

## Introduction

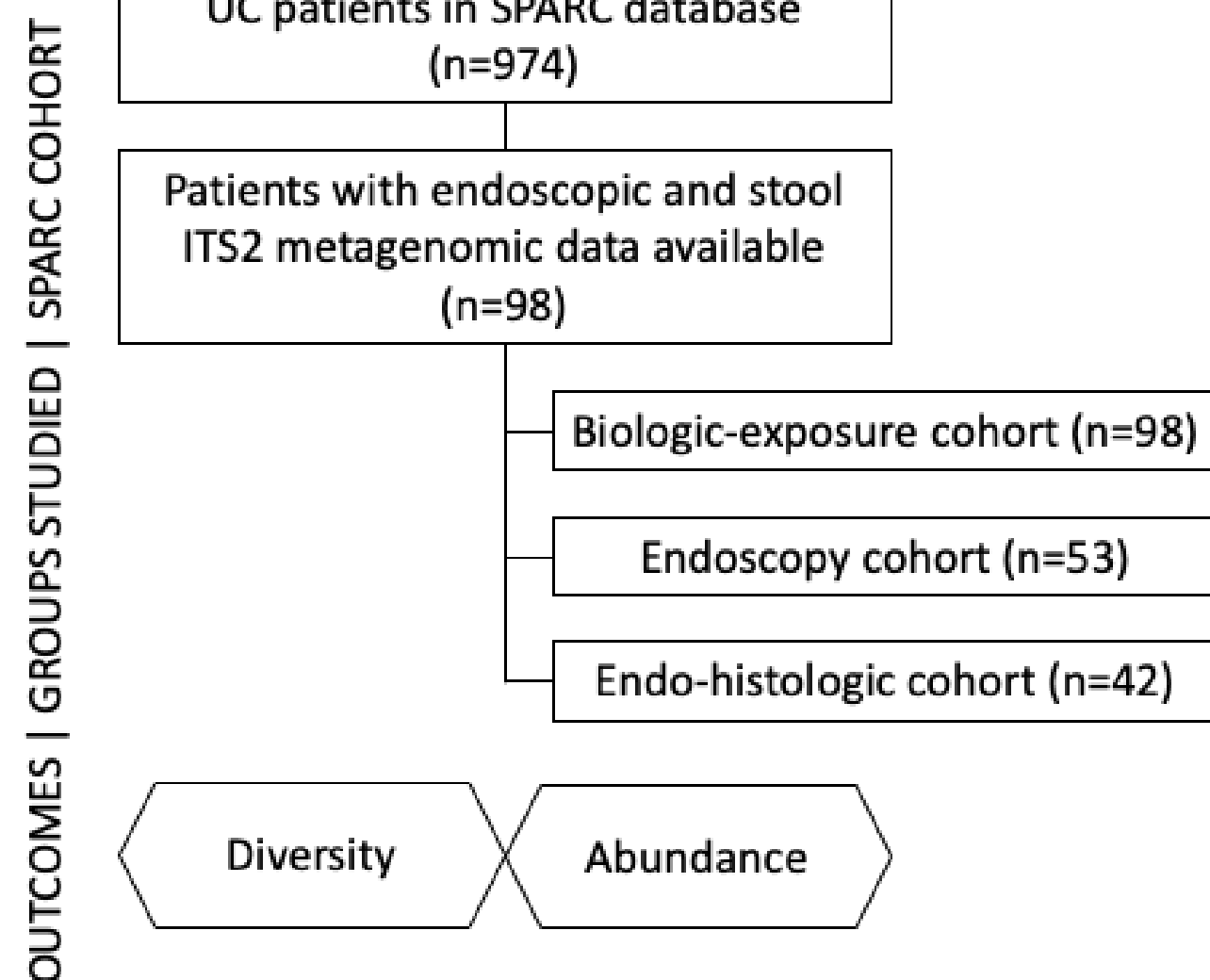
### Background

- The fungal mycobiome in UC remains uncharacterized across endo-histologic activity and treatment exposure
- Outcomes of FMT in UC may be linked to fungal diversity of recipients<sup>1</sup>

### Aim

- To characterize the diversity of fungal microbiome in ulcerative colitis across the spectrum endo-histologic activity alongside treatment-mediated effects.

