The goal of the University of Pittsburgh School of Medicine is to educate physicians who are science-based, skilled, and compassionate clinicians prepared to meet the challenges of practicing medicine in the 21st century and to conduct cutting-edge biomedical research that is focused on bettering the human condition and advancing the fundamental understanding of medical science.

Out of more than 3,400 institutions nationwide, the University of Pittsburgh (together with its affiliated institutions, including Children's Hospital of Pittsburgh and Magee-Womens Research Institute) ranked seventh among educational institutions and affiliates in National Institutes of Health funding—the gold standard of biomedical research stature—in fiscal year 2005, primarily as a result of the efforts of the medical school faculty. This ranking is the only truly objective metric by which the overall stature of research-focused medical schools is assessed in a nationally competitive context, but it follows that schools in such a tier must also have excellent faculty, students, and resources.

Medical schools are periodically subject to full accreditation review by the Liaison Committee on Medical Education (LCME), the accrediting authority for M.D. degree programs in the United States and Canada. The process of meeting and maintaining accreditation requires a medical school to comply with a long list of rigorous national standards. After its most recent review here, the LCME survey team reported it had found numerous areas of strength and not a single area of weakness, which essentially meant the School of Medicine had achieved a perfect “score.”
The School of Medicine began as the Western Pennsylvania Medical College and graduated its first class of physicians in 1887. In the 1890s, the medical college became affiliated with the Western University of Pennsylvania, which originated as the Pittsburgh Academy in 1787, making it one of the nation’s oldest academic institutions. Western University of Pennsylvania was renamed the University of Pittsburgh in 1908.

- The School of Medicine is the nucleus of the region’s cutting-edge biomedical research initiatives, home to a growing number of world-class investigators, and a significant contributor to the region’s growing biotechnology industry.

- Pitt medical students consistently perform well on the United States Medical Licensing Examination (USMLE), which consists of a basic sciences test at the end of their second year (Step 1) and tests for clinical knowledge and clinical skills during their fourth year (Step 2CK and Step 2CS). Our students regularly score above the national mean on these tests and almost always have a higher pass rate than the corresponding national average.

- Each year, the National Resident Matching Program consistently pairs Pitt’s fourth-year medical students with some of the nation’s top residency programs in virtually all specialty areas. In 2006, 58 percent of our graduates matched to residencies in one of the country’s 15 most highly ranked (and, therefore, most coveted and competitive) academic medical centers, including Johns Hopkins Hospital, Brigham and Women’s Hospital, UCLA Medical Center, University of Chicago Hospitals, Stanford University Programs, the Hospital of the University of Pennsylvania, and the University of Pittsburgh Medical Center. Among our most recent graduates, 40 percent chose primary care specialties, 33 percent surgical specialties, and 22 percent hospital-based specialties.

For more information: www.medschool.pitt.edu/admis/pdfs/residency-match06.pdf
The School of Medicine has 589 M.D. students: 274 women (47 percent) and 315 men (53 percent). Of these students, 168 (29 percent) are Pennsylvania residents. The School of Medicine fosters an academic environment that encourages and supports a richness of diversity among students of various racial, ethnic, and cultural backgrounds. Underrepresented minority students make up approximately 10 percent of the medical student body.

In addition, the medical school’s various Ph.D. programs have a total of 279 students (including those students in the Medical Scientist Training Program who selected one of the School of Medicine graduate programs for the Ph.D. segment of their studies) plus 58 students in M.S. programs and 11 students in certificate programs.

As of July 1, 2006, the School of Medicine had 1,881 regular faculty plus 1,751 volunteer faculty. Fifty-five faculty members from throughout the school are current members of its new Academy of Master Educators, which was developed to recognize and reward excellence in medical education.

The medical school receives more than 5,300 applications for admission a year, interviews approximately 900 prospective students, and enrolls 148 members in the first-year class.

The School of Medicine includes the following 28 departments: Anesthesiology; Biomedical Informatics; Cell Biology and Physiology; Computational Biology; Critical Care Medicine; Dermatology; Emergency Medicine; Family Medicine; Immunology; Medicine; Molecular Genetics and Biochemistry; Neurobiology; Neurological Surgery; Neurology; Obstetrics, Gynecology, and Reproductive Sciences; Ophthalmology; Orthopaedic Surgery; Otolaryngology; Pathology;
Pediatrics; Pharmacology; Physical Medicine and Rehabilitation; Psychiatry; Radiation Oncology; Radiology; Structural Biology; Surgery; and Urology. The newest of these departments—Biomedical Informatics, Computational Biology (which was among the first to be established in this discipline at a U.S. medical school), and Structural Biology—reflect the school’s growing emphasis on the integration of advanced technology with basic science in some of the most rapidly developing and leading-edge fields of medical research.

