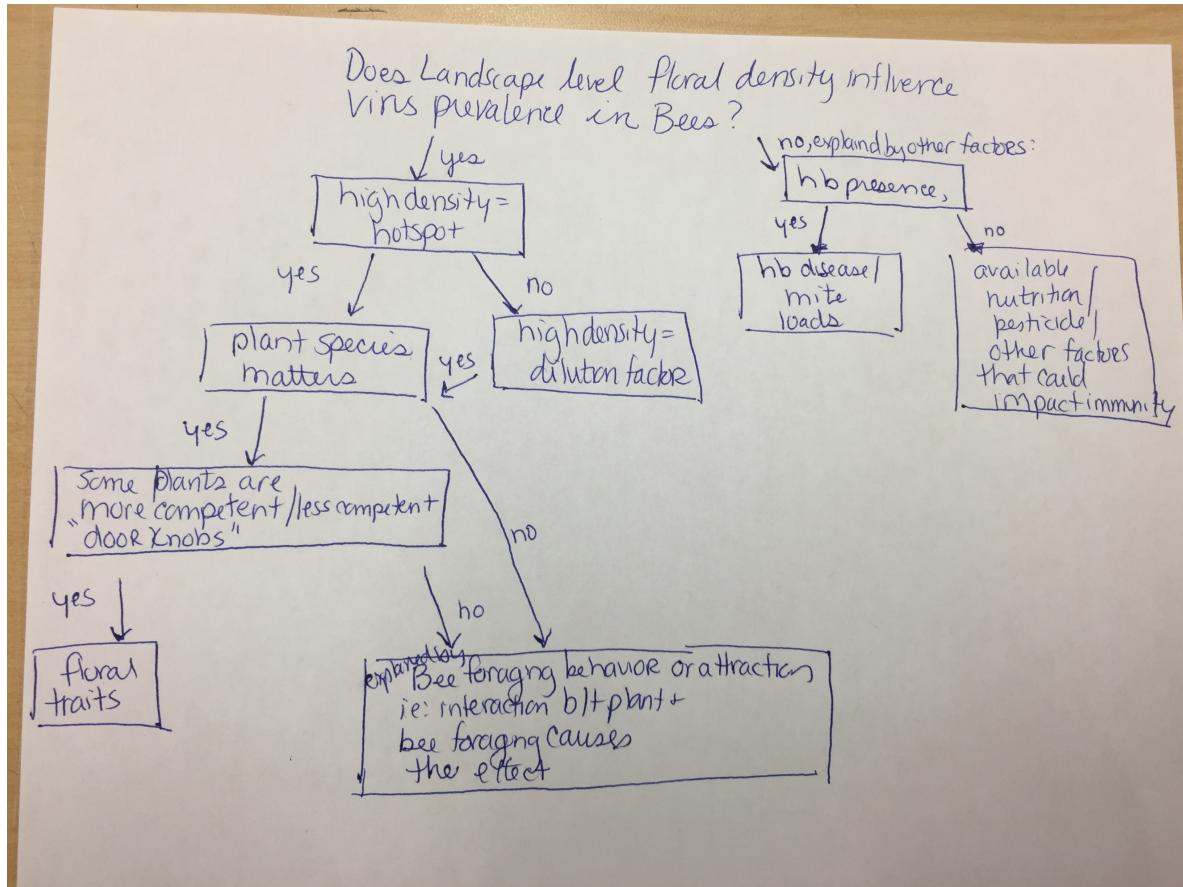


Assignment 2 Bio 381

Samantha A. Alger

1/25/2017

Thinking on Paper...

