

Highlights from the 2004–2005 annual report of Baylor Research Institute

The 2004–2005 annual report of Baylor Research Institute (BRI) was recently published and illustrates Baylor Health Care System's ongoing commitment to clinically relevant research. Some highlights:

- The number of active protocols and those awaiting approval now exceeds 600.
- Baylor's physicians and researchers are continuing to publish their work in top peer-reviewed journals.
- Research projects enhance recruitment of the finest physicians and health care professionals to Baylor Health Care System and support Baylor's clinical and medical education programs.
- The success of the Baylor Institute for Immunology Research's cancer vaccine research, directed by Dr. Jacques Banchemereau, led Baylor to fund a new biotech company, ODC Therapy, Inc.
- William Duncan, PhD, the chief operating officer/chief scientific officer recruited to BRI from the National Institutes of Health, has enhanced the quality and safety of research by establishing two in-house data safety monitoring boards. The addition of Biosafety Officer Stephen Phillips, PhD, helps further advance our safety efforts.

RESEARCH PROJECTS

Across Baylor Health Care System, major research projects are under way in numerous clinical areas. Examples of the topics being studied are listed below.

- **Heart disease:** adult stem cell therapy to improve heart function in patients with severe congestive heart failure; surgical treatment of ischemic heart failure; off-pump beating heart surgery; gene therapy using ultrasound-targeted microbubble destruction
- **Community health improvement:** using a volunteer health care delivery program to reduce emergency department visits of patients with historically high rates of utilization
- **Dermatology:** effectiveness of new drugs, including alefacept, Enbrel, and infliximab
- **Gastroenterology:** the biology and diagnosis of hereditary nonpolyposis colorectal cancer; the role of the JC virus in tumor formation in the human colon
- **Geriatrics:** efficacy of interdisciplinary primary care for community-dwelling seniors; differences in end-of-life preferences between patients with heart failure and those with dementia; pressure ulcers in the frail elderly
- **Health care research and improvement:** diabetes care improvement; reduction of inappropriate antibiotic use in neonatal intensive care units; improving care through the use of autopsy information; evaluation of electronic health record deployment in the ambulatory care setting

- **Immunology:** dendritic cell biology program; cancer immunology program; autoimmunity program; infectious disease immunology (see the next issue of *BUMC Proceedings* for a historical article on the Baylor Institute for Immunology Research and an interview with the institute's director, Jacques Banchemereau, PhD)
- **Oncology:** gene vaccines in lung cancer; prevention trials for breast and prostate cancer; intraperitoneal heated chemotherapy for advanced gastrointestinal and ovarian cancers; chemoprevention of recurring adenomatous polyps; autoantibody activity in Waldenström's macroglobulinemia
- **Orthopaedics:** developing and testing new diagnostic tools; analyzing effects of injuries and disease on function; improving rehabilitation techniques; new implant designs
- **Surgery:** outcomes of bariatric surgery; effectiveness of sentinel lymph node biopsies in different cancers; studies of techniques such as capsule endoscopy, thermal ablation of hepatic tumors, and endoscopically drained pancreatic pseudocysts
- **Transplantation and hepatology:** gene expression response to transplant rejection and immunosuppression; study of hepatitis C in liver transplant patients; development of an international registry for liver cancer

APPLYING RESEARCH FINDINGS TO PATIENT CARE

The goal of clinically oriented research is to increase knowledge that ultimately improves patient care. The 2004–2005 BRI annual report includes vignettes of five patients who have benefited from Baylor's research efforts.



Connie West

Connie West was referred to a clinical trial at Baylor University Medical Center (BUMC) that is testing experimental treatments for advanced lung cancer. Although two initial therapies did not clear Connie's cancer, a third one did. The successful treatment involved an experimental gene therapy vaccine that triggered her immune system to kill the cancer cells. Then, 6

months later, a new tumor found in her right lung was surgically removed. Connie has been cancer-free for 3 years, and her doctor, John Nemunaitis, MD, expects her to remain so.

"I feel very fortunate to have had an excellent response to the vaccine. Now I'm volunteering as a patient advocate on a panel that reviews new clinical trials at Baylor, to help new cancer patients benefit from the same opportunities I had," says Connie.

John Prior

After undergoing his first bypass surgery in 1982 and a second bypass procedure in 1997, John Prior, 78, was very interested in participating in a drug study that could prevent further cardiac problems. "I don't want a third surgery," he says.

John is one of 57 patients currently enrolled at Baylor in a 5-year, multisite study of the efficacy of ramipril, an angiotensin-converting enzyme (ACE) inhibitor, and telmisartan, an angiotensin II receptor blocker (ARB). In the study, which is randomized and double-blinded to both patient and caregiver, patients are given the ACE inhibitor, the ARB, or a combination of the two. Both of these medications have proven effective in lowering blood pressure, but this is one of the first trials to compare the drugs with each other and to study whether a combination of the two might be even more effective.

In addition to examining their efficacy in controlling blood pressure, the study is focused on determining whether the medications have other beneficial or protective effects on the heart and kidneys.

"I think they've really helped me," says John, who continues to enjoy his woodworking hobby. "If I felt any better, I would have to be twins."



Dan Borutta

Patients with familial adenomatous polyposis (FAP), a rare genetic disorder causing numerous precancerous polyps in the digestive tract, can avoid colon cancer through yearly polyp removal and the eventual removal of the colon. But when Dan Borutta's FAP affected his stomach, he feared the worst. So Dan's gastroenterologist referred him to BUMC

to see C. Richard Boland, MD, a member of the medical staff and a leading expert on FAP and colorectal cancer. Dr. Boland met with Dan and explained that his stomach polyps were not precancerous and required no treatment.

"My wife and I feared I would lose a part of my stomach. Now we know that won't happen and I can survive this disease," says Dan.

Luis Asanza

Intermittent employment as a construction worker and lack of health insurance led Luis Asanza to seek care in the BUMC emergency department. After being examined for treatment, he was screened for financial eligibility. Then, the BUMC emergency department staff referred him to the community health research coordinator stationed in a small corner office of the emergency department. Accepting enrollment in Project Access, Asanza received his AdvancePCS Pharmacy Card and first primary care physician appointment in several years. A Central Dallas Ministries community health worker contacted him to address any concerns or potential barriers to keeping his first appointment and offered an appointment with a community diabetes educator at Central Dallas Ministries. With affordable medications and physician appointments, Asanza expressed that he no longer would need to go to the emergency department to get his medications. Data from the BUMC emergency department will be tracked to validate his assertion.



Todd Painter

Todd Painter describes his liver transplant at BUMC as the procedure that gave him back his life. Upon awakening in the recovery room, he immediately felt better. Unlike most organ recipients, Todd does not have to take the steroids that prevent organ rejection but sometimes have potentially harmful side effects. Instead, Göran Klintmalm, MD, PhD, and his transplant team on

the medical staff at BUMC used an advanced experimental drug protocol to "reboot" Todd's immune system by selectively weakening it and then allowing it to rebuild with his new liver in place. It accepts Todd's new liver as his, not a transplant.

"It feels great after 10 years to finally live a normal life again," says Todd. "I feel so grateful. I've rediscovered traveling and the joy of simply being outdoors. Plus, I'm able to sleep soundly for the first time in 10 years."

For a copy of the BRI annual report, contact Wendy Walker at wendyw@BaylorHealth.edu or 214-820-4581.