FOR MORE INFORMATION: WWW.MEDSCHOOL.PITT.EDU/DEPT/DEPT.ASP

CURRICULUM

Highlights and Distinctions

Pitt’s medical school curriculum blends innovative teaching methods with tried-and-true techniques. Here are some highlights:

PATIENT/DOCTOR RELATIONSHIP

In addition to the rigorous traditional study of the basic sciences in the first two years of medical school, Pitt offers courses from the very beginning of the medical school experience that deal with the human side of medicine. In these courses, students encounter real patients, learn how to establish a patient/doctor relationship, and develop patient interviewing skills as well as the techniques for conducting a physical examination. Starting in their first year, students are exposed to medicine being practiced in primary care ambulatory settings, including clinics and physicians’ offices.

Scaife Hall
PROBLEM-BASED LEARNING
In the early 1990s, Pitt was among the first medical schools to adopt a teaching method known as problem-based learning, or PBL, which engages small, faculty-mentored groups of first- and second-year students in exercises of clinical diagnoses built from actual cases of graduated difficulty. PBL builds collaborative problem-solving skills and teaches students how to “mine” vast information resources and apply them to specific clinical cases. In PBL sessions, faculty members serve as facilitators rather than traditional instructors. Pertinent facts are presented in such a way that students must continuously analyze and re-evaluate them, seek supporting evidence, and focus their thinking to reach a differential diagnosis. This mode of instruction is an important component of our curriculum and catalyzes the development of cognitive skills in our students.

INTEGRATED LIFE SCIENCE PROGRAM
The fourth-year Integrated Life Science (ILS) Program includes a choice of courses that revisit some aspect of basic science after students have had several years of clinical experience. Because of the level of sophistication that students have developed by this stage in their medical education, they can better understand the relevance of basic science to clinical problems. Each student is required to complete one of the following ILS courses: Neoplasia and Neoplastic Disease; Clinical Pharmacology; Surgical Integrated Life Sciences; Infectious Disease in Obstetrics, Gynecology, and Reproductive Medicine; Molecular Medicine; or Science of Resuscitation.

EVIDENCE-BASED MEDICINE
An important skill set for physicians today is being able to interpret and evaluate new findings reported in the medical literature and to apply these advances to real-life circumstances. For instance, the ability to understand and rapidly evaluate conflicting reports on a new or even a commonly used drug is increasingly important in daily patient care. Evidence-based medicine — an ongoing focus of our curriculum — teaches students how to critically evaluate the medical literature and to use medical databases to make patient care decisions based on best-known practice.
MENTORED SCHOLARLY PROJECT
At the University of Pittsburgh, all medical students engage in a mentored scholarly project; this program has been incorporated longitudinally throughout the curriculum as an indispensable component of their medical education and has been broadly defined to provide a wide range of opportunities to appeal to individual students’ interests and aspirations. The intent of this effort is to expose students to the mechanics of scientific investigation; teach them how to develop a hypothesis and how to collect, analyze, and interpret data to support it; encourage them to pursue research opportunities; and help them understand the structure of thought underlying the practice of medicine. This goal is achieved through course work leading up to a mentored scholarly project designed to enhance critical and analytical thinking skills along with the creative application of scientific principles. Scholarly projects take a variety of forms. Some students select traditional laboratory-based or clinical research experiences, while others opt for less obvious choices, like developing and supporting a hypothesis concerning new and innovative ways to provide adequate health care for the uninsured/underinsured. Many students initiate their scholarly project by pursuing a summer
research program, while others might take a year off to pursue an intensive research program at Pitt or elsewhere. Students can select a project that complements their individual aspirations. Some might find the experience rewarding enough to consider a career as a physician-scientist. The goal in every case, however, is to enhance their ability to think independently, critically, and creatively and, thereby, become better equipped to practice medicine in the 21st century.

**TEACHING METHODS**

Lectures are only one of the teaching methods used at the School of Medicine. In fact, in their first two years, students spend only about one-third of their time in lectures. Another third is spent in small-group sessions; the rest is devoted to a mix of activities, including self-directed learning, computer-based study, community visits, and clinical experiences, among others.

