

University of Pittsburgh
School of Pharmacy

ANNUAL REPORT
2007–2008



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The School of Pharmacy: A Description



The School of Pharmacy: A Description

Chartered in 1878, the School of Pharmacy is the oldest of the University of Pittsburgh's schools of the health sciences. The School of Pharmacy is located on the Oakland Campus of the University of Pittsburgh, a beautiful 132-acre urban campus. The University's 12,000 employees, including 3,800 full-time faculty members, serve approximately 34,000 students through the programs of 15 undergraduate, graduate, and professional schools.

Along with the five other schools of the health sciences, the School of Pharmacy is adjacent to and affiliated with the internationally renowned University of Pittsburgh Medical Center (UPMC), which provides care through the region's largest and finest network of tertiary, specialty, and community hospitals. Collectively, these facilities provide one of the nation's greatest, most complete health centers for teaching, patient care, and research in the health sciences. The School's overall reputation is grounded in its excellence of the teaching, patient care, research, and service conducted by its faculty, graduate students, residents, postdoctoral fellows, staff, and alumni.

The University of Pittsburgh School of Pharmacy is on the forefront of educating pharmacy's future practitioners and scientists with its four-year PharmD program and its graduate programs. Setting the School apart from others is a curriculum that: 1) integrates science and practice throughout the course of study; 2) emphasizes team building through collaborative learning; 3) leads the nation in its service learning program; 4) offers professionally and technologically advanced methods of instruction delivery. The School of Pharmacy also enjoys a national reputation for the Clinical Pharmaceutical Scientist Program, an innovative PhD program that educates scientists to conduct translational and patient-oriented research.

The School of Pharmacy is a leader in research, with endeavors ranging from molecular genetics to human clinical research and patient-care outcomes. The School consistently ranks among the top ten schools of pharmacy in National Institutes of Health (NIH) competitive research funding.

The School of Pharmacy is home to the Center for Pharmacogenetics, the Center for Education and Drug Abuse Research (CEDAR), and the Center for Pharmacoinformatics and Outcomes Research. The School also houses the Cell Imaging Core of the Center for Reproductive Science, a Neuroendocrinology Research Consortium, as well as considerable chemistry expertise in the newly created Drug Discovery Institute of the University. Collectively, these programs have consistently placed the School among the top schools of pharmacy based on competitive research funding from the National Institutes of Health. Through its collaboration with UPMC, School of Pharmacy faculty members also lead the combined Pittsburgh Poison Center and Drug Information Center.

Organizationally, the School of Pharmacy is comprised of three units: the Office of the Dean, the Department of Pharmaceutical Sciences, and the Department of Pharmacy and Therapeutics. Instruction for the professional and graduate courses in the School of Pharmacy occurs mainly in Salk Hall, in shared classrooms and in a dedicated teaching laboratory. State-of-the-art research laboratories are located on the fifth through eighth floors and the tenth floor of Salk Hall. The ninth and eleventh floors house faculty and administrative offices exclusively. Faculty members also have laboratory facilities in the Biomedical Science Tower 3 as part of the Drug Discovery Institute. Some faculty members have offices in Scaife Hall, Lothrop Hall, and Falk Clinic as well as in UPMC hospitals, the Children's Hospital of Pittsburgh, and VA Pittsburgh Healthcare System hospitals, in proximity to their patient care practices. Off-site faculty and staff offices are also located in the Birmingham Towers on the South Side.

SCHOOL OF PHARMACY FACTOIDS

- 81 percent of U.S. schools of pharmacy use an online diabetes management course developed at the School of Pharmacy.
- The School of Pharmacy ranks #9 nationally, based on NIH research funding.
- Pharmacy researchers in the 1980s identified the mechanism by which hemoglobin transports oxygen.
- In 2007, the Pittsburgh Poison Center, directed by Pitt pharmacy professor Edward P. Krenzelok, responded to 133,343 calls.
- The School of Pharmacy is a leader in preventing and reducing deadly medication errors and has received seven national and three regional medication safety awards.
- The pharmacy school housed the first prototype for robots that dispense medications in hospital pharmacies across the country.
- The School of Pharmacy has produced three recipients of the Remington Medal, pharmacy's highest honor.
- The inaugural Remington Medal was awarded to Pitt faculty member James Hartley Beal, who drafted sections of the 1906 Pure Food and Drug Act.
- 1916 pharmacy graduate Ella P. Stewart was the first licensed African American female pharmacist in Pennsylvania and one of the earliest practicing Black female pharmacists in the country.
- Pharmacy school faculty developed the gas technology used for disinfecting the Hart Senate Office Building following the 2001 anthrax incident.
- The banana split was invented in 1904 by Pitt pharmacy alumnus David Strickler.
- 1929 pharmacy alumnus William Goode was the first African American male pharmacist and pharmacy owner in Pittsburgh.
- 20 percent of pharmacy school faculty members are recognized as elected fellows in the national scientific and professional organizations.
- U.S. Surgeon General Richard Carmona presented national award to Pitt pharmacy students in 2003 for Operation Immunization.



University of Pittsburgh
School of Pharmacy

Vision for 2012

Long-Range Strategic Plan

2006–2012



School of Pharmacy Vision for 2012

VERSION 18M

Long-Range Plan 2006–2012

During FY06, faculty and staff of the School of Pharmacy adopted revised mission, vision, and values statements and finalized a long-range strategic plan that extended through 2011; modifications were made with the input of faculty and staff to extend the plan through 2012. Only the action part of the plan is presented here. The full text of values adopted in 2001 is available upon request, as is full text of our plan that provides an assessment of the environment and the opportunities.

Mission

The School of Pharmacy is committed to
improving health through
excellence, innovation, and leadership in
education, research, patient care, and service.

Adopted July 2006

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

Long-Range Plan 2006–2012

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

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

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

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

Long-Range Plan Organization

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

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

The strategic outcomes within the Plan are organized using the subheadings of excellence, and innovation and leadership, where excellence refers to the organizational or operational recurring outcomes; innovation and leadership outcomes are strategic. The except is "assuring an adequate resource base," which is exclusively focused on excellence.

Annual retreats at the Johnstown and Greensburg campuses and at Southpointe along with half-day sessions on campus have been the major force for developing the Plan, measures, and tactics. PharmD student leaders engage with the process at their selected Annual Student Leadership Retreats and through the Dean's Advisory Board. It has been the firm belief of the School of Pharmacy leadership that the engagement of faculty, staff, students and trainees, and alumni of the School will result in the best possible chances for achieving the stated outcomes of our Long-Range Plan

Educating the Next Generation of Practitioners and Scientists

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

Adopted 2005

PHARM D PROGRAM

By 2012, the School of Pharmacy will have:

Excellence

1. Met or exceeded the standards for accreditation by ACPE, earning accreditation for the maximum interval of six years
Measure:
 - Years of accreditation granted
2. Consistently demonstrated the excellence of our students and their organizations by the awards and national recognitions they have received.
Measures:
 - national and regional awards to individual students (#)
 - student organization applications for regional and national awards (#)
 - regional and national awards to student organizations. (#)
 - Graduates who pursue residency training (#)
 - Graduates who pursue PhD or MS education (#)
 - NAPLEX pass rate (%)
 - MJPE pass rate (%)
3. Recruited and retained a diverse community of students.
Measures:
 - students admitted with degrees (%)
 - men admitted (%)
 - minorities admitted (%)

Innovation and Leadership

4. Developed a culture of innovation and scholarship in teaching and assessment.
Measures:
 - publications (#)
 - presentations (#)
 - faculty total producing scholarly work (#)
 - seeking grants (#)
 - participating in training programs through Pitt or other organizations (#)
 - teaching awards (#)
5. Developed credit-based opportunities for students to obtain international study experiences
Measures:
 - courses/rotations developed (#)
 - students/year (#)
6. Created curricular tracks/areas of concentration for specialization within the PharmD program.
Measures:
 - created the opportunity for curricular tracks (yes/no)
 - curricular tracks/areas of concentration (#)
 - students enrolled in tracks (#)
 - students who pursue additional training in AOC after graduation
7. Developed elective and required interprofessional education opportunities and courses within our curriculum.

Measures:

- opportunities (elective, required) (#)
- courses (#)
- students who access interprofessional opportunities (#)

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

Measures:

- pharmacy-patient care courses/modules developed/implemented (#)
- number of online courses, degree programs, or certificate programs developed (e.g. CTSI, other non-pharmacy-care)
- schools who access the program(s) each year (#) (track each program developed)
- people who access the program(s) per year (#)
- joint degree programs developed(#)
- MTM curriculum developed: Yes No
- pharmacists utilizing curriculum as continuing education (#)

9. Explored and potentially developed an "out-of-Pittsburgh" curricular program

Measures:

- opportunities explored (#)

GRADUATE PROGRAM

By 2012 the School of Pharmacy will have:

Excellence

10. Achieved recognition for the quality of the graduate students and graduate program.

Measures:

- students in the program (#)
- applications submitted for competitive fellowships (e.g. AFPE, NRSA, T32, F31) (#)
- fellowships awarded (#)
- student awards and honors from external entities (#)
- peer-reviewed publications authored by graduate students (#)
- students who attend national or international meetings (#)
- students who present at national or international meetings (#)
- PhD graduates per year (#)
- graduate students who take post-doctoral fellowships (#)
- graduate students who take academic positions (#)
- publications about program (#)
- faculty as primary mentors (#)

11. Recruited and retained highly academically qualified graduate students.

Measures:

- U.S. citizens or permanent residents admitted (%)
- stipend as a % of NIH stipend as a standard (%)

12. Educated graduate students who are highly sought after.

Measures:

- graduate students who take positions in industry (#)
- graduate students who take positions in government (#).

13. Rebuild the excellence of the Clinical Pharmaceutical Scientist Program as a national model for clinical and translational research in the pharmaceutical sciences.

Measures:

- faculty as primary mentors in the program (#)
- graduate students in the program (#)
- invited presentations by faculty about the program (#)

- graduates who enter academia (#)
- graduate students receiving national awards (#)
- graduate students receiving fellowships (#)
- presentations at national or international meetings (#)
- publications about the program (#)

Innovation and Leadership

14. Partnered with the Clinical and Translational Science Institute to develop learning opportunities for our students.
Measures:
- opportunities available (#)
 - participating students (#)
15. Developed MS program in pharmacy administrative sciences, including institutional and community practice administration.
Measures:
- programs (#)
 - students (#)
16. Advanced the graduate program in order to successfully compete for a PHS training grant.
Measures:
- students in program who qualify for PHS support (#)
 - applications for a PHS training grant submitted (#)
-

RESIDENCY PROGRAM

By 2012 the School of Pharmacy will have:

Excellence

17. Participated in the creation of accredited residency program and training of residents.
Measures:
- Residency programs (#)
 - programs accredited that are eligible for accreditation (%)
 - # partners for residency training (#)
 - residents total (#)
18. Achieved national recognition for the excellence of our residency programs.
Measures:
- universities from which residents were recruited (#)
 - applications per residency (#)
 - residents who present at a national meeting (%)
 - residents who published their research in peer-reviewed journals (%)
 - first-year residents continuing to PGY-2 program (%)
 - residents who earn an MS or PhD
 - residents who take academic positions (%)
19. Trained residents who compete successfully for national grants and awards.
Measures:
- # grants received by residents

Innovation and Leadership

20. Defined the criteria for and established "Residencies of Excellence" in targeted areas of focus.
Measures:
- develop criteria (yes/no)
 - residencies that meet the criteria for a "Residency of Excellence" (#)
21. Partnered in the development and implementation of a residency program model that emphasizes the commonality of community and ambulatory programs.

Measures:

- develop/implement community/ambulatory program (Yes or no)
- residents in community/ambulatory program

Advancing Human Health through Research

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

Adopted 2005

By 2012 the School of Pharmacy will have:

Excellence

22. Enhanced our reputation of research excellence.

Measures:

- ranking based on NIH funding (# rank)
- scientific conferences hosted (# per year)
- scientific organization program committees chaired by School faculty (#)

23. Diversified our portfolio of research funding.

Measures:

- non-NIH funding (%)

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

Measures: postdoctoral fellows:

- in training annually (#)
- who take academic positions (#)
- who take positions in industry (#)
- who take positions in government (#)

Innovation and Leadership

25. Competed successfully for a PHS training grant.

Measures:

- Funded faculty participating in the graduate program (#)

26. Competed successfully for a program project grant.

Measures:

- applications submitted (#)
- applications funded (#)

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

Measure:

- publications (#)
- grants (#)

28. Developed research collaborations through the Clinical and Translational Science Institute at the University of Pittsburgh.

Measures:

- grants to School faculty/students funded through the CTSI (#)
- programs funded (#)

Enhancing the Health of the Community through Partnerships

By 2012, the School of Pharmacy will have:

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

Adopted 2007

By 2012 the School of Pharmacy will have:

Excellence

29. Engaged in significant corporate partnerships for the purpose of providing patient care.

Measures:

- hospital partnerships (UPMC Presby/Shadyside, Childrens, VA, St. Margarets, Magee) (#)
- faculty who have patient-care practices at UPMC (#)
- faculty (total) who have patient-care practices (#)
- non-institutional partners for MTM and direct patient care (#)

30. Maintained and enhanced our reputation of practice excellence through honors and recognitions of our programs and our faculty.

Measures:

- faculty invited to make presentations at national and regional meetings (#)
- faculty members invited to consult about patient-care programs (#)
- national/regional program awards and recognitions (e.g. Cheers) (#)
- UPMC Quality and other awards (#)
- peer-reviewed publications about pat care/service models/outcomes (#)
- grants fro pharmacy service models/patient outcomes (#)
- learning visits/calls to our programs (#)

31. Developed evidence-based medication protocols and collaborative practice agreements that improve clinical outcomes, enhance patient safety, and reduce costs.

Measures:

- protocols developed (#)
- hospitals in which the protocols are implemented (#)
- UPMC collaborative practice agreements (#)

32. Provided poison and medication information to the public and to health professionals through our Pittsburgh Poison Center and Drug Information Center.

Measures:

- calls answered by Poison Center (#)
- calls answered by Drug Information Center (#)

Innovation and Leadership

33. Provided leadership in the safe and effective use of medications for the care of all UPMC patients through development and implementation of a comprehensive system for hospital care and transition to the community.

Measures:

- Immunizations administered (#)
- Anticoagulation patients (INRs handled) # thousands (# thousands)
- Medication use guidelines developed and approved (#)
- Surgical Care Improvement quality measures (SCIP-1, SCIP-2, SCIP-3) (#, #, #)
- Low-molecular weight heparin early discharges (#)

34. Created and implemented a pharmacy service model that integrates faculty and staff pharmacists and through which UPMC patients receive their care.

Measures

- Yes/No

- patient-care units served by the model (#)
 - units served by the model per hospital (%)
35. Participated in the care of underserved patients in local and global communities through the Grace Lamsam Pharmacy Program for Underserved Patients.
- Measures:
- Lamsam Program patients and patient visits (# patients, # visits)
 - patients who receive MTM/direct patient care (%)
 - prescriptions provided (#)
 - locations served (#)
 - prevention and chronic disease programs (e.g. smoking cessation, immunizations) (#)
 - collaborative practice agreements in place (#)
 - grant and gift support (\$ thousands)
 - students who gain IPPE or APPE experiences through the Program (#)
 - students who volunteer at Program sites (#)
 - volunteer pharmacists (#)
36. Partnered to create a state-of-the-art combined Pittsburgh Poison Center and Drug Information Center.
- Measures:
- Created combined Poison and Drug Information Center: Yes/No
37. Partnered to provide remote care for patients through technology.
- Measures:
- developed remote patient care program with a partner: Yes or No
 - program implemented: Yes or No

Enhancing Our Capabilities through Increased Efficiency and Effectiveness

By 2012, the School of Pharmacy will have:

- **increased effectiveness and efficiency and will have enhanced the professional growth of faculty and staff**

Renewed 2005

By 2012 the School of Pharmacy will have:

Excellence

38. Efficiently applied technology to optimize utilization of staff and faculty time and financial resources.
- Measures:
- programs offered for training faculty and staff on expanded use of technology (#)
 - faculty and staff trained (#)
 - applications of commercial and self-built programs and databases (#)
(e.g. School-wide adoption of Outlook (scheduling meetings), reservation of rooms/equipment, Coursecast for capturing video, PENS Software for experiential education, Admissions PharmCas/Pharmadmit, online view of applicant data for admissions committee, Department Manager, Task Stream, Blackboard, Turning Point)

39. Applied technology to effectively and efficiently deliver quality education to facilitate student learning.
Measures:
- software applications applied to teaching (#) (e.g. audience response, Pharmacal, Taskstream, Rotation assignment program)
 - technological platforms (# courses in which they have been adopted)
 - staff able to support adoption of technology within courses (#)
40. Improved efficiency and cost savings through initiatives identified and lead by the staff.
Measure:
- cost savings through bundling software and securing group licenses (\$)
 - costs saved through channeled spending and related opportunities (\$)
41. Enhanced communication for internal stakeholders
Measures:
- Presence of a student portal: Yes No
 - Presence of a faculty and staff portal: Yes No
42. Adopted a proven and effective technology platform that serves faculty, staff, students and others
Measures:
- calls to technology help desk (#)
 - satisfactory responses within 24 hours (%)
 - utilization of School's technology platform for support (# people)
 - Web page hits/traffic (#)

Innovation and Leadership

43. Enhanced faculty and staff knowledge of new technologies for teaching
Measures:
- Teaching technologies available (ARS, video taping, course cast, etc.) (#)
 - Training sessions offered (#)
44. Application of Lean and Toyota Productions System principles and practices, and value stream mapping for staff and some faculty processes.
Measures:
- application of principles: Yes or No
 - work processes specified (total # of work specifications developed)
 - work specifications revised (#)
45. Consistently partnered with CSSD in testing the application of technology.
Measure:
- early adopter or beta-testing partnerships with CSSD (# times)

Securing an Adequate Resource Base

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

Renewed 2005

HUMAN RESOURCES

By 2012, the School of Pharmacy will have:

Excellence

Faculty

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

Measures:

- faculty (# full time, #part time)

- board certifications (# ever)
- elected fellows (# faculty ever, # fellowships)
- nominations of faculty/staff for awards (#)
- research awards to faculty from external organizations (#)
- teaching/mentor awards to faculty from external organizations (#)
- patient care awards to faculty from external organizations (#)
- honors awards to faculty for outstanding service (#)
- distinguished alumnus designation, other awards from universities (# ever)
- faculty national/regional awards (# ever)
- faculty appointments to NIH study sections (#)
- editorial board appointments (#)
- faculty on non-industry advisory boards (#)
- faculty published in specific high-impact journals (#) ?publications ?# faculty?
- faculty who have received national awards (# ever)
- faculty invited to give national/regional/university presentations (#)
- faculty who have received Chancellor's Distinguished award (# ever)
- faculty recipients of other Pitt awards/recognitions (#)

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

Measures:

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

48. Faculty who have engaged as citizens to serve our profession and academic community.

Measures:

- faculty on at least one School of Pharmacy committee (%)
- faculty who participate in faculty governance, e.g. faculty assembly or senate (#)
- faculty members on University committees in past five years (#)
- faculty serving on committees in other Schools or Institutes at the university (#)
- faculty who have served at least one term as elected or appointed member of AACP/APhA/AAPS (# ever) ?# '06-'012?
- faculty who have served for at least one term in an elected or appointed position of a professional or scientific organization from 2006 through 2012 (#)
 - # of elected leaders in local, regional and national organizations
 - # local, regional and national committee memberships
- publications of scholarly article concerning practice or service engagement (#)
- presentations of educational programs to academic, institutional, industry, government, and community groups (#)
- # of honors and awards received in recognition of outstanding service contributions
- % of faculty pharmacists who volunteer for the Lamsam Program

Staff

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

Measure:

- administrative staff who attend biannual staff retreats (# and %)
- administrative staff who attend faculty/staff retreats (# and %)

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

Measures:

- internal development programs offered (#)
- staff attending external development programs (#)

- staff who have an individualized development plan (%)

Alumni, Friends, and Other Constituencies

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

Measures:

- times stakeholders received communication from the School (#)
- distinct print or electronic pieces developed (#)
- on-time production of communication materials (%)

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

Measures:

- # of times error message on web site

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

Measure:

- alumni total (#)
- rank for alumni engagement
- alumni participating in School and University events (#)
- email addresses obtained (%)

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

Measures:

- non-faculty preceptors for at least one student (#)
- rotations offered by non-faculty preceptors (#)
- preceptors who attend preceptor development programs (#)

FINANCIAL RESOURCES

By 2012, we will have:

55. Met the goals for the Capital Campaign.

Measure:

- total dollars raised toward the \$27 million Capital Campaign School goal (\$ total in millions)
- programs that develop new resource base/increase funding (#)

56. Increased the book value of the School of Pharmacy endowment from \$11 million to \$21 million.

Measure:

- Book value of the endowment

57. Increased total dollars and number of contributors through all sources of gifts.

Measures:

- total donors including organizations (#)
- annual giving (\$)
- total gifts and pledges (\$ million)

PHYSICAL RESOURCES

By 2012, we will have:

58. Renovated and refurbished existing space to meet programmatic needs

Measures:

- Sq ft renovated/refurbished (# SF)

59. Secured our place in the Master Plan for Oakland, assuring adequate space for the School's programs.

Measures:

- Total # assignable square feet of space allocated for School use
- Availability of state-of-the art research space in immediate proximity to Salk Hall

School-Based Initiatives



School-Based Initiatives

DISTINGUISHED LECTURE SERIES

This year marked the seventh year of the School of Pharmacy’s Distinguished Lecture Series. This series celebrates achievement in laboratory, clinical, and health policy research, all of which are fundamental to drug discovery and to safe and appropriate drug use. The Distinguished Lecture Series Committee, chaired by Dr. Wen Xie, selected this year’s awardees from an eminent group of nominees. These innovators and leaders in research spoke about their most significant discoveries and challenges.

FY08 Distinguished Lecture Series

Date	Distinguished Lecturer	Lecture Topic
September 18, 2007	Elwood V. Jensen, PhD Distinguished University Professor and George and Elizabeth Wile Chair for Cancer Research, University of Cincinnati College of Medicine; Member of National Academy of Sciences	The Contribution of “Alternative Approach” to Understanding Steroid Hormone Action
October 9, 2007	Craig B. Thompson, MD Director of the Abramson Cancer Center of the University of Pennsylvania; Member of National Academy of Sciences	A New Approach to Identifying the Initial Mutations That Lead to Cancer
March 4, 2008	Juan E. Mezzich, MD, PhD President, World Psychiatric Association; Professor of Psychiatry and Director, Division of Psychiatric Epidemiology and International Center for Mental Health, Mount Sinai School of Medicine, New York University	Toward a Medicine for the Person: Articulating Science and Humanism
March 26, 2008	Peter Wipf, PhD University Professor of Chemistry and Professor of Pharmaceutical Sciences; Director of the Center for Chemical Methodology and Library Development and the Center for Combinatorial Chemistry, University of Pittsburgh	The 52nd Annual Koch Lecture: Targeting the Vinca Domain
April 8, 2008	David W. Bates, MD, MSc Chief, Division of General Internal Medicine, Brigham and Women’s Hospital, Harvard Medical School	Improving Medication Safety Using Information Technology

ALUMNI ENGAGEMENT

For the second time in the three years, the School of Pharmacy ranked first in alumni engagement among the 18 schools and programs of the University. Of the 4,567 living alumni, 40.38 percent (up 3.84 percent from last year) were engaged with the School of Pharmacy and/or University in some way during FY08. The term “engagement” includes contributions to the University and participation in events and University support functions.

By percentage, Pharmacy alumni were first in life and regular memberships in the Pitt Alumni Association, first in participation in School and University programs, and second to the School of Medicine in percent of alumni who contribute financially.

In FY08 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:

- Homecoming celebration on Friday, October 19, 2007, in Salk Hall:
 - Alumni Day speaker, Charles Blackburn (BS '63), gave a presentation to pharmacy students.
 - Approximately 68 alumni attended the Banana Split Homecoming Party.
- Three receptions at national professional and scientific meetings:
 - American Association of Pharmaceutical Scientists honored president-elect Karen Habucky (BS '87, PhD'92) during the annual meeting, November 12, 2007, in San Diego, Calif.
 - American Society of Health-System Pharmacists, December 3, 2007, in Las Vegas, Nev.
 - American Pharmacists Association, March 15, 2008, in San Diego, Calif.
- The Sixteenth Annual Career Roundtables, February 13, 2008, in Salk Hall. Thirty alumni participated in this student event. Alums from 18 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 Second Annual Scholarship Tea, April 9, 2008. There were 59 guests comprised of scholarship donors and recipients of scholarships.
- Rxtravaganza Gala 2008: A Night On The Town, May 31, 2008, an annual celebration for alumni and friends. More than 260 alumni and friends enjoyed the Saturday evening dinner and dancing extravaganza, which was held at the Downtown Hilton Hotel in Pittsburgh.
- The School of Pharmacy Golf Invitational, June 13, 2008; 103 golfers participated, and the event raised \$22,122 for the Alumni Scholarship Fund.

SCHOOL OF PHARMACY RETREATS

Two faculty retreats were held during the past year. In addition to the goal of promoting communications and camaraderie among faculty, each retreat had the goal of enhancing the skills of the participants.

Curricular Retreat 2007

Wednesday, August 22, 2007

Salk Hall

The faculty gathered to review academic policies and procedures; map specific courses and content to the 13 curricular outcomes; and explore the use of case scenarios to show application of the pharmaceutical sciences, social sciences, and clinical practice. Drs. Samuel Poloyac, Dexi Liu, Amy Seybert, and Regis Vollmer shared the innovative educational strategies they each use to integrate the teaching of pharmaceutical sciences, social sciences, and clinical practice.

Mini-Retreat; Our Long-Range Plan—A Focus on Programs and Measuring Success
Friday, January 4, 2008
Salk Hall

The focus of the all-day meeting was to identify characteristics of great programs and to develop measurable outcomes for specific programs of the School. Faculty worked in small groups during the day, which ended with multi-voting. While the Long-Range Plan was updated in 2006, measurable outcomes were still needed to assure that the School's progress and successes are able to be recognized by us and by others.

Achieving Our Vision
Wednesday, June 11, 2008
Southpointe Golf Club, Canonsburg, Pa.

Morning: Individuals who have responsibilities for managing strategies and tactics that lead to the School's ultimate strategic goals met to discuss major accomplishments of the past year and goals for the coming academic year.

The afternoon session included all faculty members and began with a lunch-time presentation by Myron Z. Holubiak, president of 1-800-Doctors, Inc. As keynote speaker, he gave an insightful presentation about the future direction of pharmaceutical company research and development and its impact on pharmacy practice and health care systems. Presentation title: "An Outlook on the Future of the Pharmaceutical Industry and the Role of the Consumer."

Afternoon: The session, which included all faculty members, began with a brief faculty meeting that included updates on Salk Hall renovations, Blackboard posting guidelines, and policy changes and additions. Faculty members then formed small discussion groups to discuss: (1) bylaws and their implications for terms of service on School-based committees; and (2) short-term and longer-term visions regarding the structures of centers, focus groups, and divisions in the School.

