School of Pharmacy
Vision for 2012

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.

Mission

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

Adopted July 2006, Revised July 2009

Vision

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

Adopted July 2006

Values

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

Adopted July 2006

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 exception is "assuring an adequate resource base," which is exclusively focused on excellence.

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

Environment: Assessment and Opportunities

Healthcare Issues

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

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

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

- Redesigning care processes;
- Effective use of information technologies;
- Knowledge and skills management;
- Development of effective teams;
- Coordination of care across patient conditions, services, and settings over time;
- Use of performance and outcome measurement for continuous quality improvement and accountability.

Currently, the predominant form of interaction between pharmacists and patients does not meet the needs of people with chronic diseases, particularly those with complicated and expensive drug regimens. In order for therapy to be effective, patients must understand the regimen, accept the responsibility for appropriate self-care, know how to monitor their response to therapy, and have the confidence to communicate with their various healthcare providers. Pharmacists have the knowledge and skill to make a difference, but are currently working in a service delivery model that focuses on the product, not on the information or care process.

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

Health Disparity

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

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

Opportunities for the School of Pharmacy:

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

Global Health Issues

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

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

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

Opportunities for the School of Pharmacy:

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

Research

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

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

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

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

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

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

Opportunities for the School of Pharmacy:

- Increase NIH-funded research awards to the School of Pharmacy by recruiting new faculty members who are prepared to be independent or who already are funded investigators to participate in pharmacogenetics, the multi-disciplinary drug discovery program, and other emphasis areas of the school.

- Increase the scope and funding for translational and clinical research, especially hospital-based research conducted by faculty members who have clinical backgrounds.
- Develop health services and health economics research programs on pharmacy care and systems.
- Enhance partnerships with other schools on campus to better position the faculty of the School of Pharmacy and the schools of the health sciences to compete for federal and foundation funding.

The Changing Role of Pharmacists

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

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

	2001 Estimated Deployment	2020 Forecast Need for Pharmacists
Order Fulfillment (Dispensing)	136,400	100,000
Patient Care	48,000	295,000
Other	12,300	22,000
Total Need	196,700	417,000
Total Supply	N/A	260,000
Projected Shortfall		*157,000*

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

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

The shortage of pharmacists is also being addressed by application of technology and technical staff to prescription order fulfillment. The goal of the application of technology is to reduce the need for a pharmacist in the dispensing function and to provide decision support for drug interactions and

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

Community Pharmacy in Transition

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

Opportunities for the School of Pharmacy:

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

Institutional Pharmacy Developments

Pharmacists in institutional practice have become the driving force for evidence-based medication usage and medication safety. Drug use review (DUR) programs will increase with the emphasis on defining the evidence-based use of new drugs and counteracting the advertising and detailing efforts of the pharmaceutical companies. Pharmacists will be under pressure to hold drug budget increases to a minimum and to maintain the quality of clinical outcomes.

Growing evidence of the number of medical errors that occur throughout the U.S. healthcare system has prompted increased interest in using technology to improve safety. A significant concern of patients, healthcare organizations and clinicians is medication errors, that occur at a rate ranging from 19%-36% in hospitals; over half of these errors occur during medication administration. In the United States Pharmacopeia Convention's recently published report, almost 2% of all medication errors (approximately 4,000) reported in hospitals during 2003 resulted in significant harm to patients. Pharmacists in hospitals are uniquely positioned to implement and evaluate technology to improve safety. Examples of this technology include bar coding systems, automated dispensing devices, and computerized physician order entry.

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

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

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

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

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

Opportunities for the School of Pharmacy:
- Become the leader in evaluating drug therapies and generating evidence-based guidelines for effective and safe use of medications. More importantly, the School, in partnership with the Schools of Nursing and Medicine, can develop and evaluate how to implement guidelines in different clinical settings.
- Become one of the first hospital systems in the country to achieve the objectives of ASHP 2015.
- Develop systems of care that ensure all patients receive appropriate pharmacist interventions and patient education.
- Develop a post-marketing surveillance program to track safety of FDA-approved medications.

