmacy and Health Sciences</td>
</tr>
</tbody>
</table>

**Graduate Program: Educating the Next Generation of Scientists**

**Graduate Program in Pharmaceutical Sciences**

This program prepares students for positions in academia, government, and industry. The School of Pharmacy offers three degrees: the PhD, the thesis-based Master of Science (MS), and the 12-month, non-thesis-based MS (NTMS). The PhD program provides students with the foundation to become independent researchers as either basic scientists or clinical pharmaceutical scientists. The MS provides students the opportunity to develop basic and/or clinical research skills preparing them for entry into a PhD program or employment. The NTMS degree is a one-year program designed to prepare students for employment in the pharmaceutical and biotechnology fields. Each degree program offers four tracks: biochemical pharmacology, medicinal chemistry, pharmaceutics, and clinical pharmaceutical sciences (a specialized program to train students in clinical and translational science).
ADMISSION AND ENROLLMENT DEMOGRAPHICS

FY14 was a record for the total number of students enrolled in the graduate program with 79 full-time and 4 part-time students enrolled in the pharmaceutical sciences graduate program. The part-time students included one in the PhD program, one in the MS program, and two in the non-thesis MS program.

Of the 79 full-time students: 53 are PhD students; 6 are Master of Science students; 20 are non-thesis MS students.

- 31% (17/53) of the PhD students are U.S. citizens or permanent residents.
- 50% (27/53) of the PhD students have degrees from schools of pharmacy.
- 5 students passed their comprehensive examination and achieved PhD candidate status.

See figure below.

At the beginning of the FY15, 79 students were enrolled in the graduate program: 76 full-time and 3 part-time students. Part-time students include 2 in the MS program and 1 in the non-thesis MS program.

Of the 76 full-time students: 52 are PhD students; 13 are Master of Science students; 11 are non-thesis MS students.

- 27% (14/52) of the PhD students are U.S. citizens or permanent residents.

2013-2014 (FY14) Admission Demographics

For the class that enrolled in the fall of 2013,

- The school received 145 applications for the PhD program, 55 for the MS program and 12 for the non-thesis MS.
- 12 PhD students received admission offers and enrolled (100% yield).
  - 4 of the 12 are either US citizens or permanent residents.
  - 1 of the 12 has a PharmD degree.
- 7 MS students received admission offers and 4 students enrolled.
- 28 NTMS students received admission offers (through application to the PhD or MS program); 18 enrolled.
2014-2015 (FY15) Admission Demographics
• The school received 92 applications for the PhD program, 46 for the MS program and 6 for the non-thesis MS.
• 6 PhD students were offered and 5 accepted for fall 2014.
  o 1 of the 6 is either a US citizen or permanent resident.
  o 1 holds a PharmD degree.
• 7 MS students were offered admission and 6 accepted for fall 2014.
• 14 NTMS students were offered admission and 7 accepted for fall 2014.

2013–2014 Pharmaceutical Sciences Graduate Students

<table>
<thead>
<tr>
<th>Name</th>
<th>Advisor</th>
<th>Track</th>
<th>Enrollment</th>
<th>Degree</th>
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<tbody>
<tr>
<td>Adams, Solomon</td>
<td>Poloyac, Samuel</td>
<td>CPS*</td>
<td>13-Aug</td>
<td>PhD</td>
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<tr>
<td>Al Busaysi, Salwa</td>
<td>Fabian, Tanya</td>
<td>Pharmaceuticals</td>
<td>11-Jan</td>
<td>PhD</td>
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<tr>
<td>Almazroo, Omar</td>
<td>Venkataramanan, Raman</td>
<td>Pharmaceuticals</td>
<td>11-Aug</td>
<td>PhD</td>
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<tr>
<td>Almehizia, Abdulrahman</td>
<td>Xie, Sean</td>
<td>Medicinal Chemistry</td>
<td>9-Aug</td>
<td>PhD</td>
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<tr>
<td>Almowalad, Jamal</td>
<td>Undecided</td>
<td>Non-Thesis Master</td>
<td>13-Aug</td>
<td>NTMS</td>
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<tr>
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<td>Xie, Sean</td>
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<tr>
<td>AlShogran, Osama</td>
<td>Nolin, Thomas</td>
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<tr>
<td>Altawalbeh, Shoroq</td>
<td>Thorpe, Joshua</td>
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<td>Alvarez, Celeste</td>
<td>Wipf, Peter</td>
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<td>Anderson, Kacey</td>
<td>Poloyac, Sam</td>
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<tr>
<td>Amin, Yashesh</td>
<td>Folan, Maggie</td>
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<td>Xie, Wen</td>
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<td>Li, Song</td>
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<tr>
<td>Chen, Yuzhe</td>
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*CPS – Clinical Pharmaceutical Scientist Program

**Students Selected for the Pharmaceutical Sciences PhD and Research-based MS Graduate Program, Beginning in Fall 2014**

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Students Selected for the Pharmaceutical Sciences Non-Research Based MS Graduate Program, Beginning in Fall 2014*

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*All Non-Research Based MS are advised by Dr. Vinayak Sant and Dr. M. Maggie Folan

STUDENTS COMPLETING GRADUATE DEGREES IN 2013-2014

Master of Science Graduates

Cheng Fang, MS  
Advisor: Xiang-Qun (Sean) Xie, PhD, MBA  
Graduation: April 2014 (Defense completed March 2014)  
Thesis Title: Poloypharmacology Analysis of Anti-osteoporosis Agents and Cannabinoid 2 Receptor Inverse Agonists for Osteoporosis Drug Research

Layal Hammad, MS  
Advisor: Peter Wipf, PhD  
Graduation: December 2013 (Defense completed December 2013)  
Thesis Title: A Small Molecule Scaffold Analysis: Biological Profiles of Novel, Priviledged, and Promiscuous Scaffolds

Ismail Walbi, MS  
Advisor: Jan Beumer, PharmD, PhD  
Graduation: April 2014 (Defense completed April 2014)  
Thesis Title: Pharmacokinetics of the Combination of Veliparib and Temozolomide in Leukemia

Qi Xu, MS  
Advisor: Xiang-Qun (Sean) Xie, PhD, MBA  
Graduation: August 2013 (Defense completed August 2013)  
Thesis Title: PKD1 3D Structure Model and Docking Studies for New PKD Inhibitors
PhD Graduates

Ayman Akil, PhD
Advisor: Lisa C. Rohan, PhD
Graduation: December 2013 (Defense completed November 2013)
Thesis Title: Vaginal Poloymeric Film Containing Combination of Antiretrovirals for Prevention of HIV Sexual Transmission: Impact of Co-Delivery

Ananda Chowdhury, PhD
Advisor: Xiang-Qun (Sean) Xie, PhD, MBA
Graduation: December 2013 (Defense completed November 2013)
Thesis Title: Functional Human Cannabinoid Receptor 2 from Escherichia Coli

Kareem Khoury, PhD
Advisor: Barry Gold, PhD
Graduation: December 2013 (Defense completed December 2013)
Thesis Title: Small Molecule Inhibitors of Protein-Protein Interactions

Robert Parise, PhD
Advisor: Raman Venkataramanan, PhD
Graduation: April 2014 (Defense completed April 2014)
Thesis Title: The Preclinical and Clinical Pharmacology of Benzaldehyde Dimethane Sulfonate (BEN) for the Treatment of Renal Cell Carcinoma

Jafra Sadik Bhasha Shaik, PhD
Advisor: Samuel M. Poloyac, PharmD, PhD
Graduation: December 2013 (Defense completed October 2013)
Thesis Title: Evaluation of Effects of CYP450 Derived Eicosanoids in Cerebral Ischemia

Non-Thesis MS Graduates

Jing Li, MS
Advisor: Lisa C. Rohan, PhD
Graduation: August 2013

Lingjue Li, MS
Advisor: Samuel M. Poloyac, PharmD, PhD
Graduation: August 2013

Hesong Liu, MS
Advisor: Regis Vollmer, PhD
Graduation: August 2013

Chuchu Qin, MS
Advisor: Lee McDermott, PhD
Graduation: August 2013

Daniel Reinfeld, MS
Advisor: Lisa C. Rohan, PhD
Graduation: August 2013
Yingfei Xue, MS
Advisor: Song Li, MD, PhD
Graduation: December 2013

Tianyi Yang, MS
Advisor: Peter Wipf, PhD
Graduation: December 2013

Xiang Zhou, MS
Advisor: Jeffrey K. Yao, PhD, FACB
Graduation: December 2013

AWARDS TO GRADUATE STUDENTS

Research or Presentation Awards
- Kacey Anderson won the 2014 ACCP Student Award (which included a scholarship for travel and meeting registration) for her abstract “The Effects of Therapeutic hypothermia on ABCG2 and ABCB1.”

Competitive Fellowships
- Katherine Eichenger received an AFPE Pre-Doctoral Fellowship in Pharmaceutical Science for her proposal "Immunomodulation of the neonatal response to Respiratory Syncytial Virus (RSV) using inhaled interferon gamma (IFN)" Mentor-Kerry Empey, PharmD, PhD. (September 2014-August 2015).
- Kacey Anderson was awarded the Jonas Salk Fellowship from the Jewish HealthCare Foundation for the 2013-14 academic year.

Other Awards
- Sheila Grab won the Leadership and Service award presented by The Graduate and Professional Student Government, University of Pittsburgh, April 18, 2014.
- Zu Wei Zhai won the 2014 Society for Prevention Research Early Career Prevention Network Travel Award.
- Mengxi Jia and Peng Zhang won the Pharmaceutical Sciences Graduate Student Excellence Award from the University of Pittsburgh, School of Pharmacy.
- Jianqin Liu and Nuozhou Wang won the Norman R. and Priscilla A. Farnsworth Student Award from the University of Pittsburgh, School of Pharmacy.
- Lindsay Ferguson Kramzer and Dustin Walsh won the Randy and Renee Juhl Pharmacy Graduate Scholar Award from the University of Pittsburgh, School of Pharmacy.
- Kacey Anderson and Hari Kalluri won the Graduate Student Teaching Assistant Award from the University of Pittsburgh, School of Pharmacy.

Travel Awards
- Mengxi Jiang received a Graduate Program Council travel award to attend the ICE/ENDO Annual Meeting in Chicago, IL.
- Tian Zou received a Graduate Program Council travel award to attend the 27th International Conference and Antiviral Research in Raleigh, NC.
• ZuWei Zhai received a Graduate Program Council travel award to attend the Society for Prevention Research Symposium in Washington, DC.
• Ryan Whetstone received a Graduate Program Council travel award to attend the 16th Annual Midwest DNA Repair Symposium in Detroit, MI.
• Omar Almazroo received a Graduate Program Council travel award to attend the AAPS Annual Meeting in San Antonio, TX.
• Tiantian Gong received a Graduate Program Council travel award to attend the AAPS Annual Meeting in San Antonio, TX.
• Lindsay Kramzer received a Graduate Program Council travel award to attend the AAPS Annual Meeting in San Antonio, TX.
• Xiaolan Zhang Lindsay Kramzer received a Graduate Program Council travel award to attend the Nanomedicine and Drug Delivery Symposium in Los Angeles, CA.

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.
• Lindsay Ferguson-Kramzer, (PharmD 2009, University of Pittsburgh) works in L. Rohan’s lab and expects to graduate in the spring semester 2014.
• Erin Resetar (anticipated PharmD 2015, University of Pittsburgh) has completed two summers of research in K. Empey’s lab and has been admitted as a PhD student for fall 2015.

Graduate Student Publications and Presentations

PUBLICATIONS


• Pillai VC, Parise RA, Christner SM, Rudek MA, Beumer JH, Venkataramanan R. Potential interactions between HIV drugs, ritonavir and efavirenz and anticancer drug, nilotinib—a study in primary cultures of human hepatocytes that is applicable to HIV patients with cancer. *J Clin


**Presentations, Posters, and Podium Presentations**


• 5th AAPS Regional Meeting and Research Forum, Duquesne University, Pittsburgh, PA, Down-Regulation of Hepatic Reductases in Experimental Kidney Disease. Alshogran, O. November 5, 2013.


- 42nd Annual Autumn Immunology Conference, Chicago, IL. Inhaled interferon (IFN) during primary respiratory syncytial virus (RSV) infection induces airway hyperresponsiveness (AHR) after RSV re-challenge. Eichinger K. November 22, 2013


• Center for Pharmacogenomics, University of Pittsburgh, Pittsburgh, PA. PEG5k-Fmoc-FTS2 Micelle System as Dual Functional Delivery System for TQ in Treatment of Liver Fibrosis. Ghazwani, M. September 26, 2014.


• Center for Pharmacogenomics, University of Pittsburgh, Pittsburgh, PA. Development and characterization of Paclitaxel-loaded solid lipid nanoparticles. Ghazwani, M. May 22, 2014.


• 5th AAPS Regional Meeting and Research Forum, Duquesne University, Pittsburgh, PA. Continuous Infusion of Mycophenolate Mofetil for Acute Graft-Versus-Host-Disease Prophylaxis in Pediatric Bone Marrow Transplant Patients Joshi, R. November 5, 2013.


• Neuroscience 2013, Society For Neuroscience, San Diego, CA. Sustained treatment with estradiol or G-1 alters the levels of orexin and aromatase mRNAs in the brain in a regionally-specific manner Kirshner, Z. November 5, 2013.


• Neuroscience 2013, Society For Neuroscience, San Diego, CA. Sustained Treatment with Estradiol and G-1 Alters the Levels of Orexin and Aromatase mRNAs in the Brain in a Regionally-Specific Manner. Li, J. November 13, 2013.


• Pittsburgh Area Nuclear Receptor/Coregulator Club (PANRC) Conference, University of Pittsburgh Cancer Institute, Pittsburgh, PA. AHR Activation Alleviates Diet-induced Obesity and Type 2 Diabetes by Induction of Fibroblast. Lu, P. September 17, 2014.


• 5th AAPS Regional Meeting and Research Forum, Duquesne University, Pittsburgh, PA. PCL-Graphene nanocomposites for skeletal muscle tissue engineering. Mukundan, S. November 5, 2013.


- 5th AAPS Regional Meeting and Research Forum, Duquesne University, Pittsburgh, PA. Small Molecule Inhibitors of Cytoplasmic Dynein Heavy Chain. **Pouland, T.** November 5, 2013.

- Drug Discovery Institute, University of Pittsburgh, Pittsburgh, PA. Screening for Small Molecule Perturbagens of Cytoplasmic Dynein Heavy Chain. **Pouland, T.** August 5, 2013.

- 16th Annual Midwest DNA Repair Symposium, Detroit, MI. Stem Cell Mutagenesis and Carcinogenesis in the Colon of Wild Type and Immune Compromised Mice after Treatment with Azoxymethane and/or Dextran Sodium Sulfate. **Whetstone, R.** May 17, 2014.

- The 26th Annual UPCI Scientific Retreat, University of Pittsburgh, Greensburg, PA. Colon Stem Cell Mutagenesis and Carcinogenesis in Wild Type and Immune Compromised Mice after Treatment with Azoxymethane and/or Dextran Sulfate Sodium. **Whetstone, R.** June 19, 2014.


- Pittsburgh Area Nuclear Receptor/Coregulator Club (PANRC) Conference, University of Pittsburgh Cancer Institute. CAR Suppresses Gluconeogenesis through PGC1α Sequestration and Degradation, **Yan, J.** September 17, 2013.


- 5th AAPS Regional Meeting and Research Forum, Duquesne University, Pittsburgh, PA. Parental attachment, neurobehavior disinhibition, and substance use in the etiology of substance use disorder. **Zhai, Z.** November 5, 2013.

- 2014 West Virginia University School of Pharmacy Regional Research Forum, Morgantown, WV. A PEG-Fmoc conjugate as a simple and effective nanocarrier for paclitaxel. **Zhang, P.** June 12, 2014.

- 5th AAPS Regional Meeting and Research Forum, Duquesne University, Pittsburgh, PA. PEGylated peptide equipped with drug-interactive units: a simple and effective nano-carrier for anti-cancer agent paclitaxel. **Zhang, P.** November 15, 2013


- West Virginia University School of Pharmacy Regional Research Forum, Morgantown, WV. Reduction-Sensitive Dual Functional Nanomicelles for Improved Delivery of Paclitaxel. **Zhang, X.** June 12, 2014.


**POSTDOCTORAL FELLOWS**

**School of Pharmacy Postdoctoral Associates FY14**

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
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<th>Field</th>
<th>Country</th>
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<td>Bartlow, Patrick</td>
<td>PhD</td>
<td>University of Pittsburgh</td>
<td>Bioengineering</td>
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<td>Bastian, Jaime</td>
<td>PharmD</td>
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<td>Chithambarampillai,</td>
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<td>Texas Tech</td>
<td>Pharmacology and Toxicology</td>
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<tr>
<td>Venkateswaran</td>
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<td>Feng, Zhiwei</td>
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<td>Garbacz, Wojciech</td>
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<td>Sinha, Mantosh Kumar</td>
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<td>Zhao, Jielu</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 2012–2018:

By 2018, the School of Pharmacy will:
• Be recognized as a research school of distinction.

Research by the Numbers for FY14

• In FY14, funded research projects generated $14,709,329 in total support ($10.94 million direct costs and $3.77 million indirect costs).
• FY14 School of Pharmacy PHS research expenses were $6,058,477 in direct costs and $2,629,542 in indirect costs.
• 114: the number of active research projects.
• #12 among schools of pharmacy in NIH support for FY13 with $7.9 million in funding (#13 in overall funding and #7 in non-federal funding).
• 35 faculty members were principal investigators.
• 3 principal investigators or co-investigators on multi-institutional grants.
• 9 international research presentations in 4 countries.
  • 3 at universities or hospitals
  • 6 at conferences or academies

Research Funding

Annual Grant Costs by Source
Active project funding for FY14 was $14.71 million, with $10.94 million in direct costs and $3.77 million in indirect costs. The graph and tables below and on the next page provide detail regarding FY14 sources of funding for direct costs.

Direct Costs for Research by Funding Category

<table>
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<tr>
<th>Source</th>
<th>FY02</th>
<th>FY07</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
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<td>$6,934,873</td>
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<td>$7,229,748</td>
<td>$4,967,911</td>
<td>$6,006,199</td>
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<td>Federal-Oth</td>
<td>257,268</td>
<td>846,586</td>
<td>856,030</td>
<td>1,268,055</td>
<td>1,469,405</td>
<td>2,143,548</td>
<td>$1,702,706</td>
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### Direct Costs: Research Funding

![Bar chart showing direct costs by fiscal year and funding source]

**FY14 PHS Funding**

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<tr>
<th>Investigator</th>
<th>Agency</th>
<th>AgencyNum</th>
<th>Title</th>
<th>Direct $</th>
<th>Indirect $</th>
<th>Total</th>
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<tr>
<td>J. Beumer</td>
<td>NIH</td>
<td>P30</td>
<td>CCSG CPAF</td>
<td>64,127</td>
<td>33,025</td>
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<td>J. Beumer</td>
<td>NIH</td>
<td>R01</td>
<td>Vaccines to Promote Tc-1 Based Targeting of Tumor Stroma</td>
<td>3,278</td>
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<td>J. Beumer</td>
<td>NIH</td>
<td>R21 CA161951</td>
<td>Pilot Clinical-Pathological and Molecular Analysis of Atypical Nevi in Response to BSE-L-Sulforaphane</td>
<td>16,065</td>
<td>8,434</td>
<td>24,499</td>
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<td>J. Beumer</td>
<td>NIH</td>
<td>U01 CA099168</td>
<td>Early Clinical Trials of New Anti-Cancer Agents with Phase 1 Emphasis</td>
<td>29,251</td>
<td>15,357</td>
<td>44,608</td>
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<td>J. Beumer</td>
<td>NIH</td>
<td>R21 CA173887</td>
<td>Nanomicellar Formulation for Synergistic Targeting Prostate Cancer</td>
<td>9,163</td>
<td>4,810</td>
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<td>J. Beumer</td>
<td>NIH</td>
<td>R01 GM102989</td>
<td>Rational Design of Lipidic Vectors for Mitochondria-Targeted Antioxidants</td>
<td>16,788</td>
<td>8,814</td>
<td>25,602</td>
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<td>J. Beumer</td>
<td>NIH</td>
<td>HHSN2612011 00015</td>
<td>Preclinical Pharmacokinetic and Pharmacological Studies with Anticancer and Other Therapeutic Agents</td>
<td>62,011</td>
<td>31,995</td>
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<td>J. Beumer</td>
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<td>Gynecologic Oncology Group Pharmacokinetic and Pharmacodynamic Core Laboratory</td>
<td>31,799</td>
<td>16,376</td>
<td>48,175</td>
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<td>J. Beumer</td>
<td>NIH</td>
<td>R01 CA13284404</td>
<td>Role of CYP24 in Non-Small Cell Lung Cancer</td>
<td>11,000</td>
<td>5,665</td>
<td>16,665</td>
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<td>X. Gao</td>
<td>NIH</td>
<td>R01 EB016516</td>
<td>Ultrasound Activated Microbubbles for Targeted siRNA Delivery to Tumor (Villanueva)</td>
<td>3,149</td>
<td>1,653</td>
<td>4,802</td>
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<td>R. Gibbs</td>
<td>NIH</td>
<td>R01 NS060005</td>
<td>Environmental Enrichment and Cholinergic Mechanisms After TBI (Kline)</td>
<td>7,811</td>
<td>4,022</td>
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<td>R. Gibbs</td>
<td>NIH</td>
<td>R21 AG043817</td>
<td>Impact of Estrogens and Menopause on Interacting Monoamine Neurotransmitters in the Brain</td>
<td>150,000</td>
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<td>P. Johnston</td>
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<td>R01 CA160423</td>
<td>Development of a Novel HCS Assay to Screen for Disruptors of AR-TIF2 Interactions</td>
<td>195,050</td>
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<td>P. Johnston</td>
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<td>U24 AI082673</td>
<td>Novel Modifiers of Toll-like and RIG-like Receptor Signaling</td>
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<td>13,380</td>
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<td>P. Johnston</td>
<td>NIH</td>
<td>R01 DE023685-01A1</td>
<td>P13K Pathway Mutations in Head and Neck Cancer</td>
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<td>5,437</td>
<td>15,552</td>
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<td>L. Kirisci</td>
<td>NIH</td>
<td>K02 DA017822</td>
<td>Quantifying and Tracking Risk for Substance Use Disorder</td>
<td>125,450</td>
<td>9,970</td>
<td>135,420</td>
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<td>S. Li</td>
<td>NIH</td>
<td>R01 HL083365</td>
<td>Role of Ubiquitin in Cardiovascular System</td>
<td>225,437</td>
<td>109,486</td>
<td>334,923</td>
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<td>S. Li</td>
<td>NIH</td>
<td>R01 GM102989</td>
<td>Rational Design of Lipidic Vectors for Mitochondria-Targeted Antioxidants</td>
<td>190,000</td>
<td>94,677</td>
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<td>Targeted Combination Therapy for Breast Cancer</td>
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<td>NIH</td>
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<td>Non Viral Gene Therapy for Lung Injury</td>
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<td>NIH</td>
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<td>Mitochondrial Targeting Against Radiation Damage</td>
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<td>NIH</td>
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<td>Polymeric System for Synergistic Targeting of AR Signaling in Prostate Cancer</td>
<td>130,500</td>
<td>67,208</td>
<td>197,708</td>
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<td>S. Li</td>
<td>NIH</td>
<td>R21 CA173887</td>
<td>Nanomicellar Formation for Synergistic Targeting of Prostate Cancer</td>
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<td>63,702</td>
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<td>X. Ma</td>
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<td>Mechanisms of adverse effects of anti-tuberculosis drugs</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>3,627</td>
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<td>15,412</td>
<td>57,340</td>
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<td>Cyclooxygenase 2 and Ischemic Neuronal Injury</td>
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<td>Epigenomics of Patient Outcomes after Aneurysmal SAH</td>
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<td>M. Reynolds</td>
<td>NIH</td>
<td>R01 DA033322</td>
<td>Decision Making and Dysregulation Pathways in Adolescents with Parental SUD History</td>
<td>32,790</td>
<td>17,215</td>
<td>50,005</td>
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<td>L. Rohan</td>
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<td>R33 A1089801</td>
<td>Microbicide Properties of RT Inhibitor Combinations</td>
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<td>U19 A1082639</td>
<td>Alternative Formulations of Tenofovir &amp; UC781 Project 1 &amp; Core C</td>
<td>629,736</td>
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<td>Combination HIV Antiretroviral Rectal Microbicide Prog (Formulation Development CoreC)</td>
<td>171,529</td>
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<td>S. Sant</td>
<td>NIH</td>
<td>R03 EB018575</td>
<td>Engineered Microenvironments to Model Effect of Size in Tumor Progression</td>
<td>50,000</td>
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<td>R. Tarter</td>
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<td>P50 DA005605</td>
<td>Drug Abuse Vulnerability: Mechanisms and Manifestations</td>
<td>1,231,269</td>
<td>466,317</td>
<td>1,697,586</td>
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<td>Longitudinal Modeling of SUD Etiology</td>
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<td>C. Thorpe</td>
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<td>Medication Oversupply and Outcomes in Patients with Diabetes</td>
<td>123,750</td>
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<td>Guideline Adherence and Short/Long-term Health Outcomes in Patients with Diabetes</td>
<td>40,816</td>
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<td>R. Venkataramanaman</td>
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<td>U10 HD047905</td>
<td>Impact of Pregnancy on Drug Absorption, Disposition and End Organ Response (Caritis)</td>
<td>155,591</td>
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<td>R. Venkataramanaman</td>
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<td>UH2 TR000496</td>
<td>All-Human Microphysical Model of Metastasis Therapy</td>
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<td>R. Venkataramanaman</td>
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<td>T32 HD071859</td>
<td>Training in basic and Clinical Pharmacology in Pregnancy</td>
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<td>4,063</td>
<td>67,203</td>
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<td>W. Xie</td>
<td>NIH</td>
<td>R01 DK083952</td>
<td>A Novel Role of the Aryl Hydrocarbon Receptor in Hepatic Steatosis</td>
<td>205,425</td>
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<td>Aminoglycoside Microbicides to Restore Natural Expression of anit-HIV1 Retrocyclins</td>
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<td>Gut Bile Acids, FXR. &amp; FGF15 In Total Parenteral Nutrition - Associated Cholestasis</td>
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**FY 2014 Industry Funding**