CONTINUING EDUCATION

The School of Pharmacy partnered with the University of Pittsburgh Center for Continuing Education in the Health Sciences (CCEHS) to deliver three live continuing education programs in FY08:

- The Fall Continuing Education Seminar, "New Therapeutic Options for Diabetes, Rheumatoid Arthritis and Immunizations," featured presentations by Dr. Scott Drab, Dr. Shelby Corman, and Dr. Denise Sokos and was attended by 82 pharmacists.
- The Preceptor Program and Dinner, "Promoting Learning Through Experience," featured a presentation by Dr. Susan Meyer. The goal of this one-hour continuing education preceptor development program was to orient preceptors to the experiential learning program at the University of Pittsburgh School of Pharmacy and address Accreditation Council for Pharmacy Education (ACPE) guideline 14.1. It was attended by 54 preceptor pharmacists.
- The Spring Continuing Education Seminar, "Update on Neurological Disorders: Autism, Alzheimer's Disease, and Seizure Disorders," featured presentations by Dr. Martin Lubetsky, Dr. Christine Ruby-Scelsi, and Dr. Denise Howrie and was attended by 88 pharmacists.

BOARD OF VISITORS

Dean Patricia Kroboth and faculty hosted the School of Pharmacy Board of Visitors on November 7-9, 2007. The visit was structured around the three academic elements of the School's Long-Range Plan: education, research, and patient care. Board members held a series of discussions with faculty and students regarding progress toward achieving the strategic goals in these areas.

The visit culminated with a technology demonstration followed by a summary meeting at which the Board members met with Senior Vice Chancellor for the Health Sciences Arthur Levine and Vice Provost for Faculty Affairs Andrew Blair.

Board of Visitors

John A. Pieper, PhD, Acting Chair

Dean, College of Pharmacy
University of New Mexico

Donald J. Abraham, PhD

Professor Emeritus, Department of Medicinal
Chemistry, School of Pharmacy
Director, Institute for Structural Biology
and Drug Discovery
Virginia Commonwealth University

William L. Bailey, PharmD

Senior Director, Medical and Scientific Affairs
Sankyo Pharma Inc.

Richard J. Bertz, PhD

Director, Clinical Discovery Virology
Bristol-Myers Squibb, R&D

Daniel J. Cobaugh, PharmD, FAACT, DABAT

Director of Research
American Society of Health-System Pharmacists
Research and Education Foundation

John P. Innocenti, MBA

President
UPMC Presbyterian Shadyside

Coleen M. Kayden, RPh

Consultant Pharmacist
Medication Information Services
A Division of Williams Apothecary, Inc.

Patrick Quinn

Senior Director of Trade
Novo Nordisk Inc.

Victoria F. Roche, PhD

Senior Associate Dean
School of Pharmacy and Health Professions
Creighton University

David P. Rotella, PhD

Principal Research Scientists III
Wyeth Research

Rosalie Sagraves, PharmD

Professor, Pharmacy Practice
College of Pharmacy
University of Illinois at Chicago

Advancing Human Health Through Research



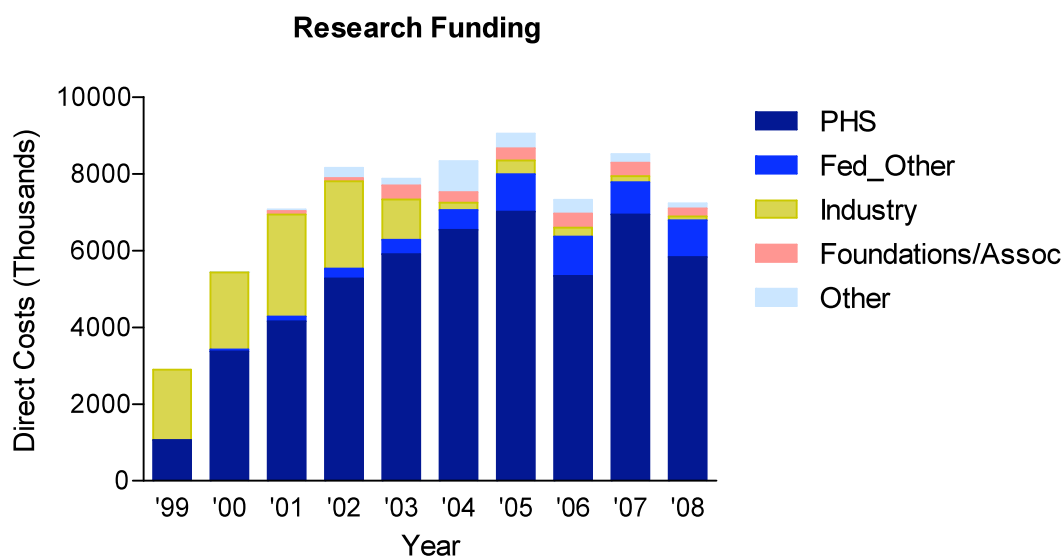
Advancing Human Health Through Research

By 2012, the School of Pharmacy will:

- **Be recognized as a research school of distinction.**

The overall goal of the School of Pharmacy's research programs is to advance human health through a diversified research portfolio that ranges from the molecular to the care of patients. 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 in a time of greatly increased competition for those limited resources.

The figure below shows direct cost figures associated with research by funding area for the past ten years.



SELECTED BRIEF RESEARCH HIGHLIGHTS

Drug Discovery Institute

During FY08, faculty:

- Developed and implemented a combination approach of high throughput biochemical and high information content cell-based screens for inhibitors of cytoplasmic dynein and for microtubule stabilizers. (Day lab)

- Advanced the research on the microtubule stabilizer 6-*epi*-dictyostatin into successful mouse breast cancer xenograft studies. (Day lab)
- Accomplished the first total synthesis of the cytotoxic and anti-angiogenic natural product tubulysin. (Doemling)
- Developed novel small molecular (ant)agonists of protein-protein interactions associated with apoptosis, *e.g.*, p53/Mdm2, IAPs and TRIAL. (Doemling)
- Designed and synthesized efficient and specific minor groove binding DNA alkylating agents for the treatment of cancer. These compounds have advantages over traditional antineoplastic DNA damaging agents in that they are extremely cytotoxic but only weakly mutagenic. (Gold)

Center for Education and Drug Abuse Research

Faculty have:

- Developed an instrument, termed the *transmissible liability index*, that captures the heritable risk for addiction.
- Reported that:
 - Quality of the neighborhood, indexed by number of abandoned houses, amplifies testosterone level in boys that in turn leads to aggressivity elevation and risk for cannabis use disorder by young adulthood.
 - Employing a parenting strategy of instilling guilt in children has no impact on reducing risk for addiction.
 - Girls and boys are more similar than different on the factors that cause the use of illicit drugs.
 - Exposure to alcohol prenatally by drinking in a pregnant mother amplifies psychological dysregulation in children which in turn promotes substance abuse and addiction.
 - Children scoring high on the transmissible liability index have lower activation level of the brain compared to children at low risk; indicating that the susceptibility to addiction has, in part, a neurobiological basis.

Center for Pharmacoinformatics and Outcomes Research

- Predictors of aripiprazole treatment continuation in psychiatric inpatients include younger age, a diagnosis of bipolar or major depressive disorder, higher maximum aripiprazole doses, and upward dose titration within three days of admission. (Coley, Fabian)
- Elderly inpatients treated with aripiprazole are most commonly initiated on a low dose (*e.g.*, 5 mg) of aripiprazole irrespective of their diagnosis. Agitation/activation is the most commonly reported side effect in this population. (Coley, Ruby-Scelsi, Fabian)
- Psychiatric inpatients at the highest risk for experiencing an in-hospital fall are those treated with alpha-blockers, non-benzodiazepine sleep aids, benzodiazepines, histamine-2 blockers, lithium, and atypical antipsychotics. (Lavsa, Coley, Fabian)

- When developing methods to detect adverse drug reactions as part of ICU patient safety surveillance systems, it is helpful to incorporate a computer system that uses abnormal laboratory values in conjunction with causal drugs as triggers. (Kane-Gill)
- When evaluating potential adverse drug reactions in an ICU setting, the Kramer algorithm, Naranjo Probability Scale, and Jones algorithm demonstrate similar results and therefore, the simplest instrument, the Jones algorithm, is preferred. (Kane-Gill, Verrico)
- Costs, length of stay, and mortality are higher in postoperative cardiac surgery patients who develop acute kidney injury (AKI) using RIFLE criteria, and these values increase as AKI severity worsens. (Kane-Gill)

Center for Pharmacogenetics

- The importance of ubiquitin in meiotic chromatin remodeling is widely appreciated, yet little is known about the pathways involved. UBR2 is a recognition E3 component of the N-end rule pathway, where Ub ligases recognize, for proteolytic polyubiquitylation, the N-termini of substrates as degrons. We find that UBR2 marks unsynapsed axial regions of meiotic chromosomes undergoing transcriptional silencing in spermatocytes. UBR2-lacking spermatocytes fail to induce transcriptional silencing of the sex chromosomes and, moreover, monoubiquitylation of histone H2A, a histone modification found in various chromatin inactivation processes. UBR2 and HR6B form an E3-E2 complex and cooperatively mediate H2A monoubiquitylation. Pachytene arrest and germ cell apoptosis of UBR2-deficient spermatocytes are associated with defects in repair of SPO11-induced double strand breaks. Our work unveils a Ub pathway controlling histone ubiquitylation and chromatin inactivation in spermatogenesis, providing new insights into the role of ubiquitin in chromatin remodeling. (Kwon lab)
- We have recently reported an E3 family (termed UBR1 through UBR7) characterized by the 70-residue UBR box. We further characterized substrate binding specificity and recognition domains of UBR proteins. Pulldown assays suggest that 570-kDa UBR4 and 300-kDa UBR5 bind N-degron, whereas UBR3, UBR6 and UBR7 do not. Binding assays narrow down the degron-binding activity to a 71-residue UBR box-only fragment that recognizes type-1 but not type-2 residues. A surface plasmon resonance assay shows that the UBR box binds to the type-1 substrate Arg-peptide with K_d of $\sim 3.4 \mu\text{M}$. Downstream the UBR box, we identify a region, termed the N-domain, whose residues are required for type-2 substrate recognition. We propose a model where the UBR box functions as a structural element for binding to all known destabilizing N-termini, whereas specific residues localized in the UBR box (for type 1) or the N-domain (for type 2) provide substrate selectivity through interaction with the side group of an N-terminal residue. Our work provides new insights into substrate recognition in the N-end rule pathway. (Kwon lab)
- In collaboration with Dr. Wen Xie, we have recently shown that activation of FXR results in enhanced NO production via coordinated regulation of a number of FXR target genes in vasculature, liver, and kidneys. These results suggest the potential of FXR ligands as a novel therapeutics for the treatment of various types of cardiovascular diseases. (Song Li lab)
- We have also developed a new series of cationic polymers that show improved transfection efficiency and significantly decreased toxicity over currently available polymers. Pulmonary delivery of a transgene for mini-urokinase plasminogen activator (uPA) results in significant

protection against lung injury in a mouse model of bleomycin-induced pulmonary fibrosis.
(Song Li lab)

- We have performed comprehensive structural, biochemical and molecular studies of interactions of nuclear receptor PPAR γ with coactivator PGC-1 α . The functional interaction between PGC-1 α and PPAR γ is critical for normal physiology of PPAR γ and its pharmacological response to antidiabetic treatment of rosiglitazone. Our results establish a structural model for understanding how PPAR γ interacts with PGC-1 α with high affinity and selectivity, and provide insights into the molecular basis for the preferential activation of PPAR γ by PGC-1 α in glucose homeostasis and adipocyte differentiation. (Yong Li Lab)
- We have determined the crystal structure of the PPAR γ ligand-binding domain (LBD) bound to nitrated linoleic acid, which provides the first structures of PPAR γ bound to a natural ligand. Structural and functional studies of receptor-ligand interactions reveal the molecular basis of PPAR γ discrimination of various naturally occurring fatty acid derivatives and also synthetic ligands. Since PPAR γ is an important target for type 2 diabetes drugs, our findings could be useful in the design of better drugs to treat type 2 diabetes. (Yong Li Lab)
- We have shown that the fatty acid transporter Cd36 is a shared target of LXR, PXR and PPAR γ . CD36 has been shown to be regulated by PPAR γ and PXR. In this study, we showed that activation of LXR also induced Cd36. Moreover, the hepatic steatosis induced by LXR agonists was largely abolished in Cd36 null mice. We conclude that the network of CD36 regulation by LXR, PXR and PPAR γ establishes this FFA transporter as a common target of orphan nuclear receptors in their mediation of lipid homeostasis. (Xie lab)
- We have recently revealed the anti-apoptotic role of pregnane X receptor in human colon cancer cells. In this study, we showed that activation of PXR protected colon cancer cells from deoxycholic acid (DCA)-induced apoptosis. Activation of PXR in transgenic mice inhibited bile acid-induced colonic epithelial apoptosis and sensitized mice to dimethylhydrazine (DMH)-induced colonic carcinogenesis. In summary, our results have established the anti-apoptotic role of PXR in both human colon cancer cells and normal mouse colon epithelium. (Xie lab)
- We have shown that activation of LXR sensitizes mice to gallstone disease and that activation of LXR sensitized mice to lithogenic (stone forming) diet-induced gallbladder cholesterol crystallization. The combined effect of increased biliary concentrations of cholesterol and phospholipid and decreased biliary concentration of bile salt in LXR-activated mice led to increased cholesterol saturation index and formation of cholesterol crystals. We propose that LXR is a lithogenic factor and the LXR transgenic mice may offer a convenient gallstone disease model to develop therapeutic interventions for this disease. (Xie lab)

CLINICAL AND TRANSLATIONAL SCIENCE INSTITUTE

Originating in 2007, the University of Pittsburgh received one of 12 Clinical and Translational Science Awards (CTSA) from National Institutes of Health. The University created the Clinical and Translational Science Institute to implement the award. During FY08, the University of Pittsburgh School of Pharmacy has remained committed to the success of this novel multidisciplinary institute:

- Three faculty members served on the CTSI internal advisory and executive boards.
- Five faculty served on CTSI T32 and KL2 mentorship committees.

- One faculty member chaired the CTSI core curriculum committee charged with developing the first CTSI specific, multidisciplinary, Web-based curricular offering in the fall of 2008 titled *Introduction to Translational Research in the Health Sciences*.
- One faculty member was awarded a competitive KL2 Faculty Development Award.
- Two graduate students received competitive CTSI long-term T32 awards.
- Two pharmacy students received CTSI short-term T32 summer research experience awards.

Furthermore, the Clinical Pharmaceutical Scientist Program and the professional student research programs have served as models for the development of CTSI graduate training programs and summer research programs, respectively. Based on these contributions, the School of Pharmacy has made a direct contribution to the outcomes of the CTSA grant, while simultaneously benefiting from the training opportunities available from this award. This synergistic relationship between the CTSI and the Clinical Pharmaceutical Scientist Program has provided a foundation for continued collaborative growth.

RESEARCH FUNDING

Direct Costs for Research by Funding Category

Source	FY02	FY03	FY04	FY05	FY06	FY07	FY08
PHS	\$5,269,880	\$5,905,214	\$6,534,485	\$7,013,478	\$5,338,778	\$6,934,873	\$5,829,075
Federal-Other	257,268	376,042	519,572	974,624	1,024,805	846,586	961,814
Industry	2,277,596	1,049,399	190,418	359,881	232,777	156,419	99,363
Foundation/Association	86,523	366,780	272,805	313,274	369,428	351,468	209,084
Other	261,494	174,049	811,652	380,527	355,421	222,110	134,181
Total	\$8,152,761	\$7,871,484	\$8,328,932	\$9,041,784	\$7,321,209	\$8,511,456	\$7,233,517

FY08 PHS Funding

Investigator	Agency	Agency #	Title	Direct \$	Indirect \$	Total
J. Amico	NIH	R01 HD044898	Anxiety and Stress Responses in Oxytocin Deficient Mice	170,673	77,388	248,061
R. Bies	NIH	P30 MH071944	Advanced Center for Interventions and Services Research for Late-Life Mood Disorders - Operations Core	5,433	2,635	8,068
R. Bies	NIH	P30 MH071944	Advanced Center for Interventions and Services Research for Late-Life Mood Disorders - Research Methods Core	8,150	3,953	12,103
B. Day	NIH	P01 CA078039	Bioinformation and Cell-Based Assay Core-Core B	31,939	15,491	47,430
B. Day	NIH	P01 CA078039	Combinatorial Approaches for Novel Anticancer Agents: Proj 3	2,636	1,278	3,914

Investigator	Agency	Agency #	Title	Direct \$	Indirect \$	Total
B. Day	NIH	P01 CA101944	Integrated NK and DC into Cancer Therapy	5,833	2,829	8,662
B. Day	NIH	P30 CA047904	Core - Basic Genomics and Proteomics Facility	8,010	3,885	11,895
B. Day	NIH	R01 CA120792	Chemical Approaches for the Discovery of New Cancer Therapeutic Targets	7,273	3,527	10,800
B. Day	NIH	R21 AL068784	A Quantitative Proteomic Study of MyD88 Pathways	4,151	2,013	6,164
B. Day	NIH	R03 MH081275	HTS Assays for Microtubule Stabilizers	16,667	8,333	25,000
B. Day	NIH	R01 CA090787	Mechanisms and Prevention of Etoposide-Induced Leukemia	18,378	8,913	27,291
A. Doemling	NIH	AI068021	P53 Pathway and Caspase Directed Radiation Mitigators	25,000	12,313	37,313
U. Feske	NIH	R01 DA020130	Drug Abuse & Risky Sex in Borderline Personality	234,449	99,183	333,632
R. Gibbs	NIH	R01 AG021471	Cholinergic Lesions and Age-Related Cognitive Impairment	213,340	65,705	279,045
R. Gibbs	NIH	R01 HD046700	Novel Rehabilitative Approaches for Recovery from TBI	5,398	2,686	8,084
R. Gibbs	NIH	R01 HD13254	Molecular and Structural Bases of Hypothalamic Puberty	5,790	2,889	8,679
R. Gibbs	NIH	R21 NS046292	A New Tool for Targeted Antisense Knockdown in Brain	122,972	44,696	167,668
R. Gibbs	NIH	U54 HD008610	Physiology and Pathophysiology of the Primate Gonad	5,987	2,904	8,891
B. Gold	NIH	R01 GM068430	Sequence Specific Triple Helix Forming Molecules	221,550	65,474	287,024
B. Gold	NIH	R01 CA029088	DNA Damage: Role in Toxicity and Mutagenicity	213,341	57,024	270,365
L. Kirisci	NIH	K02 DA017822	Quantifying and Tracking Risk for Substance Use Disorder	113,851	9,109	122,960
Y. Kwon	NIH	R01 GM074000	Proteomics of Ubiquitin-Dependent N-End Rule Pathway	182,548	83,055	265,603
Y. Kwon	NIH	R01 GM069482	Function and Mechanism of N-End Rule Pathway	199,118	80,557	279,675
Y. Kwon	NIH	R01 HL083365	Role of Ubiquitin in Cardiovascular System	242,750	108,023	350,773
S. Li	NIH	R21 CA018415	Nanosized Delivery System for Site-Specific Drug Release	100,000	48,500	148,500

Investigator	Agency	Agency #	Title	Direct \$	Indirect \$	Total
S. Poloyac	NIH	R21 DA021276	Persistent Impact of Developmental Nicotine on Cholinergic Input to DA Cells	8,662	4,201	12,863
S. Poloyac	NIH	R01 CA095239	Fatty Acid Synthase in Prostate Tumorigenesis	16,048	7,783	23,831
S. Poloyac	NIH	R01 NR004339	Role of 20 HETE on Vaso-spasm Induced Ischemia After SAH	43,240	20,971	64,211
S. Poloyac	NIH	R01 NS052315	Role of 20 HETE in Pathogenesis of Stroke	197,340	88,351	285,691
S. Poloyac	NIH	R01 GM07031	Implications of Hypothermia on Hepatic Drug Metabolism	169,925	79,483	249,408
S. Poloyac	NIH	S10 RR023461	API 4000 QTRAP	486,817	-	486,817
L. Rohan	NIH	U19 AI065430	CV-N-Secreting Lactobacilli and Retrocyclin Microbicides - Core B	61,499	24,529	86,028
A. Seybert	NIH	R21 LM009102	Evidence Based Anomaly Detection in Clinical Databases	5,088	2,468	7,556
G. Stoehr	NIH	R01 AG023651	Mild Cognitive Impairment: Prospective Community Study	16,309	7,992	24,301
R. Tarter	NIH	P50 DA005605	Drug Abuse Vulnerability: Mechanisms and Manifestations	1,280,669	464,228	1,744,897
R. Tarter	NIH	R01 AA014952	Molecular Studies of Cognition in Chronic Alcoholism	15,856	7,692	23,548
R. Tarter	NIH	R01 DE014899	Genetic Factors Contributing to Oral Health Disparities in Appalachia	10,983	5,327	16,310
R. Tarter	NIH	R01 NR009878	Adherence and Health Outcomes after Liver Transplantation	10,911	5,292	16,203
R. Tarter	NIH	R03 DA024097	The Effects of Cannabis Use/Abuse on in vivo Dopamine Function	14,427	7,322	21,749
M. Vanyukov	NIH	K02 DA018701	Phenogenetics of Liability to Substance Use Disorders	112,597	9,008	121,605
M. Vanyukov	NIH	R01 DA019157	Substance Use Disorder Liability: Candidate Gene Systems	315,788	111,853	427,641
R. Venkataramanan	NIH	U01 AT003566	Phase I/II Trials of Silymarin for Chronic Liver Diseases Data Coordinating Center	3,865	1,875	5,740
W. Xie	NIH	R01 CA107011	Orphan Nuclear Receptor PXR Controlled Bile Acid Detoxification in Colon Cancer	194,378	70,301	264,679

Investigator	Agency	Agency #	Title	Direct \$	Indirect \$	Total
W. Xie	NIH	R01 ES012479	Regulation of the Phase II UDP-glucuronosyltransferases by PXR	225,000	90,019	315,019
W. Xie	NIH	R01 ES014626	Regulation of Sulfotransferases by LXR and Its Implication in Pathophysiology	220,500	87,657	308,157
X. Xie	NIH	U54 MH074411	Pittsburgh Molecular Library Screening Center	14,693	4,687	19,380
X. Xie	NIH	R01 DA015417	A Public Cannabinoid Molecular Information Repository	239,243	134,412	373,655
Total				\$5,829,075	\$2,047,814	\$7,876,889

FY08 Other Federal Funding

Investigator	Agency	Title	Direct \$	Indirect \$	Total
J. Amico	Univ Arizona	Longitudinal Effects of Intimate Partner Relationship Quality on Serum Oxytocin Levels in Newly Diagnosed Breast Cancer Patients	22,815	11,065	33,880
J. Amico	Baylor Univ	A Functional MRI Study of Mother Infant Attachment	5,224	418	5,642
R. Bies	Univ Washington	Resource Facility for Population Kinetics	23,226	11,265	34,491
B. Day	DOD	Proteomics and Bioinformatic Core Facilities TATRC	57,712	20,717	78,429
B. Day	DOD	A Novel Approach for the Identification of Pharmacophores Through Differential Toxicity Analysis of Estrogen Receptor Positive and Negative Cell Lines	22,896	11,104	34,000
B. Day	DOD	Quantitative Proteomics of Nuclear Matrix Proteins in Novel Human Ductal Carcinoms in Situ Model Systems	250,000	121,250	371,250
Y. Li	Van Andel Institute	Structural and Functional Studies of the Nuclear Receptor PPAR γ	50,000	24,250	74,250
J. Pringle	Allegheny County	Screening Brief Intervention Referral and Treatment Initiative	218,182	105,818	324,000
J. Pringle	Allegheny County	Strategic Prevention Framework State Incentive Grant (SPF-SIG)	122,224	25,276	147,500
M. Sarachine	DOD	The Nuclear Matrix and Its Interactions with Estrogen Receptors: A Role in Development and Progression of Breast Cancer	30,000	2,400	32,400
R. Tarter	Assessments Illustrated	ALEXA Adaptation for Use in Large Scale Substance Use Surveys	52,412	26,318	78,730
R. Venkataramanan	Magee Womens	Obstetric-Fetal Pharmacology Research Units (OPRU) Network	97,123	47,104	144,227
R. Venkataramanan	DOD	Development of an Inhaled Dry Powder Delivery System for Administration of Atropine	10,000	4,850	14,850
Total			\$961,814	\$411,835	\$1,373,649

FY08 Industry Funding

Investigator	Agency	Title	Direct \$	Indirect \$	Total
S. Gill	Ortho McNeil	Case-Case Control Study of Carbapenem Resistant Pseudomonas Aeruginosa Infections: Risk Factors & Outcomes/DOR-OUT-002	75,500	18,875	94,375
J. Pringle	Candle, Inc.	Evaluation of the Reality Tour Drug Prevention and Awareness Program	12,820	2,180	15,000
R. Venkataramanan	APT Pharmaceuticals	Development of New Formulations and Delivery Systems for Inhaled Cyclosporine	11,043	2,761	13,804
Total			\$99,363	\$23,816	\$123,179

FY08 Foundation and Association Funding

Investigator	Agency	Title	Direct \$	Indirect \$	Total
E. Abel	ASHP	Clinical Outcomes Comparison Between Direct Thrombin Inhibitors (DTIs) for the Management of Heparin-induced Thrombocytopenia (HIT) in Patients Receiving Hemodialysis	4,630	370	5,000
B. Falcione	APAF	Improving Prescribing and Documentation of Immunization and Education for Vaccines Administered as Prevention of Overwhelming Post Splenectomy ...	1,000	0	1,000
S. Harriman	NACDS	Determining How Medication Therapy Management Service Can Meet Physician Patient Care Needs	17,391	2,609	20,000
Y. Kwon	AHA	N-terminal Oxidation-Dependent Ubiquitin Pathway	59,200	5,800	65,000
Y. Li	AHA	Mechanism and Specificity of Ligand Bind and Coactivator Assembly by PPARgamma	70,000	7,000	77,000
S. Meyer	APTR	Educating Interprofessional Student Teams to Promote Healthy Aging	9,720	972	10,692
J. Pringle	Spirit	Evaluation of Inside Out Program	7,143	857	8,000
M. Snyder	CPF	Great Partners for Patients Project	40,000	0	40,000
Total			\$209,084	\$17,608	\$226,692

FY08 Other Funding

Investigator	Agency	Title	Direct \$	Indirect \$	Total
B. Day	IPA	Application of Metabolomics in Psychosis and Therapeutic Monitoring	6,300	0	6,300
B. Day	USC	Genetic & Environmental Risk Factors for Bladder Cancer	59,582	23,077	82,659
H. Johnson	Hartford	Pharmacokinetics of Daptomycin in Patients Receiving Continuous Ven-Venous Hemodiafiltration	3,254	813	4,067
J. Pringle	IRETA	Addiction Technology Transfer Center	10,000	2,000	12,000
F. Vitale	UCSF	National Pharmacists' Partnership for Tobacco Cessation	55,045	4,955	60,000
Total			\$134,181	\$30,845	\$165,026

DEPARTMENT OF PHARMACEUTICAL SCIENCES SEMINARS

The Department of Pharmaceutical Sciences hosts a seminar series in which nationally recognized researchers are invited to present topics of general interest to the faculty and students of the department. This series enhances the research and teaching missions of the School in all of its focus areas by presenting cutting-edge research that will promote knowledge, stimulate ideas, and encourage collaborations.