**SIMULATION TRAINING**

All Pitt medical students engage in comprehensive learning activities using whole-body simulators; two-thirds of them opt for additional elective time with these sophisticated training tools, which provide the opportunity for students to develop resuscitation, defibrillation, auscultation, airway management, and other clinical skills. Task-specific models are used to develop proficiency in vascular access and suturing procedures, among others, and the proper techniques for conducting breast, pelvic, and prostate exams.
STANDARDIZED PATIENTS

Throughout their medical education, students encounter standardized patients — people who are specially trained to present realistic and consistent behavior, symptoms, and medical histories in simulated doctor-patient interactions. These sessions are designed to help students develop their clinical skills and learn how to deal with unusual or unexpected circumstances in a safe and constructive environment. Students find that these experiences reinforce lessons they have learned through other components of the curriculum and, in a realistic way, make them relevant. The standardized patients themselves can contribute to the learning process by emerging from their role to offer feedback on the encounter and an assessment of the student’s performance.

TECHNOLOGY DEVELOPMENTS

The School of Medicine is always upgrading its use of technology in order to maintain its position at the forefront of medical education. Here are some recent developments:

- A wireless computer network serving the medical school can be accessed in Scaife Hall classrooms, the student lounge, library, and other areas commonly used by medical students. The University is now embarking on a plan to extend wireless Internet service to the entire Pittsburgh campus.

- All 35 small-group classrooms are equipped with state-of-the-art computers and ceiling-mounted LCD projectors, which make it practical for everyone in the room to be engaged in computer-based learning activities.

- Lecture rooms regularly used by medical students feature multimedia presentation systems, including dual ceiling-mounted LCD projectors; video equipment that enables a professor to show live images (e.g., a rash on a patient’s leg) to an entire class at one time; and a “smart” podium presentation system and integrated controls for the room’s lights, sound, and video equipment.
The school is expanding the use of Web-based applications of teaching materials. The medical school’s curriculum Web site contains pertinent images for the study of body organs, self-test questions, prescreened links to appropriate Web sites, and other value-added content for courses. For example, a Web-based course called Introduction to Pathobiology is presented as a series of small-group tutorial sessions facilitated by the computer program and with supervision by a faculty member. The sessions include questions for students and “mentored answers” in which the program not only tells students whether or not their answers are correct but why. This computer-based mentoring approach is being expanded to other courses. Meanwhile, other applications of computer technology, such as a simulation of how the nephron (the functional unit of the kidney) works, are being incorporated into the repertoire of available resources.

For all first- and second-year courses, syllabi, slides, and lecture materials are posted on the curriculum Web site. In addition, the school is continually on the forefront of new technology and exploring the use of various advances like podcasting to develop innovative approaches for delivering curricular materials in ways that will suit students’ individual learning styles.

“The Zone” is a one-stop, password-protected Web portal initiated by medical students and developed by them with administration support as a convenient way to access e-mail, schedules, student affairs and financial aid information, commonly used applications, and other electronic materials. The School of Medicine fosters a culture in which such student initiatives are encouraged and where those who have an idea can often make it happen.

The School of Medicine’s Laboratory for Educational Technology (LET) serves as an incubator for new ideas and a means of fast-tracking the development of novel approaches to the use of technology applications in support of medical student learning.
Curricular Innovations

Following are some of the School of Medicine’s most recent curricular innovations:

■ Because of the rapidity with which science and medicine are evolving and because of the intrinsically dynamic nature of a medical school curriculum, basic science courses have been reorganized to place greater emphasis on cell biology, molecular biology, structural biology, and genomics and to reexamine and update the integration of basic science material with organ system pathophysiology.

■ The time period in which students must complete their required 12 months of clinical clerkships has been expanded to approximately a year and a half, starting at the end of their second year, thereby giving them more choices and flexibility in scheduling research or electives relevant to their career paths. By starting their clerkships earlier, students also gain more time to experience various medical specialties before making postgraduate career decisions and applying for residency programs.

■ Material already in the curriculum on bioterrorism is being focused on the theme of biological threats to society and expanded throughout the curriculum. Included are such topics as disaster preparedness; biological, chemical, and radiological terrorism; vaccines; drug-resistant organisms; outbreaks of infectious diseases; and related safety issues. Rather than being covered in a single course, these topics are being addressed longitudinally, where appropriate, in a variety of different courses.
“The Basic Science of Care,” a novel course designed to be relevant to medical students as well as students from the University’s other five health sciences schools, focuses on timely issues like quality, safety, economics, and information technology; the workings of today’s health care system; and collaboration, problem-solving, and creativity in health care delivery. Students interact with faculty members from various departments throughout the health sciences schools as well as with leading experts in relevant disciplines from outside the University.

A series of innovative mini-electives, especially designed for first- and second-year students, is being developed for the enrichment of their medical education. Three such courses made their debut in the spring 2006 semester: Medical Journalism, Natural History of Medicine (presented in collaboration with the Carnegie Museum of Natural History), and Pandemics and Disasters. A number of other topics are being considered for future sessions.

