



Linking pollinator behavior to selfing rate for three distinct pollinators of alfalfa

Emmanuel Santa-Martínez

Johanne Brunet

Department of Entomology

University of Wisconsin-Madison

Selfing

Decrease in heterozygosity

- Deleterious alleles in homozygous plants

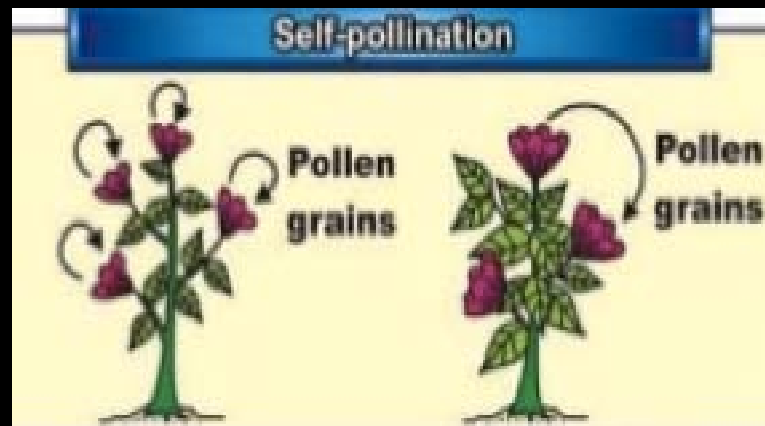
Negatively impact plant fitness

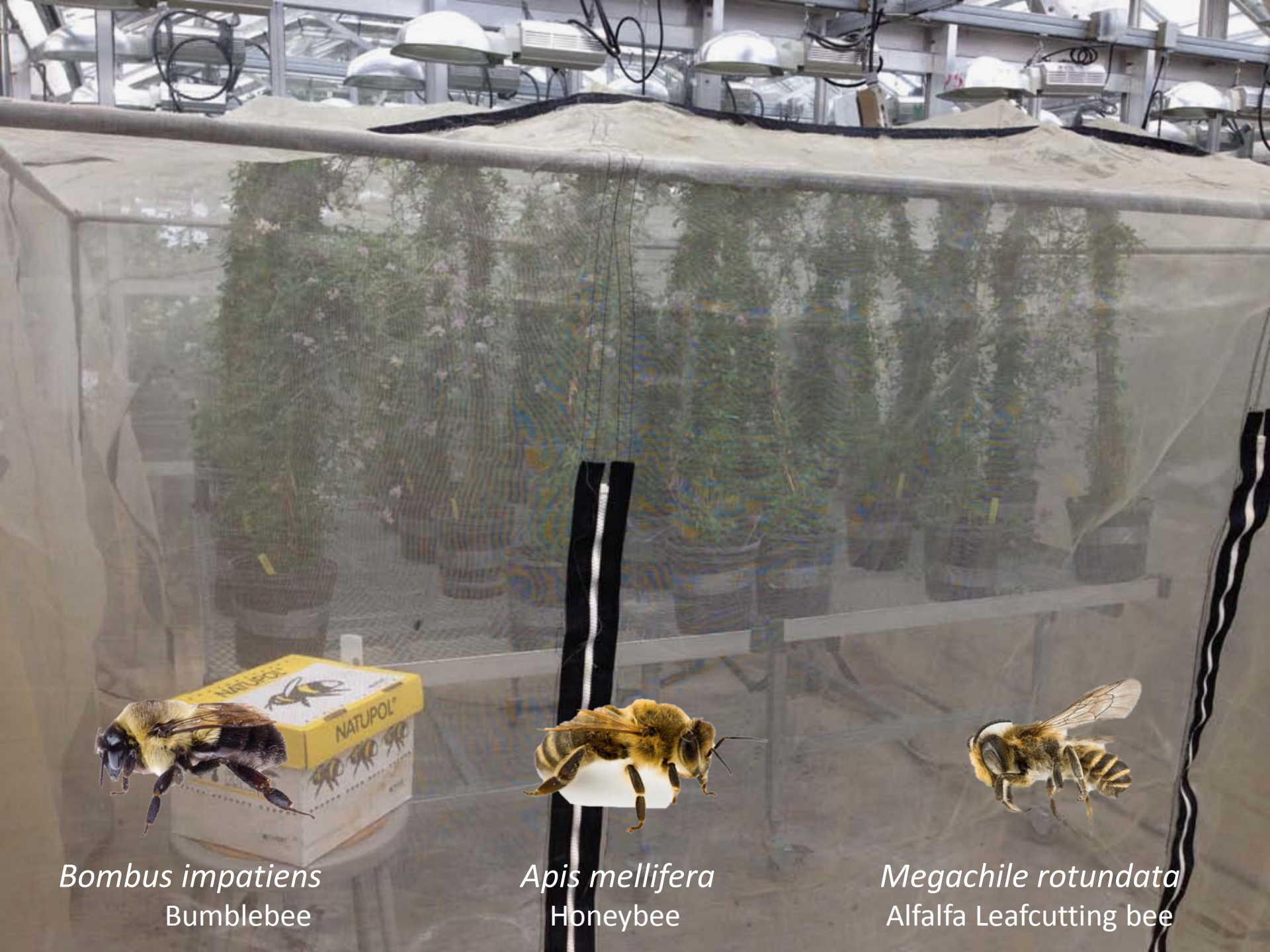
- Inbreeding depression = reduction in seed yield →