Department of Pharmaceutical Sciences FY08 Seminar Series

Date	Lecturer	Lecture Topic
September 25	Richard Heller, PhD Professor, Department of Surgery and Medical Microbiology and Immunology Co-Director, Center for Molecular Delivery University of South Florida	Electrically Mediated Delivery of Plasmid DNA and its Potential Therapeutic Applicability
October 2	Neil Kaplowitz, MD Professor of Medicine Chief, Division of Gastrointestinal and Liver Disease University of Southern California	Drug-induced Hepatotoxicity: Insights from the Acetaminophen Mouse Model
October 23	Benjamin Shneider, MD Professor and Director, Hepatology Center Children's Hospital of Pittsburgh	Molecular Mechanisms of Inherited Cholestasis
October 30	Jun Chen, MD Professor of Neurology and Pharmacology School of Medicine, University of Pittsburgh	Programmed Cell Death in Cerebral Ischemia, Signaling Pathways and Therapeutic Targets
November 27	Kevin Rice, PhD Professor and Head Medicinal and Natural Products, Chemistry Department of Pharmacy, University of Iowa	Targeted Gene Delivery from the Needle to the Nucleus
December 4	Carey Balaban, PhD Professor, Departments of Otolaryngology, Neurobiology, Communication Science & Disorders, and Bioengineering, University of Pittsburgh	Identifying Inner Ear Targets for Drug Therapy in Balance and Hearing Disorders
January 15	James Boyer, MD Ensign Professor of Medicine Director, Liver Center, Section of Digestive Diseases Department of Internal Medicine, School of Medicine Yale University	Adaptive Responses to Cholestatic Liver Injury—The Role of OSTalpha/beta
February 12	Daniel Edmundowicz, MD Director, Preventive Cardiology and Director, Outpatient Operations, Div. of Cardiology, UPMC	Clinical Implications of Statin Use—Does the End Justify the Means?
February 19	Donald Burke, MD Dean, Graduate School of Public Health Associate Vice Chancellor for Global Health Director for Vaccine Research, University of Pittsburgh	Prevention and Control of Pandemic Influenza
March 18	H. Henry Dong, PhD Assistant Professor Dept. of Pediatrics, Children's Hospital of Pittsburgh	Molecular Basis of Diabetic Dyslipidemia
April 15	Yuri Lvov, PhD Professor, Tolbert Pipes Eminent Endowed Chair on Micro and Nanosystems Institute for Micromanufacturing, Louisiana Tech Univ.	Stable Nanocolloids of Poorly Soluble Drugs Using Layer-by-Layer Nanoassembly
April 22	Lawrence Marnett, PhD Director, Vanderbilt Institute of Chemical Biology Mary Geddes Stahlman Professor of Cancer Research Professor of Biochemistry and Chemistry School of Medicine, Vanderbilt University	Mining the Active Site of Cyclooxygenase II for New Substrates, Inhibitors and Imaging Agents

FACULTY RECRUITMENT AND CHANGES

New Faculty

Name	Current Rank	Department	Prior Institution/Rank
Kerry Empey	Assistant Professor <i>Start date 8/1/07</i>	Pharmacy and Therapeutics	University of Kentucky Graduate Student
Donna Huryn	Research Professor <i>Start date 8/1/07</i>	Pharmaceutical Sciences	University of Pennsylvania, Associate Director, Penn Center for Molecular Discovery, Chemistry
Karen Pater	Assistant Professor <i>Start date 8/1/07</i>	Pharmacy and Therapeutics	University of Illinois Chicago, Assistant Professor

Promotions

Name	Previous Rank	New Rank	Department
Yong Tae Kwon	Associate Professor	Associate Professor/Tenure	Pharmaceutical Sciences
Sripal Reddy Mada	Research Associate	Research Assistant Professor	Pharmaceutical Sciences
Samuel Poloyac	Assistant Professor	Associate Professor/Tenure	Pharmaceutical Sciences
Amy Seybert-Kobulinsky	Assistant Professor	Associate Professor	Pharmacy and Therapeutics
Sandra Kane-Gill	Assistant Professor	Associate Professor	Pharmacy and Therapeutics

Departing Faculty

Name	Previous Rank	Department	Position Accepted
Sripal Reddy Mada	Research Asst Prof	Pharmaceutical Sciences	Federal Drug Administration
Rebecca McNamee	Research Asst Prof	Pharmaceutical Sciences	School of Medicine, Department of Radiology
Gary Stoehr	Associate Professor	Pharmacy and Therapeutics	Founding Dean at D'Youville College, Buffalo, N.Y.
Maria Yaramus	Assistant Professor	Pharmacy and Therapeutics	Unknown
William Zamboni	Assistant Professor	Pharmaceutical Sciences	University of New Carolina Cancer Center, Chapel Hill

NIH/NCI STUDY SECTIONS

Billy W. Day, PhD

- Drug Discovery and Molecular Pharmacology (DMP) Study Section, Center for Scientific Review, National Institutes of Health, ad hoc
- Experimental Therapeutics, Medicinal Chemistry & Carcinogenesis Panel (G), National Cancer Institute of Canada

Song Li, MD, PhD

- NIH Developmental Therapeutics Study Section (September 27-28, 2007)
- NIH Developmental Therapeutics Study Section (January 31-February 1, 2008)

Dexi Liu, PhD

- Ad-hoc Reviewer, Biomaterial and Biointerfaces (BMBI) Study Section, NIH
- Ad-hoc Reviewer, NIH, ZGM1 GDB-7 (EUREKA)
- Ad-hoc Reviewer, the Wellcome^{trust} UK
- Ad-hoc Reviewer, Diabetes UK, UK

Ty A. Ridenour, PhD

- NIH, Special Emphasis Panel/Scientific Review Group: Loan Repayment Program

Michael M. Vanyukov, PhD

- NIH, Member (2005-2009 Chartered Member), Behavioral Genetics and Epidemiology Study Section (BGES), Center for Scientific Review
- NIDA Treatment Research Subcommittee, 2007/05 NIDA-E (2)
- NIH Center for Scientific Review Special Emphasis Panel “Genetics, Phenotypes and Endophenotypes of Psychiatric Disorders,” ZRG1 HOP-V (60)
- Member, NIDA Genetics Consortium
- Co-Chair, Addiction Severity Subcommittee, NIDA Genetics Consortium

Wen Xie, MD, PhD

- Ad hoc Reviewer, NIH Cancer Etiology (CE) Study Section, Center for Scientific Review.
- Ad hoc Reviewer, NIH/NIEHS, Superfund Basic Research Program (SBRP), (RFA: ES-06-003, ZES1 JAB C S7 P), September 24-27, 2007
- Ad hoc Reviewer, “Unrestricted projects in the Cancer Biomedical Field,” Institut National du Cancer (INCa, the French National Cancer Institute)
- Ad hoc Reviewer, NIH, Developmental Pharmacology, (Program Announcement PAR-07-416, ZRG11 CB-L (50)), July 21, 2008
- Ad hoc Reviewer, Department of Defense Prostate Cancer Research Program, Clinical and Experimental Therapeutics Committee (CET4) (2008)

Xiang-Qun (Sean) Xie

- Ad hoc member of NIH BLIRC Study Section, National Library of Medicine
- Member of NIH Scientific Review Panel, ZRG1 (Biophysical and Biochemical Study Section)

BIBLIOGRAPHY OF PEER-REVIEWED PUBLICATIONS**DEPARTMENT OF PHARMACEUTICAL SCIENCES****Publications**

Beumer JH, Garner RC, Cohen MB, Galbraith S, Duncan GF, Griffin T, Beijnen JH, Schellens JHM. Human mass balance study with the novel anticancer agent ixabepilone using accelerator mass spectrometry. *Investigational New Drugs*. 2007; 25(4):327-334.

Kosovec JE, Egorin MJ, Gjurich S, Beumer JH. Quantitation of 5-fluorouracil (5-FU) in human plasma by liquid chromatography-electrospray ionization tandem mass spectrometry. *Rapid Communications in Mass Spectrometry*. 2007; 22(2):224-230.

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Beumer JH, Parise RA, Newman EM, Doroshow JH, Synold TW, Lenz H, Egorin MJ. Concentrations of the DNA methyltransferase inhibitor 5-fluoro-2'-deoxycytidine (FdCyd) and its cytotoxic metabolites in plasma of patients treated with FdCyd and THU. *Cancer Chemotherapy and Pharmacology*. 2008; 62(2): 363-368.

Beumer JH, Eiseman JL, Parise RA, Joseph E, Holleran JL, Covey JM, Egorin MJ. Modulation of gemcitabine (2',2'-difluoro-2'-deoxycytidine, dFdC) pharmacokinetics, metabolism and bioavailability in mice by tetrahydrouridine (THU). *Clinical Cancer Research*. 2008; 14(11):3529-3535.

Beumer JH, Eiseman JL, Parise RA, Joseph E, D'argenio DZ, Covey JM, Egorin MJ. Plasma pharmacokinetics and oral bioavailability of 3,4,5,6-tetrahydrouridine (THU), a cytidine deaminase inhibitor, in mice. *Cancer Chemotherapy and Pharmacology*. 2008; 62(3):457-464.

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Bigos KL, Pollock BG, *Coley KC*, Miller del D, Marder SR, Aravagiri M, Kirshner MA, Schneider LS, *Bies RR*. Sex, race, and smoking impact olanzapine exposure. *J Clin Pharmacol*. 2008 Feb; 48(2):157-65.

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DEPARTMENT OF PHARMACY AND THERAPEUTICS

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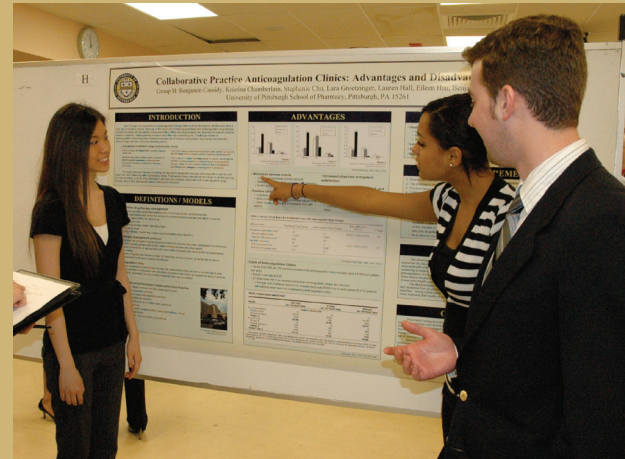
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Educating the Next Generation of Practitioners and Scientists



Educating the Next Generation of Practitioners and Scientists

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

By 2012, the School of Pharmacy will have:

- **Become a national leader in pharmacy education.**

This strategic outcome became the overall objective for the PharmD, residency, and PhD programs for the School of Pharmacy, replacing individual statements for each of the educational programs.

PHARM D PROGRAM

The strategic plan details elements that contribute to a position of national leadership in pharmacy education. The accomplishments described in this document are a direct result of the commitment of the faculty and the oversight of the PharmD Council, which was established in 2003. This integrating forum of faculty, staff, and students has the accountability for achieving strategic outcomes, establishing milestones, and aggregating data for quality measures for the PharmD program. Fourteen committees/activities of the PharmD program are represented on the Council.

Indicators of quality include:

- Achievements of student organizations and individual students
- Applicant qualifications
- Scholarships awarded
- Curricular changes and innovations
- Faculty achievements and awards

Students

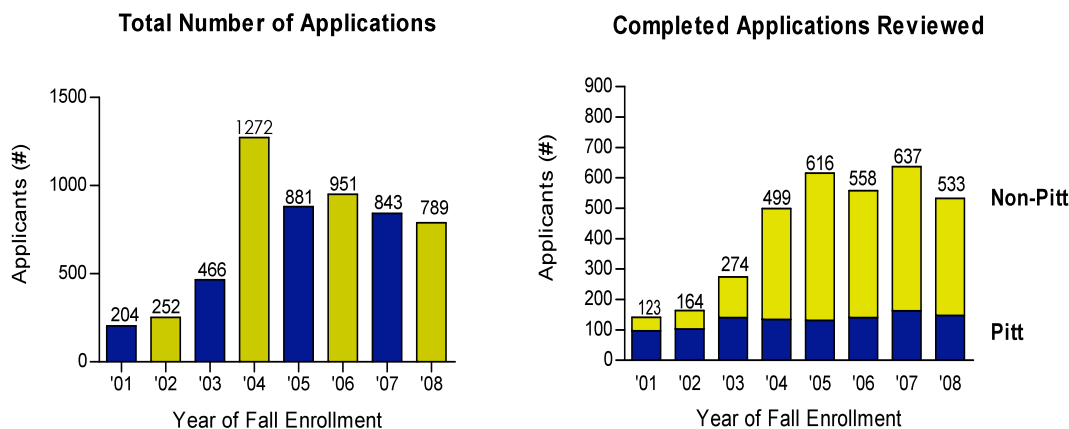
Applicants

Admission to the School of Pharmacy was highly competitive for the 108 positions in the Class of 2012.

- Forty-seven (47) of the 108 positions were students who had been conditionally accepted and who met the criteria for admission for the pharmacy program; a total of 65 had been accepted conditionally.
- Sixty-one (61) students entered from the open admission process.
- Materials were received from 742 applicants for open admission, 533 of whom completed the entire application process. Thus, there were eight applications for every one of the 61 open enrollment slots in the class.
- Competitive applicants had an overall GPA of 3.0 or greater and a science GPA of 3.0 or greater.

Applicant Interviews

Interviews of open admission applicants were initiated in December 2007 for conditional applicants for the Class of 2012. Interviews were standardized by conducting closed file interviews, holding training sessions for interviewers, and employing specific question sets and scoring rubrics to evaluate a number of behavioral dimensions and communications skills. Question sets and scoring rubrics were revised for this cycle based on experience in the previous year. Open admission applicants were selected for interviews based on a review of applications by an interview screening committee. Thirty-minute interviews were conducted by pairs of faculty members or by a faculty member paired with either an alumnus or staff member. Sixty-one faculty members, two alumni, and six staff members interviewed 174 applicants (53 conditional and 121 applicants selected to compete for 61 open spaces).



Applications* for Fall Enrollment 2001–2008

Year	Applications Received			Applications Reviewed			Average GPA	Average Math/Science GPA
	Men (%)	Women (%)	Total	Pitt	Non-Pitt	Total		
Fall 2001	33	67	204	97	44	141	3.40	3.21
Fall 2002	35	65	252	103	61	164	3.50	3.42
Fall 2003	28	72	466	140	134	274	3.37	3.23
Fall 2004	38	62	1272	134	1138	499	3.16	3.01
Fall 2005	33	67	881	131	485	616	3.33	3.17**
Fall 2006	38	62	951	140	418	558	3.34	3.21**
Fall 2007	37***	59***	843	163	474	637	3.34	3.19**
Fall 2008	35***	63***	789	147	386	533	3.40	3.25

* Applications are for the open enrollment portion of the class for which there were 61 seats; 47 students were from the conditional acceptance pool. Unless otherwise indicated, data reflect the reviewed applicants that completed the application process.

** Average Science GPA

First-Year Class Enrollments 2002–08

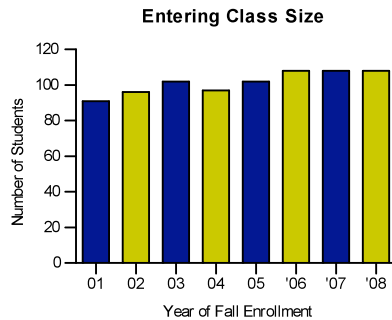
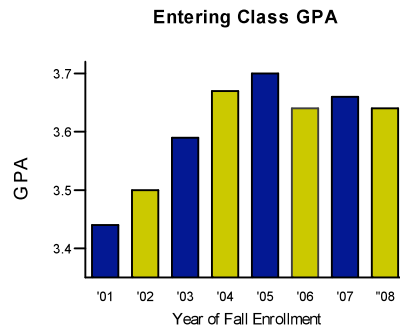
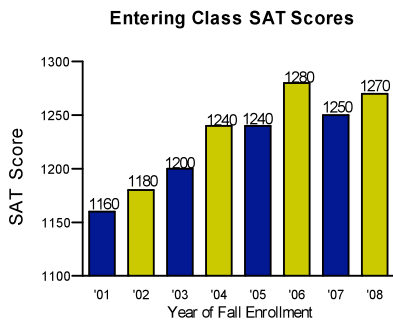
Fall Term	Residency Status		Application Pathway*					Students with 4-Year Degree (% of class)
			Conditional Acceptance	Educational Institution or Type for Students Accepted through Open Admission				
	PA (%)	Non-PA (%)		Pitt	Community College	AAU-member Institution	Other	
2002	92	8	37	37	5	5	12	16
2003	86	14	36	38	3	7	18	13
2004	85	15	52	28	0	4	13	15
2005	92	8	60	28	0	8	6	13
2006	87	13	50	44	1	3	10	11
2007	88	12	42	53	0	4	9	15
2008	86	14	47	42	0	2	17	19

*Total across Application Pathway sums to the total students enrolled; for Fall 2008, the total is 108.

Enrolled Students

Forty-seven students were admitted and enrolled through conditional admission and 61 through open admission for a total of 108 students in the class of 2012.

The graphs below display data regarding the academic qualifications of students and class sizes since 2001. When making decisions for open admission, the admissions committee considers evidence of sound scholarship, community involvement, leadership skills, and communication skills. The 108 students selected in 2007–08 to begin the pharmacy program in fall 2008 (the Class of 2012) are academically strong and match the class of 2011 as the largest entering class in recent history.



A goal has been to admit classes of students as diverse as the population they represent. Women continue to constitute the majority of the students in the class. Over the past eight years, women have constituted anywhere from 61 percent to 72 percent of the entering class, with women accounting for 66 percent of the Class of 2012. Nineteen (19) percent of the Class of 2012 holds a four-year degree prior to matriculating in the School of Pharmacy. Under-represented minorities (African American, Hispanic, and Native American) submitted 7 percent of the applications for fall 2008 and account for 3 percent of the Class of 2012. The percentages of the minority population of the P2, P3, and P4 class are as follows: Class of 2009, 2 percent; Class of 2010, 6 percent, and Class of 2011, 5 percent.

Graduates

Professional Performance. School of Pharmacy graduates consistently exceed the state and national pass rates on the North American Pharmacist Licensure Examination™ (NAPLEX®) and Multistate Pharmacy Jurisprudence Examination® (MPJE®) examinations.

North American Pharmacist Licensure Examination™ (NAPLEX®) Results

Year	Pitt Candidates Pass/Total	Pitt Pass Rate (%)	State Pass Rate (%)	National Pass Rate (%)
2008 ⁺	26/27	96.3	93.5	92.2
2007	97/98	98.9	90.9	95.3
2006	90/95	94.7	87.3	93.6
2005	79/80	98.8	85.3	91.3
2004	81/86	94.2	95.6	95.0
2003	20/22	90.9	89.2	88.2
2002	81/84	96.4	96.5	95.5

⁺Jan–April 2008 scores

Multistate Pharmacy Jurisprudence Examination® (MPJE®) Results

Year	Pitt Candidates Pass/Total	Pitt Pass Rate (%)	State Pass Rate** (%)	National Pass Rate** (%)
2008+	104/108*	96.3	91.7	91.8
2007	102/106*	96.2	90.0	91.5
2006	96/104	92.3	84.5	89.4
2005	166/183	90.7	87.5	88.6
2004	157/165	95.0	86.0	87.5
2003	143/147	97.3	93.2	92.1
2002	110/113	97.3	93.2	92.1

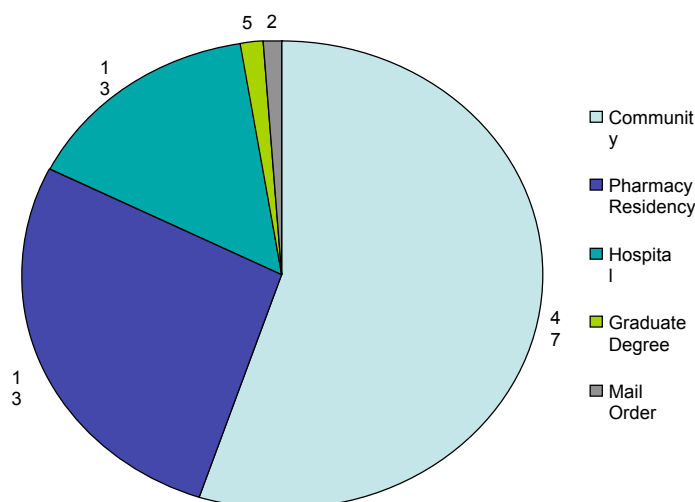
⁺Jan–June 2008 scores

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

** For all first-time candidates.

Post-Graduation Employment and Education Plans for the Class of 2008. At the time of graduation, each member of the Class of 2008 had found employment in one of the many varied pharmacy practice environments or sought post-graduate education and training in the form of a residency or graduate degree. Fifty-six (56) percent of the 80 graduates responding to a graduation survey indicated that they intended to remain in Pennsylvania immediately following graduation. The numbers next to the graph below represent the actual number of graduates pursuing the identified career track.

**Post-Graduate Employment and Educational Plans
Class of 2008**



Student Organizations

American Pharmacists Association–Academy of Student Pharmacists (APhA–ASP)

The American Pharmacists Association–Academy of Student Pharmacists (APhA–ASP) is the student governing body for the School of Pharmacy. Over 80 percent of the School’s PharmD students are members of our APhA–ASP Chapter, making it the largest student organization at the School. The 2007–08 academic year represented the first year of operation of the APhA–ASP Chapter under the revised, “umbrella” PharmD student organization structure. The revised structure provides a vehicle for communication of student organization activities across the PharmD student body.

A notable accomplishment of the APhA–ASP chapter this year was the successful completion of a public health project focused on smoking cessation. The project was directed at, and promoted the involvement of, peer University students in a competition to create 30-second commercials emphasizing the dangers and/or other negative implications of smoking. Prizes were awarded to the top three commercials as determined by independent judges. The commercials were made available to the University community via YouTube, and the winning commercial was shown at a University of Pittsburgh basketball game. The project received regional recognition at the ASP–APhA Midyear Regional Meeting and national recognition at the APhA and American Association of Colleges of Pharmacy (AACP) Annual Meeting.

Members of the APhA–ASP chapter traveled to Harrisburg for Legislative Day, an annual event promoting the profession of pharmacy to members of the state Senate and House of Representatives. In preparation for this event, the chapter held a writing etiquette workshop, and invited a guest speaker to talk on the importance of legislative advocacy. At these sessions, students learned about the value of membership in state organizations, pharmacy issues that were currently under review by the State House

and Senate, and the proper way to address legislators about pharmacy issues. Before attending Legislative Day, all students sent introductory e-mails to the House and Senate representatives to request a meeting with them during the day. In Harrisburg, students met with legislators and staff to discuss important issues of the profession focusing on reimbursement for medication therapy management services, expansion of the pharmacist's scope of practice, and safe medication disposal.

Other Student Organizations

Organization	Membership and/or Purpose
Dean's Advisory Board	Consists of elected officers from each class and president and president-elect of the ASP Chapter and meets with the dean once each month to discuss issues of student importance.
Student Chapter of the Pennsylvania Society of Health-System Pharmacists	Serves to introduce pharmacy students to opportunities within a variety of health-system settings.
Student Chapter of the Pennsylvania Pharmacists Association	Serves to introduce pharmacy students to professional and legislative issues impacting pharmacists and the practice of pharmacy in Pennsylvania.
Academy of Managed Care Pharmacy	Provides students with information about career opportunities in managed care pharmacy.
Student National Pharmaceutical Association	An educational service associate of students who are considered about pharmacy and health care issues, the welfare of the nation's underserved populations, and minority representation in pharmacy and other health-related professions.
Phi Lambda Sigma	An honorary leadership society that recognizes and fosters the development of leadership skills in its members.
The Rho Chi Society, Alpha Omicron Chapter	The honor society for pharmacy that recognizes students for their academic accomplishments.
RxPrep	Founded and organized to assist pre-pharmacy students as well as undecided students (freshmen and sophomores on the Oakland campus) learn more about the pharmacy profession and the PharmD curriculum.
Lambda Kappa Sigma	Professional pharmacy sorority (females only) whose members engage in a variety of volunteer community service activities.
Phi Delta Chi	Professional pharmacy fraternity (males only) whose members engage in a variety of volunteer community service activities.
Kappa Psi	Professional pharmacy co-ed fraternity whose members engage in a variety of volunteer community service activities.

Recognition and Awards

Recognition and Awards: Student Organizations

Student Organization	Award	Description
American Pharmacists Association Academy of Student Pharmacists (APhA-ASP)	APhA-ASP National Region 2 Award for 2006 Operation Immunization Campaign	Recognized for participation in national health campaign to increase community awareness of the importance of immunizations and to advise patients where to obtain proper immunizations.

Recognition and Awards: Individual Students

Student	Award	Description
Gretchen Kreckel (P3) Amanda Simpson (P2) Marilyn Torch (P3)	National Alliance of State Pharmacy Associations – Non-Prescription Medicines Academy of Student Pharmacists Self-Care Championship	State competition promoting interactive learning of patient self-care topics and non-prescription medicines. Team placed second among the six state colleges and schools of pharmacy.
Rachelle Busby (P3) Julie Lauffenburger (P1) Alissa Mittereder (P3)	Pittsburgh Schweitzer Fellows Program	One-year fellowship focusing on reducing disparities in health and health care and on developing leaders in service.
Eric Gardner (P1)	Carolina Summer Fellowship Program at UNC Chapel Hill	Opportunity for hands-on biomedical sciences research under the direction of a research pharmacologist.
Christina Mazur (P3) Matthew Sapko (P3)	Kappa Psi Scholarship (Two of six scholarships nationwide)	Awarded to students who demonstrate a high potential for success in the undergraduate pharmacy program on the strength of academic achievement.
Yardlee Kauffman (P2) Julie Lauffenburger (P2)	Association for Prevention Teaching and Research Paul Ambrose Scholarship (50 students selected nationwide)	Invited to attend student leadership symposium with other health care students dedicated to creating new visions, models, and experience for health professions education
Matthew Sapko (P3)	Pharmacy Times/Wal-Mart RESPy Award	Awarded for respect, excellence, and service in pharmacy.
Matthew Sapko (P3)	American Pharmacists Association Foundation Scholarship: Boyle Family Scholarship for National Region 2	Awarded for leadership, commitment to community service activities, academic achievements, essays, and recommendations.
Matthew Sapko (P3)	American College of Clinical Pharmacy StuNet Advisory Committee (One of nine students nationwide)	Selected to participate at national level to suggest future student programming at ACCP meetings and provide recommendations for student-related content on StuNet.

Student	Award	Description
Carlie Smith (P2)	Pitt Women's Tennis Team 100-Victory Club	Ninth member of the 100-victory club and first junior in Pitt's history to reach 100 victories in singles and doubles matches.
Robert Snyder (P3)	Big IDEAs Competition of the Institute for Entrepreneurial Excellence, Katz Graduate School of Business. Selected to compete at University of Nebraska 21 st Annual New Ventures World Competition.	One of six winners for his business plan for a patient advocacy company focused on reducing the complexity of health care by coordinating all health care professionals involved in patient care.
Robert Snyder (P3)	National Community Pharmacists Association Outstanding Student Member Award	Chosen by colleagues and faculty for dedication to the chapter and independent community pharmacy practice.
Jeremy Stultz (P4)	2007–08 Big East/Aeropostale Male Scholar-Athlete of Year	Recognized for outstanding diving and excelling in the classroom.
Jasmine Talameh (P4)	2008 Rho Chi-Schering Plough-AFPE First-Year Graduate Scholarship One student chosen nationally.	Recognized for high level of motivation for graduate student and research productivity.
Christopher Antypas (P3) Brooke Lowry (P3) Robert Snyder (P3) Student Editorial Board	Abstract accepted for faculty presentation at 68 th International Pharmaceutical Federation Congress in Basel, Switzerland	Presentation of Pharmacy Insights, a student-created Web site developed to share insights through student interviews with health care professionals.