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<td>HOSPIRA</td>
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<td>Millennium Pharm</td>
<td>A Phase I Pharmacokinetic Study of Intraperitoneal CTEP-Supplies Agent Bortezomib (PS-341, NSC 681239, IND#58443) and Caboplatin (SNC#241240) in Patients with Persistent or Recurrent Ovarian, Fallopian Tube, or Primary Peritoneal Cancer</td>
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<td>A Phase I Study of Chronically Dosed, Single ABT-888 in Patients with either BRCA 1/2 Mutated Cancer, Platinum-Refractory Ovarian, Fallopian Tube, or Primary Peritoneal Cancer; or Basal-Like Breast Cancer</td>
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<td>Military Drug Management System</td>
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<td>Proposed Evaluation Plan for the Electronic Quality Improvement Platform for Plans &amp; Pharmacies</td>
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<td>R. Venkataramanan</td>
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<td>Pharmacokinetics and Bioavailability of Granisetron Transdermal System (Sancuso) in Pregnancy</td>
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**FY14 Foundation/Association Funding**

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<td>A Phase II Study of Combination Nilotinib and Hyper-CVAD in Patients Newly Diagnosed with Philadelphia-chromosome Positive Acute Lymphoblastic Leukemia or Chronic Myeloid Leukemia Blast-Phase</td>
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<td>S. Kane/ P. Smithburger/ J. Thorpe</td>
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<td>A Multicenter Evaluation of Off-Label Medication use and Adverse Drug Event in Adult Intensive Care Unit Patients.</td>
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<td>C. Thorpe</td>
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<td>Communication about Type 2 Diabetes Treatment Decisions in Older Patients with Comorbid Dementia</td>
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<td>C. Thorpe</td>
<td>VAMC</td>
<td>Supporting Medication Adherence in Veterans and Their Caregivers</td>
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<td>H. Yang</td>
<td>Magee Fndtn</td>
<td>Building Interdisciplinary Research Careers in Womens Health in Pittsburgh</td>
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<td>H. Yang</td>
<td>Magee Fndtn</td>
<td>Improving the Robustness of the Ex Vivo Challenge Assay</td>
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**FY 2014 Other Funding**

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<td>Pennsylvania Client Placement Criteria</td>
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<td>J. Pringle</td>
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<td>Pennsylvania Overdose Prevention Coalition</td>
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<td>J. Pringle</td>
<td>Blair Co./Cmwlth of PA</td>
<td>Implementation of Screening, Vrief Intervention and Referral to Treatment with the Medical Community of Blair County</td>
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**RESEARCH RECOGNITION OF FACULTY**

Faculty members received various forms of recognition for their accomplishments and their expertise during FY14.

- 22 faculty members served on scientific journal editorial boards.
- 11 faculty members served on NIH grant review committees.
- 78 – the number of invited research presentations by faculty.
  - 4 presentations at 4 universities in 3 states
  - 23 presentations at 20 scientific meetings in 12 states
  - 4 presentations at 4 universities in 3 countries
  - 4 presentations at 3 international scientific meetings in 3 countries
- 9 international presentations in 4 countries.
  - 3 at universities or hospitals
  - 6 at conferences or academies

### Members of Editorial Boards

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<tr>
<th>Faculty Member</th>
<th>Number</th>
<th>Editorial Board</th>
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<tbody>
<tr>
<td>Sherrie L. Aspinall, PharmD</td>
<td>3</td>
<td>American Journal of Oncology&lt;br&gt;Journal of Thrombosis and Thrombolysis&lt;br&gt;Drug Formulary Review</td>
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<tr>
<td>Jan H. Beumer, PharmD, PhD</td>
<td>2</td>
<td>Journal of Chromatography and Separation Techniques&lt;br&gt;Cancer Chemotherapy and Pharmacology</td>
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<tr>
<td>Scott R. Drab, PharmD, CDE, BC-ADM</td>
<td>1</td>
<td>Inside Pharmacy</td>
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<tr>
<td>Christopher R. Ensor, PharmD, BCPS-CV</td>
<td>2</td>
<td>Progress in Transplantation&lt;br&gt;Journal of Pharmacy Practice, Key Articles in Pharmacy Practice</td>
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<td>Robert B. Gibbs, PhD</td>
<td>1</td>
<td>Hormones and Behavior</td>
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<td>Barry Gold, PhD</td>
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<td>Editorial Advisory Board of Future Medicinal Chemistry</td>
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<tr>
<td>Donna Huryn, PhD</td>
<td>2</td>
<td>Organic Letters&lt;br&gt;AAC Medicinal Chemistry Letters</td>
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<td>Paul A. Johnston, PhD</td>
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<td>Journal of Assays and Drug Development Technologies</td>
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<td>Sandra L. Kane-Gill, PharmD, MS, FCCM</td>
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<td>Critical Care Medicine&lt;br&gt;Journal of Hospital Administration&lt;br&gt;Annals of Pharmacotherapy-Adverse Reactions and Medication Safety Panel&lt;br&gt;Advances in Pharmacoepidemiology and Drug Safety&lt;br&gt;International Scholarly Research Network (ISRN) Critical Care Hospital Pharmacy, Critical Care Column Editor</td>
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<tr>
<td>Levent Kirisci, PhD</td>
<td>3</td>
<td>Bipolar Disorder: International Journal of Psychiatry and Neurosciences&lt;br&gt;International Journal of Person-Centered Medicine&lt;br&gt;Journal of Substance Abuse and Rehabilitation</td>
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<tr>
<td>Song Li, MD, PhD</td>
<td>3</td>
<td>Journal of Gene Medicine&lt;br&gt;Biological Procedure Online&lt;br&gt;American Journal of Cancer Therapy and Pharmacology</td>
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<tr>
<td>Susan M. Meyer, PhD</td>
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<td>American Journal of Pharmaceutical Education</td>
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<tr>
<td>Thomas D. Nolin, PharmD, PhD</td>
<td>2</td>
<td>American Journal of Kidney Diseases&lt;br&gt;Seminars in Dialysis</td>
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<tr>
<td>Lisa C. Rohan, PhD</td>
<td>2</td>
<td>AIDS Research and Therapy&lt;br&gt;Journal of Sexually Transmitted Diseases</td>
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<td>Shilpa Sant, PhD</td>
<td>5</td>
<td>Journal of Pharmacovigilance, IEEE Transactions on Nanobioscience, JSM Regenerative Medicine, In Silico Pharmacology, Scientific Reports</td>
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<tr>
<td>Amy L. Seybert, PharmD</td>
<td>1</td>
<td>International Simulation Education</td>
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<tr>
<td>Ralph E. Tarter, PhD</td>
<td>6</td>
<td>Directions in Substance Abuse Counseling (Advisory Board), Journal of Child and Adolescent Substance Abuse (Book review editor), Drug and Alcohol Dependence, Experimental and Clinical Psychopharmacology, Clinical Psychology Review, Prevention Science, American Journal of Drug and Alcohol Abuse</td>
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<tr>
<td>Regis R. Vollmer, PhD</td>
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<td>Editor, Clinical and Experimental Hypertension</td>
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<tr>
<td>Wen Xie, MD, PhD</td>
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<td>Current Drug Metabolism, World Journal of Gastroenterology, Drug Metabolism Letters, Drug Metabolism Reviews, Molecular Endocrinology, Drug Metabolism and Disposition</td>
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<tr>
<td>Xiang-Qun (Sean) Xie, MBA, PhD</td>
<td>2</td>
<td>American Journal of Molecular Biology, Pharmacology and Toxicology</td>
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### Faculty Participation in NIH Review Committees and Panels

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<tr>
<th>Faculty Member</th>
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<tr>
<td>Jan H. Beumer, PharmD, PhD</td>
<td>Pharmaceutical Sciences</td>
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<td>Barry Gold, PhD</td>
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<td>Song Li, MD, PhD</td>
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<td>Samuel M. Poloyac, PharmD, PhD</td>
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<tr>
<td>Shilpa Sant, PhD</td>
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<tr>
<td>Randall B. Smith, PhD</td>
<td>Pharmaceutical Sciences</td>
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<tr>
<td>Carolyn T. Thorpe, PhD, MPH</td>
<td>Pharmacy and Therapeutics</td>
<td>1</td>
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<tr>
<td>Xiang-Qun (Sean) Xie, PhD</td>
<td>Pharmaceutical Sciences</td>
<td>3</td>
</tr>
</tbody>
</table>
School of Pharmacy Publications in Peer-Reviewed Journals

Research


• Everett CM, **Thorpe CT**, Palta M, Carayon P, Gilchrist VJ, Smith MA. The roles of primary care PAs and NPs caring for older adults with diabetes. *JAAPA.* 2014 Apr;27(4):45-9. doi: 10.1097/01.JAA.0000444736.16669.76


• **Kane-Gill SL**. Institutional and National MEDMARX data have differences in causes and types of medication errors but agree on the higher propensity for harm in the ICU (letter). *Crit Care Med.* 2013 Sep;41(9):e234-5. doi: 10.1097/CCM.0b013e3182916fc0


Patient Care


Education


Buckley MA, MacLaren RM, Frazee EN, Smithburger PL, Personett HA, Kane-Gill SL. Surveying residents on postgraduate year 2 critical care pharmacy residencies about their level of preparedness to practice. Currents in Pharmacy Teaching and Learning. 2013 Nov 27; 6(1): 76 – 84.
RESEARCH OVERVIEW

Center for Pharmacogenetics

Faculty
Song Li, Professor
Xiaochao Ma, Associate Professor
Wen Xie, Professor
Jiang Li, Research Assistant Professor

Graduate Students (PhD students)
Yuhan Bi
Chibueze Ihunnah
Mengxi Jiang
Sung Tae Kim
Peipei Lu
Jianqin Lu
Madhav Sachar
Amina I. Shehu
Jiong Yan
Peng Zhang
Xiaolan Zhang
Yifei Zhang

Postdoctoral Fellows
Wojciech Garbaz
Ke Liu
Pengcheng Wang

Major Accomplishments

• Xiaochao Ma was invited to serve as an *ad hoc* reviewer for Medical Research Council, United Kingdom, December 2013.

• Xiaochao Ma was invited to serve as a Session co-Chair, Metabolomics in Drug Development and Drug Safety, 19th North American ISSX Meeting / 29th JSSX Meeting 2014.

• Song Li’s group has developed several novel dual-functional carriers that are highly efficient in delivery of poorly water-soluble drugs and in synergistic action with co-delivered anticancer agents. His group has also developed a new concept that incorporation of a drug-interactive group into lipid surfactants at interfacial region will not only increase drug-loading capacity but also improve the formulation stability. These studies have led to the publication of a series of manuscripts and the filing of three provisional patent applications.

• Jiang Li in Dr. Song Li’s lab has discovered that altered metabolism of amino acids is one of the early events that plays an important role in transactivation of hepatic stellate cells. This study may suggest a new therapy for the treatment of liver fibrosis.

• Song Li has served as an *ad hoc* member in a number of NIH and DOD study sections.

• Song Li received a new grant NIH RO1GM102989: *Rationale Design of Lipidic Carriers for Mitochondria-Targeted Antioxidants*, 07/01/13-04/30/17.

• Song Li received a new grant R01CA174305: *Targeted Combination Therapy for Breast Cancer*, 12/02/13-11/30/18.
• **Wen Xie** received a new NIH R01 grant titled “A Novel Regulation of the Phase II Enzyme Estrogen Sulfotransferase.” The goal of this project is to determine the inflammatory regulation of the estrogen sulfotransferase (EST) and the implications of this regulation in sepsis response.

• **Wen Xie** received a new NIH R01 grant titled “The hepatic function of cholesterol sulfotransferase 2B1b (SULT2B1b) in energy metabolism.” The goal of this project is to study the role of cholesterol sulfotransferase 2B1b (SULT2B1b) and its enzymatic byproduct cholesterol sulfate in glucose metabolism and metabolic disease.

• **Wen Xie** was named Guest Professor, Zhejiang University, Hangzhou, Zhejiang, China

• **Wen Xie** was named Guest Professor, Beijing Hospital 302, Beijing, China

• **Wen Xie** was invited to serve as an *ad hoc* member, NIH special emphasis panel “Systemic Injury by Environmental Exposure (SIEE)”. October, 2013; February and June 2014

• **Wen Xie** was invited to serve as an *ad hoc* member, Polish National Science Center. September 2013

• **Wen Xie** was invited to serve as an *ad hoc* member, NIH, Ruth L. Kirschstein Predoctoral and Postdoctoral Fellowship, Endocrinology, Metabolism, Nutrition and Reproductive Sciences (EMNR) Integrated Review Group (IRG). November 20, 2013

• **Wen Xie** was invited to serve as an *ad hoc* member, “Research projects in the field of the effects of the exposure to environmental risk factors on cancer,” Cancer TM01 of the French National Alliance for Life and Health Sciences (AVIESAN) jointly with the French National Cancer Institute (INCa). October 2013

• **Wen Xie** was invited to serve as an *ad hoc* member, NIH/NHLBI, RFA Review Panel, RFA on “Basic Research in the Pathogenesis of HIV-Related Heart, Lung, and Blood (HLB) Diseases in Adults and Children”. April 16, 2014

• **Wen Xie** was invited to serve as an *ad hoc* member, NIH/NIEHS, ZRG1 DKUS-C (50) R Virtual Consortium for Translational/Transdisciplinary Environmental Research (ViCTER) (Jun 26, 2014)

• **Wen Xie** was invited to serve as an *ad hoc* member, NIH/CSR, ZRG1 GGG-L (40) P (P01) Pre-Clinical Pharmacogenetics: a systems approach (Teleconference) (July 9, 2014)

• **Wen Xie** was invited to serve as an *ad hoc* member, NIH, ZRG1 CB-L (55) R Adverse Drug Reactions in Children (July 29, 2014)

• **Wen Xie** was named Editorial Board Member, *Molecular Endocrinology* (2014-2016)

**Selected Publications**


• Yan J, Xie W. Decipher the role of constitutive androstane receptor in energy metabolism. *Acta Pharmacologica Sinica* (Accepted) (Peer-reviewed review article)

**Selected Invited Research Presentations**

- Humanized mouse models and drug toxicity. 10th International Society for the Study of Xenobiotics (ISSX) Meeting. Toronto, Canada, October 2013. **Ma X.**

- Human PXR models provide novel insights into adverse drug reactions associated with anti-TB and anti-HIV drugs. Therapeutics Research Program, Division of AIDS, NIAID, NIH, November 2013. **Ma X.**

- Nuclear Receptors PXR and CAR in the Crossroad of Drug Metabolism and Energy Metabolism. 10th International ISSX Meeting. Toronto, Ontario, Canada. September 29-October 3, 2013. **Xie W.**


- Nuclear Receptors, Their Regulation of Drug Metabolism and Beyond. School of Pharmacy, The Chinese University of Hong Kong. Hong Kong, China. December 5, 2013. **Xie W.**

- Nuclear Receptors In Drug Metabolism And Pharmacogenetics. 1st Ling-Nan International DMPK Summit Conference. Guangzhou, China. December 5-8, 2013. **Xie W.**


- AhR in Fatty Liver Disease, the Expected and Unexpected. 53rd Society of Toxicology Annual Meeting. Phoenix, AZ. March 23-27, 2014. **Xie W.**

- A Decade of Discoveries in Pittsburgh: Unravelling the Function of Orphan Nuclear Receptors in Obesity and Diabetes. Provost’s Inaugural Lecture as the Joseph Koslow Endowed Chair, University of Pittsburgh, Pittsburgh, PA. April 15, 2014. **Xie W.**


- Intestine-Liver Crosstalk, the Role of PXR in Gallstone Disease. 6th Forum on Intestinal Barriers and Related Diseases. Beijing, China. June 6-8, 2014. **Xie W.**

- Orphan Nuclear Receptors in Hepatobiliary Diseases. Sino-U.S. Forum on Infectious Diseases and Liver Diseases, Beijing 302 Hospital, Beijing, China. June 9, 2014. **Xie W.**

- Nuclear Receptors in Liver Metabolism and Liver Diseases. Xijing Hospital of Digestive Diseases, Fourth Military Medical University, Xi’an, China. June 13, 2014. **Xie W.**
• Cholesterol Sulfate and Cholesterol Sulfotransferase Inhibit Gluconeogenesis by Targeting HNF4. School of Basic Medical Sciences, Capital Medical University, Beijing, China. June 18, 2014. Xie W.

Center for Clinical Pharmaceutical Sciences

Faculty
Samuel M. Poloyac, PharmD, PhD, FCCM, Associate Professor and Center Director
Jan H. Beumer, PharmD, PhD, Assistant Professor
Kim C. Coley, PharmD, FCCP, Professor
Kerry M. Empey, PharmD, PhD, Associate Professor
Philip E. Empey, PharmD, PhD, BCPS, Assistant Professor
Mary M. Folan, PhD, Assistant Professor
Sandra L. Kane-Gill, PharmD, MS, FCCM, FCCP, Associate Professor
Sean H.J. Kim, PhD, Assistant Professor
Margaret Beth Minnigh, PhD, Assistant Professor
Thomas D. Nolin, PharmD, PhD, Assistant Professor
Lisa C. Rohan, PhD, Associate Professor
Carolyn T. Thorpe, PhD, MPH, Assistant Professor
Joshua Thorpe, PhD, MPH, Associate Professor
Raman Venkataramanan, PhD, Professor

Graduate Students
Solomon M. Adams, PharmD
Omar A. Almazroo, BSc, MSc
Ali Mohamed Alshabi, BS, MS
Osama Y. Alshogran, BS, MS
Shoroq Altawalbeh, PharmD
Kacey Anderson, BS
Katherine Eichinger, PharmD, MS
Lindsay Ferguson Kramzer, PharmD
Firuz G Feturi, BS
Tiantian Gong, BS, MS
Fanuel Hagos, BS, MS
Hari V Kalluri, PharmD
Lingjue Li, MS
Ellen Press, BS, MS
Mohammad S. Shawaqfeh, PharmD, MS
Harisudhan Thanukrishnan, M Pharm.
Dustin R. Walsh, PharmD

Major Accomplishments
• **Kim Coley** was named as a standing scientific grant review panelist for PCORI – “Addressing Disparities” subsection.

• **Kim Coley** served on three grant review panels for the ASHP Foundation and AACP.

• **Kim Coley** received funding for the following research projects:
  o Pennsylvania Pharmacists Association. “Identifying key factors associated with successful integration of patient care services into dispensing workflow: a traditional community chain pharmacy evaluation.” Role Co-I; $1,000; 2013.
  o ASHP Foundation. PIVOTS: Pharmacist Led Interventions on Transitions of Seniors. Role S-I; $20,000; 2013-2015.
The Beckwith Institute. “Transforming the role of the hospital pharmacist to improve patients' access, adherence, and self-management of medication after discharge.” Role Co-PI; $24,450; 2013-2014.

