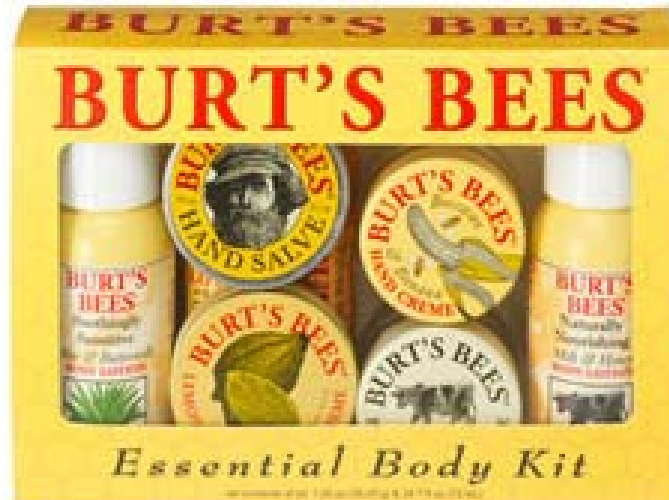




The Social Insect Lab at UNCG

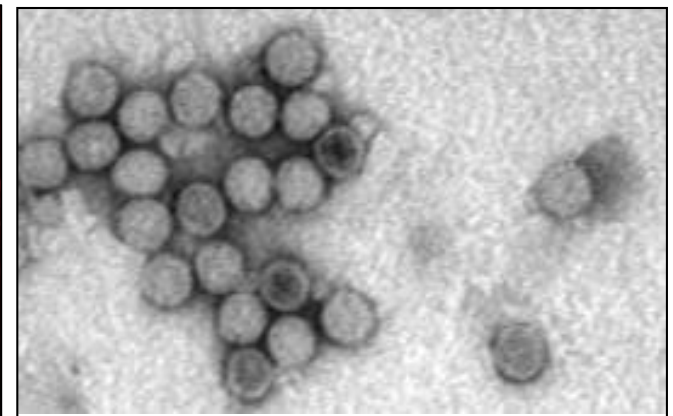
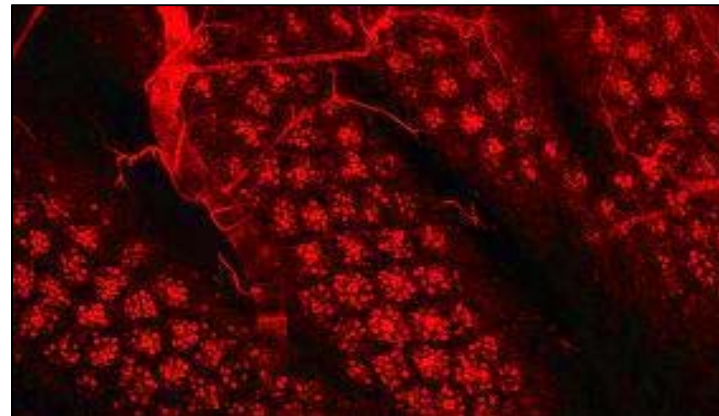