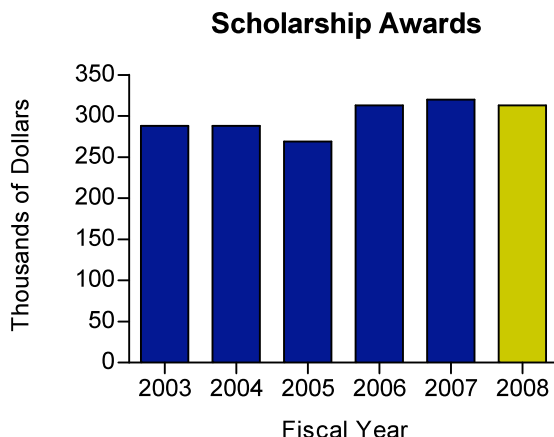
Student Awards at Graduation

Award Title	Student Awardee
The Lilly Achievement Award	Ashley Quintili
TEVA Pharmaceuticals Award	Jasmine TalemeH
GlaxoSmithKline Patient Care Award	Angela Slampak-Cindric
The Roche Award for Communication	Jennifer Friedl
The Robert W. Taylor Memorial Award	Natalie Culp
The Merck Award	Francis Iorfido; Forrest Moore
The Academy of Students of Pharmacy Certificate of Recognition	Toni Termin
The John Herman Wurdack Award	Janelle Stiefel
The Mylan Excellence in Pharmacy Award	Allison Kuckuck
McNeil/APhA-ASP Mortar and Pestle Professionalism Award	Meredith Mulvanity
Natural Medicines Comprehensive Database Recognition Award	Sarah Taylor
Perrigo Award of Excellence in Non-prescription Medication Studies	Brittany DeVoge
U.S. Public Health Service-Excellence in Public Health Pharmacy Practice Award	Rachelle Busby
Pennsylvania Pharmacists Association Award	Nickolas Kernich

Scholarship Awards

The School of Pharmacy awarded a total of \$312,583 in scholarships to 153 students. The breakdown by class is shown below:

- P4–Class of 2008 = \$98,733 awarded to 48 students
- P3–Class of 2009 = \$127,800 awarded to 49 students
- P2–Class of 2010 = \$55,700 awarded to 34 students
- P1–Class of 2011 = \$30,350 awarded to 22 students



Dr. Gordon J. Vanscoy White Coat Ceremony

The School of Pharmacy sponsored the Dr. Gordon J. Vanscoy Sixth Annual White Coat Ceremony in January 2008. The ceremony marks the entry of first-year pharmacy students into a profession committed to serving humanity. During this year's ceremony, 108 students were individually garbed in a white clinician's coat, the symbol of clinical service and care. The students recited the pledge of professionalism before faculty, family members, and friends, declaring their commitment to integrity, ethical behavior and honor. More than 600 guests attended the event.

Toward Leadership in Pharmacy Education

The PharmD program prepares graduates to identify, resolve, and prevent medication-related problems through:

- Patient assessment
- Pharmaceutical care plan development
- Medication therapy management
- Patient monitoring and pharmacodynamic decision making
- Safe medication preparation and distribution
- Systems management
- Health promotion

The curriculum integrates science with practice, reflecting the cooperative spirit of the faculty, its dedication to the profession, and its commitment to educating students to become practitioners who make a positive difference. Experiential education begins with the first term and continues throughout the curriculum, culminating with a full year of required and elective professional rotations.

Key initiatives moving us toward our vision of national leadership in education are described below.

Curricular tracks for specialization. The School has established two curricular tracks: one for research and one for Pharmacy Business Administration. The University has a formal designation to recognize students who have completed such tracks, referred to as Areas of Concentration. This year, the Curriculum Committee refined the process for the development of Areas of Concentration for the PharmD program; both programs are under consideration for designation as Areas of Concentration by the University. Faculty members continue to identify other professional practice areas for future development of Areas of Concentration.

International Education. The School of Pharmacy seeks to enhance the cultural competence of its students. The School now provides fourth-year students the opportunity to complete an elective credit-bearing clinical rotation outside the United States. In FY08, four students were supervised jointly by Pitt faculty and ISMETT staff at ISMETT (*Istituto Mediterraneo per I Trapianti e Terapie ad Alta Specializzazione*) in Palermo, Italy. The ISMETT pharmacy provides a fully integrated model of pharmacy operations and clinical services. Three students studied in San Jose Negrito, Honduras, in the Shoulder-to-Shoulder clinic.



In Honduras, students work as members of an interdisciplinary health care team to provide pharmaceutical care to patients. The clinics are a cooperative project between the University of Pittsburgh and Shoulder to Shoulder in San Jose, Honduras. Among the goals are to enhance students' understanding of the primary health care concept as proposed by the World Health Organization and of special issues related to medication therapy in a developing country.

Improving Diabetes Education Worldwide. DM Educate™ is a Web-based course that was designed by a team of educators at the University of Pittsburgh to provide faculty with the tools needed to deliver comprehensive diabetes management and education. The project was supported through a gift from Novo Nordisk and has shown significant growth in its widespread use in schools of pharmacy nationwide and for continuing education (CE) credits across several medical professions.

A total of 82 colleges and schools of pharmacy across the United States, Canada, Puerto Rico, and Lebanon have integrated DM Educate™ resources into their PharmD curricula. It is estimated that DM Educate™ has been shared with approximately 5,500 PharmD students since its first year of availability.

New features were added in 2007–08. The *DM Educator Portal* provides a forum for faculty to suggest new content for the course and to post learning exercises to be shared with others and provides faculty using DM Educate™ with up-to-date information related to the care of patients with diabetes, including information related to clinical trials, medications in the pipeline, safety alerts, and practice guidelines. The *DM Educate Instructor Group* offers the following features:

- DM Educate™ Users Guide
- Pre-and post-test documents for use by instructors
- PowerPoint slides with speaker notes for each lecture
- EndNote libraries of references for each lecture
- Forums that offer the ability to share new content, learning exercises, and exam questions

Recent accreditation through the Commission on Dietetic Registration allows for completion of the course for over 30 hours of continuing education (CE) credits for registered dietitians and registered dietetic technicians. This accreditation is in addition to the accreditation for CE of DM Educate™ by both the Accreditation Council for Pharmacy Education (ACPE) and the Pennsylvania State Nurses Association (PSNA). Over 950 individuals have registered for the course for CE credit since the launch of the CE site in March 2007. Thirteen regional and national corporations have taken advantage of the opportunity to engage large numbers of employees through group registrations.

Interprofessional Education. The School of Pharmacy has been engaged in a variety of educational activities aimed at preparing students to function as members of interprofessional patient care teams.

- *Interprofessional Team-Based Patient Care:* First offered in 2006, this elective experiential rotation brings together fourth-year pharmacy students with advanced-level students in medicine, nursing, and social work to learn about and actively practice interprofessional, team-based health care. Student teams are paired with patients and participate in various aspects of care including, assessment of a patient's disease, development of management plans, discharge planning, and follow up and care in outpatient settings.
- *Educating Interprofessional Student Teams to Promote Healthy Aging:* With a grant from the Association for Prevention Teaching and Research, Dr. Susan Meyer led a project team to design and deliver an 18-hour summer fellowship to educate and train students in team-based approaches to fostering healthy lifestyles in the elderly.

Three third-year pharmacy students (Julie Lauffenburger, Melanie Yonushonis, and Jeremy Stultz) joined seven other students drawn from medicine, nursing, dentistry, and public health in the program.

The project team included individuals from nursing, medicine, and dentistry. Partners in the delivery of the program included pharmacy faculty member Dr. Christine Ruby-Scelsi with partners from the Center for Healthy Aging, Graduate School of Public Health, Squirrel Hill Health Center, Riverview Towers, and Dr. Hollis Day of the Advanced Clinical Education program, School of Medicine.

- *Interprofessional Forum:* The School of Pharmacy is collaborating with the other schools of the health sciences to plan an Interprofessional Forum for first-year students in the clinical health professions. This program, to be offered for the first time in 2008, will expose biases and assumptions about specific health professions and professionals that have the potential to impact patient care, consider the importance of teamwork among health care providers from the patient's perspective, and describe how health profession education programs are facilitating student achievement of interprofessional team skills and practice models.
- *Basic Science of Care:* Three members of the School participate as faculty for this course, designed to guide students drawn from across the schools of the health sciences in an exploration of how the health care system works or fails to work, to identify potential solutions to systems flaws, and to develop a theoretical and practical foundation for the delivery of safe, effective, evidence-based, and interprofessional patient care.

Teaching Awards, Scholarship, and Innovations

As evidenced by faculty accomplishments in curriculum innovation, the School is moving toward its strategic plan of leadership in education. Notable accomplishments by faculty include:

- Drs. Bonnie Falcione, Denise Howrie, and Susan Meyer received funding for their proposal, “Development and Systematic Evaluation of Rubrics to Assess Value of Student Wiki Contributions in Collaborative Case-Based Learning,” from the Office of the Provost's Advisory Council on Instructional Excellence Innovation in Education. The funding will be used to study pharmacy student use of Wiki technology (Internet-based document archiving program recently made available on BlackBoard) for working on group projects that use patient cases. Specifically, the team will be looking at a way to evaluate individual student contributions for collaborative patient-care-based activities using this Wiki technology and will study the impact of using Wiki technology on student learning.
- Drs. Amy Seybert, Sandra Kane-Gill, and Regis Vollmer, along with Dr. Donald DeFranco (pharmacology-medicine) and Lawrence Kobulinsky, simulation specialist at the WISER Center, received an innovation in teaching award funded by the Office of the Provost's Advisory Council on Instructional Excellence for “Simulation Based Learning and Online Learning to Enhance Problem-Solving Skills in Acute Care Pharmacotherapy.” The project's goal is to develop critical thinking and problem-solving skills in doctor of pharmacy candidates by using human patient simulation. The Acute Care Pharmacotherapy course will combine on-line and simulation-based assessments of a student's knowledge and performance.
- Mr. Thomas Waters, director of IT and informatics, and Dr. Amy Seybert received a Virtual Learning Prize from the New Media Consortium (NMC) for their proposal “Measuring Heart Rate and How Medications Affect Heart Rate.” The purpose of this project is to create a simulated body with a beating heart. The basics created with this simulation may be used by learners at all levels in many different contexts. The New Media Consortium is an international not-for-profit consortium of more than 260 learning-focused organizations dedicated to the exploration and use of new media and new technologies. The NMC Virtual Learning Prize recognizes creative ideas for making optimal use of a virtual setting.
- Dr. Michael Shullo received the Rho Chi Award for Teaching Innovations.
- Dr. Kristine Schonder was selected as the Cohen Teacher of the Year.

Assessment

Significant progress was made in 2007–08 to develop an infrastructure that supports the use of data in a systematic and sequential way to assess curricular effectiveness, monitor student progressive development and achievement of stated learning outcomes across the curriculum, and support continuous quality improvement of the educational program. Several faculty groups have been working on assessment-related activities during 2007–08.

- *School of Pharmacy Education Team:* This leadership group, led by Associate Dean for Education Susan Meyer, coordinated the activities specific to completion of the “assessment grid” requested by the Office of the Provost and integration of data from a variety of sources. Participating as part of the Education Team were Associate Dean for Assessment and Curricular Outcomes Gary Stoehr, Assistant Dean for Academic Affairs Denise Howrie, and Curriculum Committee Chair Kristine Schonder.

- *Self-study Assessment Subcommittee*: This committee of faculty and students, chaired by Associate Dean for Education Susan Meyer, was charged to complete the self-study process relative to the Accreditation Council for Pharmacy Education (ACPE) Standard 15 and associated guidelines and to:
 - Summarize progress and key changes since the October 2002 self-study and evaluation visit
 - Compile documents, data, and descriptive texts for inclusion in self-study report appendices
 - Describe how the program is meeting Standard 15 and its associated guidelines
 - Describe noteworthy areas or concerns and strategies for quality improvement
- *Assessment Task Force*: This faculty and staff committee, chaired by Associate Dean for Education Susan Meyer, was charged to act on the initial findings of the Self-Study Assessment Subcommittee and propose a conceptual model for a curriculum assessment system for the school, outline component assessment activities, organize existing data-collection activities into the system, and develop timelines for the roll-out of the system and conduct of specific assessments.
- *Curriculum Assessment Committee*: This faculty and student committee, under the leadership of Associate Dean for Assessment and Curricular Outcomes Gary P. Stoehr, worked to develop a process to assess the coordinated and progressive development of student communication skills.
- *Portfolio Advisory Committee*: This faculty committee, under the leadership of Associate Dean for Assessment and Curricular Outcomes Gary P. Stoehr, continued its work to implement a portfolio process for assessment of progressive student learning, integration across courses and curricular years, and student achievement of curricular outcomes. A Web-based electronic portfolio process was implemented in fall 2007 with first-year students. These portfolios showcase archived collections of student work that demonstrate learning and professional achievement.

Experiential Learning Program

The experiential learning (EL) program is the program through which students learn and refine their patient care and pharmacy practice skills in a variety of practice environments. EL now constitutes 33 percent of the PharmD curriculum. The School's experiential learning office:

- Develops and retains qualified preceptors to guide student learning
- Maintains a system to assure quality student experiences
- Manages student placement with preceptors
- Facilitates communication among students, faculty, and preceptors
- Manages the process for evaluating students, preceptors, and learning sites

In 2007–08, 411 students across the four professional years benefited from 1,300 learning experiences under the direction of a preceptor. The introductory pharmacy practice experiences (years one through three of the professional curriculum) are offered primarily in the Pittsburgh and Western Pennsylvania areas. In the fourth professional year, local sites and sites outside of Allegheny County are used for advanced pharmacy practice experiences. Distant sites are located in California, Arizona, New Mexico, New York, North Carolina, South Carolina, Maryland, and Ohio. Opportunities for international experiences are available in Honduras and Palermo, Italy. Twenty-five percent of student placements are within the UPMC Health System.

Service Learning (P1 Year). Under the direction of community service workers in service organizations, students interact with patient populations that have special health care needs, such as the elderly, homeless, and terminally ill. Students increase their understanding of these patient populations, increase their awareness of circumstances affecting health and health care needs of different populations, and explore strategies to encourage public health through wellness and disease prevention programs and to address unmet medical needs within a community.

Scope of Service Learning Program

Community/Population Service Learning	Number of Experiences	Number of Sites
Children/Youth	35	2
Elderly	85 (61 elderly) (24 chron. ill)	9 (7 elderly) (2 elderly & chronically ill)
Disability/Chronically Ill	42 (18 chron. ill) (24 elderly)	5
Drug/Alcohol/HIV/Crisis	14	1
Homeless	39	4
Mental/Physical Health	26	4
Total	241	25

Community Pharmacy Practice (P2 Year). Community pharmacy practice is the focus of the experiential learning program in the second professional year of the curriculum. Students experience contemporary community pharmacy practice and develop skills to meet patient medication-related needs during their community pharmacy rotations, including skills to effectively develop patient-care practices in the community.

Scope of Community Pharmacy Experiences

Type of Community Practice Setting	Number of Experiences	Number of Sites
Chain Pharmacies	174	51
Independent Pharmacies	40	16
Total	214	67

Hospital/Institutional Pharmacy Practice (P3 Year). The practice of pharmacy in institutional practice and other unique health care environments is the focus of the professional experience program in the third year of the curriculum. Student learning in institutional practice is focused on systems management (including drug distribution, quality assurance, formulary management and patient safety); use of aseptic techniques for dosage form preparation and needed skills in calculations; and clinical practice skills (including patient assessment, design and monitoring of medication therapies). Students participate in drug delivery systems and develop and enhance skills necessary for providing pharmaceutical care in these settings.

Patient-Care Setting. In addition to practice in the institutional (hospital) setting, students were placed in new learning experiences in 30 unique care settings. These sites included acute care and ambulatory patient-care settings (such as cardiology, internal medicine, transplant, pediatric, oncology, NICU, and underserved clinics) as well as home infusion, compounding pharmacies, and managed care practices.

Scope of Hospital/Institutional Pharmacy Experiences

Type of Setting	Number of Experiences	Number of Sites
Hospital Settings	90	33
Unique Settings	57	23
Patient Care Settings	53	23
Total	200	79

Advanced Pharmacy Practice (P4 Year). The fourth professional year of the PharmD curriculum is devoted in its entirety to intensive practice of the pharmaceutical care process with exposure to patients with increasingly complex pharmacotherapeutic problems. Students complete seven five-week rotations:

- One inpatient acute care rotation
- One outpatient ambulatory care rotation
- One advanced community pharmacy practice rotation
- One advanced hospital/institutional pharmacy practice rotation
- A second inpatient acute care rotation or outpatient ambulatory care rotation
- Two elective rotations (e.g., consulting pharmacy, FDA, managed care)

Scope of Advanced Pharmacy Practice Experiences

Type of Practice Setting	Number of Sites Used	Number of Student Experiences
Acute Care	69	207
Ambulatory Care	44	130
Type of Practice Setting	Number of Sites Used	Number of Student Experiences
Elective	56	118
Advanced Community	90	123
Advanced Institutional	55	101
Total	314	679

Preceptors. Pharmacists with patient care and other professional responsibilities serve as preceptors for professional students throughout the Experiential Learning Program. While some of these preceptors are faculty members, 90 percent of the 982 School preceptors are volunteers. During 2007–08, there was a net gain of 64 preceptors and sites.

Preceptor Gain/Loss for FY08

Type of Rotation Experience	Gain	Loss
Acute Care	12 preceptors	1 preceptor
Ambulatory Care	2 sites	
Community	30 preceptors	4 preceptors
Hospital	13 preceptors	
Elective Rotations	12 preceptors	

Students in the P4 year have the opportunity to nominate for the Roche Preceptor of the Year Award a preceptor who is an exceptional role model and who has made outstanding teaching contributions during the year. The Experiential Learning Committee reviews nomination letters and makes the final selection. The 2007–08 awardees were:

- Dr. Scott Drab, assistant professor, Department of Pharmacy and Therapeutics. Dr. Drab provides ambulatory care rotations at the University Diabetes Care Associates site.
- Dr. Nicole Ansani-Jankowski, clinical education consultant, Pfizer, Inc. Dr. Ansani provides an elective rotation.

Enhancing the Experiential Learning Program. The Experiential Learning Program continues to evolve to provide quality educational experiences while ensuring compliance with the Accreditation Council for Pharmacy Education (ACPE) standards. In 2007–08 the following enhancements took place.

- The requirement for hours spent at experiential sites was increased across each year of the professional program to comply with ACPE standards.
 - The P4 Advanced Pharmacy Practice Experiences (APPE) were changed to seven five-week blocks plus a one-week Skills Enhancement course to prepare students for the APPE rotations.
 - Based on input from students and preceptors, the P3 Experiential Learning rotation requirement was changed to two 40-hour blocks, replacing the previous schedule of three hours per week for 12 weeks.
 - Students in the P2 and P3 years were required to take part in an experiential learning project of their own choosing. Minimum time standards were established for the projects.
 - On-site time in the P1 and P2 years was increased to 40 hours per semester.
- The Education Management Systems (EMS) Web-based software from ROI Solutions Group, Inc., was obtained with the help of a grant from CVS/pharmacy. EMS has greatly enhanced the School's ability to manage data associated with students, preceptors, and rotation assignments.
- The School worked in collaboration with the Pennsylvania Coalition of Schools of Pharmacy to designate the APhA/NACDS program, "Community Pharmacist Preceptor Education Program," as the standard educational tool for pharmacists wishing to precept PharmD students from any school in Pennsylvania.
- The School sponsored a Preceptor Program and Dinner at the Twentieth Century Club that 50 preceptors attended. The program, "Promoting Learning through Experience," provided 1.0 contact hour of continuing education and the evening gave us the opportunity to show our appreciation for the efforts of our preceptors.
- Outreach to preceptors included personal visits by the director of experiential learning, limited access to the Health Sciences Library Service, and provision of free continuing education to preceptors through the School Web site.
- Through work spearheaded by Dr. Denise Howrie, a mastery-based assessment process for APPEs was implemented. Initial analysis of data showed that students demonstrated progressive mastery for all curricular outcomes across the P4 APPEs.

Enhancing Curriculum Content and Process

The Curriculum Committee continued ongoing efforts and adopted new processes to enhance and manage the curriculum. Recommendations of working groups that were formed to assure progressive development in targeted content areas were implemented and expanded within the curriculum. Examples of these efforts include:

- **Culturally Responsive Care.** Students participated in blood pressure screenings as part of the Latino Health Fair. Additional opportunities for students to interact with culturally diverse populations continue to be identified.
- **Professional Inquiry.** Professional Inquiry is sequentially threaded throughout the curriculum beginning with basic skills in the first year and culminating with the seminar presentation in the fourth year. Specific recommendations of the working group to standardize referencing materials and formatting in all courses of the curriculum continue to be implemented.
- **Public Health.** Changes implemented in the first three years of the curriculum focus on broadening the pharmacist's role and understanding of public health and the need to develop a public health system within the community. Exercises designed to enhance communications skills in the second year were expanded to include health literacy, patient communication, and interprofessional team-based care.

New processes to facilitate management of the curriculum were adopted, including:

- **Professional Elective Course Review and Approval Process.** The committee evaluated courses previously approved that students may take outside the School of Pharmacy to fulfill credit requirements for professional electives. Courses that did not meet the rationale objective for a professional elective were removed from the list. Additionally, the committee adopted a systematic process for approving professional elective courses not included on the list.
- **Special Topics Elective Review and Approval Process.** The committee revised the description and process for approval and completion of the Special Topics elective that allows students to perform scholarly activities.

New processes aimed at enhancing curriculum oversight were developed and enhanced, including:

- **Establishment of Professional Year Coordinators** to manage communication between the committee and course coordinators and help to facilitate integration of course content and schedules between courses within each professional year of the curriculum.
- **Implementation of a systematic course review process** to evaluate objectives, content and outcomes of courses within the curriculum. Five courses were reviewed in the past year, including Advanced Pharmaceutical Care 2, Biochemistry 1 and 2, Infectious Diseases and Neurology/Psychiatry. Course coordinators were provided feedback by committee members to enhance student learning within each course.
- **Revision of course coordinator and staff responsibilities** to enhance organization and communication with students within individual courses.

The committee also recommended guidelines for a process to expand opportunities for students to gain academic recognition for concentrated studies within a focused area. The guidelines provide a mechanism

for programs to be developed that combine didactic and practice experiences to enable students to acquire the knowledge, skills, and attitudes for more specialized practice or research careers. The programs developed under these guidelines will be submitted for University approval to be recognized as areas of concentration. Two programs are currently being developed under this process: Pharmacy Business Administration and Research.

During 2007–08, the faculty planned and executed new required and elective courses while continuing to refine and enhance existing courses by incorporating new content, teaching methods, and assessment strategies to optimize student learning. Courses undergoing substantive changes included:

- *Biochemistry 1 & 2*: Course coordinators and faculty selected a new textbook and revised course content to align with the new text.
- *Pharmacotherapy of Cardiovascular Diseases: An Objective Structured Clinical Examination* was added to the course to assess student skills to provide pharmaceutical care related to the cardiovascular system in a simulated patient environment. The class sequence was also realigned to place nephrology-related topics together as a block of content at the end of the course.
- *Profession of Pharmacy 4*: A new course coordinator revised course content to expand public health, interprofessional care, communication, and management skills.
- *Gastroenterology/Nutrition*: Course content was reallocated to combine related topics (inflammatory bowel disease and irritable bowel syndrome) and scaled back (viral hepatitis) to allow for addition of new content (nutritional assessment and enteral nutrition).
- *Advanced Pharmaceutical Care 1*: The use of problem-based learning (PBL) was expanded with the addition of cases in sexually transmitted diseases, depression, heart failure, and diabetes mellitus.
- *Experiential Learning 3 & 4*: Directed practice assignments focused on increasing understanding of all aspects of the community pharmacy and expanding pharmacy services in a community pharmacy, in addition to patient interactions and interviews, were developed and implemented.
- *Profession of Pharmacy 5*: Capstone experience was changed from a group assignment to an individual assessment. The capstone experience involves a role-play scenario whereby students defend an evidence-based recommendation for a patient case. Instructors also present a sample journal club as a model for students.
- *Profession of Pharmacy 6*: Content was revised to prepare students for the seminar course in the fourth year. Baseline assessment questions were included to evaluate student attitude toward presentations. The audience response system was used to reinforce teaching points, based on recommendations from students from the Continuous Quality Improvement assignment in previous years.
- *Immunology*: Students received instruction on developing instructional presentations to enhance student communication skills and group presentations, which are included in the content evaluated on quizzes and exams in the course.
- *Oncology/Hematology*: New course coordinator and faculty revised course content and delivery.

- *Advanced Pharmaceutical Care 2*: New course coordinators divided the course into two distinct content areas: critical care and nephrology. The PBL format was also changed to include two four-part cases that allow students to modify a recommendation based on extended patient follow-up. The capstone case was expanded to include content from the entire curriculum. Students were provided a “medical record” for a 5-day hospital stay that addresses cardiovascular, endocrine, renal, and critical care issues.
- *Neurology/Psychiatry*: Course content was reallocated to provide psychiatry content earlier and increase content coverage to include other disease states, such as post-traumatic stress disorder and stroke. Other content (muscle relaxants and anesthetics) was moved to other courses in the curriculum (APC 2) to allow for better content alignment.
- *Experiential Learning 5 & 6*: Pharmacy practice experiences were changed such that students completed two “full-time” (40-hour) weeks: one in institutional practice; and the other in either an acute/ambulatory patient care site, managed care, compounding or other unique site.
- *New elective courses*: Faculty developed and presented new professional elective courses for the P3 class, including *Clinical Nutrition, Cardiovascular and Critical Care Pharmacotherapy Simulation*, a Pharmacy Administration series (4 courses), and the *Executive Boardroom I* series (2 courses). Also approved was *Introduction to Translational Research in Health Science*, an interprofessional course to be offered in each of the Schools of the Health Sciences, designed to develop a multidisciplinary educational core for research.

Enhancing Education Through Professional Development

The School of Pharmacy inaugurated the Faculty ACES (Advancing Careers through Education and Scholarship) program in April 2008, a coordinated faculty development program to assist faculty to achieve academic roles as educators, scholars, and valued contributors to the School. Program goals include:

- expanding array of development opportunities available to faculty
- increasing faculty participation in academic career development programs
- improving instructional skills and the use of innovative methods and technology
- motivating faculty and stimulate new ideas in teaching and assessment
- promoting educational scholarship

The Faculty ACES program includes live, bi-monthly instructional programs for faculty including a yearly faculty orientation to teaching and curricular programs. A catalog of available university programs for academic development is maintained for the faculty. Presentations by school faculty and staff from the Center for Instructional Development and Distance Education (CIDDE) focus on topics identified as needed by the faculty. Themes for the program include instructional pedagogy, innovative technologies and their applications, and academic roles and resources.

The School of Pharmacy inaugurated a Resident Teaching Series in fall 2007. This 10-session program provides pharmacy residents a forum for learning and discussing educational principles that serve as foundations for quality teaching: learning fundamental steps as “building blocks” to effective teaching; exploring teaching methodologies and effective applications in teaching environments; understanding different techniques for assessment of learning and selecting those appropriate for a given instructional setting; and building a teaching portfolio. Residents participate as instructors in pharmacy courses with individual faculty mentoring in content and teaching skills and constructive formative feedback from students and faculty. In 2007–08, 14 residents attended the Teaching Series and eight residents participated as instructors with supervision.

POST-PHARMD RESIDENCY PROGRAM

Program Description

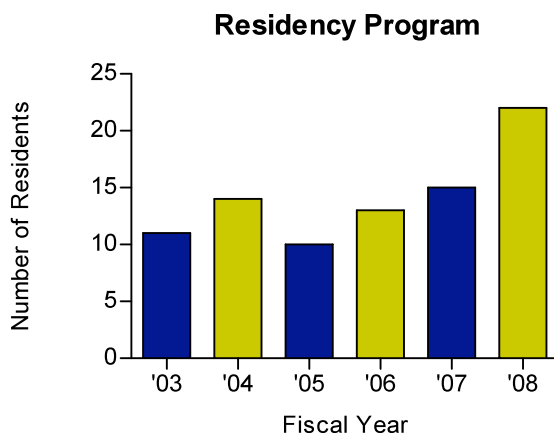
Since 1990, approximately 185 pharmacists have complete residency programs within the School of Pharmacy. The goal of the residency program is to train advanced practitioners who will become future leaders in the profession of pharmacy. These residency programs are either advanced pharmacy practice experiences or training in a specialty area of practice. Specialty residencies include critical care, family practice, cardiology, drug information, infectious disease, managed care, community care, pharmacy management and transplantation.