St. Margaret Hospital Foundation. “Pharmacist Led Interventions on Transitions of Seniors.” Role P-I; $5,000; 2013-2015.


- **Kerry Empey** received the Brenneman Scholar Award from the University of Pittsburgh, School of Pharmacy. July 29, 2013. In support to advance the science of making medicine work for people.

- **Kerry Empey** was awarded the following grants:

- **Phil Empey** received a secondary appointment, Scientist, Safar Center for Resuscitation Research, University of Pittsburgh. October 2013.

- **Phil Empey**’s three graduate students earned distinction for their research:
  - Kacey Anderson presented at the American College of Clinical Pharmacology’s national meeting in Washington DC (won best poster/travel award), American Heart Association Fellows’ Research Day (selected for an oral presentation), and the Safar Symposium (poster).
  - Fanuel Hagos presented this same research work as an oral abstract at the Safar Symposium and won best oral presentation for the entire symposium for our research.
  - Solomon Adams won best poster award in Critical Care Medicine at the Safar Symposium.

- **Phil Empey** was awarded the following grants:
  - University of Pittsburgh Advisory Council on Instructional Excellence (ACIE) Grant Award. “Using personal genome testing to teach pharmacogenomics in a large lecture course.” Role PI; $18,708 direct costs; 2014-2015.
  - University of Pittsburgh, Clinical Translational Science Institute, project funding. “MEDIvate: achieving great medication outcomes together.” Center for Assistance in Research using eRecord (CARe) support. Role PI; project funding; 2014.
  - University of Pittsburgh, Institute of Personalized Medicine/Clinical and Translational Science Institute demonstration project. “PreCISE-Rx: Pharmacogenomics-guided care to improve the safety and effectiveness of medications.” Role PI; project funding; 2014-2016.
• **Sandra L. Kane-Gill** is the recipient of the 2013 American College of Clinical Pharmacy (ACCP) Critical Care PRN Achievement Award.

• **Sandra L. Kane-Gill** was appointed vice-chair for the Critical Care Practitioners as Educators Task Force for the Society of Critical Care Medicine.

• **Sandra Kane-Gill** is the Chair of the ACCP Program Committee (2012-2014).

• **Sandra Kane-Gill** is an elected At-Large Member of the SCCM Council (2014-2017).

• **Sandra Kane-Gill** received the following grants:
  - Clinical & Translational Science Institute at the University of Pittsburgh. “Improving the identification of actionable adverse drug events associated with acute kidney injury in nursing homes.” Role Co-I; $100,000; 3/1/14-6/30/14.
  - The Beckwith Institute. “Transforming the role of the hospital pharmacists to improve patients’ access, adherence and self-management of medications after discharge.” Role Co-I; $25,000; 6/1/13-6/1/14.

• **Sean Kim** was awarded a grant from the American Association of Colleges of Pharmacy for his study “Quantitative Mechanistic Modeling of Drug Disposition with Variable Interactions.” Role PI; $9,960 direct costs; 2014.

• **Tom Nolin** became a member of the Center for Critical Care Nephrology; Department of Critical Care Medicine, University of Pittsburgh School of Medicine.

• **Tom Nolin** received a National Institutes of Health grant 1 R01 GM107122-01A1 “Drug metabolizing enzyme and transporter function in chronic kidney disease.” Role PI; $1.9 million direct costs; 2014-2019.

• **Sam Poloyac** was named as a standing member to the Neurological Sciences and Disorders K, National Institutes of Health grant reviewer.

• **Sam Poloyac** was the recipient of the University of Pittsburgh Chancellors Distinguished Teaching Award for 2014.

• **Sam Poloyac’s** undergraduate student, Shea Liput is the AFPE Gateway Fellow Awardee for 2014.

• **Sam Poloyac** was appointed as the Associate Director, Safar Center for Resuscitation Research.

• **Carolyn Thorpe** was chosen as Best Reviewer, Pharmacoepidemiology and Drug Safety.

• **Carolyn Thorpe** was invited to serve as a temporary member of the Health Services Organization and Delivery Study Section, at the National Institutes of Health.

• **Carolyn Thorpe** was awarded the following grants:
• Vasculitis Foundation. “Impact of healthcare utilization and informal caregiving for primary systemic vasculitis: A national perspective.” Role PI; $99,920 (direct total); 12/1/13-11/30/15.
• Department of Veterans Affairs, Health Services Research and Development, CHERP Competitive Pilot Funding Program. “Supporting medication adherence in Veterans with dementia and their caregivers.” Role PI; $35,000 (direct total); 10/1/13-9/30-14.
• Aging Institute of UPMC Senior Services and the University of Pittsburgh, Seed Grant Pilot Funding Program. “Communication about Type 2 Diabetes Treatment Decisions in Older Patients with Comorbid Dementia.” Role PI; $19,914 (direct total); 7/1/2013-6/30/2014.

• Joshua Thorpe was named associate director of Analytics and Research for VA’s national center for Performance Reporting and Outcomes Measurement to Improve the Standard of Care at End-of-life, PROMISE Center.

• Joshua Thorpe is a temporary study section member for VA Health Services Research & Development, Care of Gulf War Veterans section.

• Joshua Thorpe was awarded the following grants:
  • Department of Veteran Affairs, Health Services Research & Development. “Dual Use of VA/Medicare Part D and Unsafe Prescribing in Veterans with Dementia Source.” Role PI; $920,000 total direct costs; 4/1/14 – 9/30/17.
  • VA HSR&D CHERP Competitive Pilot Research Program. “Developing a Typology Veterans’ Healthcare Experiences.” Role PI; $33,000 total direct costs; 10/1/13 – 9/30/14.

Selected Publications


• Tyurina YY, Poloyac SM, Tyurin VA, Kapralov AA, Jiang J, Anthonymuthu TS, Kapralova VI, Vikulina AS, Jung MY, Epperly MW, Mohammadyani D, Klein-Seetharaman J, Jackson TC,


- Young HN, Larson TL, Cox ED, Moreno MA, Thorpe JM, MacKinnon NJ. Patient activation, medication adherence, and disease control in underserved rural patients with asthma. *J Rural Health* 2013, June 11.

**Selected Invited Presentations**


- Inhaled interferon (IFN γ) during primary respiratory Syncytial Virus (RSV) infection induces airway hyperresponsiveness (AHR) after RSV re-challenge. Autumn Immunology Conference,
• Understanding the role of IFNy in an infant mouse model of respiratory syncytial virus (RSV). Pittsburgh Lung Conference, Pittsburgh PA. October 18, 2013. Empey K.


• Lost in translation: The importance of understanding clinical pharmacology in neurotrauma research. National Neurotrauma Symposium, Nashville, TN. August 2013. Empey P.

• Development of a graduate level cross-institutional course to foster an understanding of translational sciences. American Association of Colleges of Pharmacy, Chicago, IL. July 2013. Empey P.


• Strategies to manage alert overload from clinical decision support systems. 43rd Society of Critical Care Medicine (SCCM) Congress San Francisco, CA. January 2014. Kane-Gill SL.

• Med Wreck or Med Safety: The impact of medication reconciliation on medication errors and adverse drug events. 46th ASHP Midyear Clinical Meeting, Orlando, FL. December 2013. Kane-Gill SL.

• Acute kidney injury in the critically ill, elderly patient. 3rd AKI Symposium, University of Pittsburgh, Pittsburgh, PA. October 2013. Kane-Gill SL.


• KHI’s Pilot Projects-Lessons Learned: Pharmacokinetics in Patients Receiving CRRT. Presented at the Kidney Health Initiative Second Annual Stakeholder’s Meeting, Bethesda, MD. June 12, 2014. Nolin TD.

• CYP Eicosanoids and Stroke: Results from a large cohort of aneurysmal subarachnoid hemorrhage patients. Winter Eicosanoid Conference, Baltimore, MD. March 2014. Poloyac SM.
• Special Session: Development of a Graduate Level Cross-Institutional Course to Foster an Understanding of Translational Sciences. American Association of Colleges of Pharmacy Annual Meeting Teachers Seminar, Chicago, IL. July 2013. Poloyac SM.


Computational Chemical Genomics Screening (CCGS) Center

Faculty
Xiang-Qun (Sean) Xie, PhD MBA, Professor and Director of CCGS Center
Lirong Wang, PhD, Assistant Research Professor and CCGS Center Scientific Administrator

Graduate Students
Abdulrahman Almehizia, BS
Mohammed Hamed Alqarni, BS
Haizi Cheng, MS
Cheng Fang, MS
Shfang Ma, MS
Nuozhou Wang, BS
Xiaomeng Xu, MS
XiaoLe Yang, MS

Exchange Students
Haibin Liu, PhD
Jinxu Wang, PhD

Graduate Students
Haizi Cheng, MS
Cheng Fang, MS
Shfang Ma, MS
Nuozhou Wang, BS
Xiaomeng Xu, MS
XiaoLe Yang, MS

The Computational Chemical Genomics Screening (CCGS) Center has completed its second successful year since it was launched on September 1, 2012. The Center’s mission is to promote interdisciplinary research, education, and training and foster collaborations by providing our developed state-of-the-art computational-chemical-genomics-based in-silico drug design approaches.

Major Accomplishments
• In FY14, amassed 21 peer-reviewed research publications and had 2 PCT new discovery patents approved.

• 6 faculty were invited speakers, session chair, and/or organizing committee members for international meetings or organizations.

• Received 2 newly awarded NIH grants, including:
  o NIDA Center of Excellence for Computational Chemogenomics Drug Abuse Research, PI/Director: X-Q Xie, Co-PI: L. Wang. $5.4 million (07/01/2014-06/30/19). The overall goal of the Computational Drug Abuse Research (CDAR) Center is to advance state-of-the art computational chemogenomics technologies for research toward the prevention and treatment of drug abuse (DA).
- Structure/Function of the CB2 Receptor Binding and G-protein Recognition Pocket, PI: X-Q Xie. (04/10/10-03/31/15). This study involves X-ray crystallographic studies of CB2 protein.

- Continued 3 NIH funded grants, including:
  - Structure/Function of the GPCR CB2 Receptor Binding and G-protein Recognition Pockets, PI: X-Q Xie. (4/1/2010-03/31/2015). This project focuses on characterizing the cannabinoid receptor subtype 2 (CB2) binding residues and functional domains and then to elucidate 3D structures of the recognition pockets important to agonist/antagonist binding and G-protein coupling by combined biophysical and biochemical approaches.
  - Screen/Design the CKI p18 Inhibitors for Hematopoietic Stem Cell Self-Renewal, PI: X-Q Xie. (7/1/2011-6/30/2014). This project is to screen/design small molecules targeting CKI p18, and use them as chemical probes for characterization of p18 protein binding and p18/CDK6 disruption, and further exploration of the mechanisms of activating HSC self-renewal in increasing the quantity of functional stem cells. Ultimately, our work will lead to developing HSC drugs for therapeutic uses.

- 2 NIH grant submitted as PI and co-PI (Xiang-Qun Xie and Lirong Wang).

- Center faculty supervised and trained 7 undergraduates, 10 graduate students, and 5 post-doctoral fellows.

Selected Publications


**Selected Invited Presentations**

• Cloud Computing and Diseases-Specific Chemogenomics Knowledgebase for System Pharmacology Drug Discovery and Personalized Medicine. New Frontiers in Therapeutic Agents – Successes in Drugging the Undruggable Conference, jointly sponsored by the John S. Dunn Gulf Coast Consortium for Chemical Genomics (GCCCG) and the Texas Screening Alliance for Cancer Therapeutics (TxSACT). April 16-17, 2014, University of Texas MD Anderson Cancer Center, Houston, TX. Xie X-Q.


• Cloud Computing TargetHunter© and Diseases-Specific Chemogenomics Knowledgebases for Multiple Myeloma Drug Discovery. Institute of Materia Medica, Chinese Academy of Sciences(CAS), June 9, 2014, Beijing, China. Xie X-Q.


**Patents Approved**


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 pharmaceutical products which include products intended for prevention of the spread of HIV and other sexually transmitted infections, probiotics, practical vaccine products for use in low resource settings globally, and gynecologic oncology application. This group also contributes to the development of in vitro models for formulation assessment to predict clinical outcome and characterization of vaginal and rectal biological barriers to successful drug delivery. The laboratory has experience with the development of pharmaceutical products utilizing many dosage form platforms. Delivery systems are being designed for small molecule, protein and peptide, and bacteria drug candidates.

Faculty
Lisa Rohan, PhD, Associate Professor
Haitao Yang, PhD, Assistant Professor

Research Staff  Graduate Students  Postdoctoral Fellows
Marilyn Cost  Lindsay Ferguson, PharmD  Wei Zhang, PhD
Phillip Graebing  Sheila Grab
Lin Wang  TianTian Gong
Yuan Shi  Minlu Hu
          Jing Li
          Galit Regev
          Tian Zhou
          Kunal Jhunjhunwala

Major Accomplishments
• Completed a Phase I clinical trial evaluating the antiretroviral dapivirine in a novel vaginal film product. This clinical trial is the first in human study to evaluate the use of thin film drug delivery platforms as an option for HIV prevention. Results from this trial were selected for presentation at the Conference On Retroviruses And Opportunistic Infections (CROI) annual meeting as a late breaker oral presentation. The development work and clinical trial was supported through NIAID at the NIH.

• Also within the context of the Program Cooperative Agreement Grant for which Dr. Rohan is Principal Investigator a second antiretroviral containing vaginal film was developed, the IND successfully submitted and the Phase I clinical trial initiated.

• A rectal specific HIV prevention drug product containing the antiretroviral drug tenofovir was developed in the lab. An Investigational New Drug (IND) Application was successfully filed and the clinical trial completed. This is the first clinical trial to evaluate a rectal specific dosage form for HIV prevention. A second rectal HIV prevention product was developed containing an HIV entry inhibitor. The IND was recently filed for this product and a clinical trial will be conducted at Magee in partnership with International Partnership for Microbicides and Viiv Healthcare. The development work and clinical trial is supported through NIAID at the NIH.

• The group has continued with their innovative work regarding characterization of anatomical and physiological parameters essential for development of safe and effective vaginal products. To this end they have expanded their work on transporters and metabolizing enzymes in reproductive tissues of humans and other animal models and have developed in vitro and animal models for
assessment of vaginal film products. This work has been shared with other groups and has facilitated vaginal product design by a number of organizations.

• The group in collaboration with Universal Stabilization Technologies in California has successfully formulated quick dissolve film and table vaccine formulations which can potentially overcome the current requirements for cold chain storage for worldwide vaccine distribution.

• Funding for the Pharmaceutics Group over the past year has been provided through 11 separate grants (8-NIH; 2-Bill & Melinda Gates Foundation; 1-CDC). The group was awarded a second round of supplemental funding to their U19 cooperative grant entitled “Alternative Formulations of Tenofovir and UC781”.

Selected Publications
This year the Pharmaceutics Group has published 11 peer reviewed scientific manuscripts and 1 Review Article and 2 book chapters. Additionally 2 manuscripts have been submitted for review.


Selected Invited Presentations
• Dr. Rohan was invited as a plenary speaker to deliver a talk entitled “The Role of PK/PD tissue models for prevention” at the 15th International Workshop on Clinical Pharmacology of HIV & Hepatitis Therapy held in Washington DC on May 20, 2014

• Of the many grantees for the Bill and Melinda Gates Foundation the group was one of six chosen grantees as a “Grantee Spotlight: Multipurpose Technology for HIV and Family Planning” at the Bill & Melinda Gates Foundation Annual Employee Meeting held in Seattle, WA on May 13, 2014. Their work toward development of a vaginal thin film which provides both protection from unwanted pregnancy and HIV infection.

• Over a dozen published meeting abstracts were generated. From the program grant alone seven presentations (2 oral, 5 posters) were made at 5 different conferences across a range of scientific areas (STDs (ISSTDR); Reproductive infectious disease (IDSOG); HIV (CROI, ICAR); & Family planning (Forum for Family Planning Research)

• Dr. Rohan continues to serve as a scientific advisor for the CRIMP program within NIAID at the NIH as well as advisor to several not for profit groups and pharmaceutical companies.

International Impact
The Pharmaceutics Group continues to have international impact. In addition to their research efforts in the area of improving global health, the group continues to support and train international investigators. The group collaborates with investigators in Africa, Europe, India, and Australia. As part of the Microbicide Trials Network Comparative Assessment Core the group provides scientific support to the MTN community which includes clinical sites in the US as well as in Peru, Malawi, Zambia, Uganda, Zimbabwe, India, South Africa, and Thailand. They recently successfully competed for renewal of the network grant and have been awarded a new grant which extends the MTN for an additional 7 years.

Center for Education and Drug Abuse Research

December 31, 2014 will mark the completion of a 25-year longitudinal multidisciplinary investigation of over 700 families having the overarching goal of understanding the origins and developmental pathways to addiction. The past year has focused on deriving and validating predictive models having a research to practice focus. In addition to the center grant funded by the National Institute on Drug Abuse, a grant funded by Staunton Farm Foundation enabled CEDAR to establish a prototype for addiction screening of youths in the primary pediatric setting. The results of this project indicate that a 5-10 minute screening of addiction risk can be conducted unobtrusively in a pediatrician’s office using the Web platform. CEDAR’s cumulative record of publications exceeds 400 peer reviewed papers and book chapters. The following publications are representative of empirical reports published between July 1, 2013 – June, 30, 2014.
Facility
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
Michael Vanyukov, PhD, Professor

Graduate Student
ZuWei Zhai, BA

Postdoctoral Fellow
Michelle Horner, DO

Major Accomplishments
• The Transmissible Liability Index (TLI) derived and validated at CEDAR to quantify the intergenerational component of risk for addiction has been adopted by the National Institute on Drug Abuse for inclusion in the PhenX Toolbox.

• Research with the TLI has revealed that it is informative for elucidating the genetic and neurobiological underpinnings of addiction.

• Research with the TLI has led to a funded R01 grant to demonstrate its utility for routine screening jointed to secondary prevention.

Publications

• Cornelius, J., Kirisci, L. Treatment trial and long-term follow-up evaluation among comorbid youth with major depression and a cannabis use disorder. International journal of medical and biological frontiers. NIHMSID: 513297.
Enhancing the Health of the Communities in Which We Live and Work
Enhancing the Health of the Communities in Which We Live and Work

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, transplant services and transitions in care. We are committed to advancing optimal patient care by leading medication therapy.

The School of Pharmacy will be a leader in standardizing the elements of practice so that pharmacists enhance the care of patients in the community, in institutions, and during the transitions of care.

We will impact the lives of the people in the communities in which we live and work through pharmacists who are health care providers promoting health and wellness, optimizing use of medications, and stemming the misuse, abuse, and diversion of medications.

PATIENT CARE BY THE NUMBERS FOR FY14

In FY14, School of Pharmacy faculty members:

• Contributed to care of underserved communities by:
  o Providing oversight of the pharmacy program for Health Care for the Homeless Clinic, dispensing almost 9,000 prescriptions to uninsured patients through the efforts of 12 faculty members, residents, and volunteers.

• Optimized the use of medications and stemmed the misuse, abuse, and diversion of medications by:
  o Providing anticoagulation management for over 1,200 patients with an INR in goal range of 75% for 23,738 INR values evaluated.
  o Avoiding 92 potential simeprevir-related drug-drug interactions in 310 patients with hepatitis C infection.
  o Providing medication management and education during >1,500 heart transplant recipient clinic visits.
  o Providing medication reconciliation and medication management in approximately 2,100 oncology hospitalized patients.
  o Joining the specialty Chronic Heart Failure Clinic and identifying 46 drug-related problems and 4 adverse drug reactions and preventing 9 adverse drug reactions in first 3 months.
  o Collaborating with a multidisciplinary team at the UPMC Advanced Heart Failure Outpatient Clinic to improve transitions of care through over 200 patient interactions.
  o Leading a team of pharmacists and pharmacy residents and students who educated 2,746 hospitalized patients on their medications including 247 patients newly started on insulin.
  o Administering > 3,500 seasonal influenza vaccines season to 2,083 University employees, 467 University students, and 697 UPMC employees.
• Promoted residency programs and training by:
  o Developing 2 new community pharmacy residency positions for FY15.
  o Creating 1 of 12 post-graduate residency programs nationally in geriatric pharmacy practice, successfully graduating the second PGY2 geriatric resident this year.

• Pioneered and managed patient care programs, including:
  o Creating a collaborative practice agreement with 8 infectious diseases (ID) physicians for patients discharged on intravenous antimicrobial therapy and impacting 225 patients in the inaugural 6 months.
  o Providing pharmacist-led medication-reconciliation program for over 150 patients through specialty hypertension.
  o Establishing pharmacist-led medication reconciliation program in a specialty hyperlipidemia clinic, providing medication assessments for 108 patients in first 6 months.

• Developed UPMC system-wide policies and protocols, including:
  o Conducting 114 guidelines/reviews and developing 10 electronic health record protocols for medication use across UPMC hospitals.
  o Facilitating development of 9 medication therapeutic class interchanges across UPMC inpatient sites, to optimize medication inventory, while ensuring equal safety and cost-effectiveness for UPMC patients.

• Assumed leadership roles, including:
  o Becoming 1 of 5 critical pharmacists to serve as nationally as faculty for the American Society of Health-System Pharmacists (ASHP) Foundation Critical Care Trainee Program.

• Managed 630 patients referred to University Diabetes Care Associates by 41 primary care physicians; resolved 1,450 drug-related problems.

• The WPIC MEDPACT (Medication and Education at Discharge – Pharmacist Assisted Care Transitions) program has:
  o Facilitated transitions of care for over 8,000 patients since program inception in 2008.
  o Assisted a total of 2,411 patients in FY14 and provided nearly a third of eligible WPIC patients with medication education and medications “in hand” prior to discharge.
  o Facilitated care transitions by performing a total of 6,042 medication-related interventions including resolving 2,925 prescription insurance issues and providing patient-specific medication education for 1,465 patients.

• Competed successfully in the Pitt Innovation Challenge (PInCh) Awards for patient care innovations so that 3 of 29 pharmacy teams placed among the finalists, 1 of which placed in the top ten.