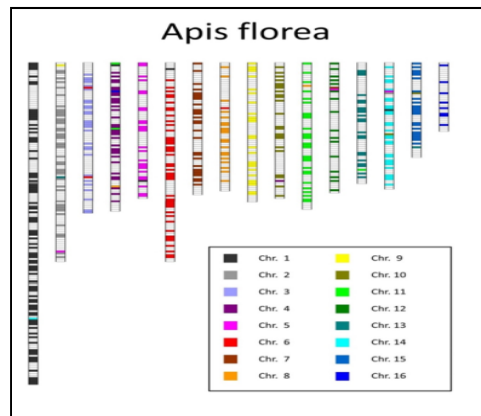
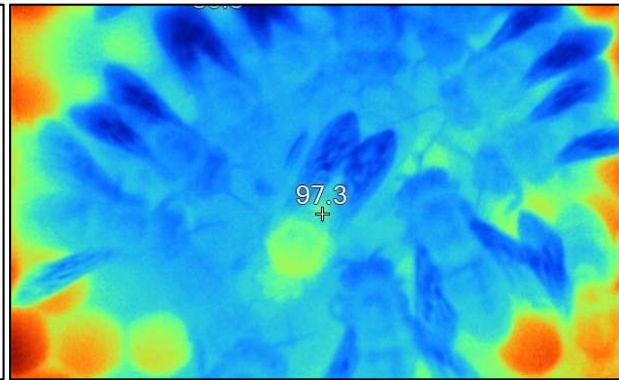
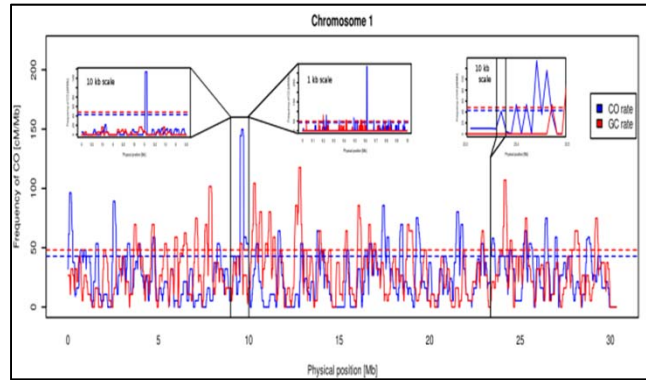
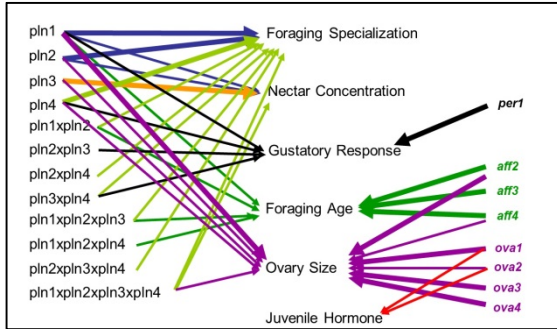