The School of Pharmacy partners with UPMC, Rite Aid, CVS Caremark, and the VA Pittsburgh Healthcare System to make the residency program a diverse and dynamic experience for peer learning.

Accomplishments

During FY08:

- The residency grew by 50%, graduating 22 residents from the School of Pharmacy Residency Program. These residents represented 14 schools of pharmacy. We exceeded our goals and have graduated the largest residency class in the history of the program.
- Thirty-one residents were recruited for the FY09 residency year, representing a 41% increase over FY08. The increase is due to expansion of current programs as well as the addition of new programs (specialty residency in solid organ transplantation, incorporation of UPMC Mercy pharmacy practice residency).



- Three of fourteen residents (21.4%) who pursued jobs accepted academic positions at schools of pharmacy (Pitt, Medical University of South Carolina, University of Sciences in Philadelphia).
- Of the 14 first-year residents, 8 (56%) are pursuing advanced specialty residency training.
- Two residents earned a Master in Public Health degree. (Gonzaga, McMillen)
- One resident earned Board Certification in Pharmacotherapy, an unusual occurrence during the residency year. (Polisetty)

- Four residents received grants to support their research:

Harriman S, Pringle J, Smith RB, Garcia G, Somma McGivney MA. “Identification of Physician-Patient Care Needs Able To Be Provided by Community Pharmacy-Based Medication Therapy Management Services.” National Association of Chain Drug Stores (NACDS) Foundation. \$20,000. December 2007.

Harriman S, Pringle J, Smith RB, Garcia G, Somma McGivney MA. “Identification of Physician-Patient Care Needs Able To Be Provided by Community Pharmacy-Based Medication Therapy Management Services.” American Pharmacists Association (APhA) Foundation Incentive Grant. \$1,000. December 2007.

Garcia G, Harriman S, Pringle J, Snyder M, Smith RB, Somma McGivney MA. “Generating Demand for Medication Therapy Management Services: Identification of Employee Medication Related Needs and Values.” American Pharmacists Association (APhA) Foundation Incentive Grant. \$1,000. December 2007.

Abel E. “Clinical Outcomes Comparison of Direct Thrombin Inhibitors for the Management of Heparin-Induced Thrombocytopenia in Patients Receiving Hemodialysis.” ASHP Foundation for the New Practitioners Resident Practice-Based Research Grant Program. \$5,000. 2008.

- Residents completed the School of Pharmacy Residency Research Series, comprised of didactic and interactive sessions focused on research skills. The residents were also certified in the fundamentals of research.
- All 22 residents presented their research projects through the Department of Pharmacy and Therapeutics Seminar Program.
- Eleven residents presented their research in the UPMC Pharmacy Grand Rounds series for ACPE-accredited continuing education credit.
- Twenty-one (95%) residents presented their research at either regional (Eastern States Residency Conference) or national (APhA, AMCP, ACCP) conferences.
- Fourteen (93%) residents are members of national pharmacy organizations.
- Residents completed the School’s orientation program, which includes a session on teaching, learning, and evaluation methods.

Resident Research Findings:

- Simulation-based learning provides a significant advantage to patient care through the reduction of medication administration errors compared to traditional lecture-style education (Ford, Seybert, Kane-Gill)
- The waiting period after an immunization session can be effectively used to identify drug-related problems in elderly patients whose medication regimen may not have been otherwise evaluated by a pharmacist. (Havrilla, Ruby, Sokos)

- The greatest risks for Piperacillin/tazobactam resistance in extended-spectrum beta-lactamase (ESBL) producing Gram-negative organisms include prior ampicillin/sulbactam and ciprofloxacin exposure in the last 30 days. (Polisetty, Potoski)
- A high percentage (25%) of patients experienced motor block with the use of continuous peripheral nerve blocks after total knee arthroplasty (Barkell, Heberlig)
- A real-time e-mail feedback system reduced the rate of tardiness from 12.7% before to 5.8%, as well as decreasing the total time lost from 447 minutes (7.4 hours) to 218 minutes (3.6 hours), a 51% reduction in the amount of time lost to tardiness. (Cerussi, Mark, Weber)
- Compliance with pavilizumab therapy was suboptimal and non-compliance (70%) was associated with increased medical claims during the 2006-07 Respiratory Syncytial Virus season. (Diehl, Daw, Rayburg)
- A retrospective drug utilization review (DUR) program is an effective cost savings mechanism to plan sponsors due to its ability to increase savings and reduce the number of days on non-steroidal anti-inflammatory drug (NSAID) therapy. (Stedman, Legal)
- Liver transplant recipients with mean postoperative BG \leq 150 mg/dL did not have improved morbidity and mortality outcomes compared to patients with mean postoperative BG $>$ 150 mg/dL. (Lat, Johnson, Donihi)
- The choice perioperative anticoagulation agents (intravenous vs. subcutaneous) significantly affect length of stay; implementation of perioperative anticoagulation guidelines should provide a significant cost savings due to decreased length of stay. (Krugger, Kruszewski, Trilli, Burke, Gerber)
- Rosiglitazone prescriptions decreased by 50% at Falk Pharmacy after a meta-analysis that identified an increased risk of MI and cardiovascular death in patients taking rosiglitazone was published. (Wisniewski, Corman)

The following table provides information about post-residency positions for the Class of 2007–08 residents.

2007–08 Residents and Future Placement

Name	Residency Program	Residency Institution	Post-Residency Appointment
Erik Abel	Cardiology	UPMC Presbyterian Shadyside	Clinical Pharmacy Specialist–Cardiothoracic Surgery, Ohio State Univ. Medical Center, Dept. of Pharmacy
Benjamin Anderson*	Pharmacy	UPMC Presbyterian Shadyside	Pharmacy Management Resident, UPMC Presbyterian Shadyside
Megan Barkell	Pharmacy	UPMC St. Margaret	Unit-Based Pharmacist, UPMC St. Margaret

Name	Residency Program	Residency Institution	Post-Residency Appointment
Nicole Cerussi*	Pharmacy	UPMC Presbyterian Shadyside	Pharmacy Management Resident, UPMC Presbyterian Shadyside
Jocelyn Diehl	Managed Care	UPMC Health Plan	Clinical Pharmacy Specialist, Lead Commercial line of business, Residency Coordinator, UPMC Health Plan
Lauren Fields Jonkman	Family Medicine	UPMC St.. Margaret	Instructor, University of Pittsburgh School of Pharmacy
Daniel Ford	Critical Care	UPMC Presbyterian Shadyside	Critical Care Specialist The Western Pennsylvania Hospital Department of Pharmacy
Gladys Garcia	Community Pharmacy	UPMC Presbyterian Shadyside	Community Practice Faculty, University of the Sciences in Philadelphia, College of Pharmacy
Joedell Gonzaga	Pharmacy Management	UPMC Presbyterian Shadyside	Pharmacy Informatics Supervisor, Allegheny General Hospital
Stephanie Harriman	Community Pharmacy	Rite Aid	Rite Care Pharmacist Rite Aid Corporation, Pittsburgh
Pamela Havrilla	Pharmacy	UPMC Presbyterian Shadyside	Critical Care Resident UPMC Presbyterian Shadyside
Whitney Hung	Pharmacy	UPMC Presbyterian Shadyside	Infectious Diseases Resident; Tufts Medical Center
Laura Jankovic Damiano	Pharmacy	VA Pittsburgh Healthcare System	Clinical Pharmacist VA Pittsburgh Healthcare System
Laura Krugger	Pharmacy	VA Pittsburgh Healthcare System	Clinical Pharmacist VA Pittsburgh Healthcare System
Asma Lat	Pharmacy	UPMC Presbyterian Shadyside	Infectious Diseases Resident; South Texas Veterans Health Care System
Stacey Lavsa	Pharmacy	UPMC Presbyterian Shadyside	Drug Information Resident, UPMC Presbyterian Shadyside
Katie McMillen	Pharmacy Management	UPMC Presbyterian Shadyside	Operations Manager UPMC Presbyterian Shadyside, Department of Pharmacy

Name	Residency Program	Residency Institution	Post-Residency Appointment
Radhika Polisetty	Infectious Diseases	UPMC Presbyterian Shadyside	Infectious Diseases Clinical Pharmacist, Hahnemann University Hospital
Ryan Steadman	Patient Benefit Management	CVS Caremark	Clinical Acct. Manager CVS Caremark
Erin Suhrie	Pharmacy	VA Pittsburgh Healthcare System	Palliative Care Resident University of Maryland School of Pharmacy
Katherine Sullivan	Pharmacy	UPMC St. Margaret	Family Medicine Resident UPMC St. Margaret
Christopher Wisniewski	Drug Information	UPMC Presbyterian Shadyside	Assistant Professor Drug Information University of South Carolina School of Pharmacy

* Second year of two-year program.

As shown in the table below, 31 residents were recruited nationally from 16 different pharmacy schools or practice settings.

2008–09 Residents

	Name	Residency Program	Residency Institution	Originating Institution/Position
1	David Goodman	Pharmacy	VA Pittsburgh Healthcare System	Albany College of Pharmacy
2	Brandi Kennedy	Pharmacy	VA Pittsburgh Healthcare System	University of Pittsburgh
3	Alissa Mittereder	Pharmacy	VA Pittsburgh Healthcare System	University of Pittsburgh
4	Christina Andrzejewski	Pharmacy	UPMC Mercy	Duquesne University
5	Meaghan Calhoun	Pharmacy	UPMC Mercy	Duquesne University
6	Pamela Gradisek	Pharmacy	UPMC Mercy	Duquesne University
7	Allison Imhoff	Pharmacy	UPMC Mercy	Duquesne University
8	Michael Perry	Pharmacy	UPMC Mercy	Ohio Northern
9	Stephanie Ballard	Pharmacy	UPMC St. Margaret	University of Florida
10	Rachelle Busby	Pharmacy	UPMC St. Margaret	University of Pittsburgh
11	Lisa Harinstein	Pharmacy	UPMC St. Margaret	University of Florida
12	Stephen Davis	Pharmacy	UPMC Presbyterian Shadyside	Auburn University
13	Tiffany-Jade Kreys	Pharmacy	UPMC Presbyterian Shadyside	University of Michigan
14	Van-Anh Le	Pharmacy	UPMC Presbyterian Shadyside	University of Houston
15	Jeffrey Little	Pharmacy	UPMC Presbyterian Shadyside	University of Kansas

	Name	Residency Program	Residency Institution	Originating Institution/Position
16	John Martello	Pharmacy	UPMC Presbyterian Shadyside	Duquesne University
17	Meredith Mulvanity	Pharmacy	UPMC Presbyterian Shadyside	University of Pittsburgh
18	Sarah Yost	Pharmacy	UPMC Presbyterian Shadyside	University of Houston College of Pharmacy
19	Benjamin Anderson	Pharmacy Management	UPMC Presbyterian Shadyside	Pharmacy Resident UPMC Presbyterian Shadyside
20	Nicole Cerussi	Pharmacy Management	UPMC Presbyterian Shadyside	Pharmacy Resident UPMC Presbyterian Shadyside
21	Roman Gokhman*	Cardiology	UPMC Presbyterian Shadyside	Temple University
22	Pamela Havrilla*	Critical Care	UPMC Presbyterian Shadyside	Pharmacy Resident UPMC Presbyterian Shadyside
23	Shara Elrod	Community Pharmacy	UPMC Presbyterian Shadyside (Falk)	University of Texas at Austin
24	Maria Osborne	Community Pharmacy	Rite Aid Corporation	Duquesne University
25	Stacey Lavsa*	Drug Information	UPMC Presbyterian Shadyside	Pharmacy Resident UPMC Presbyterian Shadyside
26	Katherine Sullivan*	Family Medicine	UPMC St. Margaret	Pharmacy Resident UPMC St. Margaret
27	Ryan Shields*	Infectious Diseases	UPMC Presbyterian Shadyside	Pharmacy Resident Saint Louis University Hospital
28	Alexander Hindman	Managed Care	UPMC Health Plan	University of Pittsburgh
29	Avita Johnson	Managed Care	CVS Caremark	Xavier University of Louisiana
30	Erin Lopata	Managed Care	UPMC Health Plan	University of Pittsburgh
31	Phyllis Chow*	Transplant	UPMC Presbyterian Shadyside	Pharmacy Resident Methodist Dallas Medical Center

* Specialty residency (PGY2 Program)

GRADUATE PROGRAM

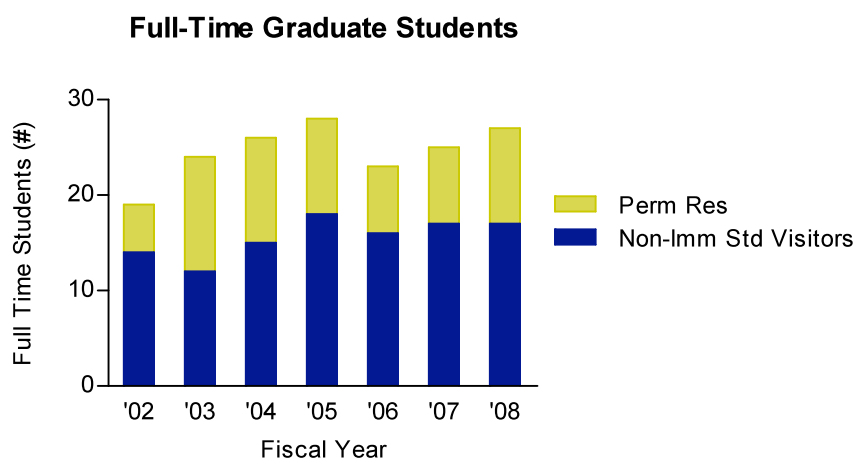
PhD Program in Pharmaceutical Sciences

Overview

The University of Pittsburgh PhD Program in Pharmaceutical Sciences prepares students to become independent researchers as either clinical or basic pharmaceutical scientists.

Demographics

This past year, twenty-seven students (26 full-time, 1 part-time) were enrolled in the PhD program. Of the full time students, nine (34.6%) were U.S. citizens or permanent residents and seventeen were non-immigrant student visitors. These numbers have remained relatively stable since 2004 (see graph below).



One of our goals is to have U.S. citizens or permanent residents comprise at least 50 percent of the students in the PhD program. Challenges include the relatively low percentage of U.S. citizens in the applicant pool and increased competition with other programs. Recent strategies for increasing the applicant pool, and specifically the number of U.S. applicants, include: the GEAR UP mini-graduate weekend and summer internship programs (described below); targeted recruitment of PharmD students into the Clinical Pharmaceutical Scientist Program; and targeted recruitment of basic science students via GRE database search and personalized letters. Thirty (30) completed applications were received from U.S. citizens/permanent residents this year compared to seventeen (17) the previous year, representing an increase of 76.5 percent. The total application pool increased by 9 percent. As a result, the percentage of applications from domestic candidates rose from 16.5 percent to 21.7 percent.

PhD Students Enrolled: FY07 and Applications for FY08

Nationality	Number	Percentage
U.S. permanent residents	10	38.5%
Non-immigrant student visitors	17	61.5%

Sex	Number	Percentage
Men	16	59.3%
Women	11	40.7%

Full/Part-time	Number
Full-time students	26
Part-time students	1
Total	27

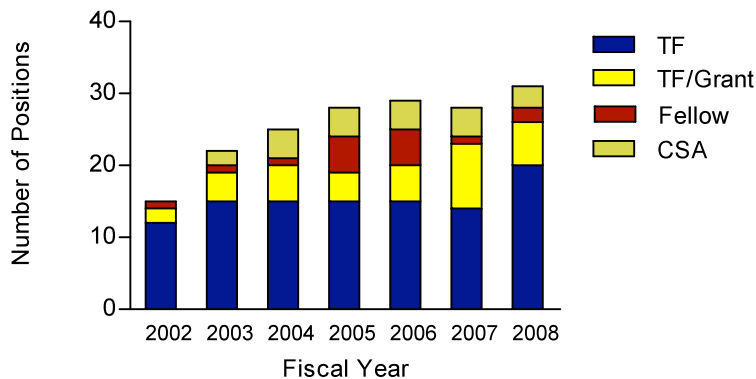
	Number
Applications for Fall 2008 enrollment	
Number of international applicants	108
Number of U.S. applicants	30
Total applicants	138

	Number
New students admitted Fall 2008	
Number of new international students admitted	5
Number of new U.S. students admitted	3
Total new students enrolled	8

Student Support

The School guarantees stipend support on a 12-month basis. In addition, full-time students receive a full tuition scholarship. This past year, of the 26 full-time students in the program, 20 (76.9%) received full or partial stipend support from mechanisms other than traditional teaching assistantships. Six students (23%) received full stipend support via TA funds; 8 (30.8%) received full stipend support via mentor's grants; 6 (23.0%) received stipends via a combination of mentor's grants and TA funds; 2 (7.7%) received T32 fellowships; 3 (11.5%) were supported as Clinical Scientist Associates; and 1 (3.8%) via other mechanisms.

Graduate Student Funded Positions



Clinical Pharmaceutical Scientist Program

The Clinical Pharmaceutical Scientist Program is one of the first programs in the country to provide a PhD degree in clinical and translational research in the Pharmaceutical Sciences. This program provides students with the unique knowledge and skills to generate new knowledge relevant to drug behavior in humans, pharmacogenetics of drug response, and biomarkers of disease progression as they relate to patient therapy and outcomes. Graduates of this program have the skills to function as independent investigators with the unique multidisciplinary skills necessary to conduct competitive clinical and translational research. This program has served as a national model for the training and development of clinical pharmaceutical scientists.

Student Highlights

Of the 27 total students who were enrolled in the School's PhD Program during FY08:

- Nine students were enrolled in the Clinical Pharmaceutical Scientist Program, six of whom are U.S. citizens or permanent residents.
- One student completed the requirements for and earned the PhD degree and took a position in the pharmaceutical industry.
- Four students successfully competed for new or renewed fellowships
 - One was awarded a fellowship from the American Foundation for Pharmaceutical Education (AFPE).
 - Two received T32 predoctoral fellowship awards from the University's Clinical and Translational Science Institute.
 - Two received summer fellowships from Pfizer for research in Groton, Conn.
- Students co-authored two peer-reviewed publications and one book chapter.
- Students made four presentations at three national meetings.
- One received an award in recognition of an outstanding abstract submitted by a student at the annual meeting of the American College of Clinical Pharmacology.
- One received a travel award to attend the annual meeting of the American Association of Pharmaceutical Scientists.
- One received a scholarship award sponsored by Walmart to attend the annual meeting of the American Association of Colleges of Pharmacy.

Participation in the University's Clinical and Translational Science Institute

During FY08, two clinical pharmaceutical scientist program students received long-term, competitive T32 awards from CTSI. Two professional students in the research training track were awarded short-term T32 summer research training awards. Eleven professional and graduate students have enrolled in the CTSI core offering *Introduction to Clinical and Translational Research in the Health Sciences* for fall 2008.

Combined PharmD/PhD Track

The combined PharmD/PhD track was initiated in FY06 as a mechanism to increase the number and training efficiency of PharmD students interested in PhD training. The program was well-received by students with one student entering the PhD portion of her training, one student enrolled completing her fourth professional year requirements, one student currently evaluating the track in her third professional year, and three students are involved in undergraduate research in their second professional year.

Graduate Students Enrolled in the Clinical Pharmaceutical Scientist Program: FY08

Student	Mentor	Term Entered Program	Degree Sought	Highest Degree Earned	Citizenship	Former Institution of Highest Degree
Gregor Bender	Bies	01-1	PhD	PharmD	United States	University of Pittsburgh
Jennifer Bonner	Venkat	05-1	PhD	PharmD	United States	University of Maryland
Marci Chew	Poloyac/Bies	03-1	PhD	BS	United States	University of Pittsburgh
Nisanne Ghonem	Venkat	2061	PhD	PharmD	United States	Tufts University
Yuyan Jin	Bies	2064	PhD	MS	China	China Pharmaceutical University, China
Jeremiah Momper	Venkat	2071	PhD	PharmD	United States	University of Pittsburgh
Diana Pinchevsky	TBD	2084	PhD	PharmD	United States	University of Pittsburgh
Mohammad Shawaqfeh	TBD	2081	PhD	MS, PharmD	Jordan	University of Iowa
Jiangquan Zhou	Poloyac	2071	PhD	MS	China	Peking Union Medical University

Student Completing Degree in 2007–08

Marci Chew, PhD

Advisors: Bruce Pollock, PhD, Robert Bies, PharmD, PhD, and Samuel Poloyac, PharmD, PhD
 Graduated: August 2007
 Dissertation Title: Anticholinergic medications and cognition in older adults
 Current Position: Research Scientist, Pfizer, Groton, Conn.

Clinical Pharmaceutical Science Student Publications FY08

Tortorici MA, Kochanek PM, Xie W, Poloyac SM. Moderate Hypothermia Prevents Cardiac Arrest-Mediated CYP3A2 and CYP2E1 Suppression and Interleukin-6 Induction in the Rat. Crit Care Med. 2008 (in press).

Bonner J, Bies R, Weber R, Tischerman S. Clinical Pharmacology, In: Souba, W.W., Wilmore, D.W., Fink, M.P., et al., eds. ACS surgery: Principles and Practice. New York: WebMD Professional Publishing, 2007.

Yuyan Jin, Pollock BG, Kirshner M, Frank E, Gastonguay MR, Kepple G, Feng Y, Bies R. Effect of different dosing report methods on estimation of pharmacokinetic parameters for escitalopram, J. Clin. Pharmacol 47(9): 1205, 2007.

Clinical Pharmaceutical Science Student Presentations

Authors (*Student)	Title of Presentation	Meeting
<i>Yuyan Jin</i> *, Bruce G. Pollock, Margaret Kirshner, Ellen Frank, Marc R. Gastonguay, Gail Kepple, Yan Feng, Robert R. Bies	Effect of different dosing report methods on estimation of pharmacokinetic parameters for escitalopram.	American College of Clinical Pharmacology (ACCP) Annual Meeting, Sept.9-12, 2007, San Francisco, Calif.
<i>Yuyan Jin</i> *, Bruce G. Pollock, Kim Coley, Del Miller, Steven Marder, Margaret Kirshner, Robert R. Bies	Population pharmacokinetics of perphenazine in schizophrenia patients from CATIE: Impact of race, smoking and concomitant medications.	American Association of Pharmaceutical Sciences (AAPS) Annual Meeting, Nov.7-14, 2007, San Diego, Calif.
Choudry SB, <i>Bonner JJ</i> *, Capitano B, Abu-Elmagd KM, Bond G, Costa G, Koritsky D, Martin D and Venkataramanan R.	Voriconazole pharmacokinetics in small bowel transplant patients.	Xth International Small Bowel Transplant Symposium, Sept. 5, 2007, Los Angeles, Calif.
Deen DP, <i>Bonner JJ</i> *, Capitano B, Martin D, Abu-Elmagd KM and Venkataramanan R.	Evaluation of the role of acute rejection on the oral availability of tacrolimus in small bowel transplant patients.	Xth International Small Bowel Transplant Symposium, Sept. 5, 2007, Los Angeles, Calif.

Student Fellowships (new or continuing)

Student	Award
Jennifer Bonner	(1) American Foundation for Pharmaceutical Education Pre-Doctoral Fellowship for grant titled, "Short- and long-term effects of small bowel transplantation on drug absorption and first-pass metabolism." (2) A 12-month Institutional Research Training Grant from the Clinical and Translational Science Institute. Grant title: Evaluation of intestinal CYP3A4/5 and p-glycoprotein function in small bowel transplant recipients
Nisa Ghonem	A 12-month Institutional Research Training Grant from the Clinical and Translational Science Institute. Grant title: Remodulin, a PGI2 analog, protects the liver graft against ischemia-reperfusion injury
Yuyan Jin	Pfizer Summer Research Fellowship, Groton, Connecticut
Jiangquan Zhou	Pfizer Summer Research Fellowship, Groton, Connecticut

Clinical Pharmaceutical Science Student Awards (other than fellowships)

Student	Award
YuYan Jin	Award in recognition of an outstanding abstract submitted by a student, presented at American College of Clinical Pharmacology annual meeting.
Nisa Ghonem	(1) Travel award to attend the annual meeting of the American Association of Pharmaceutical Scientists, San Diego, California (2) Randy P. and Renee Juhl Clinical Scientist Scholar Award
Nisa Ghonem	2007 Wal-Mart Annual Conference Scholarship to attend the annual meeting of the American Association of Colleges of Pharmacy (AACP)

Basic Pharmaceutical Sciences

Student Highlights

Of the 27 total students who were enrolled in the School's PhD Program during FY08:

- Eighteen students were enrolled in the basic pharmaceutical sciences curriculum.
- Two students completed the requirements for and earned the PhD degree; one took a post-doctoral position at Harvard; the other took a research scientist position at Scripps Institute.
- Students co-authored eighteen research papers.
- Students made fifteen presentations at thirteen national scientific meetings.
- Two students received scholarships to attend the biannual international microbicide meeting in New Delhi, India.
- One student received a scholarship to attend the MIT professional program for the course "Advances in Controlled Release Technology: Polymeric Delivery Systems for Pharmaceuticals, Proteins and Other Agents."
- One student received a scholarship to present at the Keystone Nuclear Receptors conference: Orphan Brothers, in Vancouver, BC.
- Eight students were admitted to the program for FY09.

Students Completing Degrees in 2007–08

Weihsu Chen, PhD

Advisor:	Leaf Huang, PhD
Graduated:	December 2007
Dissertation Title:	Development of a simple but effective cancer vaccine consisting of an antigen and a cationic lipid
Current Position:	Research Scientist, The Scripps Research Institute

Min Jae Lee, PhD

Advisor:	Yong Tae Kwon, PhD
Graduated:	December 2007
Dissertation Title:	Role of the N-end rule pathway in cardiovascular development, signaling, and homeostasis
Current Position:	Postdoctoral Fellow, Harvard Medical School

Graduate Students Enrolled in the Basic Pharmaceutical Sciences: FY08

Student	Mentor	Term Entered Program	Degree Sought	Highest Degree Earned	Citizenship	Former Institution of Highest Degree
Ayman Akil	Rohan	2081	PhD	B Pharm	Syria	Aleppo University
Jee Young An	Kwon	04-1	PhD	MS	Saudi Arabia	Sogang University, Korea
Jafar Sadik Basha	Poloyac	2081	PhD	M Pharm	India	Birla Institute of Technology & Science, India
Weihsu Chen	Huang	04-1	PhD	MS	Taiwan	National Yang-Ming University, Taiwan
Mark Donnelly	Venkat	2071	PhD	BS	United States	Pennsylvania State University
Jie Gao	Xie, Wen	2071	PhD	MS	China	China Pharmaceutical University, China
Rebecca Hammond	Gibbs	2081	PhD	BS	United States	North Carolina State
Kelong Han	Venkat	2071	PhD	Vordiplom+2 semesters	China	Georg-August-University, Gottingen, Germany
Dong Eun Kim	Kwon	2081	PhD	MS Dental Medicine	Korea	Seoul National Univ. of South Korea
Jung Hoon Lee	Xie	05-1	PhD	MS	Korea	Seoul National University, Korea
Min Jae Lee	Kwon	03-1	PhD	MS	Korea	Seoul National University, Korea
Robert Parise	Venkat	2061	PhD	BS	United States	Northern Illinois University
Alexandria Sassi	Rohan	05-1	PhD	BS	United States	University of Sao Paulo
Shringi Sharma	Venkat	05-1	PhD	MS	India	Panjab University, Chandigarh
Yumin Song	Day	2071	PhD	BS	China	Fudan University
Shashikanth Sriram	Kwon	2074	PhD	MS	India	Sultan-UI-Uloom Col. of Pharm., Jawaharlal Nehru Technological University
Ryan Whetstone	Gold	2081	PhD	MS	United States	Johns Hopkins Univ.
Haitao Yang	Rohan	04-1	PhD	MS	China	China Pharmaceutical University, China

Basic Pharmaceutical Sciences Student Publications

Lee MJ, Pal K, Tasaki T, Roy S, Jiang Y, *An JY*, Banerjee R, and Kwon YT, Synthetic heterovalent inhibitors targeting recognition E3 components of the N-end rule pathway. *Proc Natl Acad Sci USA* 2008, 105(1):100-5.