Strategic Outcomes

Educating the Next Generation of Practitioners and Scientists

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

Adopted 2005

PharmD 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:
    - peer review publications (#)
    - textbooks and chapters (#)
    - presentations
    - faculty total producing scholarly work (#)
    - seeking grants (#)
    - faculty learners in training programs through Pitt or other organizations (#)
    - faculty teachers in training programs through Pitt or other organizations (#)

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 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
    Measure:
    - 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:
   - PhD students in the program (#)
   - competitive fellowships e.g. AFPE, NRSA, T32, F31 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, government and industry positions (#)
   - publications about program (#)
   - faculty as primary mentors (#)
   - graduate students included on grants (#)

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. Maintain 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 (#)

- graduate students presenting at national meetings (#)
- graduate student publications (#)

Innovation and Leadership

14. Partnered with the Clinical and Translational Science Institute to develop learning opportunities for our students.
    Measures:
    - opportunities available (#)
    - participating students (#)
    - courses attended by graduate 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:
    - U.S. citizens and permanent residents admitted (#)
    - 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/regional meeting (%)
    - residents who published their research in peer-reviewed journals (%)
    - first-year residents continuing to PGY-2 program (%)
    - residents who earn an MS MPH or PhD (#)
    - residents who take academic positions (%)

19. Trained residents who compete successfully for national grants and awards.
    Measures:
    - # grants received by residents (#)

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:
    - community/ambulatory program developed/implemented (yes / no)
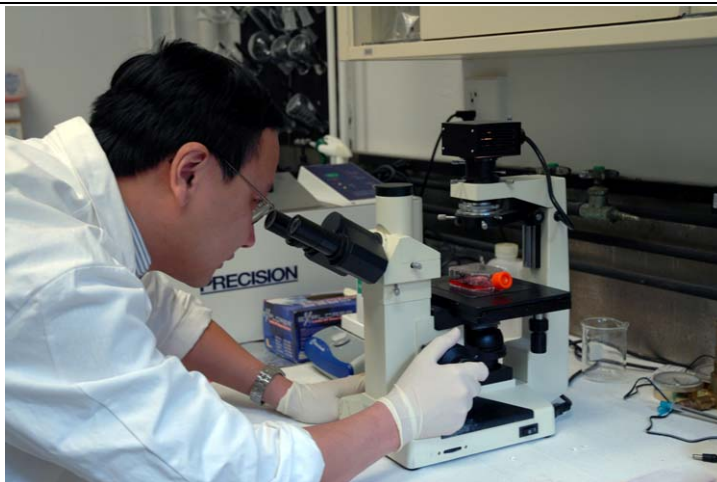   - residents in community/ambulatory program

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 (#)
    - faculty with peer-reviewed funding (%)
    - peer reviewed publications (#)
    - faculty participation in program committees of scientific organizations (#)

23. Diversified our portfolio of research funding.
    Measure:
    - non-NIH funding (%)
      a. NSF
      b. DOE
      c. DOD
      d. industry

24. Trained a cadre of PhD and postdoctoral PhD fellows who are highly sought after for careers in academia, industry, and the government.
    Measures: postdoctoral fellows:
    - in training annually (#)
    - who take academic positions (#)
    - who take positions in industry (#)
    - who take positions in government (#)
    - who take post doctoral fellow position

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 and center grants
    Measures:
    - applications submitted (#)
    - applications funded (#)
    - IRB submissions as collaborators (#)
    - IACUC submissions as collaborators (#)

27. Established a program for research that focuses on pharmacy service models and health care outcomes to favorably improve patient care.
    Measures:
    - 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 e.g. 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 patient care, service models, and/or outcomes (#)
    - grants for 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 treated (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 in provision of care for UPMC patients.
     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 / no)
     - program implemented: (yes / no)

Enhancing Our Capabilities through Increased Efficiency and Effectiveness

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

Renewed 2005

By 2012 the School of Pharmacy will have:

Excellence

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

39. Applied technology to effectively and efficiently deliver quality education to facilitate student learning.
    Measures:
    - 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 / 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 earned (# 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 or regional awards (# ever)
    - faculty appointments to NIH study sections (#)
    - faculty appointment to FDA advisory boards
    - faculty appointment to industry advisory boards
    - editorial board appointments (#)
    - faculty on non-industry advisory boards (#)
    - 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 community service awards (#)
    - 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 are engaged as citizens in serving the profession of pharmacy and the 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 (#)

- 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.
    Measures:
    - 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 (%)
    - event notifications submitted (#)
    - press release placements (#)

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