

Research Collaborations: Focused on the Goal

Economic woes are affecting many areas of life. From gas and food prices to the costs of mortgage and college loan repayments, consumers and businesses are finding ways to ease the pinch. Partnerships with industry are one solution that allows our academic medical center to stay focused on the goal—ground-breaking research results that help improve lives.

As nonprofit institutions and government agencies such as the National Institutes of Health (NIH) reduce research funding to respond to economic conditions, companies and universities are turning to joint collaborations to continue important medical and industrial research.





For-profit companies that make medicines and medical equipment are finding it increasingly important to gain access to the top-notch scientists at academic medical centers. Likewise, institutions housing research expertise are finding that corporate partnerships can provide financing that allows globally significant medical research to continue revealing answers important to us all.

“Partnering with industry allows the scientific brainpower of our academic medical center to blend with the business firepower of industry, a major advantage to patients seeking the latest treatments and newest medical equipment,” explains vascular surgeon Scott Stevens, MD, a researcher and professor. “You see, once the Federal Drug Administration (FDA) approves a new medical device, the manufacturer will seek out those institutions known to have a strong track record in that specialty and can also adhere to the very stringent guidelines set by the FDA for the use of the new device. This is one reason why the University of Tennessee Medical Center can provide treatments for people with vascular disease that are not available anywhere else in the region.”

The University of Tennessee Graduate School of Medicine is home to many such research collaborations, which inevitably bring cutting-edge treatments and technologies to the Medical Center. Researcher Jonathan Wall, PhD, explains the process in this way: “Companies are much more likely to establish clinical trials at institutions that have helped with the science from the beginning. First, a company making a compound or device asks us to use our science to investigate why and how the product works. Once that is determined and the FDA approves the use of the product, companies are likely to return to the institution to perform the subsequent clinical trials. That’s what makes having an academic medical center in our area so very important. It gives our community access to cutting-edge equipment, treatments, and diagnostic techniques.”

Thanks to research collaborations with Siemens, the PET/CT scanners at the University of Tennessee Medical Center are state of the art. “We absolutely have one of the best clinical imaging platforms in the world,” says Wall.

Very high FDA standards and protocols must be met before any new devices, equipment, or treatments can be used, and patients must request and then agree to their use in treatment.

Brian J. Daley, MD, a professor, researcher, and surgeon, explains why companies seek partnerships with the University of Tennessee Medical Center. “All our research is rigorously controlled, government-monitored research. Companies know we provide a medically sound setting for a safe, productive, responsible project.” Fostering relationships between the Medical Center and industry can mean the East Tennessee community is first in line to access the latest FDA-approved therapeutics. “The Medical Center is a national leader in the endovascular field and is known for the very fine treatments done here,” says Stevens. “Companies know we have expertise and processes already in place that they cannot cost-effectively pull together quickly, and they contact us to begin approved treatments here.”

Lea Anne Law

(From left) Researchers John H. Dougherty, MD; David Townsend, PhD; Jonathan Wall, PhD; Scott Stevens, MD; and Valerie Bertheliet, PhD

Examples of Collaborative Research

Alzheimer's Vaccine – Patients from across the country may soon be traveling to the University of Tennessee Medical Center to receive the first monoclonal antibody vaccine that might reduce the debilitating effects of Alzheimer's disease. John Dougherty, MD leads one of the elite group of centers worldwide that is evaluating the latest antibody therapy for the treatment of Alzheimer's.

Amyloidosis Diagnosis and Treatment Response – UT Graduate School of Medicine researchers are working with a company to develop noninvasive methods to determine whether a patient has amyloidosis, a condition that occurs in a significant number of patients with rheumatoid arthritis. Using some of the world's most sophisticated imaging equipment, the researchers are helping the world of medicine understand and diagnose the disease and monitor patients' response to therapy.

Aortic Aneurysm: Repair and Pressure Monitoring – Partnering with Oak Ridge National Laboratory (ORNL) and CarioMems, a Georgia Tech start-up company, the University of Tennessee Medical Center's endovascular research team used the world's most powerful computing programs to study images of aneurysms and determine the rupture risk caused by pressure in weakened, ballooned areas in blood vessels. Armed with this information, Medical Center physician researchers used pressure-sensor technology designed for military jet engines to help craft a miniature radio chip that can be embedded into a vessel during a stent procedure. In subsequent office visits, a wandlike device outside the body can be used to read the vessel pressure inside the body.

Biodistribution Studies – A pharmaceutical company, Advion, has worked over the last 12 months with UT Graduate School of Medicine and David Townsend, PhD and Jonathan Wall, PhD assisting them by tagging novel compounds with radioactive molecules and monitoring these with PET/CT imaging to determine where the molecules distribute in the body.

Clotting-Agent Safety – David Cassada, MD and a team of researchers from the University of Tennessee Medical Center's Department of Surgery are helping substantiate the safety of a company's topical preparation to quickly clot blood during spinal and vascular surgery. This same team helped research a sealant that "glues" vessels together following bypass grafting surgeries. The product is now on the market and used in medical facilities worldwide.

Huntington's Studies – In the UT Graduate School of Medicine Conformational Diseases and Therapeutics Research lab, Valerie Berthelie, PhD is homing in on Huntington's disease, a lethal condition that results from the degeneration of brain cells. Working with ORNL's Neutron Scattering Science division, she is focusing on identifying molecules created as the disease progresses, a study that may result in new therapies.

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