FOR MORE INFORMATION ABOUT THE SCHOOL OF MEDICINE CURRICULUM: WWW.MEDSCHOOL.PITT.EDU/EDUCATION/EDUCATION.ASP OR WWW.OMED.PITT.EDU

OPPORTUNITIES FOR IN-DEPTH STUDY

The following programs provide medical students with a range of options for pursuing in-depth study as part of their medical school experience. In some cases, students will use these opportunities as the starting point or the venue in which they pursue their mentored scholarly project, although they are not limited to these options. Likewise, students can pursue these opportunities independent of their scholarly project.

AREAS OF CONCENTRATION

Areas of Concentration (AOCs) enable students to pursue their enthusiasm for a particular aspect of medicine through hands-on experiences, faculty mentoring, research projects, and other activities. This voluntary program adds a thematic dimension to medical training throughout all four years. AOC topics include disabilities medicine, medical humanities, geriatric medicine, women’s health, health care to underserved populations, neuroscience, global health, and patient safety.

FOR MORE INFORMATION: WWW.OMED.PITT.EDU/PITTMED/AOC
GLOBAL HEALTH
Students interested in global health can participate in a variety of clinical and research opportunities through summer placement, fourth-year electives, or the Area of Concentration in global health. Some of the countries in which students have been involved in recent years are Malawi, Kenya, Honduras, Brazil, India, China, Uganda, and Italy. This year, three Pitt medical students are among 23 students nationwide selected for the Fogarty International Center/Ellison Overseas Fellowships in Global Health and Clinical Research Program.

MEDICAL SCIENTIST TRAINING PROGRAM
The Medical Scientist Training Program (MSTP) provides medical students who wish to pursue a career in biomedical research the opportunity to undertake doctoral work at either the University of Pittsburgh or Carnegie Mellon University in one of the participating programs in basic science, engineering, or public health and complete both degrees in an average of seven to eight years. Students begin with the first two years of medical school and then move into their Ph.D. work; once that is completed, they finish their medical training. The program provides them with full tuition and a stipend each year. Currently, 96 students are enrolled in the MSTP, which is funded by a grant from the National Institutes of Health with support from the Office of the Dean. At any time, about half of the students are engaged in the M.D. segment of the program, while the others are
involved in their Ph.D. studies. Students can apply for transfer into the program after their first year, if they are not enrolled in it from the start.

FOR MORE INFORMATION:
WWW.MDPHD.PITT.EDU

CLINICAL SCIENTIST TRAINING PROGRAM
The Clinical Scientist Training Program (CSTP) is designed for medical students with career aspirations in academic medicine and clinical investigation. This five-year program leading to an M.D. degree along with either a certificate in clinical research or a master of science in clinical research (depending on how many additional credits the students choose to pursue) provides them with opportunities to learn and practice clinical research skills during medical school. Those who are selected for the program receive full tuition plus a stipend in the research year. Students who have not applied for the CSTP at the outset of medical school can apply for the program in their first or second year.

FOR MORE INFORMATION: WWW.ICRE.PITT.EDU/CSTP/MEDICALSTUDENTS

PHYSICIAN SCIENTIST TRAINING PROGRAM
The Physician Scientist Training Program (PSTP) is a five-year program for exceptionally talented students who, in addition to the regular curriculum, undertake an additional year of laboratory-based research training and benefit from a range of special services and opportunities to prepare them for careers in academic medicine. Those who are selected for the program receive full tuition plus a stipend in the research year. Students who have not applied for the PSTP at the outset of medical school can apply for the program in their second or third year.

By paralleling the school’s other specialty training programs, the PSTP offers interested students the capability of efficiently transferring into either the MSTP or CSTP.

FOR MORE INFORMATION: WWW.PSTP.PITT.EDU

OTHER RESEARCH OPPORTUNITIES
More than 55 percent of first-year students engage in a summer research program of some kind. In addition, some students opt to take a year off at some point during their medical school career to earn a master’s degree in public health, biomedical ethics, or a related field, while others choose to engage in a year-long program of specialized study or research available through various prestigious national fellowship programs.
GRADUATE STUDIES

In addition to the M.D. degree, the School of Medicine offers academic degrees through the following graduate programs:

INTERDISCIPLINARY BIOMEDICAL GRADUATE PROGRAM (PH.D.)

This program features a core curriculum followed by the opportunity to pursue research and dissertation work in one of these areas: biochemistry and molecular genetics, cell biology and molecular physiology, cellular and molecular pathology, immunology, molecular pharmacology, molecular virology and microbiology, or neuroscience.