High selfing rate = reduce gene flow

Selfing in agricultural crops is affected by how pollinators forage on plants and plants floral display size





Bombus impatiens
Bumblebee

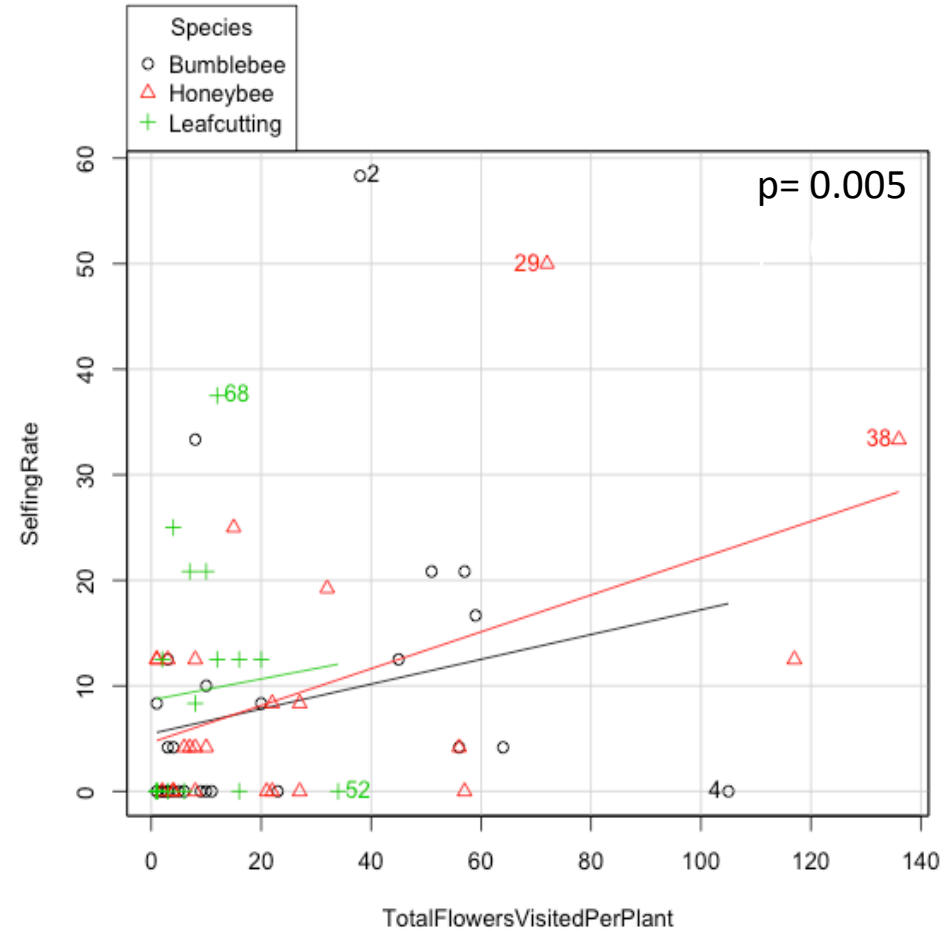
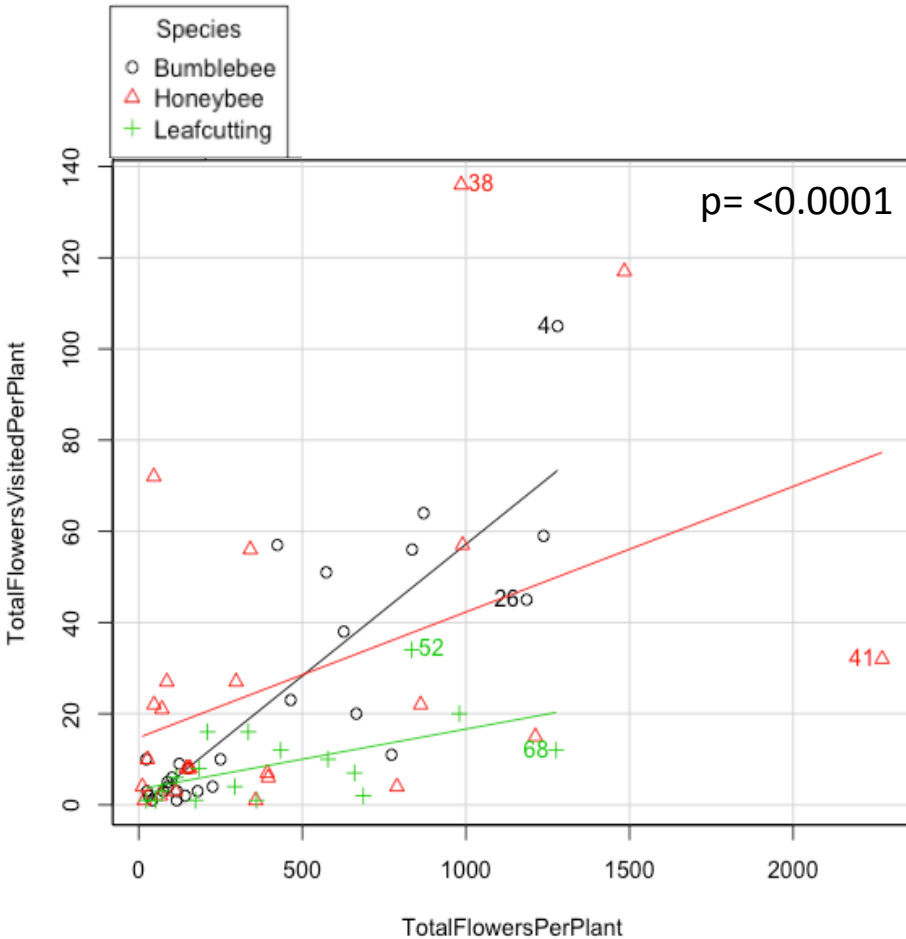


