

Richard F. Silver, M.D.
Associate Professor

Dr. Silver's primary activity is research relating to immune responses within the human lung. Dr. Silver's laboratory is involved in ongoing studies of immunity to *Mycobacterium tuberculosis*, and of the immunopathogenesis of pulmonary sarcoidosis. His studies regarding tuberculosis are specifically interested in mechanisms of lymphocyte-mediated killing of intracellular *M. tuberculosis*, expression of virulence of *M. tuberculosis* strains within human mononuclear phagocytes, and recruitment of protective immune responses to the lung. His research on sarcoidosis has suggested a role for abnormal responsiveness to stimulation of specific Toll-like receptors (TLRs) in inciting this disorder. These findings now being investigated both in further studies involving patients with sarcoidosis, and in a mouse model of the disease. Dr. Silver's work was awarded a Parker B. Francis Fellowship, and has also received support from the American Lung Association, the American Thoracic Society, the NIH, and the United States Department of Veterans' Affairs. He serves as attending physician on both the MICU and Pulmonary Consultation services at University Hospitals Case Medical Center and the Louis Stokes Cleveland VA Medical Center. He is also on the attending staff of the Cuyahoga County Tuberculosis Clinic at MetroHealth Medical Center. He is a member of the American Thoracic Society, The American Association of Immunologists, and the American Society for Microbiology.

Selected recent publications

MI Gabrilovich, J Walrath, CV Harding, H Lee, W Mackay, S Dixon Williams, and **RF Silver**. "Hyperresponsiveness to stimulation with Toll-like receptor 2 agonist 19-kD lipoprotein of *M.tuberculosis* (LpqH) in pulmonary sarcoidosis" (submitted).

RF Silver, J Walrath, H Lee, BA Jacobson, H Horton, MR Bowman, K Nocka, and JP Sypek. "Human alveolar macrophage gene responses to *Mycobacterium tuberculosis* strains H37Ra and H37Rv" Am. J Resp. Cell. Mol. Biol., 2008 (in press).

S. Theus, MD Cave, K Eisenach, W Mackay, J Walrath, H Lee, C Whalen, and **RF Silver**. "Differences in the growth of paired Ugandan isolates of *Mycobacterium tuberculosis* within human mononuclear phagocytes correlate with epidemiological evidence of strain virulence" Infection and Immunity, 2006, 74: 6865-6876.

J Walrath, L Zukowski, A Krywiak, and **RF Silver**. "Resident Th1-like effector-memory cells in pulmonary recall responses to *Mycobacterium tuberculosis*" Am. J. Resp. Cell. and Mol. Biol., 2005, 33: 48-55.

RF Silver, Q Li, L Zukowski, S Kotake, F Pozuelo, A Krywiak, and R Larkin "Recruitment of antigen-specific Th1-like responses to the human lung following segmental antigen challenge with Purified Protein Derivative of *M. tuberculosis*",

Am. J. Resp. Cell. and Mol. Biol., 2003, 29: 117-123.

DF Hoft, S Worku, B Kampmann, C Whalen, JJ Ellner, CS Hirsch, RB Brown, R Larkin, Q Li, H Yun, and **RF Silver**.

“Investigation of the relationships between immune-mediated inhibition of mycobacterial growth and other potential surrogate markers of protective TB immunity”,
J. Inf. Diseases, 2002, 186: 1448-1457.