CENTER FOR NEUROSCIENCE GRADUATE TRAINING PROGRAM (PH.D.)

Laboratory research in theory and practice is a major focus of this cross-campus program, which aims to develop general competence in neuroscience as well as expertise in one or more areas of specialization.

BIOMEDICAL INFORMATICS TRAINING PROGRAM (PH.D., M.SC., OR CERTIFICATE)

Applying modern information technology to health care, education, and biomedical research is the focus of this program, which offers general or specialized courses of study through the Department of Biomedical Informatics.

JOINT PROGRAM IN COMPUTATIONAL BIOLOGY (PH.D.)

This new program offered by the University of Pittsburgh and Carnegie Mellon University is designed to develop expertise in the use of computational methods to identify and solve complex biological problems.

MOLECULAR BIOPHYSICS AND STRUCTURAL BIOLOGY GRADUATE PROGRAM (PH.D.)

This interdisciplinary program trains students in the use of a broad range of cutting-edge technologies to study the function of biological macromolecules in physical terms and covers a diversity of research topics in molecular biophysics and structural biology.

PROGRAM IN INTEGRATIVE MOLECULAR BIOLOGY (PH.D.)

Intensive training for students with a focused and developed interest in the structure and function of molecules that comprise complex cellular pathways and systems is the intent of this new, cross-campus program. Focal areas of research include genomics, proteomics, and gene function as well as cellular and developmental dynamics.
CLINICAL RESEARCH TRAINING PROGRAM (M.S.C. OR CERTIFICATE)
This program is available for post-doctoral fellows and faculty who have a clinical degree but seek additional formal training in clinical research methodology. The curriculum focuses on the skills necessary to develop into a successful, extramurally funded clinical investigator.

CLINICIAN EDUCATOR TRAINING PROGRAM (M.S.C. OR CERTIFICATE)
This program, which is designed for clinicians who seek additional formal training and experience in the education of medical students and residents, is one of a select few programs in the country that offers a degree in medical education for medical educators.

FOR MORE INFORMATION ABOUT GRADUATE STUDIES:
WWW.MEDSCHOOL.PITT.EDU/GRAD/GRAD.ASP

NIH RANKINGS
- Funding from the National Institutes of Health (NIH) is considered the benchmark of overall stature among biomedical research institutions. In fiscal year 2005, the University of Pittsburgh ranked seventh among educational institutions and affiliates in NIH funding out of more than 3,400 institutions nationwide.
- The University and its affiliates received more than $431 million in NIH support in fiscal year 2005—$35 million more than the year before. Approximately 95 percent of this funding went to the Schools of the Health Sciences and affiliates.
- With $333 million in NIH funding, the School of Medicine and its affiliates ranked eighth in the nation out of the 123 medical schools that received support in fiscal year 2005.
- The following School of Medicine departments ranked among the top 10 nationally in their field in NIH funding for fiscal year 2005: Anesthesiology; Dermatology; Emergency Medicine; Molecular Genetics and Biochemistry; Neurobiology; Neurological Surgery; Neurology; Obstetrics, Gynecology, and Reproductive Sciences (including Magee-Womens Research Institute); Otolaryngology; Pathology; Pediatrics (including Children’s Hospital of Pittsburgh); Pharmacology; Physical Medicine and Rehabilitation; Psychiatry; Surgery; and Urology.
- The University as a whole and the School of Medicine have both more than doubled their NIH support since 1998.
RESEARCH

- The University of Pittsburgh spent approximately $603 million for research of all kinds in fiscal year 2005; more than 79 percent of this amount was for research in the health sciences.

- In fiscal year 2005, all sources of University research spending for the health sciences grew approximately 14 percent from the previous year.

- Areas of research emphasis for the School of Medicine include drug discovery and design; organ transplantation/immunology; stem cell therapy, tissue engineering, and regenerative medicine; artificial organ and medical device development; cancer diagnostics and therapy; cardiology; gene therapy; bioinformatics and computational biology; psychiatry, neuroscience, and neurological surgery; vaccine development; structural biology; developmental biology; and clinical trials management.

