

Research Highlights 1999-2000

The University of Pittsburgh has established itself as one of the nation's pre-eminent research institutions. A sampling of research endeavors that have been initiated or accomplished during the year are presented below.

University receives \$10.8 million pledge from Scaife Foundation to fund Pittsburgh Institute for Neurodegenerative Diseases (PIND) This center will bring the best clinical and laboratory investigators together to develop new understanding, treatments, and methods of prevention for neurological diseases including Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis (Lou Gehrig's disease), Huntington's disease, and stroke.

Department of Chemistry researchers develop library of compounds with potential antitumor properties Based on a compound extracted from a Chinese tree, the plant derivative, called camptothecin, is thought to prevent tumors by inhibiting the enzyme DNA Topoisomerase I (Topo I), which is an essential enzyme in cancer cell replication. These libraries of compounds have been sent to biologists who will determine Topo I inhibition activity.

Graduate School of Public Health studies osteoporosis in men Researchers in this school are part of a national study examining what predicts osteoporosis-related bone fractures in men. One-third of disease-related hip fractures occur in men. Factors such as bone mass and structure, hormones, lifestyle and tendency to fall, as well as a possible link between bone mass and prostate cancer will be examined.

University and Carnegie Mellon receive \$10 from National Institutes of Health to establish Center for the Study of Mind-Body Interactions and Health The Center will be a joint collaboration between the two schools and will be one of five centers being funded nationwide. It will explore how the mind influences the development and recovery from diverse diseases such as infectious diseases, osteoarthritis, early cardiovascular disease and breast cancer. In addition to providing support for various research projects, the Center will offer training for health care professionals and researchers through institutes, lectures and small grants to stimulate new research projects.

Chemical Engineering professors part of team that is the first to transform carbon dioxide into gel form Carbon Dioxide, CO₂, can be transformed into a gel or a foam with many applications including foam insulation; as an agent in oil well drilling, replacing water pumped into older wells to facilitate oil recovery; for CO₂-based coating processes; and as microscopic building blocks for bioengineers, who could use the CO₂ as scaffolding with which to build tissue. The foams could also offer potential applications in electronics.

\$11.2 million grant from National Institute of Dental and Craniofacial Research funds Oral Cancer Center at University This center, one of six funded by the NIDCR, is the only one to focus on oral cancer and is aimed at improving therapy and understanding the biology of this disease. The Center examines the physical and mental aspects of oral cancer through basic research, prevention and control, biobehavioral oncology, and clinical investigations. Researchers at this center have already provided the first graphic illustration of mechanisms by which chromosomes are distributed unevenly during cancer cell division.

National Institutes of Health Awards Graduate School of Public Health \$52.2 million for heart study This grant, one of the largest ever received by the University, will allow for the study to determine the best way to treat early coronary artery disease in patients with Type 2 diabetes. Using volunteers from across the U.S., the study will compare the results of drug therapy alone with treatments that combine drugs and revascularization, or overcoming blockages in arteries that lead to the heart.

School of Social Work initiates Community Enhancement Research Network (CERN) The mission of CERN is to help enhance the quality of community life by teaming University researchers with neighborhood residents. Residents will be involved in every step of the research process. Using data collected directly from residents regarding their concerns about community life, useful programs will be able to be developed to that specifically relate to the needs of those particular neighborhoods. Utilizing community residents speeds up the data collection time as they know exactly where to go and how to get the data.