

Mark Nicolls, M.D.
Staff Physician, PAVIR Investigator

Dr. Nicolls serves as a Staff Physician with a committed laboratory at the VAPAHCS; and as a Professor and Chief of the Division of Pulmonary and Critical Care Medicine at Stanford University. In addition, he serves on PAVIR's Board of Directors. Most of his externally funded research is administered by PAVIR. Dr. Nicolls earned his B.S. in Biology at the University of Portland, Portland, OR in 1987 and his M.D at Stanford University in 1993. He continued on at Stanford for his Internal Medicine Internship and Residency at the same institution, followed by a Pulmonary and Critical Care Fellowship at the University of Colorado in Denver where he subsequently joined the Faculty. In 2007, Dr. Nicolls was recruited onto the Stanford faculty and is a physician-investigator at the Palo Alto VA. He is Director of the Stanford Lung Immunology Program. In 2014, he was elected to the American Society for Clinical Investigation. Dr. Nicolls's laboratory and clinical interests are centered on the contribution of immunity to diseases such as pulmonary hypertension and lung transplantation. He is specifically interested in the interplay between inflammation and vascular injury. The VA Palo Alto produces some of the highest quality research in the Federal System, and PAVIR is viewed by its investigators as a vital partner.

Leukotriene B4 (LTB4) and its role in acquired Lymphedema

It is estimated that hundreds of millions of people worldwide suffer from this lymphedema, which includes pain and swelling that generally occurs in one of a patient's arm or leg. Lymphedema is most commonly caused by cancer treatment (radiation), the surgical removal of lymph nodes, cancer, trauma, or infection of the lymph nodes. There is no known treatment for lymphedema, which can have very significant impact on patients' quality of life and lifestyle.

With the damage or loss of lymph node functioning, buildup of lymph fluid occurs. Examining these fluids, Dr. Mark Nicolls' lab discovered that LTB4 is elevated in lymphatic patients and that the presence of LTB4 hinders lymphatic repair in a mouse model. Excitingly, there is already a drug compound available in Japan, that antagonizes LTB4 and which is currently being tested in a clinical trial at Stanford. It is highly unusual that the testing of a compound predates the publication of the underlying basic science (Dr. Nicolls' work); but a testament to the VAPAHCS and Stanford research excellence in fostering innovation that matters.