Relevance of Honey Bees





Research Overview





Hygienic Behavior

- Detection and removal of unhealthy bees
- Leads to improved colony health





Hygienic Behavior

- We know a lot about the adult, nurse bees
 - Hygienic nurses better at detecting unhealthy brood





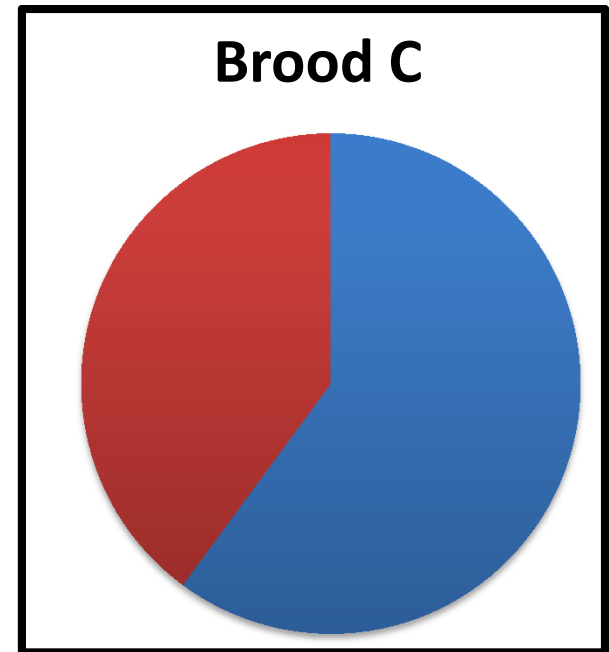
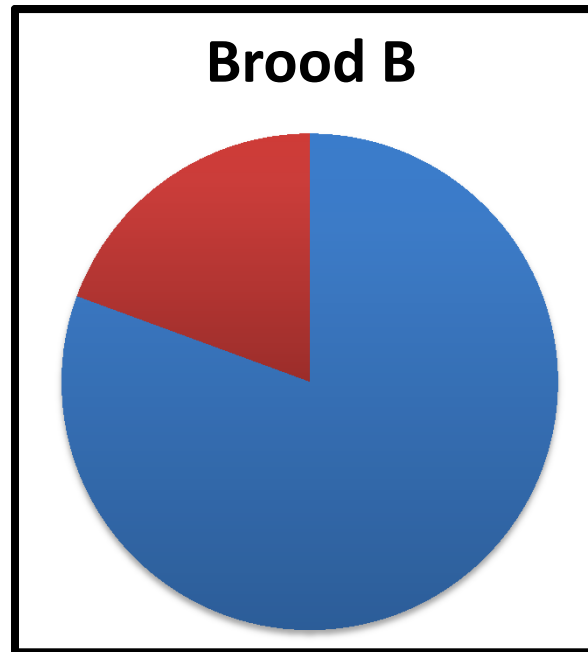
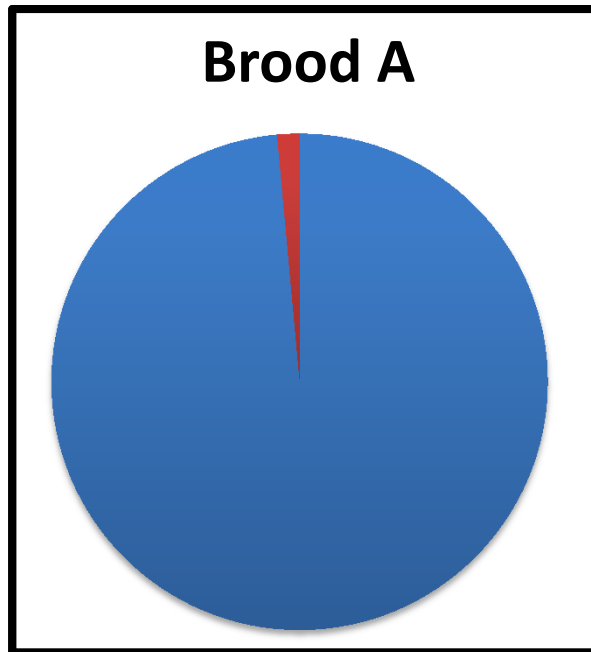
Hygienic Behavior

