



CANCER, LUNG DISEASE FOCUS OF NEW MEDICINE CHAIR'S RESEARCH



Strieter's Research Aims

More Collaboration, Translational Research

Along with his own research, Strieter has several goals over the next year for the research conducted by the Department of Medicine.

"I want to foster new thematic research, to focus on new initiatives in regenerative medicine, to increase the interactivity within the department for collaborative research, to increase interactions with basic sciences, and increase our presence in opportunities in translational research."

When Robert M. Strieter, M.D., arrived in Charlottesville in July as the University of Virginia's new chair of the Department of Medicine, he brought his internationally known research in lung cancer, pulmonary fibrosis, acute lung injury and lung transplantation.

Strieter's research may lead to treatment advances for several groups including cancer, lung-injury and lung-transplant patients. In particular, he is examining how groups of cytokines (signaling proteins used extensively in inter-cell communication) and chemokines (small proteins that attract and activate cells) affect a host of diseases and procedures.

CANCER ▶ Strieter's research team was the first to discover that the CXC chemokine family can either promote or inhibit angiogenesis, the growth of new blood vessels needed to help cancer metastasize. In addition, Strieter's research team is studying mechanisms related to how cancer cells move from the primary tumor to distant metastatic sites. These studies will help develop therapies to target these chemokines, improving cancer treatment for patients.

LUNG TRANSPLANTS ▶ Strieter is examining how cytokines and chemokines affect acute and chronic lung rejection. As part of his study, Strieter's lab has one of the country's few functioning single-lung transplant models using rats. "These studies will have impact on developing novel strategies to preserve long-term survival of lung transplant patients," Strieter says.

AIRWAY AND LUNG INJURY REPAIR ▶ Strieter is studying how chemokines regulate mesenchymal progenitor cell trafficking during lung injury that can contribute to fibrosis repair, and his lab was among the first to demonstrate that progenitor cells contribute to the fibroproliferative phase of lung injury. "Targeting these cells may lead to improved survival by reducing the fibroproliferative phase and improving lung function," Strieter says. Strieter's team has also found that a circulating epithelial cell is needed to repair injuries related to the airways or lungs. "The finding of circulating progenitor cells that can repair the injured airway epithelium is important to understand their role in the repair of the epithelium after lung transplantation or microbial infection, such as influenza," he says.

OBESITY ▶ Strieter's research team was the first to identify a circulating mesenchymal progenitor cell that can differentiate into adipocytes and form human fat in immunocompromised mice. These findings have implications for a novel paradigm for the pathogenesis of obesity and metabolic syndrome.

Epilepsy Treatment Clinical Trials at UVA



Epilepsy and seizures affect 2.7 million Americans, according to the Epilepsy Foundation.

While surgery is the most common treatment option, says Nathan Fountain, M.D., a neurologist and director of UVA's epilepsy program, some people may not be surgical candidates. For instance, the area of the brain where the seizures develop may be too close to areas of the brain that can't be removed. Individuals with epilepsy who are not surgical candidates may now have access to two innovative clinical trials at the University of Virginia Health System to determine if two implantable devices can safely and effectively treat epilepsy.

1 THE FIRST TRIAL assesses the effectiveness of the Responsive Neurostimulator System, designed to treat patients whose epileptic seizures come from one focal point of the brain. A computer chip about the size of a quarter is implanted in the skull, with electrodes placed in the area of the brain where the seizures are occurring, Fountain says. The computer chip monitors brainwaves, and when it detects a possible seizure, a small electric stimulus is sent to the electrodes to block the seizure.

2 THE SECOND TRIAL – Stimulation of the Anterior Nucleus of the Thalamus, or SANTE – examines a deep brain stimulation device similar to what is used to treat Parkinson's disease. Wires are placed in the thalamus, a relay station for seizure spread in the brain. The wires lead out from the skull and under the skin to a pacemaker-like device in the chest that sends signals to the thalamus to block seizures. Patients ages 18 and older with intractable seizures are eligible to participate. However, participants in the RNS trial must have seizures emanating from a well-defined focus.

These two national device trials are just some of the clinical trials underway at UVA to evaluate epilepsy treatments, including several drug trials. The goal of epilepsy treatment, Fountain says: no seizures, no side effects.

To refer a patient for an epilepsy trial or for evaluation, call UVA Physician Direct at 800-552-3723.

UVA HEALTH SYSTEM

CONTINUING MEDICAL EDUCATION

Winter/Spring 2007 Conferences

All conferences offered in Charlottesville, Va., unless otherwise noted.

- ▶ **LIVER TRANSPLANTATION FOR THE NON-TRANSPLANT PHYSICIAN**
Wintergreen Resort
Wintergreen, Va., Feb. 9-12
- ▶ **LUNG CANCER CONFERENCE**
Jordan Hall Conference Center
UVA Medical Center, Feb. 16-18
- ▶ **CURRENT APPROACHES IN CANCER THERAPY**
Kingsmill Resort
Williamsburg, Va., Feb. 24
- ▶ **2007 RUNNING MEDICINE**
Sponsors Hall (Darden School)
University of Virginia, March 30-April 1
- ▶ **2007 NEUROLOGY CONFERENCE**
Jordan Hall Conference Center
UVA Medical Center, March 31
- ▶ **2007 SWINEFORD ALLERGY CONFERENCE**
Jordan Hall Conference Center
UVA Medical Center, April 6-7

For information, call 434-924-5310 or visit www.cmevillage.com.

Accreditation: The UVA School of Medicine is accredited by the Accreditation Council for Continuing Medical Education. Specific information about the designated number of AMA Category 1 credits for conferences can be obtained by calling 434-924-5310.