Merry-Lynn McDonald, MSc, PhD, recently joined the UAB Division of Pulmonary, Allergy, and Critical Care Medicine as an assistant professor of medicine. Dr. McDonald is a genetic epidemiologist who brings with her a wealth of research knowledge. Dr. McDonald has specific interests in COPD, cachexia, muscle wasting, genetic epidemiology, systems biology and bioinformatics.

Dr. McDonald completed her PhD training in genetic epidemiology with Dr. Suzanne Leal at Baylor College of Medicine. Following her graduate training, she completed postdoctoral training with Dr. Edwin Silverman in Channing Division of Network Medicine, Harvard School of Medicine/Brigham and Women's Hospital. Dr. McDonald currently has funding from the National Institutes of Health (K99/R00) and the Parker B. Francis Foundation to support her research on “Network Medicine Approaches to Cachexia in COPD”. Dr. McDonald is an active member of the American Thoracic Society, the American Society of Human Genetics and the Society of Sarcopenia, Cachexia and Wasting Disorders.

Dr. McDonald’s lab is focused on researching cachexia, loss of muscle with or without loss of fat in individuals suffering from chronic illness.

“Cachexia is a common co-morbidity in COPD, but is more frequently thought of in cancer,” she said.

As cachexia presents in patients with a number of complex traits including both cancer and COPD, Dr. McDonald began searching for a shared genetic etiology for change in BMI, a proxy for cachexia, among cancer and COPD cases. In doing so, she discovered a variant in the DOCK1 gene is associated with change in BMI among GI cancer and COPD cases. This work has been accepted for publication the Journal of Cachexia, Sarcopenia and Muscle.

Dr. McDonald is currently working with the Lung Health Center’s Dr. Mark Dransfield to recruit 100 COPD cases for the CCELL (Cachexia in COPD: Etiology of Low Lean-muscle) Study to investigate cachexia.

“It’s easy to weigh someone, but we often don’t have an easy way to measure muscle mass reliably. Fortunately, my collaborator Dr. George Washko and his group at Brigham and Women’s Hospital developed a method of using chest CT to determine pectoral muscle area,” Dr. McDonald explained. “We found that it correlates significantly with morbidity metrics in COPD.”

Lean muscle mass and other information used to monitor cachexia will be assessed in cohort participants. Participants will also be invited to provide samples to generate genomics and metabolomics data to help to decipher the etiology of cachexia in COPD.

Dr. McDonald is also looking to expand her lab. Interested prospective post-doctoral fellows and programmers with expertise in bioinformatics should send their CV and cover letter to mmcdonald@uab.edu.