



Baylor Research Institute Mission

To improve the care and well-being of the community – nationally and internationally – through innovative clinically relevant research that is consistent with the mission, vision and values of Baylor Health Care System.

Baylor Research Institute Fiscal Year 2008 Statistics

- 800 active research protocols
- Physicians and scientists published more than 496 papers
- Investigators submitted 66 grant applications representing more than \$57.6 million in grant requests
- \$11.9 million in federal research awards
- 146 new contracts for research, totaling \$14.2 million, negotiated with industry sponsors

Baylor Research Institute

Established in 1982, Baylor Research Institute (BRI) promotes and supports research bringing innovative treatments from the laboratory workbench to the patient bedside. To achieve this bench-to-bedside concept, the institute focuses on basic science, clinical trials, and health care effectiveness and quality of care research. Investigators at Baylor are conducting 800 active research protocols spanning more than 20 medical specialties. In 2008, the Dallas-based BRI expanded to the Baylor Regional Medical Center - Plano campus, opening BRI - Clinical Trials Office - North.

Research keeps physicians on the forefront of medical knowledge. Investigators at Baylor medical centers publish research findings in top-tier medical journals, such as *Science*, *The New England Journal of Medicine*, *Transplantation* and *Lancet*. BHCS also publishes *Baylor University Medical Center Proceedings*, a quarterly research journal detailing research and clinical activities at Baylor.

BASIC SCIENCE

BRI focuses its basic science laboratory research in several key areas including immunology, metabolic disease, cardiovascular disease and colon cancer. Key sites include the Baylor Institute for Immunology Research (BIIR), the Kimberly H. Courtwright and Joseph W. Summers Institute for Metabolic Disease, and the Baylor Jack and Jane Hamilton Heart and Vascular Institute.

Investigators with BIIR study the immune system with the goal of developing novel approaches to treat cancer, autoimmune diseases and infectious diseases, and reduce organ transplant rejections. Led by director Jacques Banachereau, Ph.D., an internationally renowned immunologist, BIIR is devoted to rapidly translating basic laboratory discoveries made about the immune system into effective treatments for humans. Research focuses on understanding how dendritic cells, the key initiators of immune response, function and how they can be used to combat challenges to the immune system. BIIR has 15 independent researchers and more than 70 staff members.

BIIR has received numerous grants totaling more than \$40 million. In 2007, BRI became the first organization in the United States to become a unit of INSERM unit, the French equivalent to the National Institutes of Health and is collaborating with top research facilities around the globe. In conjunction with this designation, BRI received a multimillion dollar grant to develop HIV vaccines. In 2006, BRI received a \$6.2 million award from the National Institutes of Health to develop the Baylor Center for Lupus Research, a \$2.9 million award from the National Institute of Allergy and Infectious Diseases (NIAID) and Alliance for Lupus Research to further lupus research, and a \$3 million award from the National Cancer Institute to develop vaccines against melanoma, a deadly form of skin cancer. In 2003, BRI received a \$14.6 million grant from the NIAID to create the Baylor/NIAID Center for Translational Research on Human Immunology and Biodefense. With this funding, investigators are studying the human immune system's response to emerging pathogens, such as avian influenza, Brucella and other virulent agents, and seek to develop vaccines against them.

Through Baylor's transplant research program, several Type I diabetic patients have received islet cell transplants to treat their diabetes. All patients have shown improvements in their blood sugar control, and one patient was able to be weaned from insulin completely for a period of several weeks.

Investigators also are conducting genetics research aimed at curing colon cancer, as well as studying inherited diseases in the biochemical genetics field for the treatment of metabolic disease. In a new therapeutic approach to treating heart disease, diabetes and Parkinson's disease, investigators are studying in mice a novel technique, known as ultra-sound microbubble destruction, to deliver drugs or genes to

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specific tissues. For congestive heart failure patients, investigators are exploring a new drug designed to improve the efficiency of heart muscle contraction by providing a metabolic fuel for the heart. In this study, patients ingest a special oil by adding a prescribed amount to their food or drinks daily.

CLINICAL TRIALS

Through clinical research, investigators achieve advances in medicine and bring innovative therapies to patients at Baylor. Currently, more than 230 investigators are involved in clinical research supported by approximately 65 research nurses. The number of clinical trials offered to patients at Baylor continues to increase. In the last year, BRI received more than 146 new contracts for clinical research, totaling more than \$14.2 million. As research expands to hospitals throughout Baylor Health Care System (BHCS), BRI has opened Clinical Trials Offices in Fort Worth and Plano to provide clinical research support as well as education and training to investigators and research staff.

Much of the clinical research under way at Baylor is specific to investigational drug studies. By conducting clinical research many of the drugs researched by physicians now are used as standard therapy. Researchers currently are evaluating a variety of new blood pressure, cholesterol and cancer medications, as well as treatments for asthma and diabetes. In addition to drug studies, physicians are investigating various medical devices, such as cardiac stents, radiosurgery techniques, and new orthopaedic diagnostic tools and implant designs.

HEALTH CARE EFFECTIVENESS AND QUALITY OF CARE RESEARCH

This research measures the effectiveness of health care interventions and tests strategies to improve care quality across BHCS and elsewhere. A randomized trial, funded with \$1.5 million from the Agency for Healthcare Research and Quality (AHRQ), evaluates the impact of the Accelerating Best Care at Baylor training course on hospital quality among 47 rural hospitals across Texas. The trial assesses the effect of administrative, nurse and physician leader participation in this curriculum on in-hospital mortality and Joint Commission on the Accreditation of Healthcare Organizations core measure processes of care for patients with heart failure and pneumonia. An initiative funded by the Physicians' Foundation for Health Systems Excellence examines the effect of physician academic detailing on the culture of patient safety and the burden of patient harm associated with adverse events among 60 BHCS primary care centers. BHCS and collaborators also received an AHRQ conference grant focused on resolving methodological challenges associated with quality of care measurement among hospitals with small numbers of patients. BHCS was selected to participate in AHRQ's Accelerating Change and Transformation in Organizations and Networks group to conduct rapid-cycle testing and dissemination research and in AHRQ's Developing Evidence to Inform Decisions about Effectiveness (DEcIDE) Network, whose members conduct accelerated studies on the outcomes, comparative effectiveness and safety of health care interventions. BHCS is leading a DEcIDE trial assessing the effects of medication therapy management on drug safety and effectiveness among Medicare beneficiaries.

Baylor medical centers participating in research

- Baylor All Saints Medical Center at Fort Worth
- Baylor Institute for Rehabilitation
- Baylor Jack and Jane Hamilton Heart and Vascular Hospital
- Baylor Medical Center at Garland
- Baylor Medical Center at Irving
- Baylor Medical Center at Southwest Fort Worth
- Baylor Regional Medical Center at Grapevine
- Baylor Regional Medical Center at Plano
- Baylor Specialty Hospital
- Baylor University Medical Center at Dallas
- Our Children's House at Baylor
- THE HEART HOSPITAL Baylor Plano