We read with great interest the paper by Garcia-Nuñez et al. (1) published in the December 2014 issue of this journal, where the authors investigated the sputum microbiota of chronic obstructive pulmonary disease (COPD) patients. The authors found decreased microbial diversity in patients with advanced disease (approaching the very-severe-COPD category according to Global Initiative for Chronic Obstructive Lung Disease [GOLD] criteria) compared to that of patients with moderate and severe COPD. Garcia-Nuñez et al. contrast that with our findings (2), which did not identify changes in microbial diversity related to COPD severity. We wish to point out that our study compared control patients to both moderate- and severe-COPD patients but included only 2 subjects with advanced disease as defined by Garcia-Nuñez et al. Our subjects with COPD had a median forced expiratory volume in 1 s/forced vital capacity (FEV1% predicted) of 54%, while Garcia-Nuñez et al. report an FEV1% predicted of 35%. Therefore, our findings are not amenable to direct comparison with those of Garcia-Nuñez et al.

Although we did not identify severity-related changes in microbial diversity between moderate- and severe-COPD patients, we did demonstrate that increasing age was associated with increased microbial diversity in moderate- and severe-COPD patients. As this was a significant finding in our study, we wonder if Garcia-Nuñez et al. have analyzed the relationship between subject age and microbial diversity in their samples. Furthermore, our study demonstrated changes in the lung microbiota related to inhaled corticosteroid use (2). Another recent study by Huang et al. (3) observed a trend toward greater diversity in samples from subjects using inhaled corticosteroids. In the study by Garcia-Nuñez et al., more subjects with advanced disease (an FEV1% predicted of <35%) used inhaled corticosteroids than subjects with moderate to severe disease ($P = 0.082$). Although the study by Huang et al. and the study by Garcia-Nuñez et al. observed opposite changes in diversity related to inhaled corticosteroid use, we wonder if inhaled corticosteroid use may be partially responsible for the differences in diversity between the two groups.

Studies on the COPD lung microbiota are just beginning, and the work performed thus far has been challenging to interpret due to differences in technique and patient population. We hope that by taking into account already identified potential confounders (such as age and inhaled corticosteroid use), a more complete understanding of the COPD lung microbiota can emerge.

REFERENCES