Sassi AB, Isaacs C, Gupta P, Moncla B, Rohan LC. "Effects of physiological fluids on physical-chemical characteristics and activity of vaginal microbicide products." *Journal of Pharmaceutical Sciences* 2007 Oct 5; [Epub ahead of print]

Guo J, *Parise RA*, Joseph E, Lan J, Pan SS, Joo B, Egorin MJ, Wipf P, Lazo JS, Eiseman JL, Pharmacology and Antitumor Activity of a Quinolinone Cdc25 Phosphatase Inhibitor DA3003-1 (NSC 663284), *Anticancer Res.* 2007 Sept-Oct; 27(5A):3067-73.

Beumer JH, *Parise RA*, Newman EM, Doroshow JH, Synold TW, Heinz-Josef L, Egorin MJ, Concentrations of the DNA methyltransferase inhibitor 5-fluoro-2'-deoxycytidine (FdCyd) and its cytotoxic metabolites in plasma of patients treated with FdCyd and tetrahydrouridine (THU), *Cancer Chemother Pharmacol.* 2007 Sep 26.

Zamboni WC, Strychor S, Joseph E, Walsh DR, Zamboni BA, *Parise RA*, Tonda MA, Yu NY, Engbers C, Eiseman JL. Plasma, Tumor, and Tissue Disposition of STEALTH Liposomal CKD-602 (S-CKD602) and Non-Liposomal CKD-602 in Mice Bearing A375 Human Melanoma Xenografts, *Clin Cancer Res.* 2007 Dec 1; 13(23):7217-23.

Gibbons J, Egorin MJ, Ramanathan RK, Fu P, Mulkerin DL, Shibata S, Takimoto CHM, Mani S, LoRuso PA, Grem JL, Pavlick A, Lenz HJ, Flick SM, Reynolds S, Lagattuta TF, *Parise RA*, Wang Y, Murgo AJ, Ivy SP, Remick SC. A Phase I and Pharmacokinetic Study of Imatinib Mesylate in Patients with Advanced Malignancies and Varying Degrees of Renal Dysfunction. A Study by the National Cancer Institute Organ Dysfunction Working Group. *J Clin Oncol.* 2008 Feb 1; 26(4):570-6.

Zamboni WC, Strychor S, Joseph E, *Parise RA*, Egorin MJ, Eiseman JL, Tumor, Tissue, and Plasma Pharmacokinetic Studies and Antitumor Response Studies of Docetaxel in Combination with 9-Nitro-camptothecin in Mice Bearing SKOV-3 Human Ovarian Xenografts. *Cancer Chemother Pharmacol.* 2007 Oct 24.

Beumer JH, Eiseman JL, *Parise RA*, Florian Jr J, Joseph E, D'Argenio D, Parker R, Kay B, Covey J, Egorin MJ, Plasma pharmacokinetics and oral bioavailability of 3,4,5,6-tetrahydrouridine (THU), a cytidine deaminase inhibitor, in mice. *Cancer Chemother Pharmacol.* 2007 Nov 15.

Fang X-K, *Gao J*, Zhu D-N. Kaempferol and quercetin isolated from *Euonymus alatus* improve glucose uptake of 3T3-L1 cells without adipogenesis activity. *Life Sciences* 2008; 82:615-622.

Wang H, *Gao J*, Zhu D. Anti-inflammatory activities of triterpenoid saponins from *Polygala japonica*, *Phytomedicine* 2008; 15:321-326.

Lee JH, Gong H, KhSWM A, Lu Y, Ao A, Li J, Hng, bs Q. Xiw, Androgen deprivation by activating the liver X receptor (LXR), *Endocrinology*, In Press.

Zhou J, Febbraio M, Wada T, Zhai Y, Kuruba R, He J, *Lee JH*, Khadem S, Ren S, Li S, Silverstein RL, Xie W. Hepatic fatty acid transporter *Cd36* is common target of LXR, PXR and PPAR γ in promoting steatosis, *Gastroenterology* 2008; 134:556-567.

Lee JH, Zhou J, Xie W. PXR and LXR in hepatic steatosis: A new dog and an old dog with new tricks, *Mol. Pharm.* 2008; 5:60-66.

Sharma S, Ou J, Strom S, Mattison D, Caritis S, Venkataramanan R. Identification of cytochrome P450 enzymes involved in the metabolism of Hydroxyprogesterone Caproate, *DMD*, In Press.

Yan W, *Chen W*, Huang L. Mechanism of adjuvant activity of cationic liposome: phosphorylation of a MAP kinase, ERK and induction of chemokines. *Mol Immunol* 2007; 44:3672-3681.

Chen W, Huang L. Induction of cytotoxic T-lymphocytes and anti-tumor activity by a liposomal lipopeptide vaccine. *Mol Pharmaceutics*. In press. Epub 2008.

Yan W, *Chen W*, Huang L. Reactive oxygen species play a central role in the adjuvant activity of cationic liposome. *J Control Release*, In Press.

Basic Pharmaceutical Sciences Student Presentations

Authors (*Student)	Title of Presentation	Meeting
<i>Sassi AB*</i> ; Graebing PW; Roy L; Moncla BJ; Lederman MM; and Rohan LC.	Characterization of potential degradation pathways for PSC-RANTES.	2008 Biannual Microbicides Conference. New Delhi, India, February 24-27, 2008
<i>Sassi AB*</i>	RC-101 characterization, formulation, and tissue localization.	2008 Biannual Microbicides Conference. New Delhi, India, February 24-27, 2008
<i>Hammond, RE*</i> , Nelson D, Gibbs, RB.	The distribution of GPR30 in rat forebrain and co-localization with cholinergic neurons	PGSRM Conference, Ann Arbor, Mich.
Sikorski R., <i>Parise RA*</i> , Beumer JH, Egorin ME.	Liquid chromatography-mass spectrometric assay for the quantitation in human plasma of ABT-888, an orally available, small molecule inhibitor of poly(ADP-ribos) polymerase	Proceedings of the American Association for Cancer Research, 2008; 49:206.
Holleran JL, <i>Parise RA*</i> , Beumer JH, Eiseman JL, Covey JM, Glazed ER, Engelke K, Tomaszewski JE, Egorin MJ.	Quantitation of the Novel Topoisomerase I Inhibitor, NSC 724998, in Dog Plasma by LC-MS/MS.	Proceedings of the American Association for Cancer Research 2008 (April); 49:768
Sparano BA, Egorin MJ, <i>Parise RA*</i> , Walters J, Komazec KA, Redner RL, Beumer JH.	Effect of antacid co-medication on imatinib disposition—a healthy volunteer study.	Proceedings of the American Society of Clinical Oncology 2008 (June); 27.
<i>Yang H*</i> , Parniak MA, Hillier SL, Rohan LC.	Effect of Water Soluble Polymers On NNRTI UC-781: Beta-Cyclodextrin Complex Formation. (Oral Presentation Scholarship)	2008 Biannual Microbicides Conference. New Delhi, India, February 24-27, 2008.
<i>Gao J*</i> , Zhou J, Liu M, Zhai Y, Xie W.	The Anti-Apoptotic Role of Pregnane X Receptor in Colon Cancer Cells and Normal Colon Epithelium.	Keystone Nuclear Receptors Conference: Orphan Brothers, April 4-8, 2008, Vancouver, BC, Canada
<i>Lee JH*</i> , Xie W.	Androgen deprivation and inhibition of prostate cancer by activating the liver X receptor (LXR)	Endocrine Society Annual Meeting, San Francisco, Calif.
<i>Lee, JH*</i>	Androgen deprivation by LXR-mediated activation of phase II sulfotransferase	Great Lake Symposium, Pittsburgh, Pa.
<i>Lee, JH*</i> , Gong H, Khadem S, Lu Y, Zhang J, Xie W.	Androgen deprivation by activating liver X receptor (LXR)	Keystone Symposium on Nuclear Receptors: Orphan Brothers, Whistler, BC, Canada
<i>Lee, JH*</i> , Gong H, Zhang J, Xie W.	Androgen deprivation and inhibition of prostate cancer by activating the nuclear receptor, LXR	Great Lake Nuclear Receptor Conference, Pittsburgh, Pa.

Authors (*Student)	Title of Presentation	Meeting
<i>Lee, JH*</i> , Gong H, Zhang J, Xie W.	Androgen deprivation and inhibition of prostate cancer by activating the nuclear receptor, LXR	University of Pittsburgh Science 2007, Pittsburgh, Pa.
<i>Sriram, SM*</i> , Lee MJ, Tasaki T, Pore S, Pal K, Banerjee R, Kwon YT.	Heterovalent Inhibitors of the N-End Rule Pathway	40 th Annual Pharmaceutics Graduate Student Research Meeting, Ann Arbor, Mich., June 26-28, 2008
<i>Sharma S*</i> , Strom S, Caritis S, Venkataramanan R.	Modulation of hepatic transporter activity by 17- α hydroxyprogesterone caproate (HPC); a new agent that prevents preterm labor	Annual meeting of the American Association of Pharmaceutical Scientists, San Diego, Calif., 2007

Basic Pharmaceutical Sciences Student Awards (other than fellowships)

Student	Award
Jung Hoon Lee	Pharmaceutical Sciences Graduate Student Excellence Award
Alex Sassi	Scholarships to attend the 2007 Massachusetts Institute of Technology (MIT) Professional program for the course "Advances in Controlled Release Technology: Polymeric Delivery Systems for Pharmaceuticals, Proteins and Other Agents." July 23-27, 2007. Cambridge, Mass.
Alex Sassi	Scholarship to attend the biannual international microbicide meeting in New Delhi, India.
Haitao Yang	Scholarship to attend the biannual international microbicide meeting in New Delhi, India.
Jie Gao	Scholarship to present at the Keystone Nuclear Receptors conference: Orphan Brothers, in Vancouver, BC, Canada
Shashikanth Sriram	Teaching Assistant Award, School of Pharmacy

Graduate Education and Research at the University of Pittsburgh (GEAR UP)

The goals of the GEAR UP program are to:

1. Educate undergraduate and professional students about graduate training opportunities in the pharmaceutical sciences.
2. Provide research internship opportunities to students from non-research intensive colleges and universities.
3. Recruit highly qualified students for graduate studies in pharmaceutical sciences.
4. Increase the number of minority students, women and U.S. citizens and permanent residents in the School of Pharmacy graduate program.

This innovative program exposes undergraduate pharmacy and life science students to opportunities in graduate pharmaceutical science research. Using a personalized approach to recruiting students, GEAR UP is designed to identify talented students, including minorities and women, who may have not considered pursuing graduate research training. Two GEAR UP students were funded through CTSI, one was funded from an ageing grant and five were supported through the University of Pittsburgh School of Pharmacy.

Program evaluations from students who have participated in these experiences have been overwhelmingly positive. The challenge for the future is to sustain funding for the program.

Mini-Graduate School: Demographics and Impact on Career Development

Demographics

- A total of 15 students from 7 universities attended the mini-graduate weekend in December 2007.
- 9 (60%) were from the University of Pittsburgh; 1 (7%) was from another university within Pennsylvania; 5 (33%) were from outside Pennsylvania; 6 (40%) were women.

Participant Response (12 questionnaires)

Questions (1-not at all or low; 5-to a large degree or high)	Average	Range
Overall quality of this program	4.92	(4-5)
Increased interest in graduate school	4.75	(4-5)
Had significant role in my decision to pursue graduate school	4.33	(3-5)
Program demonstrated multiple aspects of graduate education	4.75	(4-5)
Value of graduate posters	3.92	(3-5)
Value of graduate panel discussion	4.33	(2-5)
I would recommend the program to others	4.92	(4-5)

Summer Internship: Demographics and Impact on Career Development

Demographics

- Eight (8) students attended the summer internship program from June 9 through August 1, 2008.
- Six (75%) of the eight students were from the University of Pittsburgh; the other two (25%) were from The University of Puerto Rico at Cayey.
- Four (50%) of the eight students were women.

Participant Response (7 questionnaires)

Questions (1-not at all or low; 5-to a large degree or high)	Average	Range
Overall quality of this program	4.71	(3-5)
Increased interest in graduate school	4.57	(4-5)
Had significant role in my decision to pursue graduate school	4.43	(3-5)
Program demonstrated multiple aspects of graduate education	4.43	(3-5)
Research mentor was actively involved in my research internship	4.71	(4-5)
Value of lunch discussion	4.00	(3-5)
I would recommend the internship to others	4.86	(4-5)

Outcomes

To date, two students who participated in the GEAR UP program have been admitted to the PhD Program at the School of Pharmacy and one is applying for admission in fall 2009.

Publication

A manuscript describing the GEAR UP Program has been published in the American Journal of Pharmaceutical Education:

Poloyac SM, Rohan LC, Janjic JM, Gibbs RB, Kroboth PD, and Smith RB. GEAR-UP (Graduate Education And Research at the University of Pittsburgh) A Program to Educate Students about Pharmaceutical Research. *Am J Pharm Educ* 2005; 69(5): Article 91.

MS Program in Pharmacy Administration

During FY08, the School of Pharmacy proposed and gained approval to grant the Master of Science degree in Pharmacy Administration. The program was proposed because the School has been committed to the development of pharmacists for management positions through the residency program and had the opportunity to increase the rigor of training through the degree program.

The program is particularly attractive because of the unique model of unified management of the academic department (Pharmacy and Therapeutics) and the UPMC Department of Pharmacy. The number of students is expected to grow with each successive year.

During FY08:

- The University Council on Graduate Study approved the program.
- Two students were recruited and enrolled in the MS program. Both are simultaneously completing a management residency at UPMC.

Students Enrolled in the MS Program in Pharmacy Administration

Name	Residency Program	Residency Institution	Originating Institution
Stephen Davis	Pharmacy	UPMC Presbyterian Shadyside	Auburn University
Meredith Mulvanity	Pharmacy	UPMC Presbyterian Shadyside	University of Pittsburgh

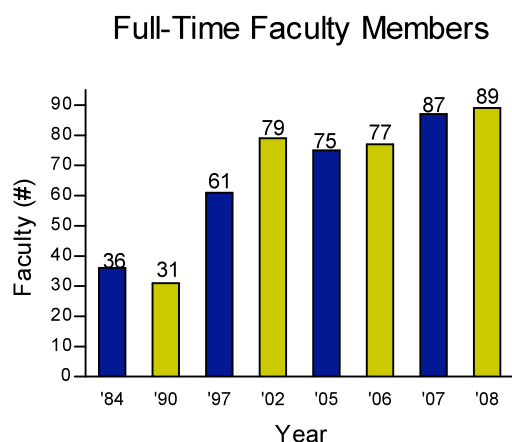
POST-DOCTORAL ASSOCIATES

Name	Faculty Mentor
Hou-Ming Cai	Janet Amico, PhD
Qiuqiong Cheng	Wen Xie, MD, PhD
Philip Empey	Sam Poloyac, PharmD, PhD
Jeffry Florian	Robert Bies, PhD
Manjori Ganguly	Barry Gold, PhD
Jinhan He	Wen Xie, MD, PhD
Vasily Korotchenko	Barry Gold, PhD
Mingjie Liu	Wen Xie, MD, PhD
Sreelekha Singh	Barry Gold, PhD
Margie Snyder*	Randall Smith, PhD
Ajay Srinivasan	Barry Gold, PhD
Stuti Srivastava	Alexander Doemling, PhD
Yuki Takahashi	Wen Xie, MD, PhD
Taira Wada	Wen Xie, MD, PhD
LiRong Wang	Xiangqun Xie, PhD
Ruo-Wen Wang	Barry Gold, PhD
Bin Zhang	Wen Xie, MD, PhD
Shimin Zhang	Raman Venkataramanan, PhD

*Post-Doctoral Fellow

FACULTY

There are 89 full-time and four part-time faculty members in the School of Pharmacy, all of whom hold faculty appointments in either the Department of Pharmaceutical Sciences or the Department of Pharmacy and Therapeutics. The growth in the number of faculty in increments since 1984 is shown in the graph.



Full-Time Faculty Rank by Department of Primary Appointment

Faculty Rank	Pharmaceutical Sciences	Pharmacy and Therapeutics	Total for School of Pharmacy
Professor	16	3	19
Associate Professor	8	10	18
Assistant Professor	6	28	34
Clinical Research Professor	1	0	1
Instructor	0	3	3
Senior Lecturer	3	0	3
Research Assistant Professor	8	1	9
Research Associate Professor	1	0	1
Research Professor	1	0	1
All Faculty	44	45	89

Fellowships in Organizations and Board Certification

Election to fellowship and board certification are two characteristics of faculty members who have distinguished themselves. Of the 89 faculty, 15 (16.9%) have been elected to fellowship in one or more organization, 23 (25.8%) are board certified, and 35 (39.3%) are either 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.

Faculty Elected to Fellowship in Professional or Scientific Organizations

Name	Fellowship		Department
Kim Coley	FCCP	American College of Clinical Pharmacy	Pharmacy and Therapeutics
Judith Gavalier	FACN	American College of Nutrition	Pharmaceutical Sciences
Randy Juhl	FAPhA	American Pharmacists Association	Pharmaceutical Sciences
Sandra Kane-Gill	FCCM	Society of Critical Care Medicine	Pharmacy and Therapeutics
Edward Krenzelok	FAACT	American Association of Clinical Toxicology	Pharmacy and Therapeutics
Patricia Kroboth	FCCP	American College of Clinical Pharmacy	Pharmaceutical Sciences
	FAAPS	American Association of Pharmaceutical Scientists	
Scott Mark	FASHP	American Society of Health-System Pharmacists	Pharmacy and Therapeutics
	FACHE	American College of Healthcare Executives	
Ted Rice	FASHP	American Society of Health-System Pharmacists	Pharmacy and Therapeutics
Christine Ruby-Scelsi	FASCP	American Society of Clinical Pharmacists	Pharmacy and Therapeutics
Paul Schiff	FAPhA	American Pharmacists Association	Pharmaceutical Sciences
	FAAPS	American Association of Pharmaceutical Scientists	
Susan Skledar	FASHP	American Society of Health-System Pharmacists	Pharmacy and Therapeutics
Randall Smith	FAAPS	American Association of Pharmaceutical Scientists	Pharmaceutical Sciences
Ralph Tarter	FAPS	American Psychological Society	Pharmaceutical Sciences
	FAPA	American Psychopathological Association	
Raman Venkataramanan	FACCP	American College of Clinical Pharmacology	Pharmaceutical Sciences
	FAAPS	American Association of Pharmaceutical Scientists	
Robert Weber	FASHP	American Society of Health-System Pharmacists	Pharmacy and Therapeutics

Faculty Board Certifications

Name	Certification	Department
Janet Amico	ABIM Internal Medicine	Pharmaceutical Sciences
Sherrie Aspinall	BCPS Pharmacotherapy	Pharmacy and Therapeutics
Shelby Corman	BCPS Pharmacotherapy	Pharmacy and Therapeutics
Lindsay Corporon	BCOP Oncology	Pharmacy and Therapeutics
Colleen Culley	BCPS Pharmacotherapy	Pharmacy and Therapeutics
Amy Calabrese Donihi	BCPS Pharmacotherapy	Pharmacy and Therapeutics
Scott Drab	CDE Diabetes Educator	Pharmacy and Therapeutics
	BC-ADM Advanced Diabetes Management	
Bonnie Falcione	BCPS Pharmacotherapy	Pharmacy and Therapeutics
Roberta Farrah	BCPS Pharmacotherapy	Pharmacy and Therapeutics
Deanne Hall	CDE Diabetes Educator	Pharmacy and Therapeutics
Heather Johnson	BCPS Pharmacotherapy	Pharmacy and Therapeutics
Edward Krenzelok	DABAT Toxicology	Pharmacy and Therapeutics
Colleen Lauster	CDE Diabetes Educator	Pharmacy and Therapeutics
Scott Mark	CHE Certified Healthcare Executive	Pharmacy and Therapeutics
Melissa McGivney	CDE Diabetes Educator	Pharmacy and Therapeutics
Karen Pater	BCPS Pharmacotherapy	Pharmacy and Therapeutics
	CDE Diabetes Educator	
Brian A. Potoski	BCPS (AQ-ID) Pharmacotherapy/Added Qualification in Infectious Diseases	Pharmacy and Therapeutics
Ted Rice	BCPS Pharmacotherapy	Pharmacy and Therapeutics
Christine Ruby-Scelsi	BCPS Pharmacotherapy	Pharmacy and Therapeutics
Denise Sokos	BCPS Pharmacotherapy	Pharmacy and Therapeutics
Dennis Swanson	BCNP Nuclear Pharmacy	Pharmacy and Therapeutics
Ralph Tarter	ABPP Professional Psychology	Pharmaceutical Sciences
Lauren Trilli	BCPS Pharmacotherapy	Pharmacy and Therapeutics

Faculty Honors, Recognition, and Professional Affiliations

DEPARTMENT OF PHARMACEUTICAL SCIENCES

Jan H. Beumer, PharmD, PhD

Director's Award for Scientific Excellence and Potential, Nineteenth Annual University of Pittsburgh
Cancer Institute Scientific Retreat, 3rd Place Award

Balwant N. Dixit, PhD

Who's Who in America
Who's Who in Medicine and Healthcare

Billy W. Day, PhD

University of Pittsburgh Innovator Award

Ty A. Ridenour, PhD
Marquis Who's Who in America

Wen Xie, MD, PhD
University of Pittsburgh Chancellor's Distinguished Research Award 2008

DEPARTMENT OF PHARMACY AND THERAPEUTICS

Kim C. Coley, PharmD, FCCP
University of Pittsburgh Women in Science and Medicine
Fellow, American College of Clinical Pharmacy 2008

Sharon E. Connor, PharmD
Preceptor of the Year for 2006-2007
UPMC Eli Rabin Memorial Award winner 2007
AACP Taskforce for Care to Underserved Populations November 2007
Medecines Sans Frontiers, Chicago, Illinois, Volunteer, Expo Refugee Camp in the Heart of the City,
September 2007

Colleen Margaret Culley, PharmD, BCPS
ASHP 2007 Summer Meeting and Exhibition, 3rd place, "Toward Excellence in Pain Management and
Palliative Care" poster competition. Skledar SJ, Culley CM, Dunwoody CJ, Hynicka L, Lavsa S. (*See
Abstracts #16*)

Amy Calabrese Donihi, BS, PharmD, BCPS
Board Certified Pharmacotherapy Specialist (BCPS) recertified 2007
"2007 Quality Cup Winner" for Comparison of Insulin Discharge Instructions Provided to Patients Before
and After Implementation of a Standardized Insulin Discharge Form. UPMC Presbyterian Quality and
Innovation Fair.

Scott R. Drab, PharmD
The Pennsylvania Society of Health-System Pharmacists Joe E. Smith Award for Practice Excellence
Roche Preceptor of the Year Award

Kerry McGarr Empey, PharmD, PhD
Multidisciplinary Clinical Research Scientist Program Scholar

Bonnie Ann Falcione, PharmD
Board Certification in Pharmacotherapy 2008
Immunization Certificate Program, American Pharmaceutical Association. Recertification

Roberta M. Farrah, PharmD, BCPS
Board Certified Pharmacotherapy Specialist (BCPS)

Sandra L. Kane-Gill, PharmD, MSc, FCCM
Fellow, American College of Critical Care Medicine 2008
University of Pittsburgh, Rho Chi Society, Outstanding Scholarly Contribution Award
American College of Clinical Pharmacy

Deanne L. Gimiliano-Hall, PharmD, CDE

Pennsylvania Authorization to Administer Injectables
American College of Clinical Pharmacy Academy Leadership and Management
Certificate Program participant– estimated completion in 2009

Heather J. Johnson, PharmD, BCPS

Certified Trainer, American Pharmacists Association Pharmacy-Based Immunization Delivery

Edward P. Krenzelok, PharmD, FAACT, DABAT

American Board of Applied Toxicology – Recertified
American Association of Poison Control Centers, Board of Directors
United States Food and Drug Administration
Consultant, Committee for Drug Safety

Scott M. Mark, PharmD, MS, MEd, FACHE, FASHP, FABC

Aster Award. Bronze, Group: Healthcare System, Category: Professional Recruitment – Single. “UPMC Department of Pharmacy Recruitment Folder”
Magnum Opus Award. Gold Award, Category: Best Advertorial Design “UPMC Department of Pharmacy Recruitment Folder”
Marquis’ Who’s Who in America 63rd Edition
Marquis’ Who’s Who in the World 26th Edition
Hospital Counselor, Beta Kappa Chapter (University of Pittsburgh)
American Society of Health-System Pharmacists
Committee on Publications 2007
Chair, 2007, 2008
Eastern States Residency Conference for Residents and Preceptors
Advisory Board 2002-Present
Finance Chair 2004-Present
University of Maryland School of Pharmacy Education Advisory Board

Melissa Somma McGivney, PharmD, CDE

Pennsylvania Pharmacist Authorization to Administer Injectables
Pharmacist Services Technical Advisory Coalition (PSTAC)

Susan Meyer, PhD

Member, Health Sciences Distance Education Advisory Board, Creighton University School of Pharmacy and Health Sciences

Karen Steinmetz Pater, PharmD

Authorization to Administer Injectables, Commonwealth of Pennsylvania RPI000645
American Pharmacists Association: Pharmacy Based Immunization Delivery - A National Certificate Program for Pharmacists

Brian A. Potoski, PharmD, BCPS(AQ-ID)

Board of Pharmaceutical Specialties – Pharmacotherapy (BCPS)
Board of Pharmaceutical Specialties – Added Qualifications in Infectious Diseases

James J. Pschirer, PharmD

University of Pittsburgh School of Pharmacy Experiential Learning Committee
University of Pittsburgh School of Pharmacy Curriculum Committee
University of Pittsburgh School of Pharmacy PharmD Council
University of Pittsburgh School of Pharmacy Continuing Education Steering Committee
Abstract Reviewer, American Association of Colleges of Pharmacy

Tara Lynn Pummer, PharmD

ACPE Self-Study Committee: Standards for Curriculum Experiential Learning Subcommittee

Ted Rice, MS, FASHP, BCPS

Outstanding Faculty Member, The University of Pittsburgh. (Honors Convocation 2-29-08)
PSHP Community Service Award. Presented during the 39th PSHP Annual Assembly, Oct 2007.
ASHP Research and Education Foundation
Elected office: Immediate Past-President

Rafael Saenz, PharmD, MS

American Heart Association BLS for Health Care Provider

Kristine S. Schonder, PharmD

ACCP Educational Affairs Committee B
Development of a Pharmacotherapy Curriculum Toolkit
National Quality Forum Steering Committee
National Voluntary Consensus Standards for End Stage Renal Disease Care
National Quality Forum Technical Advisory Panel
End Stage Renal Disease Measure Evaluations for Anemia
Cohen Teacher of the Year, University of Pittsburgh School of Pharmacy Class of 2008

Amy Lynn Seybert-Kobulinsky, BS, PharmD

ACCP Academy, Teaching and Learning Certification Program Enrollee-Completed January 2008
American College of Clinical Pharmacists
Membership Committee, Education and Training PRN

Michael A. Shullo, PharmD

Rho Chi Innovation in Teaching Award, University of Pittsburgh School of Pharmacy

Susan Jean Skledar, RPh, MPH, FASHP

Fellow, American Society of Health-System Pharmacists 2008

Margaret M. Verrico, RPh

National Patient Safety Goals Anticoagulation Task Force, Task Force Member

Robert J. Weber, MS, FASHP

Chair, Council of Deans/Council of Faculties Task Force on National Patient Safety Goals, American Association of Colleges of Pharmacy.
Member, A National Summit to Manage Drug Name Confusion, Philadelphia, PA. October 9-10, 2007.
Chair, American Association of Colleges of Pharmacy Task Force on Patient Safety (Council of Deans and Faculties).