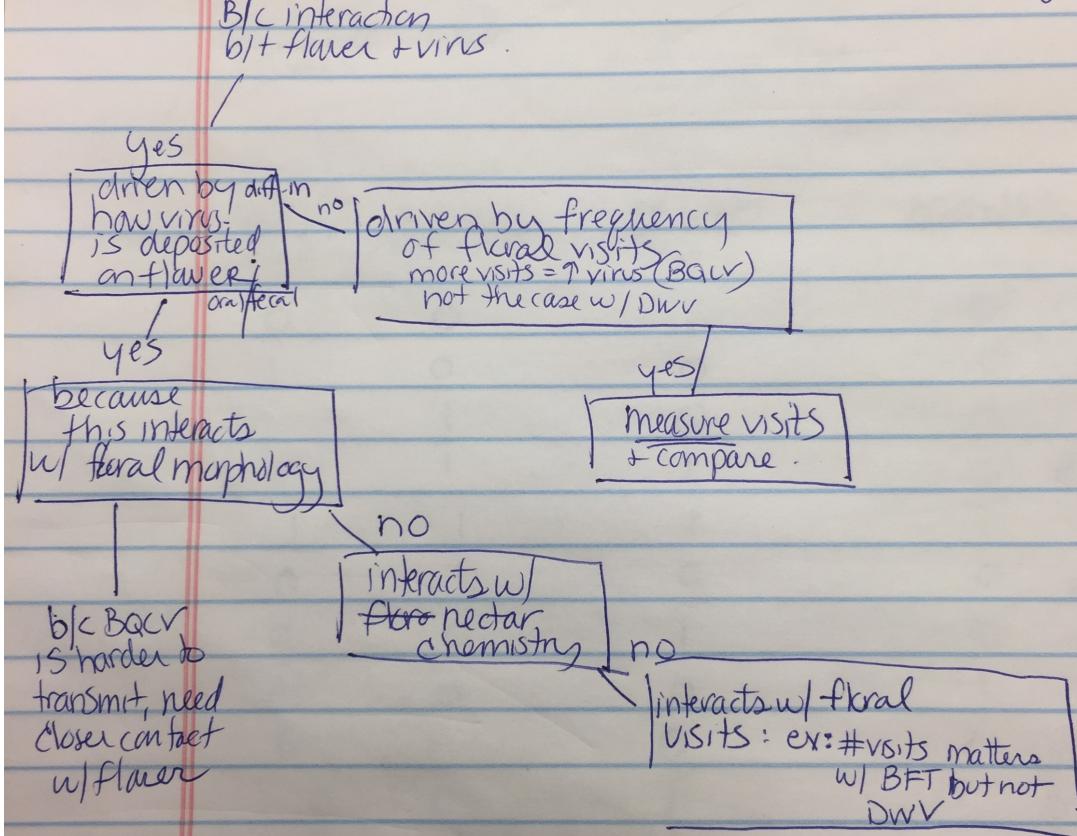


Decision Tree # 1: Exploring how floral density on the landscape level influences prevalence of virus in bumble bees.

