

Charles Parkos, MD, PhD is currently a Vice Chair and the Director of Experimental Pathology at Emory University School of Medicine. He received his MD/PhD degree from the University of California at San Diego and Scripps Research Institute in 1987, where his studies centered on determining the molecular basis of reactive oxygen species generation by neutrophils and identification of the molecular defect in Chronic Granulomatous Disease. In 1988, Dr. Parkos began residency and fellowship training in Pathology at Brigham and Women's Hospital, with subspecialization in diagnostic gastrointestinal surgical pathology, under the mentorship of James Madara. While at Harvard Medical School, he began investigating fundamental mechanisms of dysregulated leukocyte trafficking across the intestinal mucosa, as observed in patients with Inflammatory Bowel Disease during disease flares. Given the high degree of relevance of his studies to IBD, Dr. Parkos successfully obtained a Crohn's and Colitis Foundation of America Career Development Award from 1990-1993, and in 1991 received the CCFA Young Investigator Award. His research was subsequently supported by the CCFA with an Arie and Ida Crown Memorial Foundation Research Award from 1994-1995. Dr. Parkos received his first independent NIH grant in 1995 and has been continuously R01-funded by multiple grants for the past 16 years. In 1997, he was recruited to Emory University School of Medicine as a senior faculty and director of the division of gastrointestinal pathology, and became a full Professor in 2003.

In the laboratory, Dr. Parkos has had a career-long interest in elucidating mechanisms of Inflammatory Bowel Disease, expanding his interests to identification of molecular mechanisms guiding neutrophil trafficking through the mucosa, and specifically across the intestinal epithelium. At the time of his fellowship, essentially nothing was known about mechanisms of neutrophil migration into and across mucosal epithelia. Now, there is a clearer and more precise understanding of how neutrophils and other leukocyte populations find, adhere, and migrate across the intestinal epithelium. Dr. Parkos has used state-of-the-art molecular and cell-based approaches in complex cell biological systems to elucidate the roles of many epithelial and neutrophil proteins in regulating leukocyte trafficking across the intestinal mucosa and how interactions influence epithelial barrier function. Examples include important adhesion/signaling receptors and barrier regulating proteins such as CD11b/CD18, CD47, SIRPalpha, and members of the CTX family of proteins, including Junctional Adhesion Molecules (JAMs). Recent studies from his laboratory have advanced our understanding of how these proteins regulate mucosal homeostasis by extending cell-based studies to in-vivo and ex-vivo animal models of intestinal inflammation. In a recent study published in the journal *Immunity*, Dr. Parkos determined the mechanisms of adaptive immune system responses to a chronically leaky intestinal barrier that serves to protect from acute mucosal injury. Indeed, such findings may help to explain why normal relatives of patients with Crohn's disease who have increased intestinal permeability do not get the disease. During his studies, Dr. Parkos has published more than 150 scientific manuscripts, many in outstanding journals such as *Proc Nat Acad Sci*, *J Exp Med*, *Immunity*, *Cell*, *Nature*, *J Cell Biol*, *J Clin Invest*, *Mucosal Immunology*, *Gastroenterology*, and *Mol Biol Cell*, and is a regularly invited speaker at international symposia related to his field.

In addition to his research, Dr. Parkos has a longstanding commitment to teaching, training, and mentorship at all levels, including graduate and medical students, postdoctoral fellows, and junior faculty. He has served as Director of Emory's Medical Scientist Training Program since 2007 and helped to grow the program to 82 MD/PhD students this year. Many of his students, clinical fellows, postdocs, and junior faculty have gone on to highly successful academic careers in related areas. During this time, Dr. Parkos has demonstrated a high level of commitment to service, promoting research in the areas of experimental pathology and mucosal immunology. His efforts to promote the discipline of experimental pathology resulted in his election to, and service in, the roles of Vice President (2008-2009), President Elect (2009-2010) and President (2010-2011) of The American Society of Investigative Pathology (ASIP). At the same time, he has also been a strong advocate for the Crohn's and Colitis Foundation of America in promoting basic research directed at better understanding the pathogenesis of Inflammatory Bowel Disease. Since 2000, he served for six years on senior research grant review committees, and recently finished a three year term as chair of the research committee that scientifically reviews all CCFA Fellowship and Career Development Awards.