Faculty Changes During FY08

New Faculty

Name	Current Rank	Department	Prior Institution/Rank
Kerry Empey	Assistant Professor <i>Start date 8/1/07</i>	Pharmacy and Therapeutics	University of Kentucky Graduate Student
Donna Huryn	Research Professor <i>Start date 8/1/07</i>	Pharmaceutical Sciences	University of Pennsylvania, Associate Director, Penn Center for Molecular Discovery, Chemistry
Karen Pater	Assistant Professor <i>Start date 8/1/07</i>	Pharmacy and Therapeutics	University of Illinois Chicago, Assistant Professor

Promotions

Name	Previous Rank	New Rank	Department
Yong Tae Kwon	Associate Professor	Associate Professor/Tenure	Pharmaceutical Sciences
Sripal Reddy Mada		Research Assistant Professor	Pharmaceutical Sciences
Samuel Poloyac	Assistant Professor	Associate Professor/Tenure	Pharmaceutical Sciences
Amy Seybert-Kobulinsky	Assistant Professor	Associate Professor	Pharmacy and Therapeutics
Sandra Kane-Gill	Assistant Professor	Associate Professor	Pharmacy and Therapeutics

Departing Faculty

Name	Previous Rank	Department	Position Accepted
Sripal Reddy Mada	Research Asst Prof	Pharmaceutical Sciences	Federal Drug Administration
Rebecca McNamee	Research Asst Prof	Pharmaceutical Sciences	School of Medicine, Department of Radiology
Gary Stoehr	Associate Professor	Pharmacy and Therapeutics	Founding Dean at D'Youville College, Buffalo, NY
Maria Yaramus	Assistant Professor	Pharmacy and Therapeutics	
William Zamboni	Assistant Professor	Pharmaceutical Sciences	University of New Carolina Cancer Center, Chapel Hill

Enhancing the Health of the Community Through Partnerships



Enhancing the Health of the Community Through Partnerships

During the last year, the School of Pharmacy continued to improve the health of the people of the Commonwealth of Pennsylvania, particularly Western Pennsylvania, through ambulatory and hospital programs with its partners in patient care. The School of Pharmacy has developed trusted partnerships, particularly with our premier partner, UPMC. The accomplishments of the faculty with UPMC, and also with our Veterans Administration, Rite Aid, and CVS PharmaCare partners move the School closer to our vision for patient care.

By 2012, the School of Pharmacy will have:

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

Specifically, we will have:

- **Developed a model system for comprehensive care that is implemented for all UPMC patients, assuring safety and efficacy of medications during their hospital stay and transition back to the community.**
- **Created national acceptance of standardized pharmacy care in the community that enhances patient well-being through the effective and safe use of medications.**

During the last year, the School of Pharmacy continued to improve the health of the people of the Commonwealth of Pennsylvania, particularly Western Pennsylvania, through ambulatory and hospital programs with its partners in patient care. The health and well-being of patients were improved in very direct ways because faculty:

- Provided pharmaceutical care to over 35,000 hospital and community patients.
- Increased susceptibility of a dangerous microbe (*Pseudomonas aeruginosa*) to antibiotics by 40%.
- Improved appropriate prophylactic use and duration of antibiotic therapy in the University of Pittsburgh Medical Center operating room by almost 30%.
- Increased by 10% the number of pharmacy clinics that serve the homeless, uninsured, and under-insured.
- Provided influenza (“flu”) and pneumococcal (“pneumonia”) vaccine to over 600 patients and 2,500 patients in UPMC hospitals.
- Managed anticoagulant medication for over 950 patients with 65 percent of the patients achieving blood levels of anticoagulant in the safe range.

- Facilitated early discharge from the hospital for 142 patients receiving anticoagulation.
- Implemented a system of preventing errors to intravenous medications called “smart pumps.” These “smart pumps” are programmed to warn the nurse of potentially dangerous medication errors.

PROGRAMS PROVIDING CARE TO HOSPITAL PATIENTS

UPMC

The University of Pittsburgh Medical Center is the largest academic health center in the country and is the primary partner of the School of Pharmacy. Through the School’s partnership with UPMC, faculty members provide direct patient care consultations in both general and specialty practice settings, including internal medicine, transplantation, cardiology, critical care, pediatrics, oncology, surgery, trauma, geriatrics, ambulatory care, and diabetes care. During FY08, faculty:

- Provided care to patients during approximately 30,000 patient visits.
- Made over 22,000 changes to patients’ medication regimen.
- Prevented medication errors due to improper dose or drug in greater than 50% of patients.

UPMC Medication Safety Program

The medication safety program has a number of measurable clinical outcomes as a result of deliberate actions by faculty to improve quality and safety during FY08.

- Medication error reporting rates at UPMC continue to be maintained at 25% above the national average.
- The anticoagulation monitoring software available in UPMC’s clinical documentation system, TheraDoc,[®] was implemented to help prevent serious medication errors and adverse events in patients receiving agents such as warfarin (Coumadin[®]), enoxaparin (Lovenox[®]), and unfractionated heparin.
- Pharmacy information systems continue to be standardized across UPMC with eight hospitals adopting the system-wide Cerner PharmNet[®] application (PUH, SHY, WPIC, MWH, BED, MHP, SSH, SMH).
- School of Pharmacy faculty and hospital pharmacists led an aggressive implementation of a “smart pump” system in seven of its hospitals. This system detects deadly intravenous infusion medication errors by electronically guiding the nurses in safe drug administration.
- School of Pharmacy faculty continue to lead the Health System hospitals in expansion of Theradoc[®], a clinical alert information system that can detect potential drug dosing and antibiotic surveillance interventions for pharmacists.
- Inpatient influenza and pneumococcal polysaccharide vaccination rates continue to track above the national average; see graph later in this section.

- The incidence of drug resistance to highly-used antibiotics has declined by almost 20%. School faculty direct the daily operations and function of the Antibiotic Management Program.
- Medication errors in prescribing antibiotics have been held in check to reduce the rate of *C. difficile* infections by 10%.
- The use of drugs considered to be dangerous in the elderly has been significantly reduced.

UPMC Presbyterian Patient Medication Education Program

Under the guidance of pharmacy faculty members, pharmacists and pharmacy students at UPMC Presbyterian Shadyside provide individualized education for patients with complex medication regimens. In addition, pharmacists provide medication management recommendations in the medical record to communicate care recommendations.

- Twelve P4 pharmacy students (one student in each 4-week rotation) provided medication education to patients at UPMC as part of the hospital's medication education program. Faculty designed and implemented the program for the first time this year as a unique Advanced Pharmacy Practice Experience (APPE).
- Faculty, staff, residents, and student pharmacists provided medication education to more than 1,000 high-risk hospitalized patients during FY08. In approximately 30% of these patients, pharmacists made at least one recommendation for optimizing the patient's medication regimen.

UPMC Presbyterian Internal Medicine

Pharmacists provide direct patient care for adult patients with multiple medical issues in collaboration with team members from other professions. Commonly encountered disease states include diabetes, pneumonia, urinary tract infections, COPD, asthma, seizures, coronary artery disease, heart failure, hypertension, renal disease, liver disease, DVT/PE, inflammatory bowel disease, and electrolyte abnormalities. During FY08, faculty caring for patients on the UPMC Presbyterian Internal Medicine service:

- Provided expert medication management for over 1,000 patients (>4,500 patient-days).
- Conducted clinical experience rotation for two third year Doctor of Pharmacy students and for eight P4 students for their required Acute Care advanced practice rotation.

Diabetes Service of Internal Medicine. Faculty play a vital role in providing a focused approach to inpatient diabetes care to prevent and treat hyperglycemia and hypoglycemia and improve patients' understanding of insulin therapy. During the past year, faculty:

- Implemented the standardized "Discharge Instructions for Insulin Form" (DIFI), for which the project team won top honors at the UPMC Quality Innovation Fair, for providing patients with insulin instructions throughout the hospital and also disseminated it to other hospitals within the UPMC Health System.
- Developed and implemented a revised standardized form for ordering insulin in the hospital.
- Disseminated and implemented UPMC's IV insulin infusion protocols at two outside hospitals not affiliated with UPMC.

- Provided four “Pharmacy Grand Rounds” educational sessions for faculty, residents, and clinical staff pharmacists on diabetes protocols and evidence-based medicine.

Transitional-Care Unit and Intermediate-Care Service

Faculty members from the department of pharmacy and therapeutics have responsibility for providing individualized pharmaceutical care for the patients admitted to the 58 beds of the UPMC Presbyterian Transitional Care Unit (TCU) and Intermediate-Care Service. Patients on these services are generally geriatric, internal medicine, or post-surgery (especially gastrointestinal, cardiothoracic, and orthopedic surgery). During FY08, faculty:

- Managed medication therapy in approximately 4,500 patient-days on an inter-professional team in the TCU.
- Provided comprehensive patient evaluation and drug therapy interventions, drug usage guideline implementation/compliance, and interdisciplinary education, including presentations to new TCU and nurse practitioners, and student nurse orientation.
- Educated 30 nursing practitioners on geriatric pharmacotherapy.
- Conducted “Ask the Pharmacist” sessions with patients and their families to discuss medications and drug-related problems.

Children’s Hospital of Pittsburgh and UPMC

Faculty at Children’s Hospital of Pittsburgh and UPMC provided pharmaceutical care for nearly 600 pediatric oncology patients. As part of the patient care team, faculty also developed supportive care regimens for chemotherapy-induced nausea and vomiting (CINV) for the Children’s Oncology Group and Pediatric Brain Tumor Consortium of Children’s Hospital. These guidelines were used successfully in over 125 pediatric patients.

UPMC Critical Care

The Critical Care Pharmacy team has continued to improve the standard of care for intensive care patients. The team works closely with operational pharmacy, DUDSM program, Center for Pharmaco-informatics and Outcomes Research, and the department’s administration to achieve the goals of providing cutting-edge service, teaching, and research in the care of the critically ill. During FY08, faculty:

- Provided pharmaceutical care for 7,558 patients totaling over 37,000 patient days on five intensive care units.
- Coordinated a patient safety effort to identify over 4,000 “at-risk” patients treated with the anticoagulant medication heparin through the heparin-induced thrombocytopenia patient safety alert program. Anticoagulant adverse events were prevented in 5% of those patients by anticoagulant medication being changed or modified.
- Developed innovative and nationally recognized educational programs utilizing human patient simulation.
- Showed over a 25% reduction in medication administration errors in the ICUs by educating nurses through simulation.
- Trained 50 students and residents in critical care pharmacotherapy.

UPMC Transplant

School of Pharmacy faculty members provided a comprehensive pharmacy service to transplant patients at UPMC Presbyterian. As part of the patient care team, faculty members this year:

- Provided pharmaceutical care to transplant patients during more than over 7,000 patient visits; care included implementation of Allomap and Cylex immunologic testing for rejection in practice and research.
- Developed pre-heart transplant treatment protocols for sensitized patients allowing for these patients to receive transplants.
- Provided immunosuppressant drug therapy management for over 1,000 patients.
- Provided patient education for 550 new patients.
- Implemented over 17,000 medication changes to improve the safety and efficacy of drug therapy.
- Trained 15 students and 5 pharmacy residents in transplant pharmacotherapy.

UPMC Antibiotic Management Program

The Antibiotic Management Program is a collaboration of School of Pharmacy faculty with the School of Medicine's Division of Infectious Diseases physicians that monitors the selection and dosing of antibiotics at UPMC Presbyterian. A School faculty member directs the daily operations and function of the Antibiotic Management Program.

During FY08, the School of Pharmacy faculty participating in the Antibiotic Management Program:

- Reviewed and optimized antibiotic therapy for more than 12,500 patients.
- Published in the medical literature on the successful implementation of a team-oriented approach at decreasing *C. difficile* disease at UPMC Presbyterian in conjunction with the Infection Control department.
- Published the 4th edition of the UPMC Guide to Antimicrobial Chemotherapy, and distributed the guide to over 2,500 clinicians at UPMC.
- Increased ciprofloxacin susceptibility to *Pseudomonas aeruginosa*, an important nosocomial pathogen, from 50% in 2002 to 69% in 2008.
- Decreased antifungal agent expenditure by 6.5% compared to the prior fiscal year.
- Trained 12 pharmacy students and pharmacy residents.
- Provided four UPMC "Pharmacy Grand Rounds" teaching sessions on optimizing antimicrobial therapy.

Oncology Pharmacy Program at UPMC Magee-Womens Hospital

Pharmacists and pharmacy technicians provide comprehensive clinical services for the Magee-Womens Hospital oncology program. The Oncology Clinical Pharmacy program provides care for patients on the following services at Magee-Womens Hospital. In FY08, faculty:

- Implemented a new clinical oncology pharmacy service;
- Provided pharmaceutical care for over 1,500 patients.

UPMC Drug Use and Disease State Management (DUDSM) Program

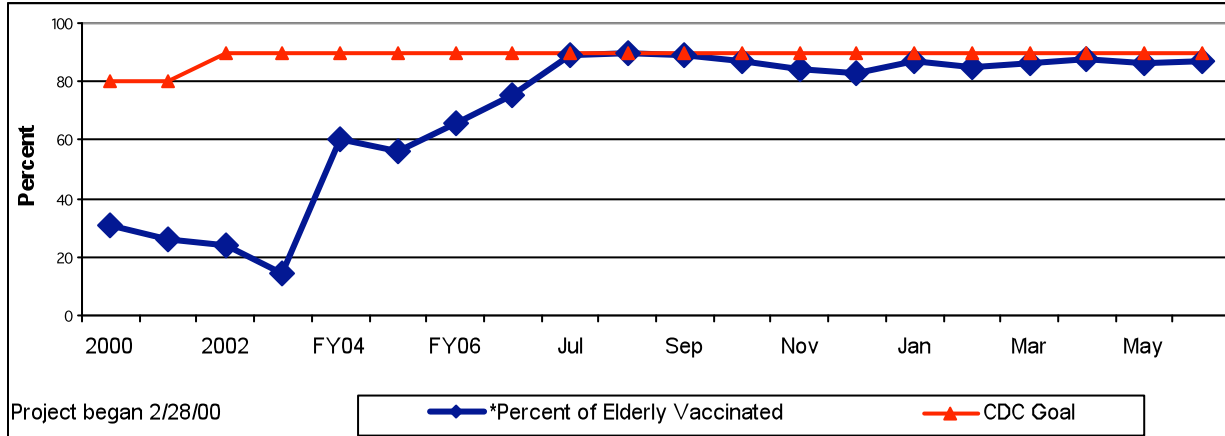
Faculty and staff members of the DUDSM program continue to innovate medication use policy and practices by supporting infrastructure for evidence-based, safe, and cost-effective use of medications.

During FY08, faculty of the Department of Pharmacy and Therapeutics:

- Developed and approved 32 UPMC medication use guidelines, including new drug formulary reviews (66%), disease management guidelines (16%), drug class reviews (9%), medication safety initiatives (6%), and innovative off-label use evaluations (3%).
- Mentored a total of 50 students (pharmacy, nursing, and medical) and pharmacy residents in developing, implementing, and evaluating evidence-based medication use guidelines.
- Reviewed and designed over 50 pre-printed physician order sets for use through Print-On-Demand and the computerized physician order entry system for UPMC.
- Performed over 10,000 medication therapy management interventions in over 8,000 inpatients at UPMC Presbyterian, including standing order immunizations, automatic renal drug dosing, medication safety in the elderly, automatic stop orders and others.
- Provided training on formulary management guidelines/reviews and resources to new pharmacists, including pharmacy residents, and physicians practicing at UPMC Presbyterian.
- Comprised the leadership for use of Theradoc® throughout UPMC health system and trained approximately 45 pharmacists in its use; faculty also hosted four site visits from national and international sites to demonstrate functionality of Theradoc® in daily hospital pharmacy practice. Theradoc® is a computerized critical alert and clinical documentation program that integrates information from the UPMC electronic health record and identifies opportunities for medication therapy intervention.
- Served as UPMC health system pharmacy leadership for the Alaris® intravenous medication infusion pump. Developed and implemented the drug library Guardrails® parameters for safe administration of intravenous medications via the pumps, throughout the UPMC hospitals. Over 700 unique medication entries comprise the library, which guides drug dose, rate, and duration of infusions for patients in the critical care, medical surgical areas, oncology, obstetrics, and pediatric settings.
- Improved and maintained pneumococcal polysaccharide and influenza vaccination rates through the pharmacy-driven UPMC Presbyterian inpatient vaccination program, with inpatient elderly and pneumonia admission vaccination rates that are now nearing the national goal set by the Centers for Disease Control (CDC). Ensuring vaccination of patients admitted with pneumonia and respiratory complications prior to their discharge from the hospital is a core quality measure

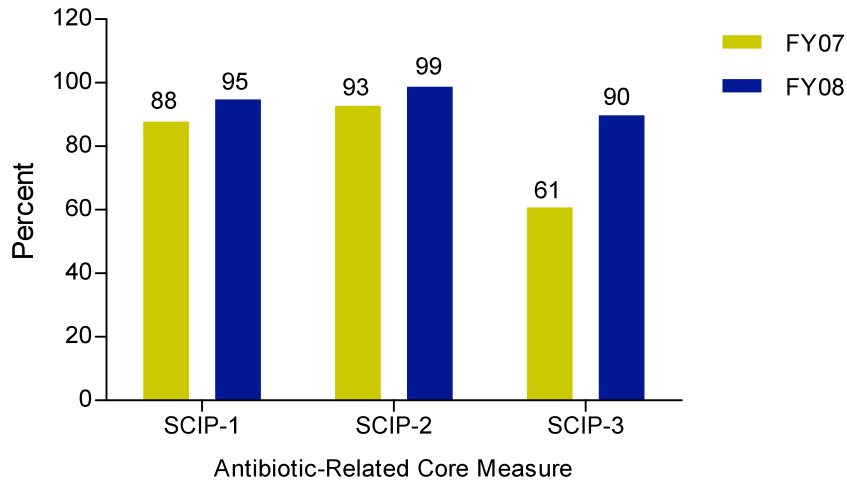
from the Centers for Medicare and Medicaid Services (CMS) and The Joint Commission™. UPMC Presbyterian vaccination rates for FY08 for pneumococcal polysaccharide and influenza vaccines were 95% and 91%, respectively, which both exceed Pennsylvania and national rates (see graph below).

Pneumococcal Polysaccharide Vaccination Rates at UPMC Presbyterian



- Improved and maintained compliance of over 90%, as graphed below, with the antibiotic core measures set forth by the National Surgical Care Improvement Project (SCIP), a core quality measure through the CMS and The Joint Commission™. The antibiotic core measures include SCIP-1 timing of antibiotic administration preoperatively; SCIP-2 selection of narrow-spectrum antibiotics as prophylaxis; and SCIP-3 short duration of postoperative antibiotic prophylaxis. The efforts of the multidisciplinary team working on these measures were recognized at the 2008 UPMC Presbyterian Quality Fair as the Quality Cup Winner and First Place in Patient Safety.

Surgical Care Improvement Project (SCIP) Compliance



UPMC St. Margaret Family Medicine Program

Clinical pharmacy education has been an integral part of the Family Practice Residency Program at UPMC St. Margaret for over 20 years. Pharmacy faculty members work closely with the medical team to educate the family practice residents on evidence-based medication utilization, collaborative patient care, and patient/public health education.

During FY08, faculty:

- Expanded the number of American Society of Health-System Pharmacists (ASHP) accredited PGY-1 Pharmacy Practice Residents, and continue the PGY-2 Specialty Residency in Family Medicine.
- Cared for approximately 800 patients in the three UPMC St. Margaret Family Health Centers (Lawrenceville, Bloomfield/Garfield, and New Kensington). Faculty provide clinical pharmacy services primarily in the areas of anticoagulation, smoking cessation, hypertension, diabetes, hyperlipidemia, asthma, and patient adherence.
- Assisted well over 500 indigent patients in obtaining their medication through a collaborative effort between the health centers, the UPMC St. Margaret inpatient pharmacy, and Falk Pharmacy.
- Provided experiential learning opportunities for various healthcare professionals including family medicine physician residents, pharmacy residents, pharmacy students, and medical students.

VA Pittsburgh Healthcare System

Comprehensive clinical pharmacy services for the VA Pittsburgh Healthcare System (VAPHS) are achieved through a coordinated program including pharmacists, PGY1 residents, and pharmacy technicians. Clinical pharmacy specialists work with practitioners in internal medicine, ambulatory care, geriatrics, critical care, and hematology/oncology to provide high-quality pharmaceutical care to America's veterans. The VAPHS patient population is mainly a male geriatric population; however, it is a center of excellence for Women's Health and is a VA kidney and liver transplant center. The faculty at the VA:

- Cared for nearly 700 unique patients during 6,500 estimated inpatient and outpatient visits.
- Dispensed approximately 1.8 million prescriptions, provided medication counseling to veterans, and supported research functions and multiple clinic areas throughout the medical center.
- Coordinated a national traineeship for anticoagulation services for the American Society of Health-System Pharmacists (ASHP).
- Avoided \$2 million in drug expenditures through various therapeutic interchange programs, treatment guideline implementation, and generic drug utilization.

PROGRAMS PROVIDING CARE TO PATIENTS IN THE COMMUNITY

Under the direction of School of Pharmacy faculty members and with the support of administration, this initiative has led to the development of new, and the strengthening of existing, community-based programs and partnerships that provide care for patients and educational experiences for students.

UPMC Falk Pharmacy

School of Pharmacy faculty members support the operational and clinical missions of Falk Pharmacy, a hospital-based retail pharmacy located on the UPMC Presbyterian campus. During FY08, through complementary roles of faculty and staff, Falk Pharmacy:

- Filled approximately 140,000 prescriptions by increasing the pharmacy space by five-fold and through installing a state-of-the-art bar-code filling system.
- Provided the Falk Pharmacy Community Care Medication Therapy Management (MTM) Service based on the Pittsburgh Model. During the past year faculty pharmacists:
 - Provided MTM to 87 patients identifying 1.3 drug related problems per visit
 - Resolved an active adverse drug reaction in 5 patients
 - Made 79 interventions during 87 patient visits
- Increased the clinical activity of the first pharmacy-based immunization clinic as conducted by the pharmacy faculty.
 - Administered 599 influenza and pneumococcal vaccinations; target populations included University of Pittsburgh employees (212); non-employees (295) and UPMC employees (92)
 - Administered 10 herpes zoster vaccinations in the Benedum Geriatric program as part of a targeted initiative to reduce herpes zoster in this patient population
- Managed anticoagulant medication for 1,060 patients and analyzed 28,000 International Normalized Ratios (INRs) with 68% of the patients achieving blood levels of anticoagulant in the therapeutic and safe range.
- Facilitated early discharge from the hospital in 141 patients who had been started on home low-molecular-weight-heparin.
- Expanded the MTM service to the Comprehensive Lung Center through a grant from the Jewish Healthcare Foundation. This service has improved the accuracy and process for medication reconciliation, a significant patient safety issue.
- Cared for over 230 patients in the Benedum Geriatric Center, identifying and resolving at least one drug-related problem per patient.
- Set up medication boxes for seven “high risk” elderly patients that involved an intensive review of reordering medication and loading of pill-boxes by the pharmacist. These patients see the pharmacy faculty member on a bi-weekly or monthly basis.

Pittsburgh Poison and Drug Information Center

Pittsburgh Poison Center (PPC)

The Pittsburgh Poison Center, a division of the Pharmacy Department at the University of Pittsburgh Medical Center, is under the direction of Dr. Edward P. Krenzelok, professor of pharmacy and pediatrics. During FY08:

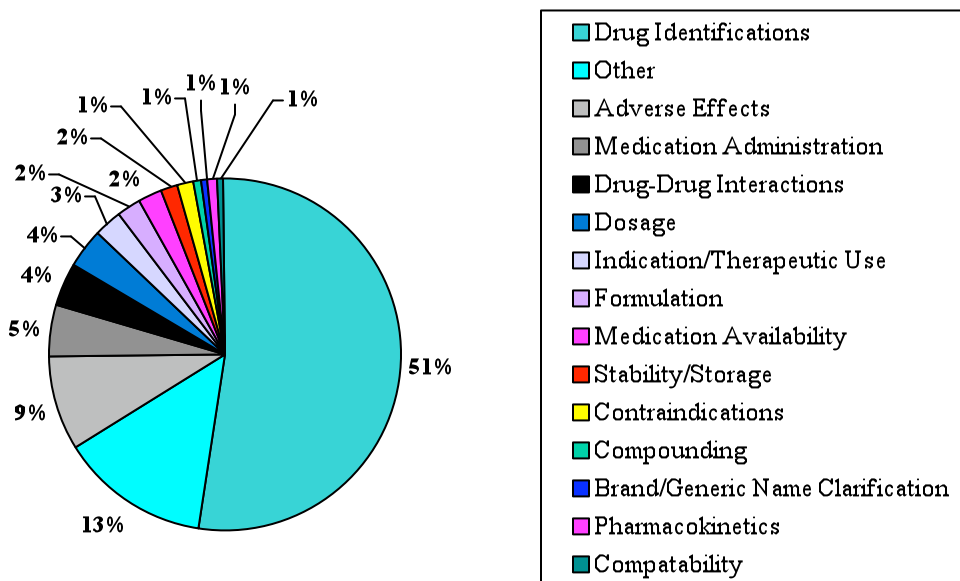
- The Center answered 133,343 calls and had a total call volume of 176,999.
- Provided poison and bio-terrorism preparedness information to the community.

The Pittsburgh Poison Center serves to provide poison information services 24 hours a day, 7 days a week to the residents and health professionals of 44 of Pennsylvania's 67 counties. In addition to responding to information requests, the Center provides poison and bio-terrorism preparedness information to the community. The Pittsburgh Poison Center enjoys a national reputation and has recently assumed leadership roles in education and systems development related to bio-terrorism preparedness. The table on the following page summarizes a number of activities the director and staff at the Center have participated in over the past year.

Drug Information Center (DIC)

As a patient-care service of UPMC, the Drug Information Center expanded its services this year by including coverage for 7-day a week drug information services. As a result, the Drug Information Center:

- Answered 3,719 questions from health care professionals at UPMC and in the community, doubling the call volume from the previous year. The figure below shows the distribution of these questions.



