



Charles (Cash) McCall, MD, Professor of Medicine, Translation Science, and Microbiology/Immunology at Wake Forest University School of Medicine, embarked on a 55-year research odyssey in leukocyte biology after observing “toxic” granulocytes in a patient dying from septic shock. He was a Maxwell Finland Fellow in Infectious Diseases at Harvard’s Thorndike Memorial Laboratory at Boston City Hospital. During this time, heroes fueled Cash’s lifetime curiosity in leukocyte biology and sepsis. Dr. Finland, a pioneer in penicillin therapy and founder of the Infectious Diseases Society of America, equipped a laboratory for Cash to investigate leukocytes. Ramsey Cotran, acclaimed inflammation investigator and pathology textbook author, provided electron microscopy and helped interpret the findings. William B Castle, who discovered the molecular basis of pernicious anemia, and instilled the spirit of the inquisitive physician in Cash. Rockefeller Institute’s Zanvil Cohn, recipient of the inaugural Society for Leukocyte Biology Legacy Award, provided direction for Cash’s first NIH

R01 at Wake Forest ,*“Functional and Metabolic Properties of Human Toxic Neutrophils.”* This grant lay the groundwork for five decades of uninterrupted of NIH funding. His present funding is an NIGMS NIH R35 Established Investigator award entitled *“Redox control over metabolism and mitochondrial bioenergetics direct the course of acute inflammation and sepsis.”* Identifying paradoxes and their unanswered questions drives his research passion. One example is how some victims survive sepsis, yet others do not. Investigating this quandary led to discovery of the nuclear Sirtuin 1 as a survival immunometabolic regulator and pyruvate dehydrogenase as a Krebs cycle control point that balances a sepsis-induced crisis in energy and demand and supply. Cash and colleagues at the University of Florida and Washington University in St Louis are pursuing the mitochondrial energy dysregulation concept in treating human sepsis.

Cash was born in Lenoir, NC, and graduated from Wake Forest University School of Medicine in 1961. A faculty member since 1968, he led the Infectious Diseases Section, directed the NIH General Clinical Research Center, founded a Section on Molecular Medicine within Internal Medicine, and pioneered the Wake Forest University Translational Sciences Institute. Cash is an emeritus member of the American Society of Investigation, the Association of American Physicians, and the Infectious Diseases Society of America. He received Wake Forest’s *Established Investigator in Clinical Research Award* and a *Society of Leukocyte Biology Lifetime Honorary Membership Award.*