- The University’s newest research facility, Biomedical Science Tower 3 (BST3), enhances the School of Medicine’s capacity for exploring frontier areas like structural biology, computational biology, developmental biology, neuroscience and neurodegenerative diseases, and drug discovery, including vaccine development. This 10-story, 331,000-square-foot structure, which has been called “the next generation of biomedical research building” because of its innovative use of space and laboratory design, also enhances the school’s culture of collaboration among researchers from a variety of highly specialized fields.
The School of Medicine currently occupies approximately 2 million gross square feet of research space in various other buildings. Initiatives to further increase available research space include plans for a $398 million Biomedical Research and Biotechnology Center in Palermo, Italy, which will be jointly managed by the School of Medicine and the University of Pittsburgh Medical Center (UPMC) after its anticipated opening in 2010, and Biomedical Science Tower 4, which is in the early stages of design. In addition, the new Children’s Hospital facility and its associated research tower are now under construction, as is a doubling of lab space at the Magee-Womens Research Institute.

The Pittsburgh Life Sciences Greenhouse, a cooperative venture involving the shared strengths and resources of the University of Pittsburgh and Carnegie Mellon University and funded by the Commonwealth of Pennsylvania, is focusing on four strategic areas — regenerative medicine, neuroscience, drug design and development, and diagnostic and medical devices — as the basis for developing the region’s biotech industry.

From 1999 through 2005, 43 companies were formed that were dependent upon the licensing of technology developed at the University of Pittsburgh. A majority of them were in the life sciences.

For more information about research: www.oorhs.pitt.edu or www.pitt.edu/~offres

Academic Career Development

One of the special resources available to medical and graduate students in the School of Medicine is the Office of Academic Career Development (OACD), Health Sciences, which offers a range of services designed to help them successfully navigate the major stepping-stones along the course of their academic careers. Programs and services also are available through OACD for postdoctoral fellows, residents and clinical fellows, and faculty members at all levels.

For more information: www.oacd.health.pitt.edu
ACHIEVEMENTS

Following are some of the medical school’s notable achievements since 1950:

1950 — Philip S. Hench, M.D., a 1920 graduate of the School of Medicine, and two other scientists win the Nobel Prize in Physiology or Medicine for discoveries relating to the hormones of the adrenal cortex.

1952 — A killed-virus polio vaccine is developed by Jonas Salk, M.D., and a team of researchers. The introduction of the vaccine to the public in 1955, after nationwide clinical trials demonstrated that it was safe and effective, led to a rapid and dramatic drop in the incidence of this previously unpreventable disease.

1958 — Peter Safar, M.D., refines cardiopulmonary resuscitation (CPR) and extends it to cardiopulmonary-cerebral resuscitation, which he assembled as a sequence of basic, advanced, and prolonged life support.

1961 — Klaus Hofmann, Ph.D., leads a team that develops a synthetic form of adrenocorticotropic hormone (ACTH) that performs all of the biological functions of the naturally occurring hormone.

1962 — Niels K. Jerne, M.D., undertakes landmark research on antigen-antibody interactions. Two articles produced during his time at the School of Medicine were among those later cited by the Nobel Committee as providing the basis for his prize-winning work.

1963 — The Magovern-Cromie sutureless heart valve developed by George J. Magovern, M.D., and others enhances the speed and efficiency of heart valve replacement surgery and improves the survival rate of patients.

1964 — Panayotis G. Katsoyannis, Ph.D., performs the first chemical synthesis of a polypeptide hormone, insulin, and combines it with biologically active material, providing the means to explore and validate previous assumptions about the active amino acids in the insulin molecule.

1964 — Julius S. Youngner, Sc.D., sheds new light on the cause of immune and inflammatory responses by discovering that non-viral agents as well as viral ones can trigger interferon induction.

1972 — Youngner and others discover that certain viruses have mechanisms that can actually inhibit the action of interferons.
1980 — Investigators isolate and cultivate *Legionella micdadei* (Pittsburgh pneumonia agent) from human lung tissue. A team led by A. William Pasculle, Sc.D., goes on to delineate the microbiology, epidemiology, clinical syndrome, and environmental ecology of this organism, which is the second-leading cause of legionella-based pneumonia.

1984 — Thomas E. Starzl, M.D., Ph.D., performs the world’s first double transplant operation (simultaneous heart and liver) on a 6½-year-old girl from Texas.

1985 — Bernard Fisher, M.D., and team are the first to recognize the systemic pattern of breast cancer development, leading to the conclusion that lumpectomy combined with radiation therapy is as effective as mastectomy in treating breast cancer. Fisher’s group went on to show the effectiveness of chemotherapy and hormonal therapy (tamoxifen) in preventing recurrence.

1991 — Following his earlier work in establishing the clinical utility of the immunosuppressants cyclosporine and tacrolimus (FK506), Starzl explores the theory of chimerism as a means of boosting transplant organ tolerance and reducing dependence on immunosuppressive drugs by proving that cells from donor organs intermingle with a transplant patient’s own tissues.

