georgetown *facts*
GEORGETOWN UNIVERSITY MEDICAL CENTER

Biomedical Research at Georgetown: an overview

Founded in 1789, the same year the U.S. Constitution took effect, Georgetown is the nation's oldest Catholic university, and Georgetown University Medical Center is the largest and most prominent Catholic, Jesuit medical center in the country. Medical center research comprises 85 percent of the University's sponsored research funding each year. Research at GUMC, while wide-ranging, focuses on basic science and translational research, specifically in the areas of cancer, neuroscience, child health and human development, global health, infectious diseases, and cardiovascular and kidney diseases.

Georgetown University Medical Center received $139 million in sponsored research funding in FY11. Approximately 55 percent of the Medical Center's funding is from the National Institutes of Health (NIH), and 27 percent is from other government sources. The remainder is from foundations, industry and other sources.

Howard J. Federoff, M.D., Ph.D., is the chief executive officer of GUMC and serves as the Executive Vice President for Health Sciences and Executive Dean of the School of Medicine. In this capacity he oversees GUMC's research and education enterprises, including the School of Medicine, the School of Nursing & Health Studies, the Georgetown Lombardi Comprehensive Cancer Center, and the Biomedical Graduate Research Organization.

Home to 53 percent of Georgetown University's sponsored research funding, Georgetown's Biomedical Graduate Research Organization (BGRO), led by Robert Clarke, Ph.D., Sc.D., was created to foster cutting-edge interdisciplinary collaboration and to enhance Georgetown University Medical Center's basic science and translational research capacity, especially in the areas of neurosciences, child health and human development, cardiovascular-kidney diseases, infectious diseases and in collaborative work with researchers and clinicians from Georgetown Lombardi Comprehensive Cancer Center. In addition to promoting this lifesaving research, BGRO's focus on educational and academic excellence in the biomedical sciences is helping to create the next generation of researchers in the United States and around the world.

Georgetown Lombardi Comprehensive Cancer Center, which is one of 40 NCI-designated comprehensive cancer centers in the country and the only one in the Washington, D.C. area, is led by Director Louis Weiner, M.D., was recruited to Georgetown from Fox Chase Cancer Center in October 2007.

Georgetown's master's and doctoral programs are housed in the BGRO and fall under Georgetown University's Graduate School of Arts and Sciences. Gerald M. Mara, Ph.D., serves as associate provost for research for the main campus and dean of the Graduate School, Barbara Bayer, Ph.D., serves as senior associate dean for Biomedical Graduate Education and chair of the Georgetown University Medical Center Council for Biomedical Graduate Education, and Adam K. Myers, Ph.D., is the associate dean and assistant vice president for special graduate programs in the Biomedical Graduate and Research Organization..

Translational research, research that takes basic discoveries and translates them into therapeutics and diagnostics that directly impact patient care, is key at GUMC. In fact, Georgetown researchers are responsible for the technology behind:

- **The First Diagnostic Test for HPV**, which when administered during a routine Pap test significantly increases the detection rate for cervical cancer and therefore lowers death rates from this invasive disease, was developed by Wayne Lancaster, Ph.D., and Alfred Bennett Jensen, M.D.

- **The HPV Vaccine**, which was developed by Richard Schlegel, M.D., Ph.D., along with Shin-je Ghim, Ph.D., and Alfred Bennett Jensen, M.D., at Georgetown and protects against the two strains of HPV that cause 70% of cervical cancers, and shows promise in protection against three other cancer-causing strains.

- **The Full-Body Scanner**, the first computer assisted tomography (CAT) scanner for any part of the body, developed by Robert Ledley, D.D.S., in 1973, had a revolutionary impact on diagnostic medicine.

- **Allegra ®,** the popular anti-histamine, was developed at Georgetown by Raymond Woosley, M.D., Ph.D., former chairman of the Department of Pharmacology.

- **The Automatic Genetic Analyzer**, also developed by Robert Ledley, D.D.S., used a robot arm to automate process of detecting genetic defects on a molecular level.

- **The Predecessor of Intravascular Surgery**; a technique which used a plastic pellet to reduce the potentially fatal flow of blood from an enlarged artery was developed by Alfred Luessenhop, MD, former chief of neurosurgery, and William Spence, MD, a neurosurgeon at Georgetown.

- **T-Wave Alternans Test**, a dynamic, non-invasive method to track and diagnose T-wave alternans, which are periodic variations between heartbeats that can put a patient at risk for fatal arrhythmias and sudden cardiac death, invented by Richard Verrier, Ph.D., former professor of pharmacology, and his colleague, Bruce Nearing, Ph.D.

- **Artificial Heart Valve**, developed by Charles Hufnagel, M.D., professor of experimental surgery, who performed the first artificial valve implantation surgery the following year.

To find out more about advances in cancer, neurological, translational, and clinical research at Georgetown University Medical Center, click here to view the 2010-2011 Year in Review.