PATIENT CARE HIGHLIGHTS WITHOUT NUMBERS

During FY14, faculty member(s):
• Supervised the establishment of the Interprofessional Student-Run Free Clinic at the Birmingham Clinic.
• Served in leadership roles in International Society for Heart and Lung Transplantation.
• Achieved ASHP Accreditation for PGY2 Solid Organ Transplantation Pharmacy Residency.
• Was named Associate Director-Cardiac Transplantation for the Advanced Heart Failure division of the UPMC Heart and Vascular Institute.
• Developed a new transitions-of-care program to be piloted at UPMC Shadyside beginning August 2014.
• Designed and implemented a program so that patients can take home their partially used bulk medications (e.g. insulin pens, inhalers) at the time of discharge.
• Developed a Free Medication Program for UPMC Family Health Center patients to improve access to medications.
• Managed carbepenem-resistant Enterobacteriaceae (CRE) in collaboration with the primary medical team. Through the assistance of provider analytics, the antibiotic management program showed that this approach led to a significant decrease in mortality, hospital stay, and costs associated with CRE infections. This is a public-health emergency and one that we are successfully addressing with our multi-disciplinary team.
• Provided medication assessment to all patients undergoing kidney transplant evaluation.
• Created new UPMC system-wide policy to define the clinical scope of practice for the institutional (hospital) pharmacist related to automatic dosing protocols, medication formulary and safety initiatives, and design of inpatient collaborative practice agreements, which are defined by the State Board of Pharmacy as “institutional protocols.”
• Facilitated 120 students attending Pennsylvania Legislative Day for the purpose of policy development.

COMMUNITY-BASED PROGRAMS

Community Chain Partnerships

Faculty
Melissa S. McGivney, PharmD, Associate Professor, Assistant Dean for Community Partnerships
Stephanie H. McGrath, PharmD, Assistant Professor
Kim C. Coley, PharmD, Professor

Research Fellow
Jennifer Bacci, PharmD

Resident
Elizabeth McCartney, PharmD-PGY1 Community Pharmacy Resident
Kristine Ossman, PharmD-PGY1 Community Pharmacy Resident

Major Accomplishments
In FY14, School of Pharmacy faculty members:

• Successfully graduated the 8th class of Community Residents, Elizabeth McCartney and Kristine Ossman.

• Partnered with Gatti Pharmacy, Indiana, PA, University Pharmacy, Pittsburgh, PA, and the Pennsylvania Pharmacists Association to develop two additional community pharmacy residency positions for 2014-15.

• Successfully recruited four PGY1 Community Pharmacy Residents for 2014-15.
Successfully recruited a new community pharmacy faculty member beginning July, 2014: **Lucas Berenbrok, PharmD**

Invited to partner with the Stearn Colloquium through the University of Pittsburgh Health Policy Institute: **Kim C. Coley and Melissa S. McGivney.**

Engaged students in a series of practice enhancement projects lead by **Melissa S McGivney, Kim C Coley, Jennifer L. Bacci, Stephanie H. McGrath.** Led intern engagement in advancing clinical patient care at Rite Aid, Giant Eagle, CVS, and within independent pharmacies.

Awarded Fellowship in the American Pharmacists Association: **Melissa S. McGivney**

Facilitated 120 students attending Pennsylvania Legislative Day: **Jennifer L Bacci and Melissa S. McGivney**

### Programmatic Accomplishments

- **Pennsylvania Pharmaceutical Care Network Training (2014-present)**
  - Leading the re-development of on-line and live training content with faculty from all seven Pennsylvania Schools of Pharmacy.

- **NACDS Foundation Faculty Scholars Program (2012-present)**
  - Developed training and mentoring program for community-based faculty selected by NACDS Foundation via nomination of their Dean.
  - Coordinate content experts in research and community practice to train faculty.
  - Facilitated learning for 5 Scholars (2012-13); 8 Scholars (2013-14); 8 Scholars (2014-15).

- **Statewide Community Residency Research Coalition – TOP TIER (Training Outpatient Pharmacists Techniques In Evidence-Based Research) 2009-present**
  - Co-developer and co-coordinator of residency research coalition.
  - Progressive on-line education with regular group discussions.
  - Includes 3 community residency programs from Wilkes University, Temple University and University of Pittsburgh: 5 residents 2009-10; 6 residents 2010-11, 6 residents 2011-12, 5 residents 2012-13, 7 residents in 2013-14.
  - Residents present work at PPA and APhA and are all required write and submit a grant application: 27/27 abstracts accepted to APhA, 11/14 received grants to support research.

- **Community Leadership Innovation and Practice (CLIP) Workshop Series (2013-present)**
  - Integrated preceptors, alumni, chain pharmacy leadership and students to learn together in a series of 4 CLIP Workshops embedded with Experiential Learning 4.
  - Invited in 4 nationally recognized Keynote Lecturers and provided CE.
  - Organized 3 additional small group interactive sessions for CE.
  - Engaged chain pharmacy leadership (Rite Aid, Walgreens, CVS, Giant Eagle) and independent pharmacy owners who are alumni to meet and talk with students.

- **Student Presentations: PPA and APhA**
  - 16 students presented 13 innovative community practice posters at PPA: January, 2013 – Bedford, PA.
  - Ten students presented 5 community research posters at APhA: March, 2013 – Orlando, FL.
Selected Publications (related to community dwelling patients)


Community Practice Grants Awarded


Selected Invited Presentations (National/International)


University Diabetes Care Associates

UDCA is a pharmacist run diabetes care center staffed by an interdisciplinary team of health care professionals. Over the past 23 years, UDCA has offered a wide range of services to patients and referring physicians including disease state management, patient education and training, medical nutrition counseling, care plan development, and pharmacokinetic consults.

Faculty
Scott R. Drab, PharmD, Associate Professor

Major Accomplishments
In FY14, School of Pharmacy faculty members:

- Treated 630 patients referred by 41 primary care physicians to resolve 1450 drug related problems.
- Precepted 19 Doctor of Pharmacy students in an ambulatory care rotation.
- Precepted 2 residents.
- The curricular objectives permit students and residents to gain a comprehensive knowledge of the practice of pharmaceutical care while allowing flexibility for individualization to specific needs or interests.

Awards
- University of Pittsburgh School of Pharmacy Preceptor of the Year Award. Drab SR.
- University of Pittsburgh School of Pharmacy Rho Chi Society Innovation in Teaching Award. Drab SR.

Selected Publications

Book Chapters Written

Selected Invited Presentations (National/International)
- Reducing Chronic Complications of Diabetes. Richmond Pharmacists Association; Richmond, VA, August 22, 2013. Drab SR.
- Pharmacological Implications of Co-Morbid Conditions in Cancer Care. Oncology Nursing Society; Dallas, TX, November 7, 2013. Drab SR.
- Implementing the Chronic Care Model for Diabetes. Washington County Pharmacists Association; Hagerstown, MD, November 20, 2013. Drab SR.
• Managing Diabetes in the Long Term Care Setting. Pennsylvania Health Care Association Center for Assisted Living Management; Harrisburg, PA, February 18, 2014. **Drab SR.**

• Addressing Safety Challenges with U-500 Insulin. Institute for Safe Medication Practices Webinar; Horsham, PA, March 27, 2014. **Drab SR.**

• Diabetes Challenges: Improving Outcomes in the Long Term Care Setting. Pennsylvania Association of Directors of Nursing Administration Annual Meeting; Hershey, PA, April 2, 2014. **Drab SR.**

• Incretin Impairment: Discovering the Core Defects in Type 2 Diabetes. Pharmacy Society of Wisconsin; Madison, WI, April 10, 2014. **Drab SR.**


**Grants**

• Diabetic Monitoring and Education Grant. $480.00, LifeScan Inc, a Johnson & Johnson Company, Milpitas, CA, 2013. **Drab SR.**

• Diabetic Monitoring and Education Grant. $620.00, Roche Diagnostics, Indianapolis, IN, 2013. **Drab SR.**

• Diabetic Monitoring and Education Grant. $450.00, Abbott Diabetes Care, Alameda, CA, 2013. **Drab SR.**

• Diabetic Monitoring and Education Grant. $280.00, Novo Nordisk, Pittsburgh, PA, 2013. **Drab SR.**

• Diabetic Monitoring and Education Grant. $340.00, Bayer Corp, Pittsburgh, PA, 2013. **Drab SR.**

• DM Educate Comprehensive Diabetes Management Course. $50,000.00, Novo Nordisk Professional Education Services Grant, Princeton, NJ, 2014. **Drab SR, Smith RB, Martin SS.**

**Program Evaluation Research Unit (PERU)**

**Faculty**
Janice L. Pringle, PhD, Associate Professor

**Selected Publications (related to community dwelling patients)**

• **Pringle JL;** Aldridge A; Boyer A; Conklin M; McCullough J. The Pennsylvania Project: Pharmacist Intervention Improved Medication Adherence and Reduced Health Care Costs. Accepted for publication, *Health Affairs*. 2014.

• Stewart C; **Pringle JL**. The Relationship Between Religion and Spirituality and Physical and Mental Health in a Sample of African Americans in Substance Abuse Treatment. Submitted for publication, *Journal of Ethnicity in Substance Abuse*. 2014.


**Community Practice Grants Awarded**

• Development, Implementation, and Evaluation of an Evidence-Based Screening, Brief Intervention, Referral to Treatment (SBIRT) Curriculum in Medical Residency Training Programs. (SAMHSA). Annual contract award with the University of Pittsburgh, School of Pharmacy. $1,875,000. 2008-2014. **Pringle JL**.

• New Lease on Life. SAMHSA (Substance Abuse and Mental Health Services Administration). $300,000. 2009-2014. **Pringle JL**.


• Prospective Study on a Pharmacist-led Intervention to Improve Medication Adherence. (Merck). $902,357. 2011-2014. **Pringle JL**.


• Evaluation of a Cloud-based Application that will facilitate Patient Transition from Inpatient Stay to Primary Care Physician Engagement (PCP). (Department of Veteran Affairs). $55,489. 2013-2014. **Pringle JL**.


• Implementation of Screening, Brief Intervention, and Referral to Treatment within the Medical Community of Blair County. (Pennsylvania Commission on Crime and Delinquency). $97,433. 2014-2015. **Pringle JL**.
• Circlebacks. (Pitt Innovation Challenge). $25,000. 2014. Pringle JL.

• Screening, Brief Intervention, and Referral to Treatment Implementation Project for Clearfield and Jefferson Counties. (Behavioral Health Alliance of Rural Pennsylvania). $16,324. 2014-2015. Pringle JL.

Selected Invited Presentations (National/International)
• Implementation of Screening, Brief Intervention and Referral to Treatment (SBIRT) in the Emergency Department without Additional Resources. INEBRIA Conference. Rome Italy, September 2013. Pringle JL.

• Addiction: Character Defect versus Chronic Disease. PAA 2013 Conference. Gettysburg, PA, September 2013. Pringle JL.


• Applying Value Based Incentive Models Within Community Pharmacy Practice. Pharmacy Quality Alliance (PQA). Arlington, VA, May 2014. Pringle JL.

The Grace Lamsam Pharmacy Program for the Underserved

The Grace Lamsam Program serves primarily homeless and low-income patients, as well as under-insured patients. Pharmacists work in an interdisciplinary model of care with a team of health care providers that includes physicians, nurses, and other allied-health professionals. 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.

The Grace Lamsam Pharmacy Program partners with Health Care for the Homeless (HCH) and North Side Christian Health Center, UPMC Matilda Theiss and collaborates with the Program for Health Care to Underserved Populations (PHCUP).

Faculty
Sharon Connor, PharmD, Assistant Professor
Lauren Jonkman, PharmD, MPH, Instructor
Karen Pater, PharmD, Assistant Professor

Residents:
Marisa Sochacki, PharmD-PGY2 Advanced Practice Residency with an Emphasis in Underserved Care & Global Health
**Major Accomplishments**

In FY14, the Grace Lamsam Program:

- Continued in partnership with UPMC Matilda Theiss Health Center as a 340B Leading Practice Site (Peer to Peer Leader) by the Pharmacy Services Support Center in partnership with Health Resources and Service Administration, Health Systems Bureau, Office of Pharmacy Affairs.

- Provided oversight of the pharmacy program for Health Care for the Homeless Clinic, dispensing almost 9000 prescriptions to uninsured patients through the efforts of 12 faculty members, residents, and volunteers.

- Provided experiences for 247 pharmacy students through IPPEs and APPEs.

- Provided care for approximately 200 patient care visits at the North Side Christian Health Center Pharmacy Services Clinic.

- Established longitudinal patient-care experiences for one ambulatory care resident at and two pharmacy practice resident rotation experiences UPMC Matilda Theiss Health Center, and two Pharmacy Practice resident rotations Birmingham Free Clinic.

- Participated in the HRSA Patient Safety and Clinical Pharmacy Services Collaborative through the Matilda Theiss Center and provided care for approximately 300 patient care visits.

- Supervised the establishment of the Interprofessional Student-Run Free Clinic at the Birmingham Clinic (Mazzarisi, PharmD P3 and Yoav Karpenshif [MS3], Lauren Jonkman.

- First Area of Concentration in Global Health students graduated (Tina Elgin and Jessa Koch) and each will participate in Pharmacy Practice residencies in the upcoming year.

- Graduated one Global Health/Care to Underserved Resident who has accepted a position as an Aid Worker with Doctors Without Borders.

**Selected Publications**


**Invited Presentations**

• What communities are doing to ensure quality medication regimens for patients. Invited presentation at the Dispensary of Hope National Conference. Nashville, TN, April 1, 2014. Connor SE.

Select Presentations


• Self-management support for diabetic patients at the Birmingham Free Clinic. All Together Better Health VII. Pittsburgh PA, June 2014. Mohanty S, Jonkman L, Herbert M, Bui T.

UPMC PROGRAMS

UPMC Ambulatory Clinics and Retail Pharmacies

UPMC Presbyterian Ambulatory Clinics and Outpatient Pharmacy

Faculty
Deanne L. Hall, PharmD, Associate Professor
Heather J. Johnson, PharmD, Assistant Professor
Karen S. Pater, PharmD, Assistant Professor
Kristine S. Schonder, PharmD, Assistant Professor
Michael A. Shullo, PharmD, Associate Professor

Residents
Marie Davies, PharmD, MS-PGY2 Ambulatory Care Pharmacy Resident
Patient Care Activities for FY14

- Led the program that administered > 3,500 seasonal influenza vaccines during influenza season to 2,083 University employees, 467 University students, and 697 UPMC employees.
- Provided anticoagulation management for over 1,200 patients with an INR in goal range of 75% for 23,738 INR values evaluated.
- Provided transition to home for 98 patients on low molecular weight heparin.
- Newly established pharmacist team member within specialty chronic heart failure clinic identified 46 drug related problems, 4 adverse drug reactions, and preventing 9 adverse drug reactions in first 3 months.
- Provided pharmacist lead medication reconciliation programs for specialty hypertension providing medication reconciliation for over 150 patients in the year.
- Established pharmacist lead medication reconciliation program in a specialty hyperlipidemia clinic, providing medication assessments for 108 patients in first 6 months.
- Provide medication assessment to all patients undergoing kidney transplant evaluation.
- Avoided 92 potential drug-drug interactions in 310 Hepatitis C patients treated with simeprevir.
- Provided medication therapy management and education for patients during >1500 heart transplant recipient clinic visits.
- Oversee all drug therapy for the Advanced Heart Failure program consisting of artificial heart and heart transplant.
- Provided diabetes education on a weekly basis to individuals and group education classes on a monthly basis.
- Established UPMC Health Plan Certified Pharmacist smoking cessation program at Falk Pharmacy.

Major Accomplishments

In FY14, School of Pharmacy faculty members were recognized as follows:

- Invited ASHP Ambulatory Care Conference and Summit Panelist. Hall DL.
- Best Poster Finalist, 2013 American College of Clinical Pharmacy Annual Meeting. Hall DL.
- Elected President, Allegheny County Pharmacist Association. Pater KS.
- 2013 Stan Cohen Teach of the Year Award. Pater KS.
- 2013 Pennsylvania Pharmacist Association Preceptor of the Year. Pater KS.
- 2014 Advisory Council, Allegheny County Health Department. Pater KS.
- Chair Elect of the of the AACP Self-Care Therapeutics/Nonprescription Medicines Special Interest Group (AACP SCT/NM SIG). Pater KS.
- Appointed Associate Director of Cardiac Transplantation. Shullo MA.
• Provided ambulatory residency rotation training for 7 PGY1 residents and 6 PGY2 Residents. (ALL)

Selected Publications (related to the care of and educating students in the care of ambulatory patients)


• Snyder ME, Frail CK, Hudmon K, Pater KS, Doebbeling B, Smith RB. Utility of a Screening Tool for Medication-Related Problems. Accepted for publication.


Selected Invited Presentations (National/International)


• Tracking Curricular Outcomes Through the Implementation of an ePortfolio. Assessment Institute 2013, Indianapolis, IN, Oct 28, 2013. Pater KS.


• Technology in Pharmacy Education and Learning SIG: Educational Effects of Active Learning with Turning Point. AACP Annual Meeting, Chicago, IL, July 16, 2013. ACPE#294-999-13-108-L04P. Pater KS.

*Past Pharmacy Residents
**PharmD Students
UPMC St. Margaret Family Medicine

Faculty
Roberta Farrah, PharmD, Assistant Professor

Residents
Gregory Castelli, PharmD
Sarah Dombrowski, PharmD
Amanda Wojtusik, PharmD

Patient Care Activities for FY14
• Provide medication therapy management for patients seen at three family health centers. The family health centers see a patient volume of up to 2,500 visits per month, as a mix of pediatric and adolescent, adult, and geriatric medicine.

• The three family health centers are models for interprofessional primary care practice. All three have received Level 3 Patient Centered Medical Home (PCMH) status by the National Committee for Quality Assurance (NCQA). Pharmacists practice in face-to-face scheduled office encounters for acute and chronic conditions, telephone recent ER/inpatient transitions-of-care encounters, group visits, home visits, quality measure reports, and drug policy development and review.

• Precept UPMC St. Margaret family medicine physician residents, UPMC St. Margaret PGY1 pharmacy practice residents, and medical/pharmacy IPPE and APPE student learners at the family health centers.

• Initiated a private practice initiative (PPI) of incorporating a PGY2 Ambulatory Care pharmacy resident into a non-academic community physician practice.

• Support naloxone prescribing, dispensing and education initiative for at-risk patients and caregivers
• Lead a Free Medication Program for family health center patients to improve access to medications.

Selected Publications

Selected Invited Presentations (National/International)
• Impact of community pharmacy experience in a family medicine residency program. Society of Teacher of Family Medicine (STFM) spring conference, Baltimore, 2013. Dombrowski S, Klatt PM, Farrah RM.

• Strategies for Integrating Pharmacy Trainees Into Interdisciplinary Family Medicine Teams. Breakfast presentation at the 47th STFM Annual Conference. San Antonio, TX. May 6, 2014. Farrah RM.

• Pharmacist-Initiated Transitions of Care Program: Effect on Hospital Readmission and Adherence to PCP Appointments. Work-in-Progress presentation at the 47th STFM Annual Conference. San Antonio, TX. May 6, 2014. Farrah RM.
Transitions of Care

Faculty
Kim Coley, PharmD, Professor
James Coons, PharmD, Assistant Professor
Amy Donihi, PharmD, Associate Professor
Tanya Fabian, PharmD, PhD, Assistant Professor
Deanne Hall, PharmD, Associate Professor
Karen Pater, PharmD, Assistant Professor
Christine Ruby, PharmD, Assistant Professor
Amy Seybert, PharmD, Associate Professor
Michael Shullo, PharmD, Associate Professor

Major Accomplishments
In FY14, School of Pharmacy faculty members:

• Worked with leadership at UPMC to develop and implement a new transitions of care program to be piloted at UPMC Shadyside beginning August 2014. This pilot was modeled after the award-winning transitions of care program developed by pharmacy school faculty (Coley, Donihi, Kroboth). Coley KC

• Collaborated with UPMC St. Margaret Hospital to research staff perceptions on a geriatric pharmacist-led transitions of care program in elderly patients. Coley KC, McGivney M, Thorpe C.

• Worked with faculty (Coley KC, Coons J, Kane-Gill S, Seybert A) to pilot a shared decision-making making program to improve medication access and adherence at UPMC Presbyterian that resulted in:
  o 19 pharmacists and pharmacy students trained in the process of shared decision making
  o 173 patients evaluated for medication access and adherence problems and engaged in shared decision-making to improve their medication use.

• The WPIC MEDPACT (Medication and Education at Discharge – Pharmacist Assisted Care Transitions) program, led by Dr. Tanya Fabian, has
  o Facilitated transitions of care for over 8,000 patients by identifying and resolving barriers to medication access and adherence since program inception in 2008
  o Assisted a total of 2,411 patients in FY14 and provided nearly a third of eligible WPIC patients with medication education and medications “in hand” prior to discharge
  o Facilitated care transitions by performing a total of 6,042 medication-related interventions including resolving 2,925 prescription insurance issues and providing patient-specific medication education for 1,465 patients. Fabian T

• Collaborated with a multidisciplinary team at the UPMC Advanced Heart Failure Outpatient Clinic to improve patients’ transitions of care. This included over 200 patient encounters. Coons J.

• Developed a risk stratification model to decrease readmissions in heart failure patients. Coons J.

• Led a team of pharmacists, pharmacy residents, and pharmacy students who educated 2,746 hospitalized patients on their medications. This including 247 patients newly started on insulin. Donihi AC.
• Designed and implemented a program so that patients can take home their partially used bulk medications (e.g. insulin pens, inhalers) at the time of discharge. **Donihi AC**.

• Mentored pharmacy students who created several medication education videos that will be used to teach patients how to use their inhalers prior to hospital discharge. **Donihi AC**.

• Provided transition to home management for 98 patients on low molecular weight heparin through the UPMC Anticoagulation service. **Hall DL**.

  • Led a pharmacist driven transition of care program focusing on Senior Care patients discharged from UPMC affiliated nursing homes (Heritage, Charles Morris, Canterbury, Asbury Heights and Health South). This program includes medication reconciliation, comprehensive medication review, sharing of discharge information across sites, and confirmation of home care services. **Ruby C**.

  • Added three new sites to the SeniorCare Transitions of Care program to include UPMC Magee Hospital, UPMC St. Margarets Hospital, and UPMC Mercy TCU/Rehab. **Ruby C**.

  • Developed a special topics elective focusing on transitions of care and included new material on transitions of care in Experiential Learning 3 course. **Ruby C**.

  • Oversaw all transitions of care education, assistance, and discharge planning for the UPMC Adult Heart Transplant Program and provided direct outpatient care during >1500 patient visits. **Shullo M**.

**Selected Publications**


• Kim JJ, **Mohammad RA**, Coley KC, **Donihi AC**. Use of an iPad to Provide Warfarin Video Education to Hospitalized Patients. *J Patient Saf*. Epub 2014 Feb 11.