- We know a lot about the adult, nurse bees
 - Hygienic nurses better at detecting unhealthy brood
- We don't know a lot about the brood:



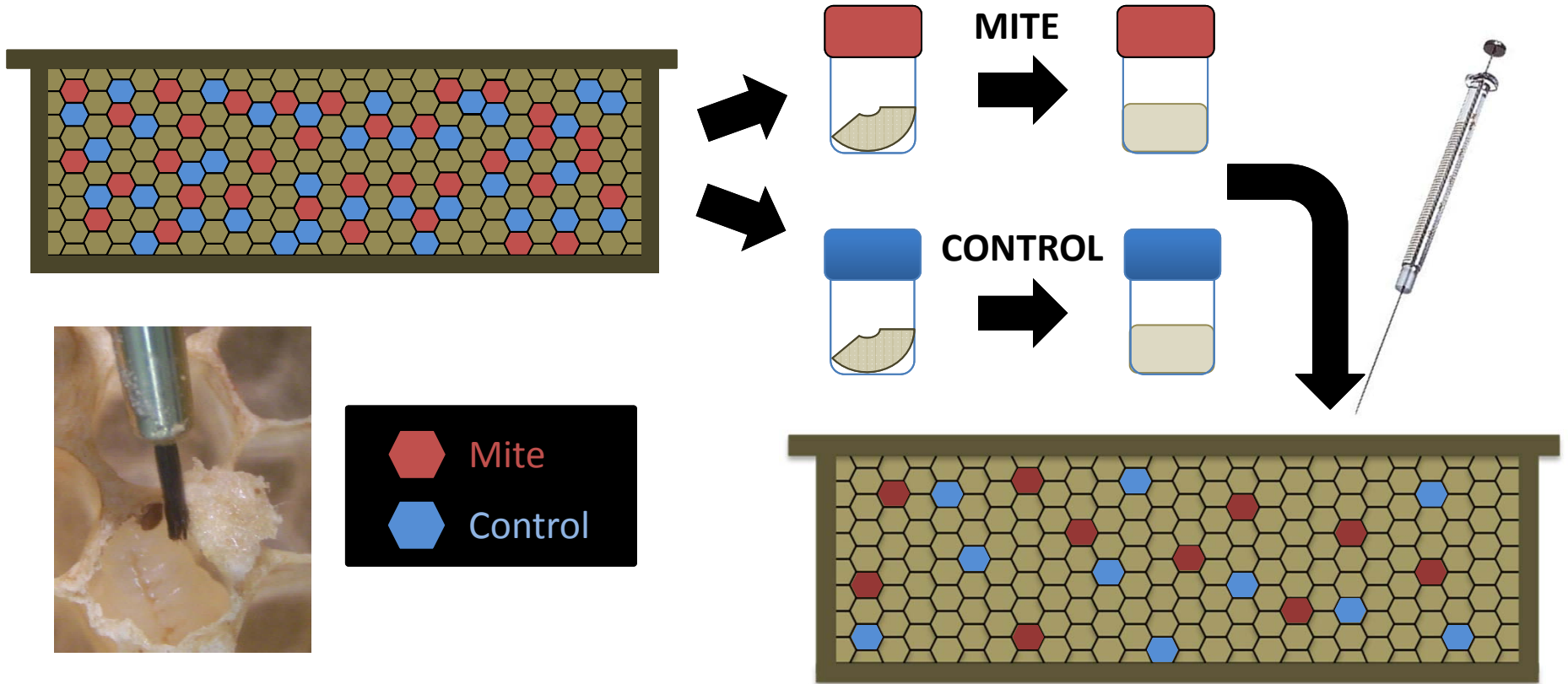


Brood Signals!



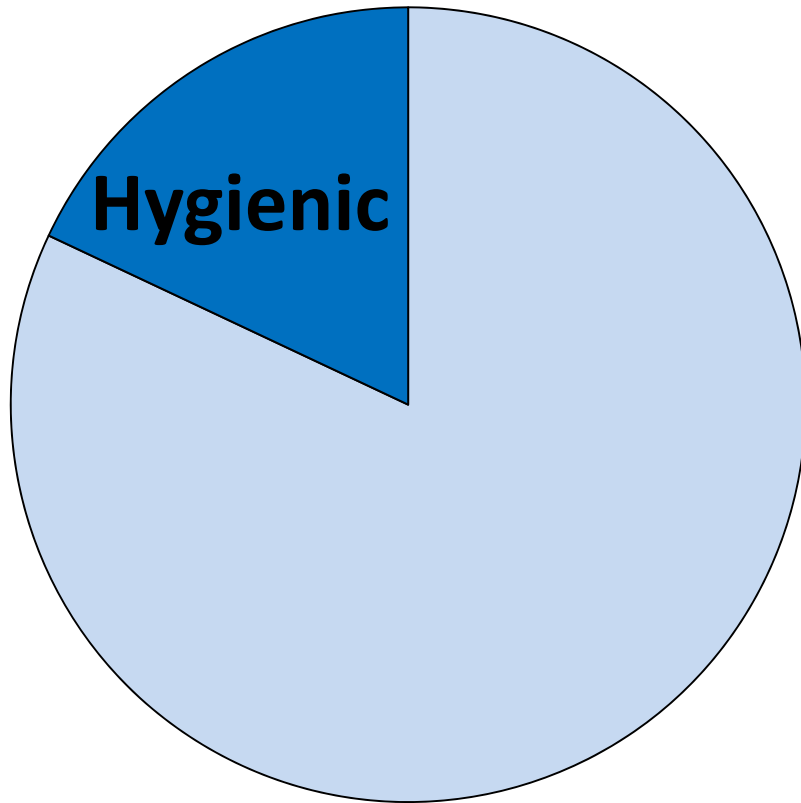
($\chi^2=69.4$, d.f.=2, $p<0.001$)