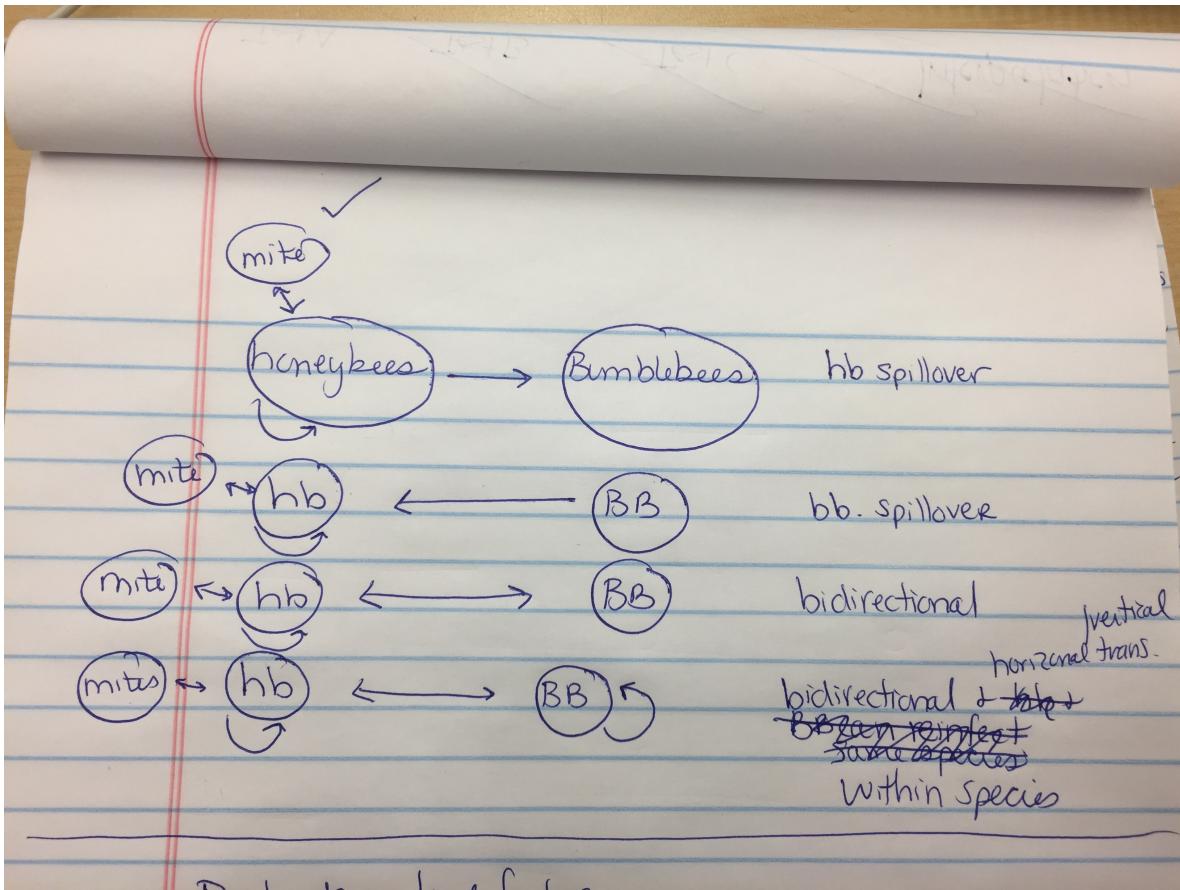
decision tree 2

BaCV = orally
DwV = fecally

B/C interaction
b/t flower + virus



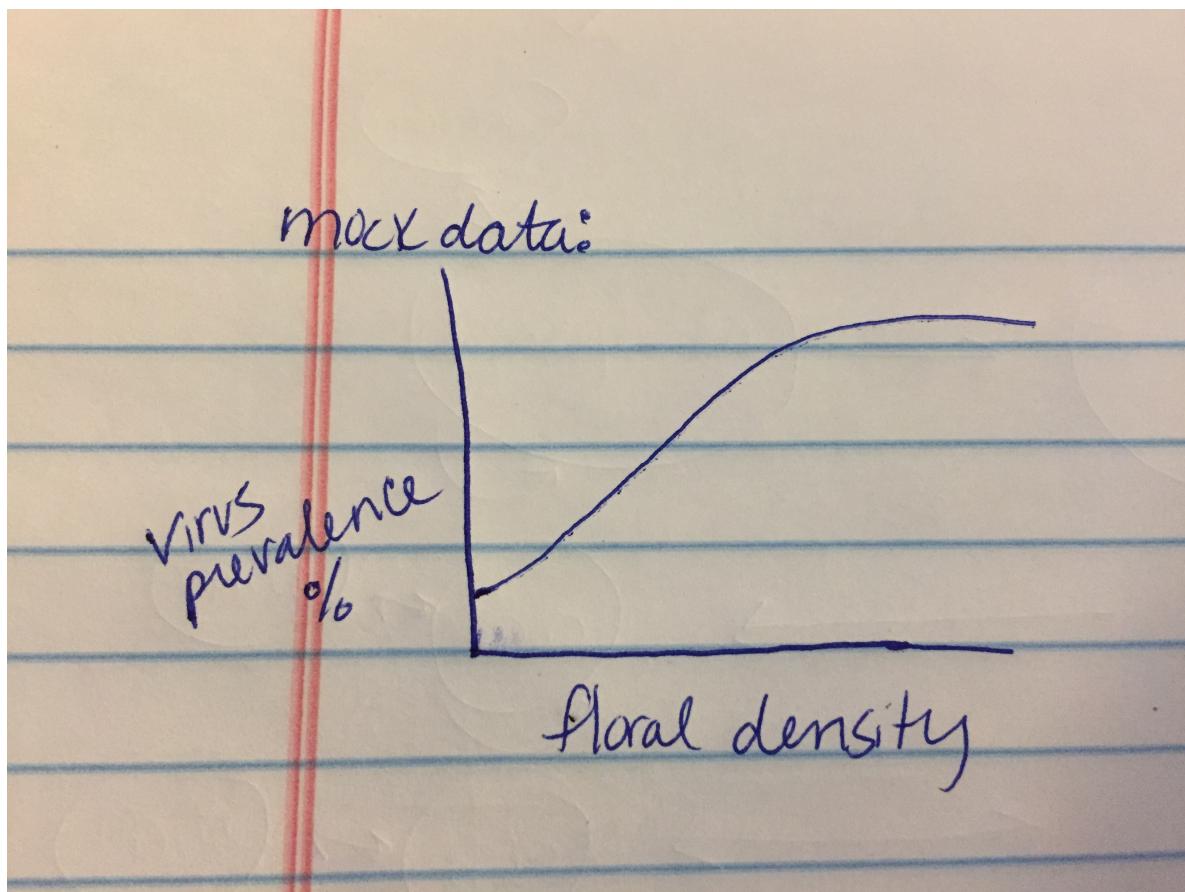
Decision Tree #2: Exploring possible explanations for why viruses and plant species are interacting.



Path Diagram: Exploring possible transmission routes and spillover between bumble bees, honey bees, and *Varroa* mites.

<u>DWV on BFT</u>	<u>DWV on WC</u>	<u>BQ on BFT</u>	<u>BQ on WC</u>
○	○	○	○ virus $\not\Rightarrow$ flowers
1	○	○	○ Uncommon event
1	1	○	○ only DWV goes on flowers
1	1	1	○ Interaction w/ virus + flower
1	1	1	1 virus \Rightarrow flowers
○	1	○	○ Uncommon event
○	○	1	○ Uncommon event
○	○	○	1 Uncommon event +
1	1	○	1 virus \Rightarrow flowers
○	○	1	1 BQ \Rightarrow flowers
○	1	1	1 interaction
○	1	1	○ interaction.
1	○	1	1 interaction
1	○	○	1 interaction.

Dip Switch Diagram: Providing an explanation for the possible results for viral detection on flowers: (2 viruses, 2 plant species).



Mock Data: Relationship between viral prevalence (%) in bumble bees and floral density. I predict virus prevalence to be positively correlated with floral density.