**Selected Invited Presentations**


• Medication Reconciliation and Implications for Patient Safety. Pennsylvania Pharmacist Association Annual Meeting, Gettysburg, PA. Sept 28, 2013. **Pater K**

• Pharmacologic Therapy of Heart Failure – Acute and Chronic. American Heart Association and the Pittsburgh Regional Healthcare Initiative. Pittsburgh, PA, April 24, 2014 and May 1, 2014. **Coons J**.

**Grants**

• **Coley KC, Thorpe C, and McGivney M** partnered with UPMC St. Margaret Hospital on developing, “PIVOTS: Pharmacist led InterVention On Transitions of Seniors.” This program places geriatric clinical pharmacists in a direct patient care role that manages elderly patients as they transition across different levels of geriatric care. This program was awarded a $60,000 grant
from the Jewish Healthcare Foundation as well as a $5,000 award from St. Margaret Hospital Foundation.

- **Coley KC** partnered with UPMC St. Margaret Hospital to evaluate provider and staff perceptions of a geriatric pharmacist conducting transitions of care activities. This evaluation was funded by the Pennsylvania Pharmacists Association for $700.

- **Donihi AC and Coley KC** partnered with clinicians from UPMC for “Implementation of an Inpatient Bulk Meds to Home Program at a Large Academic Medical Center.” This program was awarded $25,000 by the ASHP Foundation.

- **Donihi AC** partnered with clinicians from UPMC for “Nurse Education and Transition (NEAT).” This program was funded for $20,000 by the Beckwith Institute and UPMC.

### HOSPITAL-BASED PROGRAMS

#### UPMC Pharmacy Transplant Group

**Faculty**

Christopher R. Ensor, PharmD, Assistant Professor  
Heather J. Johnson, PharmD, Assistant Professor  
Kristine S. Schonder, PharmD, Assistant Professor  
Michael A. Shullo, PharmD, Associate Professor  
Raman Venkataramanan, PhD, Professor

**PhD Students**

Omar Almazroo, PhD Candidate  
Ali Alshabi, PhD Candidate  
Fairuz Feturi, PhD Candidate  
Rujuta Joshi, PhD Candidate  
Hari Kalluri, PhD Candidate  
Mohammad Shawafeq, PhD Candidate  
Hari Thanukrishnan, PhD Candidate

**MS Students**

Hongfei Zhang

**Postdoctoral Fellows**

Jamie Bastian, PharmD  
Martha Bustos, PhD  
Maisa Feghali, MD  
Chithambaram Pillai Venkateswaran, PhD  
Vikram Raghu, MD  
Imam Shaik, PhD  
Yang Zhao, PhD

**Residents**

Lauren Sacha, PharmD-PGY2 Solid Organ Transplant Pharmacy Resident
Visiting Scholars
Huijun Chen
Mimi Li

Research Associate
Wenchen Zhao

Major Accomplishments
In FY14, School of Pharmacy faculty members:

- Awarded the Leach-Abramson-Imhoff ISHLT Links Writer of the Year for 2013. Ensor CR.
- Served as Section Editor, Transplant Pharmacotherapy for Progress in Transplantation. Ensor CR.
- Served as Chair, UPMC lung transplantation sensitization and AMR research group. Ensor CR.
- Served as Co-Director, University of Pittsburgh Pharmacotherapy Scholars Program. Ensor CR.
- Served as Consensus Conference Participant, Antibody Mediated Rejection in Lung Transplantation. International Society for Heart and Lung Transplantation. Ensor CR.
- ASHP Accreditation of PGY2 Pharmacy Residency in Solid Organ Transplantation. All.
- Served as Chair, Scientific Council on Pharmacy and Pharmacology 2013-14, International Society for Heart and Lung Transplantation. Shullo MA.
- Named as Associate Director-Cardiac Transplantation for the Advanced Heart Failure division of the UPMC Heart and Vascular Institute. Shullo MA.
- Received Best Educational Presentation award: Antidotes for Alloimmunity - Principles of T cell-Directed Therapies ISHLT Academy: Core Competencies in Basic Science and Translational Research. Shullo MA.
- 9th year of NICHD funding (U10) for Pharmacology in Pregnancy. Venkat R.
- 2nd year of T-32 for maternal fetal pharmacology. Venkat R.
- AAPS Board member. Venkat R.
- AAPS Foundation, Chair of Grants Review Committee. Venkat R.

Grants/Research
- Evaluation of Treprostinil in prevention of ischemia reperfusion injury of liver after liver transplantation. Co-PI, Active, United Therapeutics. Venkat R.
• AIDS malignancy Consortium trials collaboration – HIV and anticancer drug interactions. Co-PI, Active, NCI. **Venkat R.**

• Impact of pregnancy on drug absorption, disposition and end response. Co-PI, Active, NICHD. **Venkat R.**

• Pharmacokinetics of Tamiflu in Pregnancy. Co-PI, Active, Roche. **Venkat R.**

• All Human Microphysiological model of metastasis therapy. Co-investigator, Active, NIH. **Venkat R.**

• Granisetron pharmacokinetics in pregnancy. Co-PI, Active, Prostraken. **Venkat R.**

• T-32. Training in Basic and Clinical Pharmacology in Pregnancy. Co-PI, Active, NICHD. **Venkat R.**

**Selected Publications**

• Hollis IB, Jennings DL, Oliphant CS, Baker WL, Davis EM, Allender JE, Zemrak WR, **Ensor CR.** Key articles and guidelines in the management of patients undergoing cardiac surgery. *J Pharm Pract.* (accepted).


• Bishop MA, Streiff MB, **Ensor CR,** Tedford RA, Russel SA, Ross PA. Pharmacist-managed international normalized ratio patient self-testing is associated with increased time in therapeutic range in patients with left ventricular assist devices at an academic medical center. *ASAIO J.* 2014;60:193-8.


• Ging P, Shullo MA. Pharmacists take prominent role at the International Society of Heart and Lung Transplant 33rd annual meeting and scientific sessions in Montreal. *Eur J Hosp Pharm*. 2013;0:1–2


Book Chapters

Invited Presentations and Published Abstracts


• What you always wanted to know about LISH (laboratory tests, infectious agents, special situations, and hidden infections) but were afraid to ask. ISHLT 24th Annual Meeting and Scientific Sessions, San Diego, CA. April 2014. Ensor CR (co-chair).


• Antithrombotic therapy for advanced heart failure and mechanical circulatory support: Principles and challenges. 28th Pharmacy Invitation Conference on Antithrombotic Therapy (PICAT). Orlando FL. December 2013. Ensor CR.

• Novel therapeutic approaches to resistant cytomegalovirus. Immunology and transplantation PRN focus session. ACCP Annual Meeting, Albuquerque NM. October 2013. Ensor CR.


• Characteristics of solid organ transplant patients more likely to receive vaccinations after pharmacist recommendation. Poster presented at the American Society of Health-Systems Pharmacy Midyear Clinical Meeting, Orlando, LA, December 8–12, 2013. Moore CA, Supko AE, Schonder KS, Thorpe CT, Ingemi AI.


• A data-driven assessment matrix to meet accreditation requirements while supporting systematic curriculum evaluation. Presented at the 2013 Assessment Institute, Indianapolis, IN, October 28, 2013. Schonder KS.

• Tracking curricular outcomes through the implementation of an ePortfolio. Presented at the 2013 Assessment Institute, Indianapolis, IN, October 28, 2013. Schonder KS.


• Generic Tacrolimus, Buenos Aires, Argentina. Sandoz Argentina, 2013. Venkat R.

• Interpretation and Application of Pharmacokinetic Parameters in optimizing Dosing of Immunosuppressive Drugs, Buenos Aires, Argentina. 2013. Venkat R.

• Tacrolimus in Transplantation, Childrens Hospital of Buenos Aires, Buenos Aires, Argentina. 2013. Venkat R.
• Generic Tacrolimus in Pediatric patients. Urologica Pediatrica, Santiago Chile. 2013. **Venkat R.**


• Drug Interactions between HAART drugs and anticancer drugs, ICMAOI, NIH, Bethesda MD. 2013. **Venkat R.**

• In vivo pharmacokinetics of 17-hydroxyprogesterone caproate in rats, AAPS, San Antonio TX. 2013. **Venkat R.**

• HAART Drugs Alter the Metabolism of Paclitaxel in Primary Cultures of Human Hepatocytes. ICMAOI, NIH, Bethesda MD. 2013. **Venkat R.**

• Longitudinal Changes in the Expression of Renal Transporters and Drug Metabolizing Enzymes Following Living and Deceased Donor Renal Transplantation, AAPS, San Antonio TX. 2013. **Venkat R.**

• Induced pluripotent stem cell-derived hepatocyte-like cells and renewable endothelial cells provide reasonable alternatives to fresh liver resections, NIH, Bethesda MD. 2013. **Venkat R.**

• All-Human Microphysical Model of Metastasis Therapy Using Liver as both Metastatic Niche and Pharmacologic Metabolizer System Model of Breast Metastasis”. AACR Special Conference on Advances in Breast Cancer Research, NIH, Bethesda MD. 2013. **Venkat R.**

• Optimization of a three-dimensional liver bioreactor for Long Term Assessment, AAPS, San Antonio TX. 2013. **Venkat R.**


• Impact of Female Hormones on Regulation of Cytochrome P450 Enzymes Using Human Hepatocytes Culture, ACCP, Bethesda MD. 2013. **Venkat R.**

• Continuous Infusion of Mycophenolate Mofetil for Acute Graft-Versus-Host-Disease Prophylaxis in Pediatric Bone Marrow Transplant Patient, ACCP, Bethesda MD. 2013. **Venkat R.**

• HAART Drugs, Ritonavir and Efavirenz Alter the Metabolism of Anticancer Drug Imatinib in Primary Cultures of Human Hepatocytes, ICMAOI, NIH, Bethesda MD. 2013. **Venkat R.**

• Sensitive and Specific VF Cocktail Assay for rapidly simultaneous assessment of Rat Cytochrome P450 Activities in Rat Hepatic Microsome using LC-MS/MS for in vitro drug-disease studies. AAPS, San Antonio TX. 2013. **Venkat R.**
UPMC Pharmacy Critical Care Group

Faculty
James C. Coons, PharmD, Associate Professor
Neal J. Benedict, PharmD, Assistant Professor
Philip E. Empey, PharmD, PhD, Assistant Professor
Bonnie A. Falcione, PharmD, Assistant Professor
Sandy L. Kane-Gill, PharmD, Associate Professor
Thomas D. Nolin, PharmD, PhD, Assistant Professor
Samuel M. Poloyac, PharmD, PhD, Associate Professor
Amy L. Seybert, PharmD, Associate Professor
Pamela L. Smithburger, MS, PharmD, Assistant Professor

Residents
Justin Harris, PharmD, PGY2 Cardiology Pharmacy Resident
Ashleigh Hogue, PharmD, PGY2 Critical Care Pharmacy Resident
Megan Kloet, PharmD, PGY2 Critical Care Resident
Nick Schwier, PharmD, PGY2 Cardiology Pharmacy Resident
Adrian Wong, PharmD, PGY2 Critical Care Pharmacy Resident

Graduate Students
Solomon M. Adams, PharmD
Kacey Anderson, BS
Fanuel Hagos, BS, MS
Lingjue Li, MS

Major Accomplishments
In FY14, School of Pharmacy faculty members were:

• Chosen as one of five critical pharmacists in the nation to serve as Faculty for the American Society of Health-System Pharmacists (ASHP) Foundation Critical Care Trainee Program. Benedict NJ

• Granted a secondary appointment, Scientist, Safar Center for Resuscitation Research, University of Pittsburgh. October 2013. Empey P.

• Appointed as Co-leader for the Society of Critical Care Medicine/Clinical Pharmacy and Pharmacology Section charge to develop a recertification education proposal for the Board of Pharmacy Specialties for the newly approved Certification in Critical Care. Falcione B.

• Appointed vice-chair for the Critical Care Practitioners as Educators Task Force for the Society of Critical Care Medicine, Chair of the ACCP Program Committee (2012-2014), and elected At-Large Member of the SCCM Council (2014-2017). Kane-Gill S.

• Selected as a member of the Center for Critical Care Nephrology; Department of Critical Care Medicine, University of Pittsburgh School of Medicine. Nolin T.
• Awarded a National Institutes of Health grant 1 R01 GM107122-01A1 “Drug metabolizing enzyme and transporter function in chronic kidney disease.” Role PI; $1.9 million direct costs; 2014-2019. Nolin T.

• Appointed as the Associate Director, Safar Center for Resuscitation Research. Poloyac S.

• Named as a standing member to the Neurological Sciences and Disorders K, National Institutes of Health grant reviewer. Poloyac S.

• Elected as Secretary/Treasurer of the ACCP Critical Care PRN and appointed member of the SCCM Quality and Safety Committee. Smithburger PL

Awards
• Cohen Teacher of the Year Award; University of Pittsburgh School of Pharmacy. Benedict NJ

• American Association of Colleges of Pharmacy (AACP) Innovations in Teaching Award. Benedict NJ

• Kacey Anderson presented at the American College of Clinical Pharmacology’s national meeting in Washington DC (won best poster/travel award), American Heart Association Fellows’ Research Day (selected for an oral presentation), and the Safar Symposium (poster). Fanuel Hagos presented this same research work as an oral abstract at the Safar Symposium and won best oral presentation for the entire symposium for our research. Empey PE

• Solomon Adams won best poster award in Critical Care Medicine at the Safar Symposium. Empey PE

• 2013 American College of Clinical Pharmacy (ACCP) Critical Care PRN Achievement Award. Kane-Gill SL

• ACCP Volunteer Recognition Citation for significant contributions profession of pharmacy through committee work, publications, presentations, or other commendable participation. Smithburger PL

• SCCM Presidential Citation for outstanding contributions to the Society of Critical Care Medicine. Smithburger PL

Selected Critical Care Publications


• Benedict NJ, Schonder KS, and, McGee JB. Promotion of Self-directed Learning Using Virtual Patient Cases. *AJPE.* 2013; 77 (7) Article 151

• Buckley MA, MacLaren RM, Frazee EN, Smithburger PL, Personett HA, Kane-Gill SL. Surveying residents on postgraduate year 2 critical care pharmacy residencies about their level of preparedness to practice. *Currents in Pharmacy Teaching and Learning.* 2013;6(1):76-84.


PMID:24647270


Grants

• Using Personal Genome Testing To Teach Pharmacogenomics in a Large Lecture Course. Innovation in Education Award. Provost’s Advisory Council on Instructional Excellence, May 1,

- University of Pittsburgh Advisory Council on Instructional Excellence (ACIE) Grant Award. Using personal genome testing to teach pharmacogenomics in a large lecture course. Role PI; $18,708 direct costs; 2014-2015. **Empey PE.**

- University of Pittsburgh, Clinical Translational Science Institute, project funding. MEDIvate: achieving great medication outcomes together. Center for Assistance in Research using eRecord (CARe) support. Role PI; project funding; 2014. **Empey PE.**

- University of Pittsburgh, Institute of Personalized Medicine/Clinical and Translational Science Institute demonstration project. PreCISE-Rx: Pharmacogenomics-guided care to improve the safety and effectiveness of medications. Role PI; project funding; 2014-2016. **Empey PE.**

- Clinical & Translational Science Institute at the University of Pittsburgh (3/1/14-6/30/14), Improving the identification of actionable adverse drug events associated with acute kidney injury in nursing homes. **Co-Investigator** (salary support 10%). $100,000. **Kane-Gill SL.**

- Interactive search and review of clinical records with multilayer semantic annotation. Co-Investigator (salary support 5%), Chapman (PI), Subcontract UCSD RO1 LM010964 National Library of Medicine (09/30/11- 09/29/15). $591,195. **Kane-Gill SL.**

- Agency for Healthcare Research and Quality (05/01/10-02/28/14) Enhancing the detection and management of adverse drug events in the nursing home. **Co-Investigator** (salary support 16%), Handler (PI) RO1 HS01872. $1,975,795. **Kane-Gill SL.**

- Evidence based healthcare: Interprofessional, learner-focused small groups in large lecture courses in dentistry and pharmacy. Co-Investigator. University of Pittsburgh Innovations in Teaching Award 2013 (Funded: $14,450). **Smithburger PL.**

- The Beckwith Institute (6/1/13-6/1/14). Transforming the role of the hospital pharmacists to improve patients’ access, adherence and self-management of medications after discharge. $25,000. **Seybert AL, Kane-Gill SL, Coley KC.**

**Selected Invited Presentations**

- Curricular Integration of Virtual Patients: Eight Years of Simulation. Presented at AACP Annual Conference Innovations in Teaching Special Session; Grapevine, TX: July 29, 2014. **Benedict N.**

- How To Use Web-Based Simulations to Build Clinical Reasoning Skills Across the Healthcare Education Spectrum - From Novices to Expert Teams. Presented at International Meeting on Simulation in Healthcare; San Francisco, CA. McGee J, **Benedict N, Tabas G, Doshi A.**


• Pulmonary Arterial Hypertension: Today’s Treatment Landscape & Breakthroughs on the Horizon. American Society of Health-System Pharmacists (ASHP) 48th Midyear Clinical Meeting and Exhibition, Orlando, FL, December 9, 2013. Coons JC.


• Lost in translation: The importance of understanding clinical pharmacology in neurotrauma research. National Neurotrauma Symposium, Nashville, TN. August 2013. Empey P.

• Development of a graduate level cross-institutional course to foster an understanding of translational sciences. American Association of Colleges of Pharmacy, Chicago, IL. July 2013. Empey P.

• In Pursuit of Creative Active Learning Game Strategies: Low-tech Gaming with a Twist. Presented at the Annual American Association of Colleges of Pharmacy Meeting Grapevine, Texas. Falcione BA

Update on recent ACIP/CDC immunization recommendations. Presented at the Annual Pennsylvania Pharmacists Association Annual Meeting, Gettysburg, PA. Falcione BA

• Analysis of antibiotic resistance in a cardiothoracic intensive care unit to determine appropriateness of a restriction program. Presented at American Society of Health Systems Pharmacists Midyear Clinical Meeting, Orlando, Florida. Falcione BA.


• Managing alert overload: Clinical decision support. 43rd SCCM Critical Care Congress, San Francisco, CA. January 2014. Kane-Gill SL.

• Med Wreck or Med Safety: The impact of medication reconciliation on medication errors and adverse drug events. 46th ASHP Midyear Clinical Meeting, Orlando, FL December 2013. Kane-Gill SL.

• Acute kidney injury in the critically ill, elderly patient. 3rd AKI Symposium, University of Pittsburgh, Pittsburgh, PA October 2013. Kane-Gill SL.


• KHI’s Pilot Projects-Lessons Learned: Pharmacokinetics in Patients Receiving CRRT. Presented at the Kidney Health Initiative Second Annual Stakeholder’s Meeting, Bethesda, MD. June 12, 2014. Nolin TD.

• CYP Eicosanoids and Stroke: Results from a large cohort of aneurysmal subarachnoid hemorrhage patients. Winter Eicosanoid Conference, Baltimore, MD. March 2014. Poloyac SM.

• Special Session: Development of a Graduate Level Cross-Institutional Course to Foster an Understanding of Translational Sciences. American Association of Colleges of Pharmacy Annual Meeting Teachers Seminar, Chicago, IL. July 2013. Poloyac SM.

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 patient 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 (at the School until September 1, 2014)

Major Accomplishments
In FY14, School of Pharmacy faculty members:

• Led a team of pharmacists, pharmacy residents, and pharmacy students who educated 2,746 hospitalized patients on their medications. This including 247 patients newly started on insulin. Donihi AC

• Designed and implemented a program so that patients can take home their partially used bulk medications (e.g. insulin pens, inhalers) at the time of discharge. Donihi AC

• Mentored pharmacy students who created several medication education videos that will be used to teach patients how to use their inhalers prior to hospital discharge. Mohammad RA, Donihi AC

• Designed and implemented a multidisciplinary process for ensuring that hospitalized patients receive their mealtime insulin at an appropriate time in relation to their meals. Donihi AC

Publications


**Grants**

• Grant Total: $25,000. “Implementation of an Inpatient Bulk Meds to Home Program at a Large Academic Medical Center.” ASHP Foundation, 2012-2015, Donihi AC Principal Investigator.

• Grant Total: $20,000 ($10,000 from the Beckwith Foundation plus $10,000 in matching funds). “Nurse Education and Transition (NEAT)” Beckwith Foundation, 2013-2014, Donihi AC Co-Investigator

**UPMC Infectious Diseases and Antibiotic Management Program (AMP)**

**Faculty**

Brian A. Potoski, PharmD, Associate Professor and Associate Director AMP  
Bonnie A. Falcione, PharmD, Assistant Professor, AMP and OPAT Pharmacist  
Ryan Shields, PharmD, Adjunct Faculty

**Resident**

Aaron Pickering, PharmD, PGY2 Infectious Diseases Pharmacy Resident

**Major Accomplishments**

During FY14, School of Pharmacy faculty members achieved the following:

• Approximately one year ago, the antibiotic management program, with the assistance of TheraDoc to identify positive cultures in real-time, directly contacted and discussed therapy recommendations (in real-time as well) for carbapenem-resistant Enterobacteriaceae (CRE) with the primary medical team whenever that type of organism grew from blood culture. Through the assistance of provider analytics, the antibiotic management program was able to show that this approach led to a significant decrease in mortality, hospital stay, and costs associated with CRE infections. This is a public-health emergency and one that we are successfully addressing with our multi-disciplinary team. This data was accepted for presentation at the Interscience Conference for Antimicrobial Agents and Chemotherapy (ICAAC) to be held in Washington, D.C., in the Fall of 2014.

• Brian Potoski was awarded the Society of Infectious Diseases (SIDP) Outstanding Clinical Practice in Infectious Diseases Pharmacy Practice Award 2013.

• In an effort to prevent adverse drug events and hospital readmissions a collaborative practice agreement with 8 Infectious Diseases (ID) physicians was created for a new pharmacist monitoring program of patients discharged from the hospital on intravenous antimicrobial therapy through the UPMC Presbyterian ID Outpatient Parenteral Antibiotic Therapy (OPAT) clinic. In
the first 6 months 225 patients were monitored by an infectious diseases pharmacist and a unique dose assessment nomogram was created for the clinic nursing staff; during this period the ID OPAT clinic reduced hospital readmissions by 44%. Falcione BA

Selected Publications


- Falcione BA and Meyer SM. Development of an antimicrobial stewardship based infectious diseases elective that incorporates human patient simulation technology. Am J Pharm Educ. Accepted for publication.