Active Brood Signal

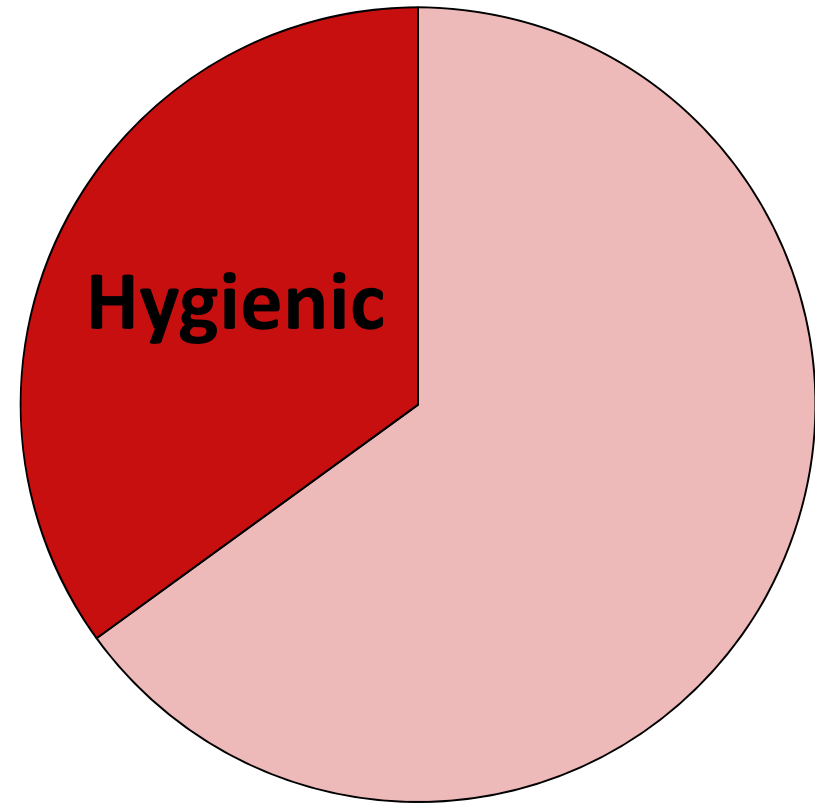




Active Brood Signal



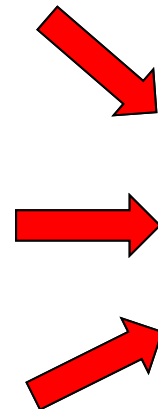
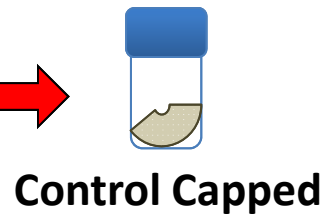
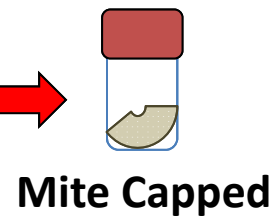
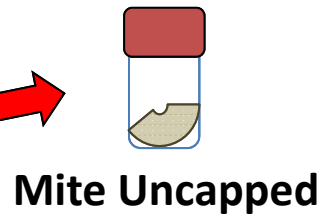
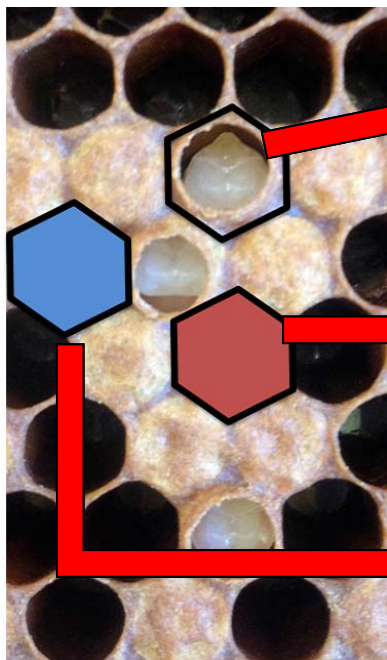
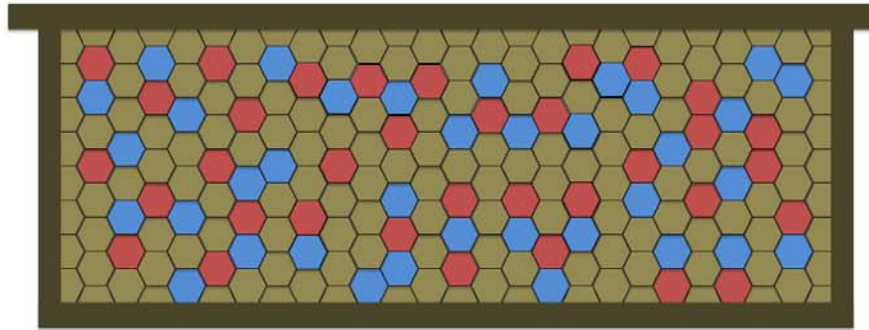
Control Extract