Highlighted Educational Activities of the Pittsburgh Poison Center

Task	Activity	Partners	Comment
Information to the Public	Distribution of Mr. Yuk stickers	Pediatricians, hospitals, state health education centers, general public	Over 525,000 sheets of stickers and 300,000 other pieces of poison prevention and poison center awareness materials were distributed
	Poison prevention/education materials	Variety of public groups	2,474 individual requests filled
	Invited presentations	Variety of public groups including: area elementary schools, summer camps, county fairs, and senior groups	84 expert talks provided
Health Professional Education	Invited presentations on Medication Overdoses, Biological and Chemical Terrorism, and Contemporary Substances of Abuse, and others	Many including: North American Congress of Clinical Toxicology, American Society of Health System Pharmacists, PA Health System Pharmacists, University of Pittsburgh Schools of Nursing, Pharmacy, and Medicine, Conferences throughout the U.S. and in Europe.	62 expert talks
Media Contacts	Various requests to respond to drug abuse and overdose cases, biochemical terrorism, and environmental/occupational toxicity incidents	Regional/national/international television, radio, and newspapers.	61 media contacts
Medical Literature	Contributed papers at national and international meetings		40 papers
	Published papers and book chapters		49 total

Pharmacist-Provided Patient-Care Practices

Rite Aid Corporation and Beyond

The relationship with Rite Aid officially began in 2004, with an agreement to establish Medication Therapy Management (MTM) Services in Rite Aid Centers of Excellence where the Rite Care brand of the Pittsburgh Model is now practiced. Since then, Rite Aid has embedded the program into their business. The University has maintained an education-based relationship and has begun to build its research agenda and national presence from the work initiated through the Rite Aid partnership.

During the past year, faculty in the School of Pharmacy:

- Expanded the community practice residency to two positions and a post-residency fellowship in FY08. Successfully recruited three individuals for the three positions for FY09.
- Were recognized nationally and locally for the unique contribution of the Pittsburgh Model to improving patient care.
 - Dr. Melissa McGivney, Drs. Gladys Garcia and Stephanie Harriman (community residents), Dr. Margie Snyder (community fellow), and the Rite Care pharmacist team were recognized as the cover story for the September 2007 issue of *Pharmacy Today* published by the American Pharmacists Association.
 - Drs. Gladys Garcia and Stephanie Harriman, community residents ('07-'08) received a combined \$22,000 in grant funding to support their resident research projects from the American Pharmacists Association (APhA) Foundation and the National Association of Chain Drug Stores (NACDS) Foundation.
- Continued to enhance experiential training rotations for students in the Rite Care Centers.

Training Future Pharmacists and Physicians Through Rite Care Practices

Trainee	2005-06	2006-07	2007-08	2008-09*
Student Pharmacist – P2 year	4	10	10	8
Student Pharmacist – P4 year	12	12	9	9
Pharmacy Resident	1	3	7	6
Physician Resident	0	12	12	12
Total	17	37	38	35

* Scheduled

- Used the “train-the-trainer” program to develop standardized MTM training for pharmacists throughout the Commonwealth of Pennsylvania as a collaborative effort among the seven schools of pharmacy. The project is supported by a foundation grant from DSF.
- Secured additional grant funding from Highmark Foundation and Pfizer to offer statewide MTM training program and to develop a training program for all pharmacy students in the Commonwealth of Pennsylvania. These extend the impact of the DSF grant described above.
- Continued inter-professional training of residents in the Family Medicine Residency program. Second-year physician residents experience patient care delivery in a community pharmacy in

conjunction with a Rite Care™ pharmacist. The experience places a strong emphasis on mechanisms for achieving inter-professional collaboration in the community once the resident is in practice.

The Grace Lamsam Pharmacy Program for the Underserved

The Grace Lamsam Program consists of volunteer pharmacists and students from the Pittsburgh area who provide pharmacy services at community health centers, free primary care clinics, and at shelters and “drop-in” centers in Pittsburgh. The Program serves primarily homeless and low-income 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 partners with Health Care for the Homeless (HCH) and North Side Christian Health Center, Squirrel Hill Health Center and collaborates with the Program for Health Care to Underserved Populations (PHCUP). The Grace Lamsam Pharmacy Program works to enhance access to cost-effective medicines for patients served by our collaborator groups. The program contributes expertise to reduce cost and assure safe and effective drug therapy.

As a measure of its success and impact, the Grace Lamsam Pharmacy Program for the Underserved was selected as one of three national finalists for the 2008-2009 American Association of Colleges of Pharmacy Inaugural Award for Transformative Community Service. The winner will be announced in February.

The table at the end of this section of the report summarizes the care provided through the Grace Lamsam Pharmacy Program in collaboration with the specific entity identified.

Health Care for the Homeless Clinic Accomplishments

During FY08, the faculty and volunteer pharmacists:

- Provided oversight of the pharmacy program for HCH who served almost 6,000 unique patients in over 18,000 visits.
- Provided experiences in the community for four pharmacy practice residents and, one community practice pharmacy resident, and two family medicine residents. It also provided experiences for 161 PharmD students.
- Received funding and supplies from the Rite Aid Foundation to continue and expand Medication Therapy Management Services (MTMS) for patients at Birmingham Clinic.

Alumni and faculty members who provide care at the clinics include Sharon Connor, director and assistant professor; Shelby Corman, assistant professor; Tanya Fabian, assistant professor; Lauren Jonkman, pharmacy resident; Laura Krugger, pharmacy resident; Kristine Schonder, assistant professor; Kara Sperandeo, pharmacist; and Maria Yaramus, assistant professor.

North Side Christian Health Center Pharmacy Services Clinic

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

During FY08, pharmacists:

- Provided care for approximately 500 patients.

- Evaluated patients for eligibility for various assistance programs available in the city, county, state and through Indigent Programs.
- Evaluated drug therapy for appropriateness and made recommendations that integrate the resources available to attain the best treatment for the patient.
- Provided experiences for 10 P4 PharmD students and 8 first-year pharmacy students.
- Provided longitudinal experiences for two community care residents and rotations for four pharmacy practice residents as well as an experience for one family medicine resident.

Accomplishments:

- Received funding and supplies from the Rite Aid Foundation to continue and expand MTMS with a focus on patients with diabetes and hypertension

Faculty: Sharon Connor, Maria Yaramus

Squirrel Hill Health Center

The Grace Lamsam Pharmacy Programs began a new partnership with the Squirrel Hill Health Center (SHHC) in 2007. Through this partnership, the program provided pharmacy students improved access to medications for the uninsured population of the SHHC. Students assisted with the Pharmaceutical Manufacturer Patient Assistance Programs applications. Students also completed a needs assessment for the establishment of an onsite pharmacy for the health center utilizing the 340B program.

Provided experiences for:

- 8 P1 students
- 8 P3 students
- 1 P4 pharmacy student

Grace Lamsam Pharmacy Program Summary

Service	Description of Service Activities	Location	How often is service provided and at what times	Providers involved in delivering service	# of individuals served/ # attendees
Health Care for the Homeless Pharmacy Partnership Partners include: 1)Health Care for the Homeless 2)Program for Health Care to Underserved Populations 3)Operation Safety Net	<ul style="list-style-type: none"> •On-site pharmacy services •Pharmaceutical Care Quality Assurance •Formulary development and maintenance •Cost-effectiveness Outcomes •Inventory Management Protocols •Development of Clinical Practice Guidelines-Best Practices •Train HCH providers to utilize the patient assistance programs 	Birmingham Clinic Women’s Center Pleasant Valley Bethlehem Haven Light of Life Salvation Army North Side	Monday – Saturday Ten clinic which meet half-day at various times	Community <ul style="list-style-type: none"> •Volunteers •P2, P3 and P4 students •SOP Faculty Pharmacy residents •14 volunteer pharmacists 	Total patient encounters: approximately 3,800
Preventive Care Clinic (Smoking Cessation) with HCH	<ul style="list-style-type: none"> -blood pressure screening -consultation -smoking cessation counseling -blood glucose testing -heart disease screening -diabetes screening 	Birmingham Clinic	Thursdays 9am–11:30am	<ul style="list-style-type: none"> •Pharmacy students •Medical students •SOP faculty •Pharmacy residents 	Total patients: 60 Patient encounters: 300
North Side Christian Health Center Pharmacy Services Clinic	<ul style="list-style-type: none"> •Medication Therapy Management Service •Access to medications through Pharmaceutical Manufacturer Patient Assistance Programs 	North Side Christian Health Center, Community Health Center	Tuesday and Thursday y from 1:00pm–5:00pm	2 Pharmacists 6 Pharmacy Residents P4 students on rotation	Total Patients: 500
Squirrel Hill Health Center (SHHC)	<ul style="list-style-type: none"> •Assist with activities of SHHC such as the process for establishing a 340B Pharmacy •Assist with paperwork to enhance access to medications through the Pharmaceutical Manufacturer Patient Assistance Programs 	Squirrel Hill Health Center	Monday – Thursday 1:00pm–4:00pm during fall and spring semesters	P1, P3 and P4 students	

University Diabetes Care Associates

University Diabetes Care Associates (UDCA) offers a wide range of services to patients and referring physicians (39 practices) including disease state management, patient education and training, medical nutrition counseling, care plan development, and pharmacokinetic consults. In FY08, faculty:

- Conducted 700-800 visits with primarily elderly patients.
- Trained 12 Doctor of Pharmacy students and 2 pharmacy residents.
- Presented a series of community outreach education outreach program called *Know Your Health Professional: A Guide to Better Diabetes Management*.

Securing an Adequate Resource Base



Securing an Adequate Resource Base

Achieving the School of Pharmacy vision requires a financial, space, and technology resource base that supports the faculty, staff, and students in their endeavors. Fostering philanthropic support, using space efficiently, acquiring space for new programs, and providing the faculty, students, and staff with the best technologies for research, education, and administration are critical to the School's success.

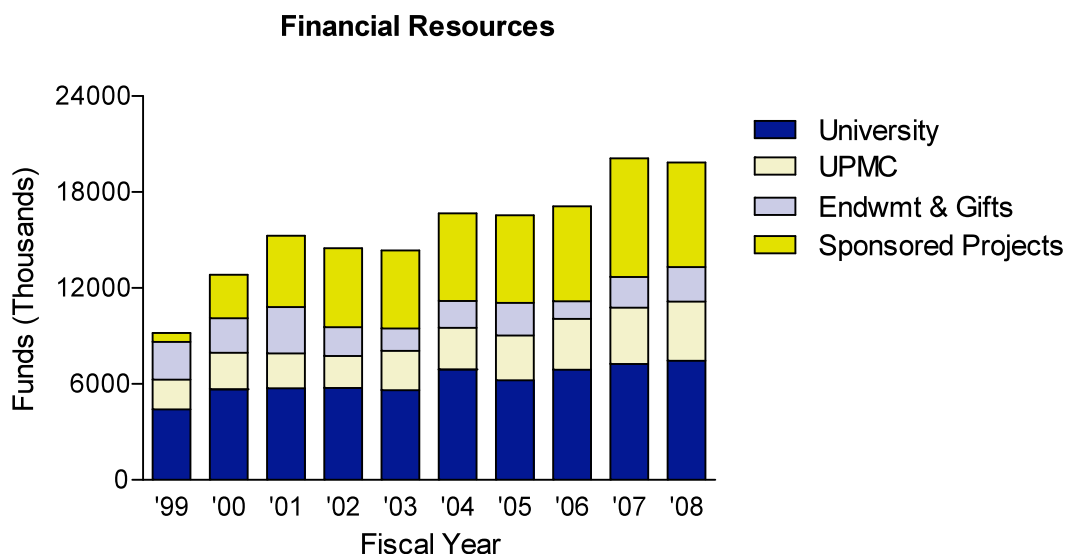
By 2012, the School of Pharmacy will have:

- **Increased the resource base of the School of Pharmacy.**

FINANCIAL

Budget

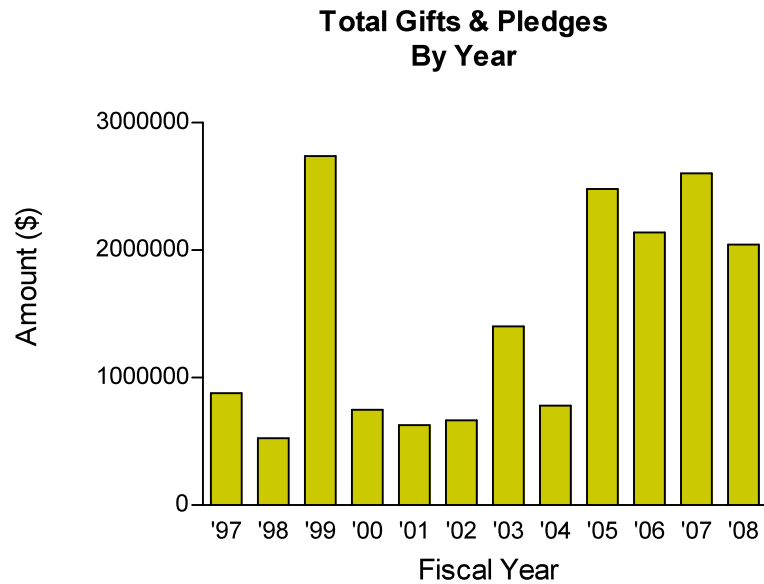
Sources of funding for the School of Pharmacy include allocation from the University of Pittsburgh, the University of Pittsburgh Medical Center Health System, continuing education and auxiliary accounts, gifts and endowments, and sponsored project awards. The graph below shows financial data for fiscal years '99 through '08.



The graph demonstrates the growth of financial resources, particularly since 1999, when the total budget was \$9,181,870 and sponsored projects accounted for 6% of the budget. The total budget for FY08 was \$19,893,616. Together, sponsored project awards (33%), University (37%) and UPMC (19%) support accounted for over 89% of the School's funding. The decrease in budget this year is attributed to a decline in sponsored projects, which accounted for 37% the budget in FY07.

Institutional Development

The value of the School of Pharmacy is recognized in many ways, including philanthropic support. In FY08, the School of Pharmacy received charitable gifts, pledges, and grants totaling \$2,044,375 from a total of 928 individuals, foundations, corporations, and other organizations. FY08 marks the fourth consecutive year that the School has received over \$2,000,000 in philanthropic support. Fundraising totals for fiscal years 2005 to 2008 accounted for over 52% of the dollars raised over the past twelve years.



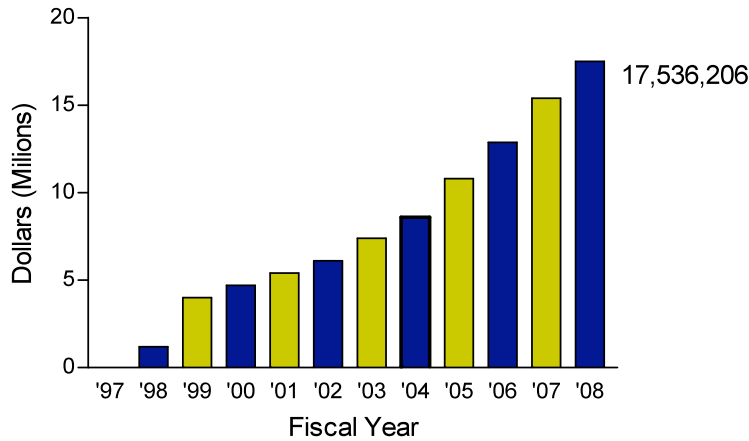
FY08 Giving to the School of Pharmacy by Source

	Alumni	Foundations	Corporations	Organizations	Friends
Amount	\$1,297,063	\$107,396	\$262,460	\$127,140	\$268,344
Percentage	63%	5%	13%	6%	13%

Capital Campaign

On July 1, 1997, the University launched the Capital Campaign for the University of Pittsburgh to support students, teaching, and research. For the period July 1, 1997, through June 30, 2008, the School of Pharmacy raised a total of \$17,536,206 in gifts and pledges for the School's portion of the Capital Campaign. Of this amount, a total of \$15,112,191 has been received and \$2,424,015 is due in pledges and planned gifts. Alumni, friends, corporations and foundations, faculty, and staff have provided the philanthropic support. Securing endowed funds to provide scholarship and professorship support is the primary goal for the School of Pharmacy Capital Campaign.

**Capital Campaign
Total Gifts and Pledges**



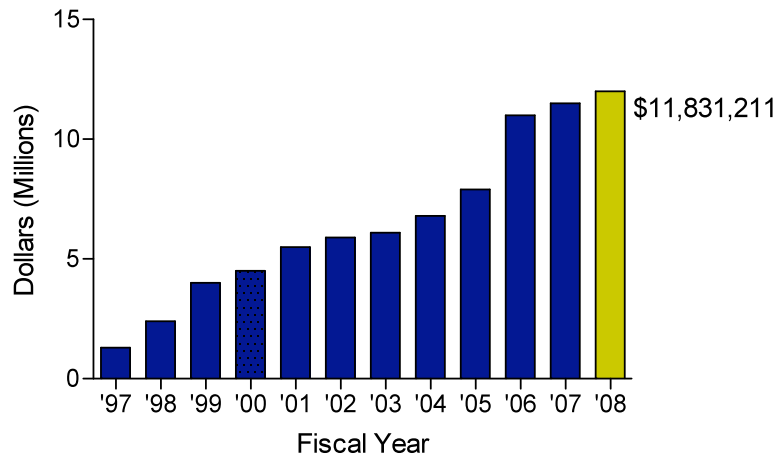
**School of Pharmacy Capital Campaign by Gift Designation
Gifts and Pledges*
July 1, 1997 – June 30, 2008**

Designation	Amount
Endowed Scholarships and Awards	\$4,690
Endowed Professorships (1)	3,000
Renovation: Seminar, Student Lounge, Labs	433
Programs and Research	4,585
Other	4,827
Total	\$17,536

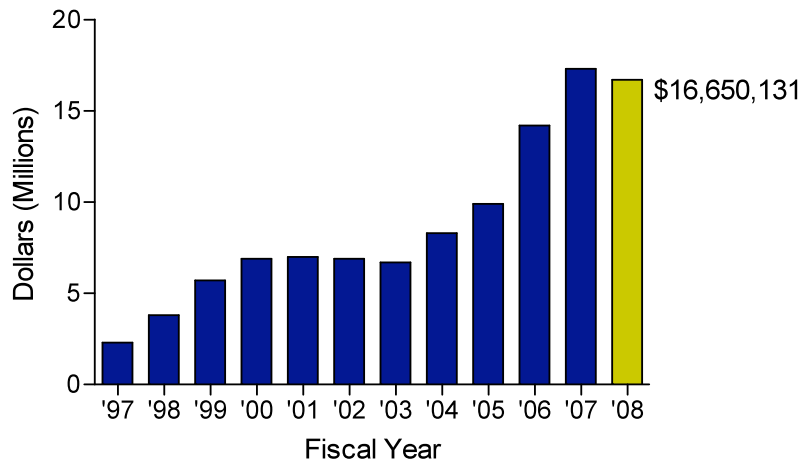
*Includes Voluntary Support (gifts) received during FY08

The graphs below indicate the book and market values, respectively, for the endowment, which were \$11,831,211 and \$16,650,131 as of June 30, 2008.

School of Pharmacy Endowment - Book Value



School of Pharmacy Endowment - Market Value



PHYSICAL FACILITIES

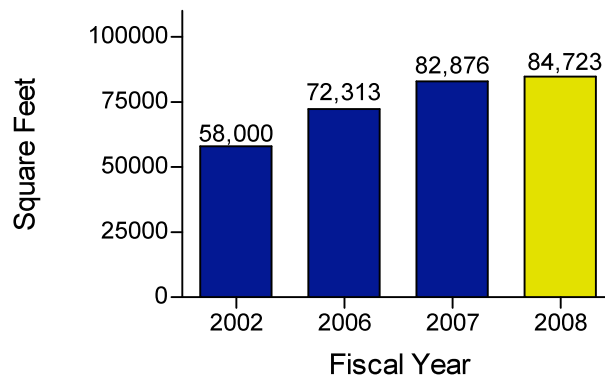
By 2011, we will have:

- **Increased the physical space of the School of Pharmacy.**

During the past year, the physical space occupied by the School of Pharmacy continued to grow. In addition, we participated in planning for continued growth in research space.

- At the close of FY08, the School of Pharmacy occupied 84,723 SF of space, including 47,450 SF in Salk Hall; 5,588 SF in BST3; 2,704 SF in UPMC Montefiore; 6,995 SF in UPMC Presbyterian; 1,091 SF in Falk Clinic; 458 SF in Lothrop Hall; 4,927 SF in Scaife Hall; 1,110 SF on Craig Street (leased); 810 SF (leased) on Fifth Avenue; and 13,590 SF (leased) in Birmingham Towers.
- School members participated in extensive planning both for renovations of Salk Hall and a new research structure that will bridge to the School of Pharmacy. The design for the new structure will be completed in Fall 2008, with anticipated move-in date of Summer 2010.

School of Pharmacy Space Allocated



EFFICIENCY AND EFFECTIVENESS

By 2011, the School of Pharmacy will have:

- **Increased effectiveness and efficiency and will have enhanced the personal growth and professional development of the staff.**
- The staff established a process for the hiring of new administrative staff. Search teams similar to faculty search teams engage to recruit and recommend hiring new staff. To date, over 70 percent of the administrative staff have participated on a search team. All of the administrative staff hired over the past two years were candidates selected by the search team.
- The integration and participation of the administrative staff on School-wide committees have grown significantly over the past several years. Currently, over 80 percent of the administrative staff serves on at least one School-wide committee including the participation of many staff in strategic planning sessions.
- Staff members have been instrumental in the development and planning of several national and international meetings and conferences hosted by the School of Pharmacy. Staff have participated in the planning and execution of these events during the past year. These programs have led to national exposure for the School of Pharmacy.

INFORMATION TECHNOLOGY

The accomplishments of the Informatics Team for FY08 are summarized below:

- **Created Pharmacy Insights, <http://www.pharmacyinsights.org/>**
Pharmacy Insights is produced by students at the University of Pittsburgh School of Pharmacy for students at schools of pharmacy around the world. The program provides students access to personal thoughts and reflections of leaders in all fields associated with pharmacy. Each influential leader is interviewed by a pharmacy student on the Pharmacy Insights editorial board. Podcasts are available for each interview and may be accessed via the Podcast page. Pharmacy Insights provides the listener with a personal view of each leader's role in pharmacy, how they prepared for their current job responsibilities, and their vision for the future. Pharmacy Insights was developed as an extension of the Executive Boardroom Series 1, a new course developed by Dr. Gordon Vanscoy, associate dean for business innovation, to provide students with a broad overview of the business of pharmacy from senior executives in various business sectors.
- **Transitioned DM Educate™ Course to In-house Management and Updated Technology**
DM Educate™ is an on-line diabetes management course serving students from 83 schools of pharmacy around the globe. Because of the number of users involved, and the fast-paced nature of changes to diabetes management and the drugs used in this area, the decision was made to transition the existing application to use open source technology, allowing for faster and more cost effective updates to content, multi-media, and on-line resources.
- **Enhanced Student Communication Options**
 - The School's student portal (<http://students.pharmacy.pitt.edu>) has been a primary location for students to find information and communications from the School. Developed in-house in 2005 by a task force of students and technology staff, it has been updated each summer to provide added functionality.

- Summer/Fall 2007: Added Yahoo widgets so students could see announcements and events from their desktop.
 - Updated calendar to provide better user interface for events using latest Web technology, AJAX.
 - Created a blog server to allow students who are doing international rotations a space to post about their experiences with the goal of encouraging others to consider different opportunities for experiential learning. <http://rxweb.pharmacy.pitt.edu/weblog/>
- **Increased Documentation for all Faculty and Staff**
 - Created an FAQ in the online Web Help Desk to provide faculty, staff, and students a centralized location for technology help. <http://support.pharmacy.pitt.edu>
 - Placed easy-to-follow instruction sheets in all classrooms and conference rooms so that faculty and staff, especially those who use the room infrequently, are able to use all of the existing technology.
 - **Increased RAID (File storage)**
File storage was increased from 2.3 to 5.5TB and began to include nightly back up of research data in addition to the back up of home directories and shared directories.
 - **Implemented GPO's (Active Directory Group Policy)**
A greater level of network-level security, and uniformity for computer security, handling, and management were implemented.
 - **Provided Daily Maintenance and Support of Classroom Computers**
Created a position, and devoted focused time on ensuring that computers in all teaching rooms were properly maintained and ready for faculty use. Instituted regular schedule of maintenance for these computers. Results: decrease in overall number of complaints about classroom technology; log record of how the computers are handled on a day-to-day basis.
 - **Handled 2,311 Technology Help Tickets**
 - Web and online technology (449)
 - Network/server administrative (215)
 - Desktop/Classroom support (1302)
 - Other (345)
 - Replaced computers (42)
 - Replaced printers (4)
 - **Launched a Lunch-and-Learn Series**
Began an informal seminar series for the technology team and interested faculty and staff to meet on a monthly basis. Presenters were leaders in the use of innovative technology. Format is short presentation with long period for Q/A and discussion. Speakers included:
 - Brian Butler, Katz Graduate School of Business: Use of Web 2.0 Technology
 - Lloyd Onyett, Assistant Dean for Information and Communications Technology, College of Education and Educational Technology, Indiana University of Pennsylvania: Second Life and the Use of Virtual Worlds in Education
 - Jesse Schell, Assistant Professor, CMU Entertainment Technology Institute: Educational Games
 - Sean Colombo, CEO, Motive Force LLC: Social Networking
 - Kevin Roebuck, VP of Education, SunMicrosystems: Collaborative Virtual Work Spaces

- **Migrated to Exchange for E-mail and Calendaring**
Replaced existing in-house scheduling system with CSSD's Enterprise Exchange to provide a higher level of connectivity, leverage University-provided resources, and standardize e-mail and calendaring.
- **Provided Remote Technical Support**
Established a policy and infrastructure for the use of Remote Desktop to allow the support staff to assist faculty and staff remotely without the need to physically visit all computers, resulting in less time needed to provide adequate support.
- **Implemented LookAhead Sessions**
Began using a model for staff development spearheaded at Google where technology staff use a portion of their time for creative exploration of new ideas. Each LookAhead session is followed by a presentation session where the staff presents to their fellow staff members what they explored, what they learned from it, and how it could impact the way they work.
- **Created Alumni Message Board**
A Message Board/forum was created to allow alumni to communicate with classmates prior to Gala 2008 as a first step toward using a higher level of social networking technology to better engage our alumni with students as well as with the School.

COMMUNICATIONS

Effective communication with our 5,800 alumni, faculty, staff, students, and friends along with countless potential applicants to our School of Pharmacy is essential to our success. Communication media are in the form of print and Web materials.

During FY08, the communications team:

- Developed and coordinated the production and delivery of 30 print pieces to the School's 5,800 constituents, for a total of 56,000 individual printed pieces. The print pieces include the School's magazine and printed materials for national symposiums hosted by the School with a University presence: Great Lakes Symposium, Medicinal Chemistry Symposium, Allegheny Drug Overdose Symposium, Drug and Nucleic Acid Symposium.
- Developed a system for coordinating the information on the public and intranet calendars to inform users of important events and meetings.
- Developed and implemented a feedback form on the School Web site to encourage feedback and input regarding the School and its publications.
- Coordinated the use of Message Board for Gala 2008 Web site including daily security checks.

Event Notification Process

In June 2002, the School of Pharmacy initiated an event notification protocol to assure that awards, appointments, and other honors received could be communicated within the School and to our broader community. Notification may be submitted by any faculty member, staff member, or student. The goal is to increase and maintain positive awareness of the accomplishments of the School of Pharmacy and its faculty, staff, and students:

1. Within the University of Pittsburgh and the UPMC community.

2. Among health care professionals; relevant researchers; federal, state, and private funding agencies; and prospective students and parents.
3. Among the public of the region and the country.
4. Within the local and national media so that the School of Pharmacy is contacted when an expert opinion on a health care or research discovery topic is desired.

Through the event notifications, news about faculty and student accomplishments and awards and other newsworthy items are posted to the School's Web site. In addition, the UPMC News Bureau liaison uses the information submitted through event notifications to generate placements in the University publications and in local and regional media. The following graphs show the number of event notifications that resulted in placements in the university and local and national media for FY03 through FY08.