- Devanathan D, Sheridan K, Shields RK, Falcione BA. Evaluation of infectious diseases pharmacists' interventions for patients receiving outpatient parenteral antimicrobial therapy after discharge from a large teaching hospital. To be presented at the ACCP Annual Meeting on October 14, 2014 in Austin, Texas.

UPMC Health System Formulary Management and Drug Use Policy

School of Pharmacy faculty members led the development of medication formulary management and drug use policy/protocol work to create evidence-based guidelines that promote safe and cost-effective use of medications for patients at UPMC. Continuing to build on the rigorous foundation of the nationally recognized UPMC formulary management work, 15 hospitals of the UPMC are now integrated as part of the Pharmacy Service Line infrastructure. Faculty and hospital-based clinical pharmacists across UPMC sites 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 postgraduate year (PGY) 1 and PGY2 hospital-based UPMC residents use these guidelines in the interdisciplinary care of patients throughout the UPMC System.

Faculty

Susan J. Skledar, MPH, Associate Professor
Colleen M. Culley, PharmD, Associate Professor
**Major Accomplishments**

During FY14, School of Pharmacy faculty members achieved the following:

- In the past year, 114 guidelines/reviews and 10 electronic health record protocols were developed for use of medications in the hospital setting across UPMC. Skledar SJ, Culley CM, other faculty and PGY1/PGY2 residents mentored by the faculty.

- Facilitated development of 9 medication therapeutic class interchanges across UPMC inpatient sites, to optimize medication inventory, while ensuring equal safety and cost-effectiveness for UPMC patients. Skledar SJ, Culley CM.

- Led the revision and/or creation of 13 UPMC-wide hospital policies, which are guidance documents for pharmacy institutional practice and meet standards of internal and external regulatory and accreditation bodies. Skledar SJ.

- Created new UPMC system-wide policy to define the clinical scope of practice for the institutional (hospital) pharmacist related to automatic dosing protocols, medication formulary and safety initiatives, and design of inpatient collaborative practice agreements, which are defined by the State Board of Pharmacy as “institutional protocols.” Skledar SJ.

- Worked with clinical pharmacists and physicians across the system to create 5 institutional automatic dosing protocols in the areas of warfarin anticoagulation, intravenous-to-oral medication switch, renal dose adjustment, weight-based dose adjustment for pre-surgical antibiotics, and parenteral nutrition management. Skledar SJ, Culley CM.

- Mentored 5 Carnegie Mellon University Heinz College graduate students in data analytics and health policy on a project entitled, “Comparative effectiveness of prophylactic anticoagulation modalities in orthopedic joint replacement surgery: an observational, retrospective analysis.” Skledar SJ.

- Received the 2013 ASHP Distinguished Service Award from the ASHP Section of Inpatient Care Practitioners for work with service to ASHP, teaching and mentoring, and advancing the practice of pharmacy in the hospital setting. Skledar SJ.

**Selected Publications**


Selected Invited Presentations


- Implementing an automatic medication interchange program across a 13-hospital health system. ASHP 48th Midyear Clinical Meeting, Orlando, FLA. December 9, 2013. Stanley M, 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 elderly population which is highly susceptible to adverse drug outcomes;
- enhanced adherence of medication regimens through education of patients and family members; and
- improved drug prescribing by physicians through pharmacy faculty advice and intervention.

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

Pharmacy Residents
Madhavi Gavini, PharmD, PGY2 Geriatric Pharmacy Resident
Major Accomplishments

• Created one of twelve post-graduate residency programs nationally in geriatric pharmacy practice, successfully graduating the second PGY2 geriatric resident this year. Ruby CM.

• Created one of two geriatric pharmacy fellowship programs nationally; successfully recruiting the third fellow this year. Hanlon JT and Ruby CM.

• Successfully completed the American Society of Health System Pharmacy accreditation process for the post-graduate residency program. (Anticipating full accreditation in August 2014). Ruby CM.

• Led a pharmacist driven transition of care program focusing on Senior Care patients discharged from UPMC affiliated nursing homes (such as Heritage, Charles Morris, Cantebury) and non-UPMC facilities (such as Asbury Heights and Health South). This program includes medication reconciliation, comprehensive medication review, sharing of discharge information across sites, and confirmation of home care services. Ruby CM.

• Added three new sites to the Senior Care Transitions of Care program to include UPMC Magee Hospital, UPMC St. Margaret’s Hospital, and UPMC Mercy TCU/Rehab and provided at least 100 patient transition of care encounters. Ruby CM.

• Developed a special topics elective focusing on transitions of care. Ruby CM.

• Trained numerous pharmacy learners (2 PGY2, 3 PGY1, 16 APPE, 8 IPPE and 5 special topic students) and medical residents over the last 2 years about the Senior Care Transitions of Care program. Ruby CM.


Awards

• Faculty elected as cabinet Secretary for the Geriatric Special Interest Group (SIG) of the American Association of Colleges of Pharmacy for a 2-year term. Ruby CM.

• Recipient of Leadership in Education Award, American Society of Consultant Pharmacists. Ruby CM.

Grants

• Systematic Evaluation of the Medication Reconciliation Process; Medical Staff Grant, UPMC Magee-Womens Hospital, 07/01/13-06/30/14. PI- Marcum ZA

• Using Shared Decision Making to Reduce Medication Discrepancies; Beckwith Institute Clinical Transformation Program, 7/01/13-06/30/14. PI- Marcum ZA

National Presentations- Invited Speaker

• Reducing Harm in the Elderly: A Focus on Delirium, Falls, and Medication Errors. An invited speaker for the American Society of Health-System Pharmacists Midyear Clinical Meeting, Orlando, FL; December 11, 2013. Ruby CM.
Selected Publications


- Marcum ZA, Hanlon JT, Strotmeyer ES, Newman AB, Shorr RI, Simonsick EM, Bauer DC,


UPMC Oncology Magee-Womens Hospital of UPMC

School of Pharmacy faculty member provides care to oncology patients at Magee Womens Hospital in a variety of ways. Precept pharmacy students and residents on the oncology inpatient unit, where they manage patients’ medication therapy as part of the patient care team. Educate medical residents and fellows on medication management of gynecology oncology patients. Provide care to the inpatient oncology patients by rounding with the multidisciplinary care team. Also, provide education to patients on chemotherapy medications, supportive care medications and discharge medications. Serve as the resource for inpatient chemotherapy in terms of providing recommendations for chemotherapy regimens, meeting with the patient regarding any questions/concerns and following the patient through their regimen as an inpatient. Serve as a consultant to the outpatient oncology clinics and infusion center to provide consults to providers and patients to optimize care to patients receiving chemotherapy.

**Faculty**
Lindsay Lippman, PharmD, Clinical Instructor

**PGY2 Resident**
Terri Lynn Shigle, PharmD, PGY2 Oncology Pharmacy Resident

**Major Accomplishments**
- Guest speaker at UPMC Advanced Practice Practitioner Conference in October 2013 on “Economic Impact of Drug Therapy in Advanced Stage Cancer Patients.” Lippman, L.

- Obtained recertification as a Board Certified Oncology Pharmacist. Lippman, L.

- Provided medication reconciliation and medication management in approximately 2100 oncology hospitalized patients.

UPMC – Western Psychiatric Institute and Clinic

**Faculty**
Tanya J. Fabian, PharmD, PhD-Assistant Professor
Director of Pharmacy Research and Pharmacy Services, Western Psychiatric Institute and Clinic

**Residents**
Erin Mathis, PharmD, PGY1 Pharmacy Practice Resident
G. Lucy Wilkening, PharmD, PGY1 Pharmacy Practice Resident
Select Presentations/Posters


Publications


Students Impacting Patient Care in Communities

Students across all years of the curriculum use the Pharmacist Interaction Tracking Tool (PITT form) for real-time tracking of patient interactions. In aggregate, the School uses PITT form data to document students’ impact on patient care. In fall 2013, P2 students, worked with 329 elderly individuals in the community through the SilverScripts curricular activity. Across two visits per student, 267 drug therapy problems were identified by the class. In spring 2014, P1 students, worked with 390 elderly patients across two visits. Collectively, they identified 249 drug therapy problems and were able to resolve 17% of the problems identified on the first visit by the second visit. Additionally, a new partnership with the CDC and the Pennsylvania Department of Health called “Get Smart About Antibiotics” was the first of its kind to engage with pharmacies to engage the public at the patient/customer level. Our students educated 771 patients this year.

In FY14, students in the P4 class documented almost 18,000 patient interactions during which they identified over 11,000 drug-related problems in their patients. The most frequently encountered drug-related problem was “needs drug therapy.” The students made over 14,000 drug therapy recommendations, identified over 640 actual adverse drug events, and prevented over 700 potential adverse drug events.
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. Because the people of the School of Pharmacy are one of its greatest resources, information about faculty, staff, and alumni appears in this section.

We will partner with our stakeholders and communities to develop the resources to advance our mission.

**Resources by the Numbers for FY14**

- **$22.9 million**: The total School of Pharmacy expenditures in FY14 from all sources.
- **$24.07 million**: The market value of the School’s endowment at the end of FY14.
- **$27,208,332**: The Capital Campaign total at the end of FY14.
- **$828,353**: Gifts in FY14; $236,180 from annual gifts.
- The School of Pharmacy has an allocation of and/or leases **62,896 SF** of space in **seven (7) locations** in Oakland, the South Side, and the East End.
- **$362 per SF**: Efficiency measured as expenditures divided by total number of square feet occupied.
- In FY14, the School of Pharmacy had **72 full-time faculty members** who received **14** awards for their accomplishments.

Of our 72 faculty members,
- **18 (25%)** have been elected to fellowship in one or more organizations.
- **24 (33.3%)** are board certified.
- **38 (52.7%)** are board certified, fellows, or both.

- **69**: the number of staff, of whom **31** are administrative and **38** are research.
- **Number of living alumni**: **5,170**

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.

- **31.9 percent** of the alumni were engaged with the School of Pharmacy and/or University in some way.
- **10** major print communications were each mailed to **6,100** stakeholders.
- **38,540** users visited the School’s Web site monthly (average of 12 months).
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 ’14.

The School of Pharmacy’s total expenditures are 1.59 times higher in FY14 ($22,857,493 million) than they were in FY03 ($14,349,415). Sponsored projects accounted for 24% of the expenses in FY14 and 34% in FY03. Together, the University (38.9%), sponsored project awards (23.8%), and UPMC (15.9%) accounted for over 78% of the School’s funding in FY14.

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 $27,208,332 in gifts and pledges for the School’s portion of the Capital Campaign. Of this amount, a total of $24,487,498 has been received and $2,720,833 is due in pledges and gifts. At the close of FY14 the University of Pittsburgh achieved and exceeded its Capital Campaign goal of $2 billion.
School of Pharmacy Capital Campaign by Gift Designation

Gifts and Pledges*
July 1, 1997 – June 30, 2014

<table>
<thead>
<tr>
<th>Designation</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Major Gifts</td>
<td>$6,327,670</td>
</tr>
<tr>
<td>Foundations</td>
<td>2,576,032</td>
</tr>
<tr>
<td>Corporations</td>
<td>7,009,551</td>
</tr>
<tr>
<td>Other Organizations</td>
<td>2,466,903</td>
</tr>
<tr>
<td>Planned Giving</td>
<td>6,652,381</td>
</tr>
<tr>
<td>Individual Other Gifts</td>
<td>2,175,795</td>
</tr>
<tr>
<td>Total</td>
<td>$27,208,332</td>
</tr>
</tbody>
</table>

*Includes Voluntary Support (gifts) received during FY14

The book value of the School of Pharmacy endowment has continued to grow through gifts as shown in the graph below. The market value of the endowment has fluctuated with the national economy; as the economy has recovered, so has the market value of the endowment.
In FY14, the School of Pharmacy received charitable gifts, pledges, and grants totaling $828,353 from a total of 709 individuals, foundations, corporations, and other organizations. Of the total, $402,341 was from corporations and organizations and was primarily designated to benefit technological renovations and research.

Despite the decrease in total gifts & pledges, the graphs below demonstrate an increase in total annual gifts (1.9 fold increase to $236,180) and in annual donors (1.3 fold to 709 donors).
PHYSICAL FACILITIES

At the close of FY14, the School of Pharmacy occupied a total of 62,896 SF, including:

- 50,310 SF in Salk Hall*
- 3,607 SF in BSTIII*
- 1,366 SF (leased) The Offices at Baum
- 3,691 SF (leased) in Birmingham Towers
- 2,074 SF (leased) in Parkvale Building
- 1,091 SF in Falk Clinic
- 757 SF in South Presby Tower

*University space

As shown in the graph below, the space allocation to pharmacy has continued to decrease. Losses of UPMC-provided office space in Montefiore, Presbyterian, and Victoria Hall for faculty who provide service to UPMC totaled 12,775 SF and explain the decrease. The School of Pharmacy is now at its lowest amount of space in the last eight years. The graph also demonstrates that once Salk Pavilion opens in FY15, the School of Pharmacy will have an increase in its available space.

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

Seventy-two full-time and six part-time faculty members comprise 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:

- Xiaochao Ma, PhD was recruited as an associate professor (with tenure) from the University of Kansas Medical Center in Kansas City, KS; the position of Lee McDermott, PhD was changed from research assistant professor to assistant professor.
- Jan Beumer, PhD, was awarded tenure.
- Regis R. Vollmer, PhD, Professor of Pharmaceutical Sciences, was named emeritus professor and retired in April 2014 after 37 years of service.
- In the past year, Billy W. Day, PhD retired; Debra Artim, PhD took a position in the Department of Neuroscience at Pitt; and Ty Ridenour, PhD relocated to the Research Triangle Institute in NC.

In the Department of Pharmacy and Therapeutics:

- One new faculty member was recruited. Assistant Professor Olufunmilola K. Odukoya, PhD, joined in the area of patient-centered safety outcomes research.
- Associate Professor Janice L. Pringle was awarded tenure; Neal Benedict, PharmD, was promoted to the rank of associate professor.
- Part-time Assistant Professor Stephanie McGrath, PharmD, left to focus on her family and full-time staff position with Rite Aid.

### 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>14</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>4</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>6</td>
<td>21</td>
<td>27</td>
</tr>
<tr>
<td>Instructor</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Research Associate Professor</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Research Assistant Professor</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Visiting Research Assistant Professor</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>All Faculty</td>
<td>30</td>
<td>42</td>
<td>72</td>
</tr>
</tbody>
</table>

*Part-time Faculty [numbers not in table] include:
Department of Pharmaceutical Sciences: 3
Department of Pharmacy and Therapeutics: 3
- In FY14, School of Pharmacy faculty members earned a total of 14 major awards and 1 recognition for their work. Details of the awards are in the table. The categories of awards/honors are research (5), education (3), practice (4), and service (3).

**FY14: Faculty Awards, Honors, and Recognitions**

<table>
<thead>
<tr>
<th>Faculty Member</th>
<th>Award</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neal J. Benedict</td>
<td>Innovations in Teaching Award</td>
<td>American Association of Colleges of Pharmacy (AACP)</td>
</tr>
<tr>
<td>Christopher Ensor</td>
<td>Leach-Abramson-Imhoff Writer of the Year Links Award</td>
<td>International Society for Heart and Lung Transplantation</td>
</tr>
<tr>
<td>Lauren Jonkman</td>
<td>Faculty Member of the Year</td>
<td>American Pharmacists Association–Academy of Student Pharmacists (APhA-ASP)</td>
</tr>
<tr>
<td>Sandra Kane-Gill</td>
<td>ACCP Critical Care PRN Achievement Award</td>
<td>American College of Clinical Pharmacy (ACCP)</td>
</tr>
<tr>
<td>Sean Kim</td>
<td>New Investigator Award</td>
<td>American Association of Colleges of Pharmacy (AACP)</td>
</tr>
<tr>
<td>Patricia Kroboth</td>
<td>Bristol-Meyers Squibb Clinical Pharmacology Mentor Award</td>
<td>American College of Clinical Pharmacology</td>
</tr>
<tr>
<td>Stephanie Harriman McGrath</td>
<td>Distinguished Young Pharmacist</td>
<td>Pennsylvania Pharmacist Association</td>
</tr>
<tr>
<td>Samuel M. Poloyac</td>
<td>University of Pittsburgh Chancellors Distinguished Teaching Award</td>
<td>University Of Pittsburgh</td>
</tr>
<tr>
<td>Brian A. Potoski</td>
<td>Outstanding Clinical Practice in Infectious Diseases Pharmacotherapy</td>
<td>Society of Infectious Diseases Pharmacists (SIDP)</td>
</tr>
<tr>
<td>Susan J. Skledar</td>
<td>Distinguished Service Award (December 2013)</td>
<td>American Society of Health-System Pharmacists, Section of Inpatient Care Practitioners</td>
</tr>
<tr>
<td>Pamela L. Smithburger</td>
<td>SCCM, Clinical Pharmacy and Pharmacology Section Excellence in Using Technology to Improve ICU Medication Safety Award</td>
<td>SCCM, Clinical Pharmacy and Pharmacology Section Excellence in Using Technology to Improve ICU Medication Safety Award</td>
</tr>
<tr>
<td>Melissa Somma McGivney</td>
<td>Fellow of the American Pharmacists Association</td>
<td>American Pharmacists Association</td>
</tr>
<tr>
<td>Wen Xie</td>
<td>Provost’s Inaugural Lecture, Joseph Koslow Endowed Chair</td>
<td>University of Pittsburgh</td>
</tr>
<tr>
<td>Xiang-Qun Xie</td>
<td>XieHe Scholar Honorary Professor</td>
<td>Chinese Academy of Medical Sciences, China</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Faculty Member</th>
<th>Recognition</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amy Calabrese Donihi</td>
<td>Recognized on the ACCP Web site for contributions to the College and the profession of pharmacy (<a href="http://www.accp.com/membership/vrp.aspx">http://www.accp.com/membership/vrp.aspx</a>)</td>
<td>American College of Clinical Pharmacy (ACCP)</td>
</tr>
</tbody>
</table>
Fellowships in Organizations and Board Certification

Election to fellowship and board certification are two characteristics of faculty members who have distinguished themselves. Of the 74 faculty members, 18 (24.3%) have been elected to fellowship in one or more organization, 24 (32.4%) are board certified, and 38 (51.4%) 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.

FY14: Faculty Elected to Fellowship in Professional or Scientific Organizations

<table>
<thead>
<tr>
<th>Name</th>
<th>Fellowship</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kim Coley</td>
<td>FCCP</td>
<td>American College of Clinical Pharmacy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmacy and Therapeutics</td>
</tr>
<tr>
<td>Barry Gold</td>
<td>AAAS</td>
<td>American Association for the Advancement of Science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmaceutical Sciences</td>
</tr>
<tr>
<td>Donna Huryn</td>
<td>FACS</td>
<td>American Chemical Society</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmaceutical Sciences</td>
</tr>
<tr>
<td>Randy Juhl</td>
<td>FAPhA</td>
<td>American Pharmacists Association</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmaceutical Sciences</td>
</tr>
<tr>
<td>Sandra Kane-Gill</td>
<td>FCCM</td>
<td>American College of Critical Care Medicine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmacy and Therapeutics</td>
</tr>
<tr>
<td></td>
<td>FCCP</td>
<td>American College of Clinical Pharmacy</td>
</tr>
<tr>
<td>Joanne Kowiatek</td>
<td>FASHP</td>
<td>American Society of Health-Systems Pharmacists</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmacy and Therapeutics</td>
</tr>
<tr>
<td>Edward Krenzelok</td>
<td>FAACT</td>
<td>American Association of Clinical Toxicology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmacy and Therapeutics (Adjunct)</td>
</tr>
<tr>
<td>Patricia Kroboth</td>
<td>FCCP</td>
<td>American College of Clinical Pharmacy</td>
</tr>
<tr>
<td></td>
<td>FAAPS</td>
<td>American Association of Pharmaceutical Scientists</td>
</tr>
<tr>
<td>Melissa Somma McGivney</td>
<td>FCCP</td>
<td>American College of Clinical Pharmacy</td>
</tr>
<tr>
<td></td>
<td>FAPhA</td>
<td>American Pharmacists Association</td>
</tr>
<tr>
<td>Thomas Nolin</td>
<td>FCCP</td>
<td>American College of Clinical Pharmacy</td>
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<tr>
<td></td>
<td>FCP</td>
<td>American College of Clinical Pharmacology</td>
</tr>
<tr>
<td></td>
<td>FASN</td>
<td>American Society of Nephrology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmacy and Therapeutics</td>
</tr>
<tr>
<td>Samuel M. Poloyac</td>
<td>FCCM</td>
<td>American College of Critical Care Medicine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmaceutical Sciences</td>
</tr>
<tr>
<td>Christine Ruby-Scetsi</td>
<td>FASCP</td>
<td>American Society of Consultant Pharmacists</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmacy and Therapeutics</td>
</tr>
<tr>
<td>Paul Schiff</td>
<td>FAPhA</td>
<td>American Pharmacists Association</td>
</tr>
<tr>
<td></td>
<td>FAAPS</td>
<td>American Association of Pharmaceutical Scientists</td>
</tr>
<tr>
<td>Amy Seybert</td>
<td>FASHP</td>
<td>American Society of Health-System Pharmacists</td>
</tr>
<tr>
<td></td>
<td>FCCP</td>
<td>American College of Clinical Pharmacy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmacy and Therapeutics</td>
</tr>
<tr>
<td>Susan Skledar</td>
<td>FASHP</td>
<td>American Society of Health-System Pharmacists</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmacy and Therapeutics</td>
</tr>
<tr>
<td>Randall Smith</td>
<td>FAAPS</td>
<td>American Association of Pharmaceutical Scientists</td>
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<tr>
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<td></td>
<td>Pharmaceutical Sciences</td>
</tr>
<tr>
<td>Ralph Tarter</td>
<td>FAPS</td>
<td>American Psychological</td>
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<tr>
<td></td>
<td></td>
<td>Pharmaceutical Sciences</td>
</tr>
<tr>
<td>Name</td>
<td>Fellowship</td>
<td>Department</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>FAPA</td>
<td>American Psychopathological Association</td>
<td></td>
</tr>
<tr>
<td>Raman Venkataramanan</td>
<td>FACCP</td>
<td>American College of Clinical Pharmacology</td>
</tr>
<tr>
<td></td>
<td>FAAPS</td>
<td>American Association of Pharmaceutical Scientists</td>
</tr>
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</table>

**FY14: Faculty Board Certifications**

<table>
<thead>
<tr>
<th>Name</th>
<th>Certification</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sherrie Aspinall</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>James Coons</td>
<td>BCPS (AQ-CV)</td>
<td>Pharmacotherapy (Added Qualification in Cardiology)</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>CDE</td>
<td>Diabetes Educator</td>
</tr>
<tr>
<td></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>Christopher R. Ensor</td>
<td>BCPS (AQ-CV)</td>
<td>Pharmacotherapy (Added Qualification in Cardiology)</td>
</tr>
<tr>
<td>Tanya Fabian</td>
<td>BCPP</td>
<td>Psychiatric Pharmacy</td>
</tr>
<tr>
<td>Bonnie Falcione</td>
<td>BCPS (AQ-ID)</td>
<td>Pharmacotherapy (Added Qualification in Infectious Disease)</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></td>
<td>BCACP</td>
<td>Ambulatory Care Pharmacy</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>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>Amy L. Seybert</td>
<td>CHSE</td>
<td>Certified Healthcare Simulation Educator</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 Carradine</td>
<td>BCPS</td>
<td>Pharmacotherapy</td>
</tr>
<tr>
<td>Gordon J. Vanscoy</td>
<td>CACP</td>
<td>Certified Anticoagulation Care Provider</td>
</tr>
</tbody>
</table>

**Alumni and Alumni Engagement**

In the eight years that the University of Pittsburgh has been ranking its 18 schools and programs in alumni engagement, the School of Pharmacy has held the number one spot in FY07 and FY09, ranking second in FY08 and FY10, and third in FY11, FY12, and FY14. “Engagement” is the percentage of
alumni who make gifts to the School/University, participate in events, have Life memberships in the Alumni Association, participate in online forums, and have provided active email addresses.

