

BATTELLE REPORT FACT SHEET

Functional Impacts of Wake Forest Baptist Medical Center in FY2011

Wake Forest Baptist Medical Center is an institution dedicated to providing functional impacts including high quality health care, health sciences and allied health education, biomedical and health sciences research, community benefits and workforce development. The positive impacts generated by the mission and services of the institution are critically important, have widespread substantial impacts on North Carolina and beyond, and make Wake Forest Baptist a valuable asset and signature institution for the entire state.

HEALTH CARE

Wake Forest Baptist meets the primary and specialty health care needs within North Carolina and the region. This mission is met at the point of care – the place where interaction takes place between patients and the collective knowledge of diagnostics and clinical care contained across the organization. This care extends to a very large volume of patients on an annual basis.

FY2011 WFBMC

Outpatient visits	More than 665,000
Hospital inpatient days	Nearly 220,700
Inpatient discharges	38,849
Personnel	13,500

Wake Forest Baptist is renowned for its clinical and research excellence. It consistently ranks as one of America's "Best Hospitals" by *U.S. News & World Report* and holds the coveted "Gold Seal of Approval" from The Joint Commission. It's also one of the top institutions in the nation for the sheer number of physicians listed in "America's Top Doctors" and with 293 faculty listed in "Best Doctors in America."

As a renowned academic medical center, Wake Forest Baptist provides access to the latest procedures, including experimental protocols and procedures that are on the forefront of advanced specialty care. Through participation in research and clinical trials, patients are able to benefit from treatments that would otherwise be unlikely to be available within the region.

In 2010, Wake Forest Baptist undertook 2,500 research studies, including 475 in cancer alone. Its commitment to translating research from the "lab bench to the bedside" is illustrated in formation of the Translational Science Institute (TSI), dedicated to accelerating innovations into commercialization and practice.

MAJOR RESEARCH & INNOVATION CENTER

Attracts Significant Research Dollars

Intellectual property is one of the most valuable properties to own in the highly competitive 21st century knowledge-driven economy. Biosciences and biomedical technologies have emerged at the forefront of U.S. innovation today with a dramatic leap forward in our understanding of fundamental and functional life mechanisms and new fields of medicine.

Wake Forest Baptist is a major research and innovation center making important contributions to biomedical and health science research nationally and internationally. Active in research ranging from basic biological sciences to advanced translational and clinical research (the “lab bench to bedside” continuum), the institution is a key innovation-based economic development asset for North Carolina.

In FY2011, Wake Forest Baptist attracted \$144.7 million in federal research funding to North Carolina mainly from the NIH through successful research proposals. The amount of money spent on research totaled \$233.9 million. Conducting and publishing research is a unique and important role for academic institutions and is fundamental to the U.S. position as an international leader in science.

Outstanding Quality, Impact and Volume of Research Publications

Wake Forest Baptist’s research is having a major impact across multiple life science disciplines. Between 2006 and 2010, Medical Center researchers published 5,129 papers. These were cited in other literature 55,000 times. The publications impact equates to 12 percent above the national norm for all publications in these fields.

At least 50 or more papers were published in each of 25 different medical specialties during the same period. The publications impact for these papers ranges from 11 percent to 149 percent higher than the average impact of other university papers in these fields.

This research is made possible by the Medical Center and the University making substantial investments in resources and sophisticated scientific instrumentation and infrastructure. Wake Forest Baptist operates 28 core and specialized research facilities in support of basic, translational and clinical research.

Leading Clinical Trials

Wake Forest Baptist is a major leader in clinical trials and is engaged in multi-center clinical trials as well. For FY2011, Wake Forest Baptist conducted nearly \$13.6 million in overall clinical trials activity with \$8.1 million in industry-sponsored research. The TSI is working to translate the Medical Center's scientific discoveries into practical innovations to improve health care and advance the practice of modern medicine.

COMMERCIALIZATION & TECHNOLOGY-BASED ECONOMIC DEVELOPMENT

Successful Innovation, Commercialization and New Business Development

At Wake Forest Baptist, biomedical R&D is being leveraged deliberately for business and economic development in North Carolina. This translational science is coordinated through the University's Office of Technology Asset Management (OTAM) which provides intellectual property management services, technology screening, business development and advisory services. OTAM helps identify, protect and transfer novel research discoveries to the commercial sector for development into new products that benefit the public through traditional licensing (to medical, pharmaceutical and biotech firms) or to forming start-up companies.

Wake Forest Baptist received \$86 million in licensing revenues from its discoveries in 2010, more than any other research university in the state. Since 2000, Wake Forest has started 22 companies (15 in the past five years.) Sixteen of these are currently operating in various stages of development or have been sold and of those, 12 companies have remained in North Carolina. This is a major achievement given the high risk nature of technology-based business start ups, especially in life sciences where time from initial discovery to commercial product is long.

Efficient Development of Intellectual Property - Patents

Patent activity is a key measure of innovation by a university and its researchers. University data show that from 2007-2011 Wake Forest Baptist researchers generated 333 invention disclosures. During this same time, the Medical Center received 53 patents. This portfolio of intellectual property has been leveraged to generate a total of 73 licenses and options with external companies and total licensing revenues of over \$388 million between 2007 and 2011.

Wake Forest Baptist performs at a level that is more productive than its major research university peers in terms of invention disclosures. In 2010, 72 invention disclosures were made which equated to about \$2.4 million per disclosure, much lower than the national average of \$2.9 million per disclosure. Wake Forest Baptist was slightly behind the national average for new patent applications and issues in 2010 generating one patent application per \$4.4 million in research versus the national

average of \$3.2 million in research to generate a patent application. It received one new patent for every \$14.6 million in research in 2010, compared to an average of \$13.2 million spent by research universities for each new patent.

WORKFORCE & HEALTH SCIENCE DEVELOPMENT

Wake Forest Baptist is a key education and labor driver in one of the state's key economic and scientific clusters - health care, biotech and life sciences. In a modern, knowledge-driven economy the most valuable asset a state can possess is a well-educated and skilled populace and workforce.

Wake Forest Baptist not only generates new knowledge through its annual research output, it also proactively transfers and imparts knowledge via education programs. The Wake Forest School of Medicine is home to 1,075 faculty (832 medical faculty and 243 basic science faculty) and provides education to medical students and graduate students in biomedical and health sciences, together with additional programs of specialized study and advanced combined degree programs.

2010-2011 Wake Forest Baptist Student Enrollment

Medical Students	477
Graduate Students	323
Physician Assistants	106
Nurse Anesthetists	45
Allied Health	107

In terms of residents and fellows, Wake Forest Baptist was home to 641 in the 2010-2011 year and provided education for 46 students in the pastoral care chaplain residency and internship program.

The Battelle report shows individuals with higher levels of education earn successively higher salaries which in turn provide higher societal returns through higher tax payments. And a well-educated workforce increases economic productivity. Investment in higher education is a shrewd decision:

- A person with an undergraduate degree will earn 1.73 times the earnings of a person with a high school diploma
- A person with a graduate or professional degree will earn between 2 and 3.4 times the earnings of a person with a high school diploma