1992 — A team led by Geoffrey D. Block, M.D., produces the first sustained, proliferative growth of normal liver cells in the laboratory, laying the groundwork for development of artificial liver devices, possible treatments for acute liver failure, and gene therapy strategies.

1996 — Investigators led by John W. Mellors, M.D., discover that plasma HIV load plays the critical role in determining the prognosis of AIDS patients.

1998 — Studies led by Fisher demonstrate that the drug tamoxifen can substantially reduce the risk of breast cancer in high-risk women who have not yet developed the disease.

2000 — Researchers led by Bora E. Baysal, M.D., Ph.D., and Bernard Devlin, Ph.D., discover that a mitochondrial gene mutation is the cause of hereditary paraganglioma. This study is the first to link the structure of mitochondrial DNA to tumor development.

2004 — In collaboration with colleagues in Sweden, researchers complete the first human study of a radioactive dye called Pittsburgh Compound B developed...
by William E. Klunk, M.D., Ph.D., and Chester A. Mathis, Ph.D., to detect, using PET scanning, the amyloid plaque deposits that are believed to signal Alzheimer’s disease.

2005—Amin Kassam, M.D., and Carl Snyderman, M.D., pioneer endoscopic transnasal brain surgery, a revolutionary technique that uses the nose and nasal sinuses to gain access to hard-to-reach brain and spinal cord tumors previously considered to be inoperable.

2006—A multi-institutional research team led by Yifan Dai, M.D., Ph.D., reports the development of transgenic pigs engineered to produce heart-healthy omega-3 fatty acids, providing vast new opportunities to study their influence on cardiovascular function and the risk of heart disease—and perhaps even a source of healthy bacon someday.

UNIVERSITY OF PITTSBURGH MEDICAL CENTER (UPMC)

Through its affiliation with the University of Pittsburgh Medical Center (UPMC), the School of Medicine and UPMC share mutual interdependence and a common commitment to excellence in education, research, and clinical care.

■ As one of the nation’s largest and most financially successful academic health care systems, UPMC encompasses more than 40,000 employees, 2,150 physicians, and 19 tertiary care, specialty, and community hospitals serving 29 counties throughout western Pennsylvania, as well as specialized outpatient facilities; cancer centers; rehabilitation facilities; retirement, skilled nursing, and long-term care facilities; and doctors’ offices in the same region.

■ As of August 2006, the health system had 903 medical residents and 296 clinical fellows in programs approved by the Accreditation Council for Graduate Medical Education plus 36 clinical fellows in other programs.

■ For the seventh time in eight years, UPMC appears on U.S. News & World Report’s Honor Roll of “America’s Best Hospitals” in 2006. UPMC is one of only 14 hospitals in the nation and the only one in Pennsylvania to earn the distinction this year. In addition, UPMC is recognized for excellence in 14 of 16 specialty areas included in the magazine’s survey and is the
only hospital in western Pennsylvania to rank in any specialty. The specialties for which UPMC is recognized include: ear, nose, and throat; pediatrics; psychiatry; cancer; orthopaedics; digestive disorders; gynecology; rheumatology; kidney disease; respiratory disorders; endocrinology; neurology and neurosurgery; urology; and heart and heart surgery.

- UPMC also has more clinical transplantation experience than any other center in the world, with more than 12,000 organ transplants in the last 20 years.

- The core of the health system is located in the Oakland and Shadyside sections of Pittsburgh, where the following health care facilities are interwoven with University of Pittsburgh facilities: UPMC Presbyterian, UPMC Montefiore, Eye and Ear Institute, Children’s Hospital of Pittsburgh of UPMC, Magee-Womens Hospital of UPMC, Western Psychiatric Institute and Clinic, UPMC Shadyside, and Hillman Cancer Center.

- Hillman Cancer Center is the flagship facility in the UPMC Cancer Centers network of more than 40 clinical care facilities throughout the region and home of the University of Pittsburgh Cancer Institute, one of only 39 facilities in the nation (and the only one in western Pennsylvania) designated by the National Cancer Institute as a Comprehensive Cancer Center for cancer treatment, research, education, and prevention.

- UPMC’s clinical programs have earned international recognition, drawing patients from around the world. In addition, the medical center is now transporting its expertise to other countries, including Italy (where it manages the Mediterranean Institute for Transplantation and Advanced Specialized Therapies in Palermo) as well as new ventures in Ireland and Qatar.