In FY14:
- 31.90 percent of the 5,170 School of Pharmacy living alumni were engaged with the School of Pharmacy and/or University in some way.

- School of Pharmacy alumni ranked:
  - first (11.10 percent) in life and in regular memberships in the Pitt Alumni Association in schools and programs with more than 100 alumni.
  - third (31.9 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:
  - Pharmacy alumni celebrated Homecoming 2013 with a Tailgate Homecoming Party held at the William Pitt Union. Over 150 alumni were in attendance.
  - School of Pharmacy hosted two receptions at national professional and scientific meetings:
    - American College of Clinical Pharmacy Annual Meeting, September 23, 2013, Bethesda, Maryland.
  - The School of Pharmacy also hosted:
    - The Twenty Second Annual Career Roundtables, October 23, 2013, O’Hara Student Center Ballroom. Twenty-nine alumni participated in this student event. Alumni from nineteen 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 Joseph A. Gatto Scholarship Golf Invitational, May 16, 2014, Quicksilver Golf Course. Seventy-one golfers participated, and the event raised $18,131.71 for the Alumni Scholarship Fund. In the past eleven years, more than $194,000 has been raised for student scholarships.

The Rxtravaganza Gala for alumni and friends celebrated the 135th Anniversary of the founding of the School of Pharmacy. The event, called We Have Something in Commons, was held in the Cathedral of Learning Commons on October 26, 2013. The event raised $28,275.00 for student scholarships.

- The School’s Alumni Society recognized two alumni as Distinguished Alumni:
  - Zane Gates, BS ’90, the director of the Altoona Community Health Center, Partnering for Health Services and the founder of the Gloria Gates Foundation.
  - Roger Morris, BS ’86, is partner in Quarles & Brady’s Health Care Practice Group and a member of the American Society for Pharmacy Law.

- The School’s Alumni Society recognized two alumni Rising Stars:
  - Adam Welch, PharmD ’03, associate professor of Pharmacy Practice at Wilkes University and the acting chairperson of Pharmacy Practice.
• Michelle Zingone Farland, PharmD ’04, assistant professor in the Department of Clinical Pharmacy at the University of Tennessee College of Pharmacy, Knoxville campus; she also serves as an ambulatory care clinical specialist.

Board of Visitors

Dean Patricia Kroboth and select faculty hosted the School of Pharmacy Mini-Board of Visitors on November 13, 2013. The chair of the Board, a board member, and representatives from the Katz Graduate School of Business and the University Center for International Studies had a focused discussion on the proposed MS in Pharmacy Business Administration.

Board of Visitors
2013–14

Herbert S. Shear, Chair
Chief Executive Officer
GENCO ATC

William L. Bailey, PharmD
Head, North American Medical Affairs
Pfizer Consumer Healthcare
Global R&D/Global Medical Affairs

Richard J. Bertz, PhD ’95
Executive Director, Virology and Neurosciences
Discovery Medicine and Clinical Pharmacology
Research and Development, Bristol-Myers Squibb

Daniel J. Cobaugh, BS '87, PharmD, FAACPT, DABAT
Vice President, ASHP Research & Education Fdn.

Leaf Huang, PhD
Fred N. Eshelman Distinguished Professor and
Chair, Division of Molecular Pharmaceutics
Eshelman School of Pharmacy
University of North Carolina at Chapel Hill

Krista M. Pedley, PharmD ’00, MS, CDR, USPHS*
Director, Office of Pharmacy Affairs
Health Resources and Services Administration

Patrick Quinn, ’78 CAS
Senior Director of Trade
Novo Nordisk Inc.

John T. Tighe III, BS ’78
Founder, President and CEO
TMG Health, Inc.

Albert L. Wright, Jr., FACHE
Vice President of Operations
UPMC Presbyterian Shadyside
ENHANCING OUR RESOURCE BASE THROUGH EFFICIENCY AND EFFECTIVENESS

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

Staff

In FY14:
• Sixty-nine staff members served in:
  • administrative roles (31)
  • research roles (38).
• Eleven staff members received service awards from the School of Pharmacy for their tenure and commitment to the School.
• Kellie Mitchell served as Chair-Elect of the Administrative and Finance Officers of the American Association of Colleges of Pharmacy; she will serve as Chair during FY15.
• Several administrative staff members serve as leaders on committees and councils external to the School of Pharmacy. Service in leadership roles and participation on national committees provides opportunity to enhance the reputation of the school and allows for professional development.

Information Technology

FY14, the Information Technology staff:
• Handled 1,110 Technology Help Tickets
  o Web and online: 287
  o Network/Server Administration: 241
  o Desktop and Classroom Support: 582
• Expanded task responsibilities for a team of student workers to include some classroom technology support in addition to expanded video support.
• Implemented battery replacement program to make lecture rooms 402 and 456 “greener.” This cut the number of batteries needed for the year by about 100 AA batteries, lowering cost as well as keeping batteries out of landfills.
• Completed the migration of the School’s database servers and set a September 2014 date for completing the total migration of all servers to the University NOC for increased security and stability. This also leverages University support for backup and maintenance of servers.

Communications

The Web site continues to be a primary tool by which varied constituents learn about the School of Pharmacy, with an average of 38,540 monthly users. PittPharmacy is active in social media and has a presence in Twitter, Facebook, YouTube, and LinkedIn.

The Communications Team achieved the following in FY14:
• Ten major print communications to the School of Pharmacy’s 6,100 stakeholders; a total of 30 print pieces were developed and produced by the Communications Team for more limited distribution. A move to electronic publications is occurring for both efficiency and effectiveness reasons.

• The Communications Group redesigned, re-formatted PittPharmacy, the School’s news magazine. The publication is now printed in color with updated layout intended to give broader appeal to our alumni, faculty, staff, students, donors and friends. Two issues were published during FY14: PittPharmacy Fall 2014 and PittPharmacy Spring 2014.

• The team collaborated to overhaul the School’s Web site with the goal to convey the dynamic range of programs and learning opportunities within the School and provide increased “branding.” The new site was published in sections over the year and will continue to be revised during FY15.

• The event notification process was improved to coordinate with the ePittPharmacy electronic news and information platform. Faculty, staff and students are able to submit and expand on news about the school. This electronic process also streamlines our most current news to outside media and assists in tracking awards, grants and promotions for data use in reports.
Extending Our Global Reach
Extending Our Global Reach

The School of Pharmacy is extending its global reach to provide diverse learning opportunities for our students and to advance research and patient care through meaningful collaborations with international partners whose strengths and interests complement our own.

The University of Pittsburgh Board of Trustees formally adopted the “Statement of Aspiration and Strategic Priorities” on February 28, 2014. Abstracted from the document is the statement that “Our overarching goal to be among the best in all that we do. . . . In the pursuit of that perpetual goal, the University’s work in the years ahead will be centered on efforts to: . . . Extend Our Global Reach.”

This section expresses the commitment of the School of Pharmacy to endorse the University’s emphasis on extending its global reach. Although this section of the annual report is new for FY14, the faculty and staff of the School of Pharmacy embraced the Global Vision that the University of Pittsburgh articulated in 2012.

By 2020, the University of Pittsburgh will be a community of faculty, students, and staff “Living Globally.” The Living Globally commitment will influence all aspects of our research, teaching, and service missions and will serve to enhance the University’s reputation as a leader in global education. We will:

- Pursue research and scholarship that increase global understanding.
- Develop our students into global citizens and leaders.
- Improve people’s lives by studying and solving the world’s most critical problems.

GLOBAL REACH BY THE NUMBERS FOR FY14

During FY14:
- The School of Pharmacy engaged in partnerships with 24 international organizations on 6 continents, including Africa, Asia, Australia, Central America, and Europe. The agreements include:
  - 12 Memoranda of Understanding for inter-institutional exchange of faculty and students
  - 10 Affiliation Agreements for the purposes of student and resident rotations
  - 2 Research Collaboration Agreements between faculty or students and a host site.

- 11 international visiting scholars studied at the School of Pharmacy.

- 14 P4 PharmD students participated in 15 rotations in 6 different countries at 8 different sites.

- 5 P1 and P2 students and 5 residents also completed international rotations.

- 67 international students are enrolled in degree programs and comprise 12.9% of our students: 5 PharmD students; 36 PhD students; 6 Master of Science students; 20 Non-Thesis Master of Science Students.
DEVELOPING A SUPPORTIVE INFRASTRUCTURE

During 2014, two administrative appointments were made to provide infrastructure for the School’s growing international program.

• International Partnerships Coordinator: Shannon L. Young, MA
  In this role, Shannon works with international institutions to formalize agreements for collaboration and to coordinate visits to the School of Pharmacy.

• Coordinator for Student International Experiences: Lauren Jonkman, PharmD, MPH
  In this new role, Dr. Jonkman works to meet student demand for quality international learning opportunities and matches students with their interests and available sites. She also seeks out and develops new learning experiences for future Pitt Pharmacy students.

Both individuals assumed those responsibilities in addition to their primary roles. The School began a focused effort to increase and support global interactions for faculty and students.

GLOBAL AND INTERNATIONAL PARTNERSHIPS

Partnerships
As part of the relationship-building process, the School of Pharmacy signs agreements with institutions to declare our intentions to explore possibilities for collaboration and to formalize our partnership. These agreements include:

• Memoranda of Understanding (MOU), which are broad-based expressions of interest in exploring opportunities for student and faculty exchange, research collaboration, and program development.
• Affiliation Agreements that provide structured expectations of both entities for international rotations for PharmD students and residents.
• Research Agreements between specific faculty or students and international organizations for the purposes of research collaboration.

Key advances during the year include:

• Tripling the number of MOUs from 4 in FY13 to 12 in FY14. This growth illustrates our commitment to developing international programs and our efforts to identify partners who have shared goals.
  New MOUs were signed with a variety of institutions in China, including Peking University Health Sciences Center in Beijing, Second Military Medical University and Changhai Hospital in Shanghai, and West China Hospital in Chengdu.

• The School hosted a delegation of 14 visitors from Yunnan Province in September 2013 who represented the Kunming Institute of Botany from the Chinese Academie of Sciences’ State Key Laboratory of Phytochemistry and Plant Resources and the Botanical Society of Yunnan.
  In addition to touring the Drug Discovery Institute, the delegates participated in a Memorandum of Understanding signing ceremony in the stunning China Nationality Room in the Cathedral of Learning.

• 10 international affiliation agreements were signed/maintained for the student and resident rotations.
• 2 research agreements were signed for specific faculty members/ students to engage in collaborative research with an international site.

The graph below illustrates the proportion of each agreement type. The table provides a comprehensive list of organizations with which we have active signed agreements.

**Proportion of International Agreements**

**FY14**

<table>
<thead>
<tr>
<th>MOUs for Inter-Institutional Exchange</th>
<th>Affiliation Agreements for Student/Resident Rotations</th>
<th>Research Collaboration Agreements</th>
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</thead>
<tbody>
<tr>
<td>50%</td>
<td>42%</td>
<td>8%</td>
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**FY14: Agreements with International Organizations**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Location</th>
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<tbody>
<tr>
<td><strong>Australia</strong></td>
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<tr>
<td>Austin Health Hospital</td>
<td>Perth, Australia</td>
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<tr>
<td>Sir Charles Hospital (Nedlands)</td>
<td>Nedlands, Australia</td>
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<tr>
<td><strong>Britain</strong></td>
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<tr>
<td>King’s College</td>
<td>London, United Kingdom</td>
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<tr>
<td><strong>China</strong></td>
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<tr>
<td>Botanical Society of Yunnan</td>
<td>Yunnan Province, China</td>
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<tr>
<td>Shanghai Hospital</td>
<td>Shanghai, China</td>
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<tr>
<td>Fudan University</td>
<td>Shanghai, China</td>
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<tr>
<td>Kunming Institute of Botany, Chinese Academic of Sciences, State Key Laboratory of Phytochemistry and Plant Resources</td>
<td>Yunnan Province, China</td>
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<tr>
<td>Peking University, Health Science Center</td>
<td>Beijing, China</td>
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<tr>
<td>Second Military Medical University</td>
<td>Shanghai, China</td>
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<tr>
<td>Shanghai Jiao Tong University</td>
<td>Shanghai, China</td>
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<tr>
<td>Institution</td>
<td>Location</td>
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<tr>
<td>Sun Yat-Sen University</td>
<td>Guangzhou, China</td>
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<tr>
<td>West China Hospital</td>
<td>Chengdu, China</td>
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<td><strong>Honduras</strong></td>
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<td><strong>Hong Kong</strong></td>
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<td>The Chinese University of Hong Kong</td>
<td>Shatin, Hong Kong</td>
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<tr>
<td><strong>Ireland</strong></td>
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<tr>
<td>Farmer’s Pharmacy</td>
<td>Dublin, Ireland</td>
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<tr>
<td>Beacon Hospital</td>
<td>Dublin, Ireland</td>
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<td><strong>Italy</strong></td>
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<tr>
<td>Universita degli Studi di Palermo/ UPMC ISMETT,</td>
<td>Palermo, Italy</td>
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<td>(translated as Mediterranean Institute for</td>
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<td>Transplantation and High Specialization</td>
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<td>Therapies)</td>
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<td><strong>Malawi</strong></td>
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<td>Baobab Health Trust</td>
<td>Lilongwe, Malawi</td>
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<td><strong>Singapore</strong></td>
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<td>National University of Singapore</td>
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<td><strong>Palestine</strong></td>
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<td>Ashraf Pharmacy</td>
<td>West Bank, Palestine</td>
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<td><strong>Philippines</strong></td>
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<td>Philippine General Hospital</td>
<td>Manila, Philippines</td>
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<td>University of Philippines</td>
<td>Manila, Philippines</td>
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<td><strong>Scotland</strong></td>
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<td>HCDumfermline – Douglas Street</td>
<td>Dunfermline, Scotland</td>
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<tr>
<td><strong>South Africa</strong></td>
<td></td>
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<tr>
<td>Kwazulu-Natal Research Institute for TB-HIV</td>
<td>Durban, South Africa</td>
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PROGRAMS

Summer Research Program
Initiated and led by Professor Wen Xie, the School of Pharmacy designed a summer research program in partnership with the Sun Yat-Sen University School of Pharmaceutical Science in Guangzhou, China. The admissions committee composed of faculty from both universities selected six competitive third year bachelor’s students from Sun Yat-Sen University to participate as summer research interns at the University of Pittsburgh during July 2014.

The goal of the program is to attract academically qualified and scientifically prepared MS and PhD students from top tier schools of pharmacy. The summer internship offers potential students an opportunity to learn more about our graduate program, our faculty, the University of Pittsburgh, and living in Pittsburgh. The internship also provides an opportunity for our faculty to evaluate participants and the match of their research interests to individual laboratories.

Students must apply to our graduate program using the regular application process and must meet all requirements for graduate study at the University of Pittsburgh. Students have the option of choosing the two-year thesis-based master’s program, the one-year non-thesis master’s program, or the PhD program. Students admitted to the MS programs must be self-supported.

If deemed successful, the program will be extended to domestic and other international institutions.

Clinical Training Program
In collaboration with organizations in Singapore, the School of Pharmacy has developed a 12-month fee-based clinical training program similar to a PGY2 specialty clinical pharmacy residency.

Under the leadership of Professor Amy Seybert, the program accepted its first paying trainee in July 2014, clinical pharmacist Ong Chai Ling from the National Heart Centre in Singapore. Ms. Ling has received a scholarship from the Singapore Ministry of Health to support her for one year. The goal is to extend this fee-based training program to other organizations in Singapore and to other countries once the School establishes the appropriate infrastructure to support the program.

Planned future clinical scholars. Exchanges have been arranged for FY15 for clinical pharmacists from Fudan University and Peking University.

PharmD Student International Learning and Experiences
Interest in international pharmacy experiences has continued to grow among our PharmD students. Students seek opportunities in global health (underserved patients), international pharmacy practice (developed countries), and research. Their goals are diverse and include passion for serving communities, inquisitiveness to learn about health care in other nations through both research and practice, and an adventurous spirit to become global citizens.

In FY14, a total of 20 PharmD students were the direct beneficiaries of the growing number of international partnerships.

• 14 PharmD students completed 15 P4 APPE rotations;
• 1 P3 student on a Howard Hughes Fellowship research experience in Durban, South Africa
• 1 P1 student to Cap Haitien, Haiti
• 4 P2 PharmD to Shanghai

Examples of the student work include:
• The student who went to Cap Haitien, Haiti worked at St. Anthony’s Clinic to develop a medication formulary for the clinic that would meet the needs of the population and aid in obtaining donations for needed essential medications.

• Students evaluated differences between clinical pharmacy practice at Second Military Hospital Pharmacy and Pharmacy School in Shanghai and UPMC Presbyterian Hospital.

The number of P2 students (six) is an increase from two P2 students who studied internationally in FY13. In FY13, two students attended a global conference on Drug Development and Traditional Chinese Medicine (TCM) at Shanghai Jiao Tong University School of Pharmacy. Those students also had observerships in two Chinese hospitals—one a westernized hospital and one that uses TCM. Students focused their research on the comparison of outpatient pharmacy practice in a TCM practice to a typical US community pharmacy.

Howard Hughes Medical Institute Program
In FY14, P3 student Lauren Cirrincione received a 10-week summer research fellowship with KwaZulu-Natal Research Institute for Tuberculosis and HIV (K-RITH) in Durban, South Africa. K-RITH is a program offered as a collaboration between the Howard Hughes Medical Institute and the University of KwaZulu-Natal. Cirrincione received support in the form of a Nationality Room Scholarship and from the Office of the Dean to support this research experience. The research focus of her laboratory (Dr. Alex Pym) is to understand how the tuberculosis bacterium tolerates certain antibiotics—the ultimate goal is to develop novel therapies for tuberculosis that can reduce the length of treatment.

International Pharmacy Scholarly Experiences Course
A course entitled International Pharmacy Scholarly Experiences was developed to provide academic support for P2 and P3 students who elect to complete international research experiences during the summer. It was offered for the first time in FY13 (three students); in FY14, five students completed the elective.

Global Health Area of Concentration
In FY14, a total of 14 students were enrolled in the Global Health Area of Concentration (GH-ARCO). The co-directors of the GH-ARCO are Sharon Connor, PharmD and Lauren Jonkman, PharmD. The first 2 PharmD students in the ARCO graduated in the class of 2014, each having participated in at least one global health APPE rotation and each having completed a mentored independent research project. The next graduating class of ARCO students includes eight students, of which six will complete their ARCO projects in international global health settings in FY15.

International Advanced Pharmacy Practice Experiences (APPEs)
In FY14, 14 P4 students completed 15 separate international advanced pharmacy practice rotations. Three students arranged international rotations using personal contacts (Scotland and Ghana). The remaining rotations are long-lasting School of Pharmacy partnerships.
- Farmer’s Pharmacy in Dublin, Ireland: 3 students
- UPMC Beacon Hospital in Dublin, Ireland: 2 students
- Shoulder to Shoulder Pittsburgh-San José, San José del Negrito, Honduras: 2 students
- Kamuzu Central Hospital in Lilongwe, Malawi: 1 student.
- Sir Charles Gairdner Hospital in Nedlands, Australia: 2 students
- Austin Health in Heidelberg, Australia: 2 students
- Accra, Ghana community pharmacy: 1 student
- Dunfermline, Scotland hospital pharmacy: 2 students
Global Health Residency and Rotations
The University of Pittsburgh School of Pharmacy is one of only two PGY2 residency programs in the country to offer pharmacist training to practice in global health. The directors of the PGY2 global health residency are Sharon Connor, PharmD and Lauren Jonkman, PharmD, MPH.

As part of the global health residency experience, the resident practices in limited-resource settings in Pittsburgh; in addition, he or she completes a minimum of two international global health experiences. In FY14, the PGY2 resident implemented a quality improvement program in Honduras to identify and treat all children in the community with moderate to severe asthma. The program relies on a community health nurse to visit families monthly to provide education and medicines with the goal of improving asthma control in a rural community.

Five pharmacy residents, including the global health resident, completed global health rotations.
- Kamuzu Central Hospital in Lilongwe, Malawi: 1 PGY2 global health resident at the University of Pittsburgh School of Pharmacy
- Shoulder to Shoulder Pittsburgh-San José, San José del Negrito, Honduras: 2 residents: 1 PGY2 global health resident and 1 PGY1 UPMC St. Margaret pharmacy practice resident
- Friends of Ocote Paulino, Ocote Paulino, Honduras: 1 UPMC Presbyterian PGY1 pharmacy practice resident
- INMED in Wenchi Methodist Hospital, Ghana: 1 UPMC St. Margaret PGY1 pharmacy practice resident
International Visiting Scholars
In total, the School of Pharmacy hosted 11 international visiting scholars at differing levels of training during FY14. In FY14, the array of international visitors to the School of Pharmacy began to diversify. We hosted larger numbers of trainees interested in clinical pharmacy and continued to welcome scholars to conduct pharmaceutical sciences research.