## Methods



## Results

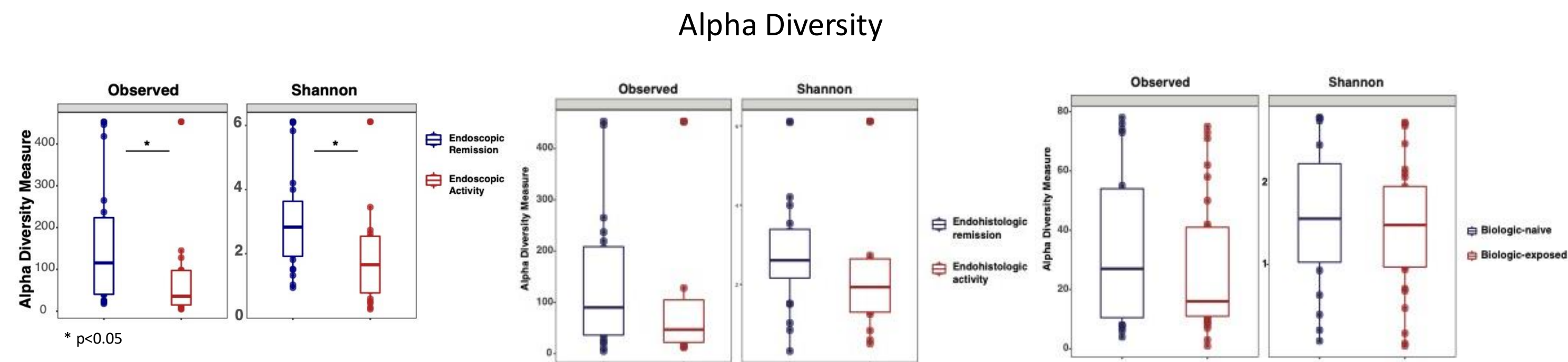


Figure 1. Alpha diversity measure with Observed and Shannon Diversity for patients with Ulcerative Colitis grouped by Mayo Endoscopic Score, histologic activity of endoscopic samples, and treatment with biologics.

## Beta Diversity

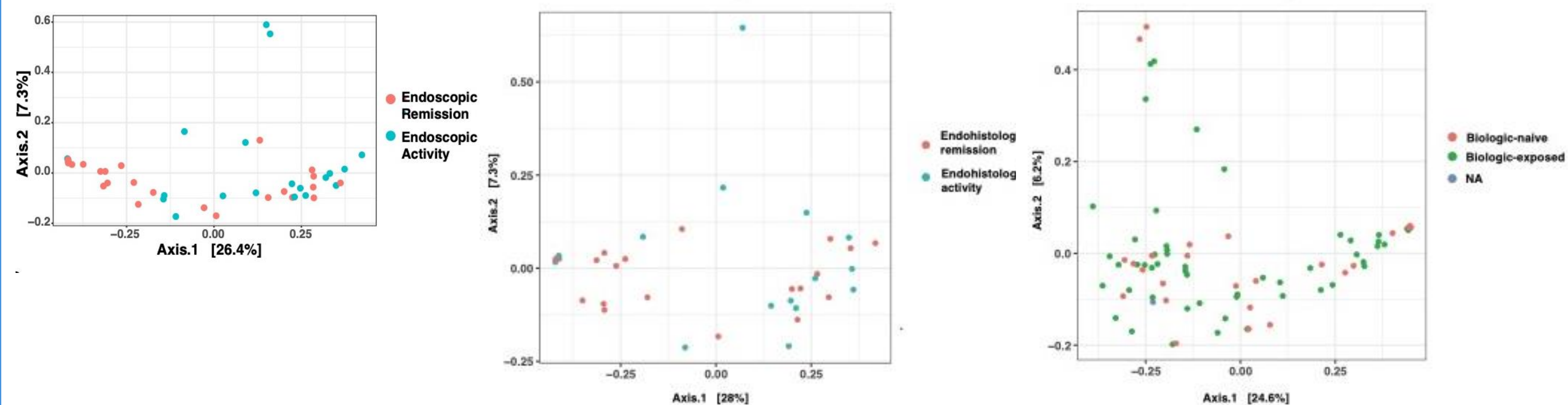


Figure 2. Beta diversity measure with Unifrac for patients with Ulcerative Colitis grouped by Mayo Endoscopic Score, histologic activity of endoscopic samples, and treatment with biologics.

## Conclusion

### Alpha Diversity

- Endoscopic: Remission > Activity (Observed 160.6 v 85.1,  $p < 0.05$ ; Shannon 3.07 vs 2.03,  $p < 0.05$ )
- Histologic: Remission = Activity (Observed 141.4 v 119.5,  $p = 0.34$ ; Shannon 2.84 v 2.49,  $p = 0.23$ )
- Biologics: Naïve = Exposed (Observed 33.2 v 27.5,  $p = 0.55$ ; Shannon 1.58 v 1.45,  $p = 0.57$ )

### Beta Diversity

- Endoscopic: Remission > Activity ( $p < 0.05$ )
- Histologic: Remission = Activity ( $p = 0.467$ )
- Biologic: Naïve = Exposed ( $p = 0.52$ )

### Take Away

- Patients with endoscopic remission demonstrated significantly greater alpha and beta diversity than patients with endoscopic activity
- Alpha and beta diversity was similar across histologic activity and biologic treatment
- These findings support prior literature demonstrating increased fungal diversity is associated with improved outcomes

## Acknowledgements

Thank you to Crohn's and Colitis Foundation, Tufts Clinical and Translational Science Institute, Natalie V. Zucker Research Award, Delilah Maloney

References  
1. Leonardi I, Paramsothy S, Doron I, Semon A, Kaakoush NO, Clemente JC, Faith JJ, Borody TJ, Mitchell HM, Colombel JF, Kamm MA, Iliev ID. Fungal Trans-kingdom Dynamics Linked to Responsiveness to Fecal Microbiota Transplantation (FMT) Therapy in Ulcerative Colitis. Cell Host Microbe. 2020 May 13;27(5):823-829.e3. doi: 10.1016/j.chom.2020.03.006. Epub 2020 Apr 15. PMID: 32298656; PMCID: PMC8647676.