Meeting Minutes:
2023-10-04

Research hypothesis:

- Still exploratory in nature
- Alpha and beta diversity panel for all factors we're interested in
    - If one variable sticks out to us, move ahead with just one variable, if following all the variables along the whole time, it may be a lot to follow each variable down the whole pipeline
- Can look at global beta diversity and then move to looking at more specifics
- Or we could stick with impact of BMI and explore the effect of breastfed vs formula feeding

Impact of BMI through breastmilk: compare mother's with different BMIs and see if there are differences between breastmilk vs. formula fed infants

- Linking impact of BMI through breast milk could help make our research question more novel

"Boutique analysis" Pie crust → takes sequencing data, correlates bacterial species with genes that are normally present, generates a functional table along with which species are there

- Ex: pathways that are present because of different species

"Boutique analysis" Kegg orthology → looks at metabolic differences

- Specific differences (genes, enzymes, that are present, etc.)

Infant microbiome time point: pick one time point → 6 months or 9 months of age, to avoid having delivery mode as a confounding factor and to avoid fluctuation of infant microbiomes in the early stages of life

- Will need to control for birthmode

For proposal: ensure sufficient detail in table at the end (done in R? What tools are you using, what stat tests, theoretically, TAs should be able to read our proposal and then be able to replicate the project)

- Be specific not vague, provide details
- Make sure that analysis are based on logic
- We're looking at correlations, not causes with this dataset
- Be clear and detailed, move forward in logical way (with justification)
- For feedback → can send specific questions to Avril, he can give us some feedback without going into too much depth

Action: email Avril this week to let him know how the dataset is looking (qiime2 workflow?)
Action: literature review to ensure whatever becomes significant finding is novel → (Hayley and Emily)
Action: make a skeleton for proposal or flowchart of what we're going to be doing

Action: To match baby samples to mom samples and understand the metadata → email researcher
Action: by next meeting → get qiime workflow done (if possible), get skeleton of proposal going, literature review

Qiime pipeline: importing & demultiplexing (Maddy and Nicole) → denoise & cluster (choosing truncation lengths) (Maddy and Nicole) → training classifier (meeting?) → generating taxonomy and bar plots → rarefaction & look at plots (Emily and Hayley)