For more information about UPMC: www.upmc.com

City of Pittsburgh

- The city of Pittsburgh is home to three rivers (the Allegheny and Monongahela converge here to form the Ohio), an estimated 720 bridges, nine colleges and universities, a number of Fortune 500 companies, and the remnants of Fort Duquesne, which was built in the 1750s and later renamed Fort Pitt.
While approximately 335,000 people also call the city of Pittsburgh home, the population of the 10-county region is approximately 2.6 million. The city is vibrant, safe, and affordable; it features the amenities of a large city with small-town civility.

Pittsburgh has a variety of museums, three of which—the Carnegie Museum of Art, Carnegie Museum of Natural History, and Carnegie Science Center—bear the name of 19th-century industrialist Andrew Carnegie, who made his fortune in steel here. The city also has the Senator John Heinz Pittsburgh Regional History Center; the Mattress Factory, one of America’s leading museums for site-specific installation art; the Pittsburgh Children’s Museum; and the Andy Warhol Museum, one of the most comprehensive single-artist museums in the world.

If it’s culture one craves, the choices include the Pittsburgh Ballet Theatre, Pittsburgh Opera, Pittsburgh Symphony Orchestra, and Pittsburgh Civic Light Opera (musical theater), all of which perform in Downtown’s revitalized Cultural District.
Stage presentations in Pittsburgh can be found at the Pittsburgh Public Theater, which makes its home in the new O’Reilly Theater; the City Theatre; Pitt’s Kuntu Repertory Theatre, celebrated for its productions of works by African-American playwrights; the Quantum Theatre, which is known for presenting site-specific productions in uncommon settings; the Pittsburgh Irish and Classical Theatre; and the Prime Stage Theatre for Youth and Families. The Manchester Craftsmen’s Guild, a multidisciplinary, minority-directed arts and learning center (and home of one of the nation’s leading series of jazz concerts), is another of the city’s cultural features.

Other amenities the city offers include the National Aviary; Phipps Conservatory and Botanical Gardens; Kennywood, one of the country’s grand old amusement parks; the Duquesne Incline and the Monongahela Incline; the Pittsburgh Zoo and PPG Aquarium; annual festivals celebrating jazz, art, and folk culture; the Pittsburgh Vintage Grand Prix; and much more.

All or part of 63 motion pictures, including The Mothman Prophecies, Wonder Boys, Inspector Gadget, Hoffa, Lorenzo’s Oil, Silence of the Lambs, and Flashdance, were filmed in the Pittsburgh area.
For sports enthusiasts, Pittsburgh’s professional teams — the Steelers (winners of Super Bowl XL), Pirates, Penguins, and, most recently, the Riverhounds — provide plenty of reasons to cheer, or jeer, depending on the year. In addition, the University is home to 19 varsity men’s and women’s sports teams, the Pitt Panthers, which typically offer some of the finest performances in college athletics.

Prominent people from Pittsburgh and nearby communities include musicians Stephen Collins Foster (honored by Pitt’s Stephen Foster Memorial, which houses the world’s largest collection of Foster materials), George Benson, Henry Mancini, Billy Eckstine, Oscar Levant, and Earl Wild; authors Gertrude Stein, Rachel Carson, August Wilson, Robinson Jeffers (who studied at Pitt), and David McCullough; entertainers Gene Kelly (a Pitt graduate), Fred Rogers (who did graduate studies in child development here), Shirley Jones, Michael Keaton, Jeff Goldblum, Dennis Miller, Perry Como, Sharon Stone, Bobby Vinton, and Christina Aguilera; and sports legends Joe Montana, Arnold Palmer, Joe Namath, and Pitt graduates Tony Dorsett, Dan Marino, and Mike Ditka. Pulitzer Prize-winning author Michael Chabon and
famed conductor Lorin Maazel weren’t born here, but they graduated from Pitt, as did best-selling author Bebe Moore Campbell, who now serves on the University’s Board of Trustees. Likewise, the city embraces some of its sports heroes, including Mario Lemieux and the late Roberto Clemente and Willie Stargell, as being among its own.

• Oakland, the neighborhood in which Pitt is located, is unquestionably the intellectual center of the community. In the heart of Pitt’s campus is the 42-story Cathedral of Learning, the nation’s tallest education building and home to more than two dozen Nationality Rooms styled to reflect the culture of the faraway places to which many Pittsbourghers can trace their roots.

• From the East End to the West and the North Side to the South, Pittsburgh is home to 88 neighborhoods, many of them tacked onto hillsides or tucked into valleys and embracing distinct ethnic and cultural flavor plus traces of Old World attitudes and culture.

• The city’s most famous neighborhood of all, Mister Rogers’ Neighborhood, the children’s television show that was broadcast from here for 33 years, reflected in its own simple and charming way a nice place to be, which is, perhaps, the best way to describe Pittsburgh.
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