Application number/Title: 20915 - Genome-wide integrative and network-based approaches to obstructive lung diseases and their comorbidities

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Keywords provided by the Applicant PI to describe the research project:

COPD, asthma, comorbidities

Application Lay Summary:

1a: Chronic obstructive pulmonary disease (COPD) and asthma are the two most common obstructive lung diseases in the world, and cause an enormous burden to society. These diseases have unique but also shared characteristics and risk factors. The goal of this proposal is to leverage our expertise in lung disease, genetics, and network modelling to find new unique and shared genetic variants for these diseases.

1b: This research will contribute to knowledge about the heterogeneity and susceptibility to two major obstructive lung diseases and their comorbidities.

1c: We will obtain data on genetics, lung function, body measurement and composition, and co-morbid diseases (such as cardiac disease) from the UK Biobank. We will combine this data with our existing data COPD, asthma, and comorbidities, to examine genetics common or distinct to asthma, COPD, and specific comorbidities, such as obesity and wasting. Finally, we will use network methods to build disease modules and identify shared and distinct networks.

1d: We will analyse the full cohort with available genetic and phenotypic measurements.