The visiting scholars are listed in the table below.

<table>
<thead>
<tr>
<th>FY14 Visiting Scholars</th>
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<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Hua-Lin Cai, PhD</td>
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<tr>
<td>Yan Guo, MS</td>
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<tr>
<td>Bingfang Hu, BS</td>
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<tr>
<td>Sharleen Ibrahim</td>
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<tr>
<td>Suhyeon Kim, PhD</td>
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<td>Haibin Liu, MS</td>
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<td>Wan Jin Sia, BS</td>
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<tr>
<td>Ki Sa Sung, PhD</td>
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<tr>
<td>Xisha Wang, PhD</td>
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<tr>
<td>ShuHui Yeang, BS</td>
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<tr>
<td>Zhihui Zheng, PhD</td>
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</tbody>
</table>

International Invited Presentations
Faculty and students are invited to speak at international meetings and sites each year. Examples of recent international invited presentations include:

- 9 international research presentations in 4 countries.
  - 3 at universities or hospitals
  - 6 at conferences or academies

- 3 international education presentations in 1 country.
  - 2 at universities or hospitals
  - 1 at a conference
School of Pharmacy
Long Range Plan 2018
School of Pharmacy

Our Excellence, Innovation and Leadership Journey

Building our Long-Range Plan is a journey that began in 2001 and continues to this day in the form of Long-Range Plan 2018. To date, we have forged three long-range plans that have unified the faculty, staff, and students around goals and their achievement.

From the beginning our plans have been:
  • Mission and vision driven;
  • Aligned with the strategic direction of the University;
  • Highly participative;
  • Outcome driven.

One of the first orders of business in 2001 was to align our plan with the University of Pittsburgh goals, we used the five statements articulated in “Pitt in the Year 2000: Pursuing Our Full Potential” to structure our plan. In 2014, the University modified its “Statement of Aspiration and Strategic Priorities.” The School of Pharmacy embraced those priorities. In parallel with the University and it stated priorities, the School of Pharmacy’s work in the years ahead will be centered on efforts to:
  • Consistently Deliver Excellence in Pharmacy and Pharmaceutical Education;
  • Make Contributions of Impact to Health through Pioneering Research;
  • Build Community Health through Pharmacist-Provided Care of Patients in the Community, in Institutions, and During Transitions of Care;
  • Extend Our Global Reach
  • Secure an Adequate Resource Base.

The School has folded the University’s statement to “Provide Top Value” into “Securing an Adequate Resource Base,” so only five appear above. Within the first year, we developed measurable outcomes within each of the above broad categories. By 2008, we had developed and continue to use “Progress At a Glance” (PAGE) as the dashboard to standardize the presentation of our accomplishments.

The characteristics of excellence, innovation, and leadership have become a hallmark of the School of Pharmacy and are articulated in our mission statement that was adopted in 2006. Simultaneously, we took a fresh look at our values and developed a more succinct statement. The year of intermittent and thoughtful discussions forged cohesiveness among the faculty and staff. See Mission and Values statements attached.

From the very first planning session at a retreat in 2001, both administrative and office staff and faculty members have engaged in goal setting and planning. Our Board of Visitors, students and alumni also had opportunities for input. Our process is sustainably “highly participative.”

In 2012, we began developing the third iteration of our plan. This time, we chose to make a few bold statements that could be easily remembered. The outline of our Long-Range Plan 2018 is attached and includes the major themes within the strategic priority areas.
The images show Salk Hall plus phases of construction on Salk Pavilion, the new research facility.
Long-Range Plan 2018
School of Pharmacy

“Providing the Innovators and the Discoveries to Solve the Complex Medication-Based Problems of Today and Tomorrow”

The School of Pharmacy will be a leader in pharmacy and pharmaceutical science education.

We will provide students with a personalized education that will efficiently prepare them to innovate, lead, and identify opportunities to improve health using the clinical and research principles of the pharmaceutical sciences.

We will build educational opportunities for non-pharmacy students and health care providers to learn about drugs, drug mechanisms, the use and abuse of medications, therapeutic applications, and the pharmaceutical sciences.

The School of Pharmacy will be a research school of distinction.

We will bridge the drug development gap for new therapies by integrating and expanding our strengths in drug development, drug delivery and biomarker research.

We will develop a translational pharmacogenomics research program to utilize patient-specific information as a component of personalized patient care.

The School of Pharmacy will build healthy communities through pharmacist-provided care of patients in the community, in institutions, and during transitions of care

We will impact the lives of the people in the communities in which we live and work through pharmacists who are health care providers promoting health and wellness, optimizing use of medications, and stemming the misuse, abuse, and diversion of medications.

We will create a Pharmacy Innovations Lab that will be the incubator and concept testing environment where multidisciplinary teams come together to address complex problems of medication use.

We will extend our global reach*

Create global partnerships that advance research, develop our students as global citizens, and enhance pharmacy care to promote health, wellness, and the appropriate use of medications.

We will increase the resource base of the School of Pharmacy.

We will leverage existing and evolving technologies to enhance learning, to improve patient care, to enhance research, to engage stakeholders, and to become more efficient.

We will partner with our stakeholders and communities to develop the resources to advance our mission.

*Additional details will be defined during FY15.
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
We will provide students with a personalized education that will efficiently prepare them to innovate, lead, and identify opportunities to improve health using the clinical and research principles of the pharmaceutical sciences.

We believe that personalized education will enrich individual student experiences and will better prepare them for success as they navigate the rapidly changing health care landscape and post-graduate environment.

By 2018, we will have:

• Evolved the curriculum of each degree program so that students achieve the “generalist” mastery and have had the opportunity to personalize their learning.
  Actions:
  o Review and revise the curricular outcomes for the PharmD program to reflect contemporary and evolving practice and research.
  o Personalize and contextualize learning by revising PharmD curriculum to create efficiency and flexibility for vertical integration of in-depth experiences, exposures, and knowledge in practice, in cultures, and in communities.
  o Develop teaching and advising strategies that allow students to build progressively on their strengths and interests and identify career aspirations.

• Embedded learning strategies to enhance educational effectiveness and efficiency and rapidly propel students to defined levels of mastery.
  Actions:
  o Inventory current teaching strategies, approaches and resources (e.g., peer-learning, high-fidelity simulations, portfolios, educational support, and technology tools). (FY12)
  o Conduct educational programs, including online programs, for faculty and staff to prepare us to deploy educationally sound teaching, learning, and assessment strategies that are based on learning science. (FY13 and beyond)
  o Define a cross-school or cross-university multidisciplinary education support team to develop, deploy, and study strategies to rapidly propel students to defined levels of mastery. (FY13)
  o Build educational processes by which all students develop and demonstrate expertise in problem identification and problem solving.
  o Address the affordability of education through efficiencies in learning.

• Built learning experiences for students to become engaged in medication discovery, development, manufacture, distribution-including procurement and supply chain management, dispensing, clinical application, and clinical outcomes. (FY14)
  Actions:
  o Develop partnerships that will facilitate opportunities for a student to pursue experiences in the areas that impact drug development, distribution, and use.

Develop an outcomes research track to the PhD program that will be available by fall.
We will **build educational opportunities for non-pharmacy students and health care providers** to learn about drugs, drug mechanisms, the use and abuse of medications, therapeutic applications, and the pharmaceutical sciences.

We believe that greater depth of knowledge and understanding positively affects non-pharmacist attitudes about pharmacies, pharmacy-centered care, and the use and abuse of medications.

By 2018, we will have:

- Evaluated and potentially developed at least two interdisciplinary certificate programs and short courses.
  
  **Actions:**
  - Charge a taskforce to develop guidelines that will facilitate and guide options for new program (certificate, degree, short course) development. (FY13)
  - Draft and submit proposals for review:
    - At least one short course, including use of simulation in education or medication management in transplant patients (FY13)
    - At least one undergraduate and/or graduate certificate program (FY14) including pharmaceutical sciences (undergraduate) and research (graduate).

- Evaluated and potentially developed dual-degree, joint degree, or combined degree programs.
  
  **Actions:**
  - Obtain approval for a PharmD/MBA program as a model for the development of other two degree programs. (FY13)
  - Draft guidelines for the process for partnering with other schools to create two-degree programs and other cross-disciplinary programs (FY13).

- Developed new or opened existing courses to non-pharmacists/non-pharmaceutical scientists who are engaged in discovery, development, manufacture, distribution — including procurement and supply chain management, — dispensing, and clinical application.
  
  **Actions:**
  - Draft and submit proposals for review:
    - At least one course in an area of opportunity and need. Areas to consider include graduate and undergraduate courses in: medications of abuse, physiology, and drug discovery/development, pharmacogenomics.
    - Offer one or more courses during the summer, fall, or spring terms on an ongoing basis.
We will **bridge the drug development gap for new therapies** by integrating and expanding our strengths in drug development, drug delivery and biomarker research.

We believe that the faculty of the School of Pharmacy has expertise to bridge the drug discovery, development, and delivery gap, sometimes known as the “Valley of Death” for the chemical to drug transition.

By 2018, we will have:

- Become the “knowledge experts” for campus researchers and external entities to pursue the development of chemicals into drugs or to repurpose currently approved drugs.
  
  **Actions:**
  
  o Develop a Center for Drug Development and Delivery that integrates the continuum of research spanning from delivery to the clinic.
  
  o Charge a task force to develop a proposal for the center, including identification of specific goals, administrative structure, and performance metrics.
  
  o Establish an outside advisory group that provides direction and guidance regarding development plans and selection of projects to be undertaken within the center.
  
  o Achieve focused growth particularly in pharmacogenomics, metabolomics, and PK/PD modeling.

- Moved one or more compounds across the “Valley of Death” to the point of licensing the formulation or drug.
  
  **Actions:**
  
  o Develop a new or apply an existing algorithm for moving potential candidate molecules through the development and/or delivery process.
  
  o Expand the biomarker core to include biomarker discovery (metabolomics) and validation (modeling) as it relates to drug effect and disease progression.

- Developed partnerships with external sources including industry partners.
  
  **Actions:**
  
  o Develop a mechanism to engage expertise outside the School of Pharmacy.
  
  o Work with the Office of Technology Management to identify and engage with industry partners.
We will **develop a translational pharmacogenomics research program** to utilize patient-specific information as a component of personalized patient care.

We believe that pharmacogenomics is central to the role of pharmacists in the healthcare team to make personalized medicine a reality for each individual patient.

We believe that pharmacy is uniquely positioned to determine drug response and genetic profile systematically in individual patients and to assess variability in drug response among patients.

We believe pharmacy should be the primary driver of research aimed at understanding drug response/pharmacogenetic relationships and diffusing this knowledge into clinical practice.

By 2018, we will have:

- **Established a translational pharmacogenomics research program.**
  
  **Actions:**
  
  - Recruit at least one faculty member who has translational pharmacogenomics/epigenetics expertise and at least one faculty member who has a pharmacogenomics clinical research focus.
  
  - Define resources needed to collect outcomes and to design/test interventions.
  
  - Integrate School of Pharmacy researchers into genetics-focused initiatives such as the Personalized Medicine Institute and the NIH-funded Pharmacogenomics Research Network.
  
  - Generate and access genetic information for the purpose of personalizing drug therapy.

- **Established processes for incorporating pharmacogenomics into new and existing drug use protocols and measuring the clinical outcomes from these implementations.**
  
  **Actions:**
  
  - Charge a task force with external expert representatives to recommend mechanisms for establishing pharmacogenomic testing services at UPMC.
  
  - Build pharmacist-based systems to define and measure drug and patient outcomes.

- **Become the identifiable source for information about the application of pharmacogenomics to patient care.**
  
  **Actions:**
  
  - Build a web-based pharmacogenomics information resource housed in the School of Pharmacy.
  
  - Lead the diffusion of understanding regarding the drivers of drug response, including the application of pharmacogenetics, throughout inpatient and community patient-care sites; this includes pharmacists and other health care providers.
We will **impact the lives of the people in the communities in which we live and work** through pharmacists who are health care providers promoting health and wellness, optimizing use of medications, and stemming the misuse, abuse, and diversion of medications.

We believe that pharmacies can become the home of health and wellness within communities through interprofessional models of care.

We believe that pharmacists, who are among the most trusted professionals, can play an essential role in the prevention and treatment of illness and in the promotion of health and wellness.

By 2018, we will have:

• Partnered with UPMC and UPMC Health Plan and other entities to continually pilot, implement, evaluate, and disseminate pharmacist-based patient care programs.
  Action:
  o Design, implement, and evaluate a telepharmacy or remote pharmacy program.

• Created pharmacy-centric community health zones that are scalable.
  Actions:
  o Evaluate the Pharmacy Practice Act for legality of pharmacists providing pharmacy care when not associated with a dispensing pharmacy; pursue a pharmacy license if needed.
  o Establish a partnership with the Oak Hill Neighborhood Association in Pittsburgh with the goal of improving overall health and wellness.

• Addressed America’s prescription drug abuse crisis and improve the safety of the public through policy, research, and patient care demonstration programs.
  Actions:
  o Develop scalable prescription drug programs that partner physicians, dentists, pharmacists, and patients to address the use, misuse, abuse, and diversion of medications.
  o Engage in collaborative practices in chronic pain and palliative care.

• Created global partnerships that will advance pharmacy care to promote health, wellness, and the appropriate use of medications.
  Actions:
  o Create Memoranda of Understanding with international partners—including schools of pharmacy and non-governmental organizations.

• Gained recognition from the public for pharmacists as health care providers who promote health, wellness, and the appropriate use of medications.
  Actions:
  o Maximize collaborative practice opportunities ambulatory care and community settings, including dental practices.
  o Create programs and tools that can promote health and wellness.
  o Engage student pharmacists in an organized approach to address medication-based needs of patients.
  o Host an Invitational Conference on implementation of effective pharmacy care models.
We will **create a Pharmacy Innovations Lab** that will be the incubator and concept-testing environment where multidisciplinary teams come together to address complex problems of medication use.

We believe that bringing together expertise and perspectives from many disciplines, including those external to health, sparks innovation and leads to novel solutions to complex problems.

By 2018, we will have:
- Created innovative patient care models that have become clinical “game changers” and the foundation for policy.
  - **Actions:**
    - Systematically incorporate pharmacy and non-pharmacy stakeholders into planning, conducting, and communicating our work.
    - Take on the risk to design, implement, and evaluate system interventions with partners, including self-insured companies, to improve health outcomes.
    - Define effective mechanism for diffusion of innovative findings into inpatient, outpatient and community-based settings.
    - Establish and host recurring partner colloquia where research questions and research in-progress are shared to identify and extend opportunities to improve health outcomes.
    - Use technologies to improve pharmacy-based care of patients.
- Become the “knowledge experts” for creative solutions to systems-related medication problems.
  - **Actions:**
    - Create a white paper for the Pharmacy Innovations Lab that includes recent accomplishments and the case for development of the Lab. (FY13)
    - Create a portfolio of projects and programs that demonstrate improved care and make it available on-line in print. (FY13)
    - Organize symposia at Pitt and at national health care meetings.
    - Create a Web-site that showcases the available expertise.
We will leverage existing and evolving technologies to enhance learning, to improve patient care, to enhance research, to engage stakeholders, and to become more efficient.

We believe that technology can magnify the impact of a single person.

We believe that pharmacists must successfully utilize vast and growing amounts of health information to inform prescribing decisions regarding individual patients and populations of patients.

By 2018, we will have:

• Enriched the student experience by applying technology and web-based content that augments innovative teaching and assessment strategies and supports our goals.
  Actions:
  o Establish “Educational Technology Committee” to guide and recommend the efficient application of technology, web-based content, and assessment strategies. (FY13) For example:
    a. Implementation of systematic capture of course content, i.e., lecture.
    b. Develop additional VPSim cases with variable difficulty and development of new simulations and applications for the hi-fidelity human simulator.
    c. Develop additional multi-university courses so that students can interact through media with students and faculty at other universities.

• Created a technology “help team” that supports education and the other elements of our mission.
  Actions:
  o Charge a faculty-staff-student technology advisory committee with external participants to continually evaluate technologies that will support and advance our mission and goals.

• Created systems for capturing and readily retrieving patient-specific information about medication outcomes to support practice-based research.
  Action:
  o Use national claims data and link to health outcomes.
  o Develop systems or work with partners to develop “add-ons” to existing systems, e.g. EpiCare, EMR, Cerner.
  o Obtain a data-capture system to support School of Pharmacy patient-care programs.

• Become the “knowledge experts” or referral group for technology implementation.
  Action:
  o Evaluate and publish results of technology implementation, offer short courses, and license or share technology developed internally.

• Efficiently applied technology to optimize utilization of staff and faculty time and financial resources.
  Actions:
  o Implement a mechanism for making internal and external video calls and conferences.
We will **partner with our stakeholders and communities to develop the resources to advance our mission.**

We believe that the members of the extended School of Pharmacy family are united in our pride in our past and in our ability to shape our future.

By 2018, we will have:

- Partnered with individuals, companies, and organizations who will open their network of colleagues to provide opportunities for students to personalize their education.

- Recruited and retained faculty and staff who are critical to achieving the goals stated in Long-Range Plan 2018.

- Designed and built new effective “neighborhoods” within Salk Hall and Salk Pavilion for:
  - teaching and learning, including simulation, practice laboratories, and large and small classrooms.
  - laboratory research.
  - practice- and computer-based research in Salk Hall.

- Met our internal Capital Campaign goal so that the funds raised support this Long-Range Plan.
  - Create a Technology Development Fund.
**Long-Range Plan 2006—2012—2018**

**Educating the Next Generation of Practitioners and Scientists**

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**The School of Pharmacy will be a leader in pharmacy education.**

*Adopted 2005*

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**PHARM.D PROGRAM**

The School of Pharmacy will:

**Excellence**

1. Meet or exceed the standards for accreditation by ACPE, earning accreditation for the maximum interval of six years.

2. Consistently demonstrate the excellence of our students and their organizations by the awards and national recognitions they receive.

3. Recruit and retain a diverse community of students.

**Innovation and Leadership**

4. Sustain a culture of innovation and scholarship in teaching and assessment.

5. Develop credit-based opportunities for students to obtain international study experiences

6. Create curricular tracks/areas of concentration for specialization within the PharmD program.

7. Develop elective and required interprofessional education opportunities and courses within our curriculum.

8. Be a leader in defining and providing innovative curricula that enhances pharmacy-provided patient care.

9. Explore and potentially develop an “out-of-Pittsburgh” curricular program
GRADUATE PROGRAM

The School of Pharmacy will:

Excellence
10. Achieve and sustain recognition for the quality of the graduate students and graduate program.
11. Recruit and retain highly academically qualified graduate students.
12. Educate graduate students who are highly sought after.
13. Maintain the excellence of the Clinical Pharmaceutical Scientist Program as a national model for clinical and translational research in the pharmaceutical sciences.

Innovation and Leadership
14. Partner with the Clinical and Translational Science Institute to develop learning opportunities for our students.
15. Develop MS program in pharmacy administrative sciences, including institutional and community practice administration.
16. Advance the graduate program in order to successfully compete for a PHS training grant.

RESIDENCY PROGRAM

The School of Pharmacy will:

Excellence
17. Participate in the creation of accredited residency program and training of residents.
18. Achieve national recognition for the excellence of our residency programs.
19. Train residents who compete successfully for national grants and awards.

Innovation and Leadership
20. Define criteria for and establish “Residencies of Excellence” in targeted areas of focus.
21. Partner in the development and implementation of a residency program model that emphasizes the commonality of community and ambulatory programs.
Advancing Human Health through Research

The School of Pharmacy will be a research school of distinction.

Adopted 2005

The School of Pharmacy will:

Excellence

22. Enhance our reputation of research excellence.

23. Diversify our portfolio of research funding.

24. Train a cadre of PhD and postdoctoral PhD fellows who are highly sought after for careers in academia, industry, and the government.

Innovation and Leadership

25. Compete successfully for a PHS training grant.

26. Compete successfully for a program project grant and center grants

27. Establish a program for research that focuses on pharmacy service models and health care outcomes to favorably improve patient care.

28. Develop research collaborations through the Clinical and Translational Science Institute at the University of Pittsburgh.
Enhancing the Health of the Community through Partnerships

The School of Pharmacy will be 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

The School of Pharmacy will:

Excellence
29. Engage in significant corporate partnerships for the purpose of providing patient care.
30. Maintain and enhance our reputation of practice excellence through honors and recognitions of our programs and our faculty.
31. Develop evidence-based medication protocols and collaborative practice agreements that improve clinical outcomes, enhance patient safety, and reduce costs.

Innovation and Leadership
33. Provide 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.
34. Create and implement a pharmacy service model that integrates faculty and staff pharmacists in provision of care for UPMC patients.
35. Participate in the care of underserved patients in local and global communities through the Grace Lamsam Pharmacy Program for Underserved Patients.
37. Partner to provide remote care for patients through technology.
The School of Pharmacy will increase effectiveness and efficiency and will enhance the professional growth of faculty and staff.

Renewed 2005

The School of Pharmacy will:

**Excellence**

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

39. Apply technology to deliver quality education to facilitate effective and efficient student learning.

40. Improve efficiency and cost savings through initiatives identified and led by the staff.

41. Create effective means of communication for internal stakeholders

42. Adopt a proven and effective technology platform that serves faculty, staff, students and others

**Innovation and Leadership**

43. Enhance faculty and staff knowledge of new technologies for teaching

44. Application of Lean System principles and practices, and value stream mapping for staff and some faculty processes.

45. Consistently partnered with CSSD in testing the application of technology.
Securing an Adequate Resource Base

We will increase the resource base of the School of Pharmacy.
Renewed 2005

HUMAN RESOURCES

The School of Pharmacy will:

Excellence

Faculty
46. Recruit and retain faculty who are recognized for scholarly, educational, service and practice distinctions.

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

48. Recruit and retain faculty members who engage as citizens in serving the academic community and the profession of pharmacy.

Staff
49. Recruit and retain staff members who contribute to the strategic goals of the School and to the culture of teamwork and collaboration.

50. Create and implement individualized development plans for all staff members.

Alumni, Friends, and Other Stakeholders

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

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

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

54. Engage and support non-faculty preceptors who provide educational experiences for our students.
FINANCIAL RESOURCES

We will:
55. Meet the goals for the Capital Campaign.
56. Increase the book value of the School of Pharmacy endowment.
57. Increase total dollars and number of contributors through all sources of gifts.

PHYSICAL RESOURCES

We will:
58. Renovate and refurbish existing space to meet programmatic needs.
59. Secure our place in the Master Plan for Oakland, assuring adequate space for the School's programs.