Apis mellifera
Honeybee



Megachile rotundata
Alfalfa Leafcutting bee

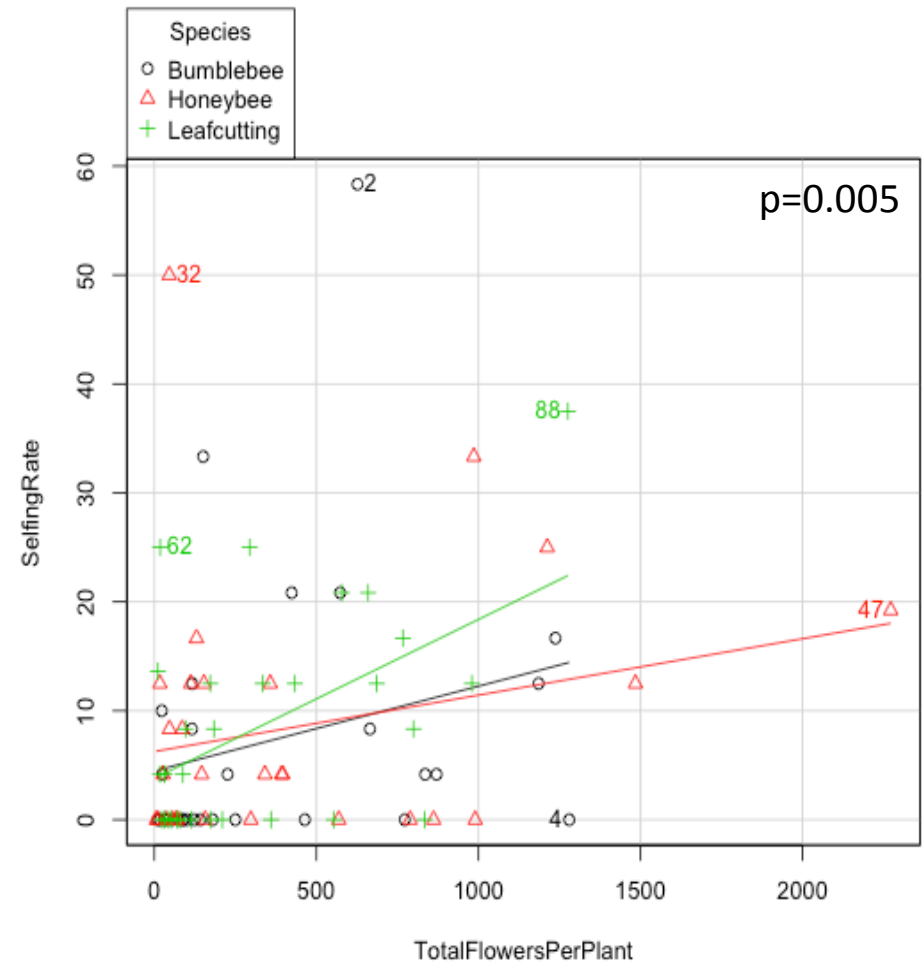
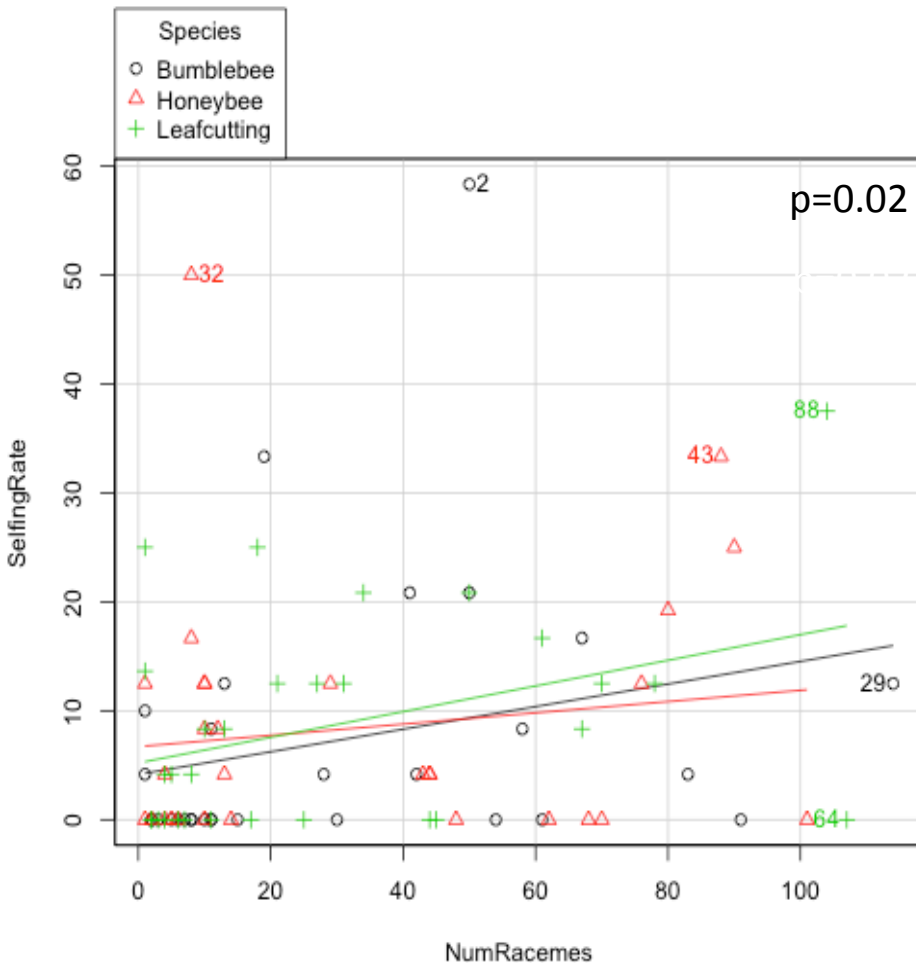
Relation of the number of flowers visited and selfing



Large amount of flowers available on a plant can increase attractiveness and the visitation rates of pollinators.

Visiting more flowers in succession on a plant increase selfing rate (geitonogamous selfing).

The impact of floral display on bees and selfing



Higher selfing rates in plants with larger floral displays:

- Selfing rate increases with the number of racemes per plant.
- Selfing rate increases with the number of flowers per plant