

\$20 Million Endowment For Biomedical Engineering Research

Duke University

DURHAM, N.C. -- A \$20 million endowment to foster research collaboration between bioengineers and clinicians, with the ultimate goal to develop new technologies to improve patient care, has been created by Duke University and the [Wallace H. Coulter Foundation](#) [1].

“The Coulter Foundation’s vision for translating promising biomedical research into practical applications is perfectly aligned with Duke’s commitment to knowledge in service of society,” said Duke President Richard H. Brodhead. “Duke is grateful to the Coulter Foundation for being our partner in this endowment, which will continue to nurture exciting developments in the future of medicine.”

The Duke Coulter Translational Partnership in biomedical engineering is being funded by \$10 million from the Coulter Foundation, with additional investments from Duke and the Fitzpatrick Foundation, bringing the endowment to \$20 million for the Pratt School of Engineering.

“This program started out as a grand experiment to link the relatively new discipline of biomedical engineering to translational research,” said Sue Van, president of the foundation. “With the capabilities and financial sustainability of this endowment, Duke is now a champion at the forefront of translational research and can systematically and successfully move innovation out of the university to benefit humanity.”

Elias Caro, vice president of technology development at the foundation, said, “As a member of the Coulter program, Duke adopted the Coulter Process, an industry-like development process, that includes a thorough commercialization analysis which assesses intellectual property, FDA requirements, reimbursement, critical milestones and clinical adoption. This attracted follow-on funding from venture capital and biomedical companies.”

In 2005, the Coulter Foundation chose Duke as one of nine universities to accelerate the movement of university biomedical engineering projects into commercial products and clinical practices. A key requirement is that each project must be led by a biomedical engineering faculty member and a clinical or medical school researcher. The overall Duke program has been led by Department of Biomedical Engineering Chair George Truskey, biomedical engineering Professor Barry Myers, who is also director of Duke’s Center for Entrepreneurship and Research Commercialization and Melda Uzbil, the Coulter Program Director.

“This program is a highly successful effort to create research collaborations

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between clinical faculty at the Medical School and biomedical engineering faculty to develop promising approaches that address important unmet clinical needs," said Truskey. "Not only do the faculty benefit, but students participate in the research and learn first-hand about the process of moving a critical technology from the lab toward clinical application."

Robert A. Harrington, MD, director of the Duke Clinical Research Institute, a partner in the endowment, said, "We look forward to more great collaborations between our clinical research faculty and the faculty and students of the Biomedical Engineering Department who will ultimately help us meet our mission of improving the care of patients worldwide."

Since 2005, 19 Duke projects have been funded, focusing on such areas as detecting prostate cancer and esophageal pre-cancerous lesions, treating hemophilia and controlling urinary function for paraplegics. In total, the Duke projects have resulted in three startup companies, several licensing agreements, more than \$35 million in venture capital and investments, and another \$47 million in federal, state or foundation grants. The new endowment will allow the program to continue to support promising translational projects at Duke in perpetuity, Truskey said.

The start-up companies, all located in the Research Triangle Park, have the potential to grow into thriving companies—thereby providing an economic return to North Carolina. The Duke Coulter program helps establish a valuable entrepreneurial pipeline for the region and state. One of the new companies formed, [Zenalux](#) [2], is working to market a photonic system that can tell the difference between benign and malignant tissue, with applications in cancer detection and other diseases. The lead researcher was biomedical engineering Professor Nimmi Ramanujam.

Jesko von Windheim, the CEO of Zenalux, said, "The tremendous resources of Duke's clinical expertise and biomedical engineering research and the Research Triangle Park—a place dedicated to launching and nurturing new companies—makes this area of North Carolina a natural fit for entrepreneurial efforts that address healthcare."

Wallace H. Coulter (1913-1998), benefactor of the foundation, was a serial innovator and entrepreneur. He founded Coulter Corporation and continued to lead this global diagnostics company during its entire 40-year history. He revolutionized the practice of hematology and laboratory medicine and pioneered the fields of flow cytometry and monoclonal antibodies.

The Coulter Principle, or electronic sensing zone, was just one of his 82 patents. Its first application, the Coulter Counter, provided the first high-throughput, standardized method to count and size cells and particles as they flow through an aperture. It led to major breakthroughs in science, medicine and industry.

In fact, the Coulter Principle touches everyone's daily life from having a blood test, to painting your home, from drinking beer to eating chocolate, swallowing a pill or

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applying cosmetics. It is critical to toners and ceramics as well as space exploration where NASA uses it to test the purity of rocket fuel. The impact of the Coulter Principle to the medical, pharmaceutical, biotechnology, food, beverage and consumer industries is immeasurable.

[SOURCE](#) [3]

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[1] <http://www.whcf.org/about/the-coulter-foundation>

[2] <http://www.zenalux.com/index.html>

[3] http://prattpress.pratt.duke.edu/duke_den_coulter_2011