Chronic obstructive pulmonary disease (COPD) is the number one cause of hospitalization in Canada, responsible for 80,000 admissions per year and the 3rd leading cause of death worldwide, responsible for >3 million deaths per year. Regrettably, there are no therapies that can modify the natural progression of disease or reduce COPD mortality. One major barrier in the care of patients with COPD and for drug discovery has been the paucity of simple biomarkers to indicate disease activity. In this talk, we will discuss strategies and progress to discover and develop blood based biomarkers for COPD disease activity.