**Letter of Intent (1 page)**

**Research Question:** Can mushroom mycelium be a beneficial nutritional additive to developing bumble bee diets? (i.e.: effects on total number of offspring, offspring fat content, and bee size)

**Planned efforts:** Create microcolonies (groups of 6 worker bees separated from a queen) provisioned with either: wildflower pollen (control), wildflower pollen with a 1% concentration of blue oyster mushroom mycelium, or wildflower pollen with a 1% concentration of pink oyster mushroom mycelium. Allow the microcolonies to produce brood and emerge offspring for 45 days. After 45 days freeze original workers and emerged males and count offspring in brood cells.

- Data Collected:

* Total offspring (= count of emerged males + larvae in brood cells)
* Worker body size
* Male body size
* Male fat content (vanillin lipid extraction method)

- Use an ANOVA to compare treatment effects.

**Data Source:** This is Brooke’s data from her current experiment

**Data Structure:**

Continuous distribution: worker body size, male body size, and male fat content

Categorical, poisson distribution: total offspring counts

**Potential Analyses to be conducted:** ANOVA – analysis of variance

**Responsibilities of each group member:**

**Preliminary data analysis** (1-2 pages)

any data wrangling undertaken to prepare the data for analysis Shane

summary statistics for relevant variables Brooke

variable types (e.g., categorical vs. Continuous) Brooke

potential challenges in analysis (e.g., violations of normality; pseudoreplication) Amber

and pertinent graphical depictions. Amber

**First submission (3-5 pages)**   
This report should reflect a short manuscript, with an:

Abstract, Introduction, Shane

Materials and Methods, Discussions, Brooke

Results + Tables/Figures (as appropriate). Amber

References all

**Presentation:**

a description of the research question, Shane

its relevance to the field/society, Shane

the structure of the data, Brooke

the statistical analyses Brooke

potential challenges Amber

and broader implications of the findings. Amber