Mite Extract

$\chi^2 = 3.6, df = 1, p = 0.029$

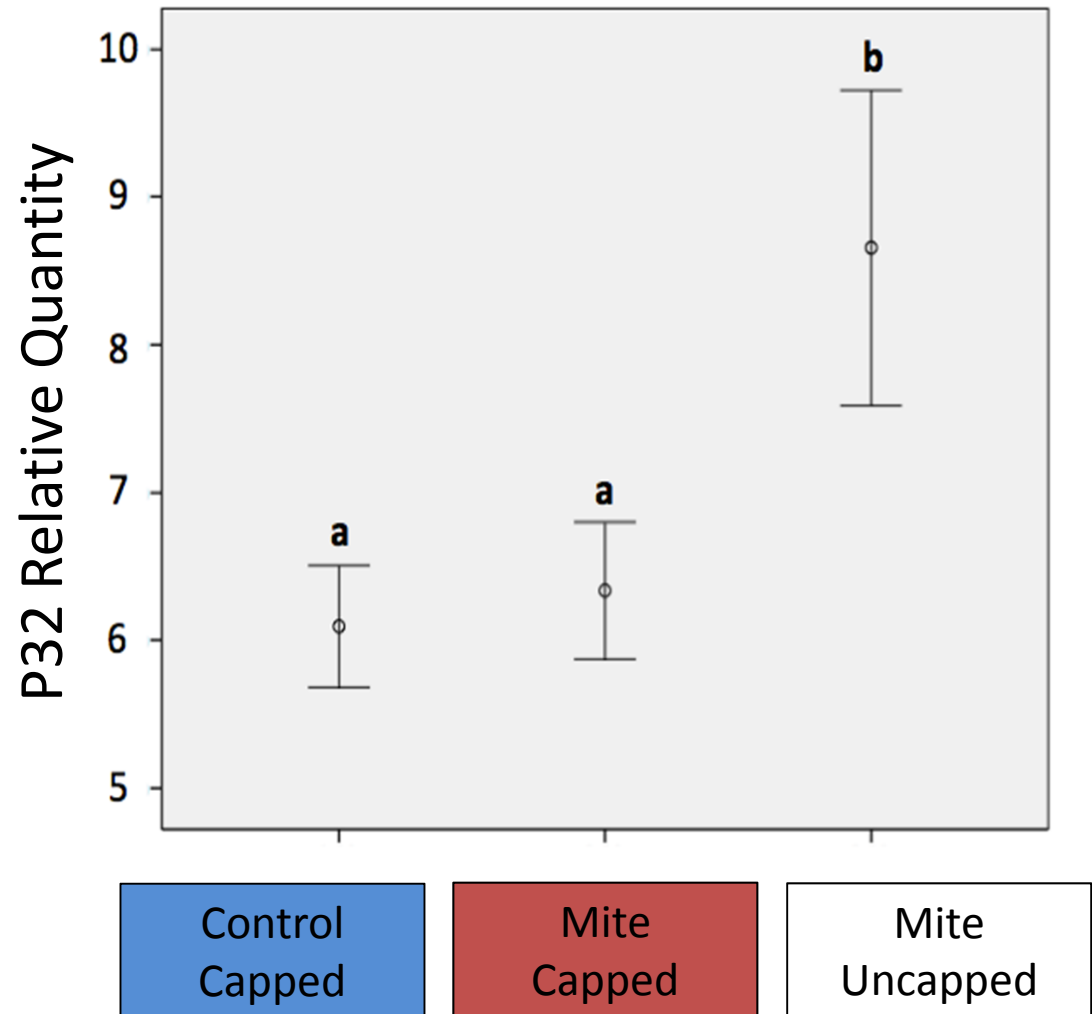
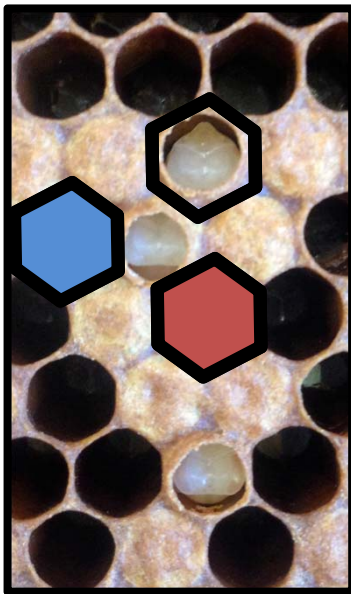
Signal Identification





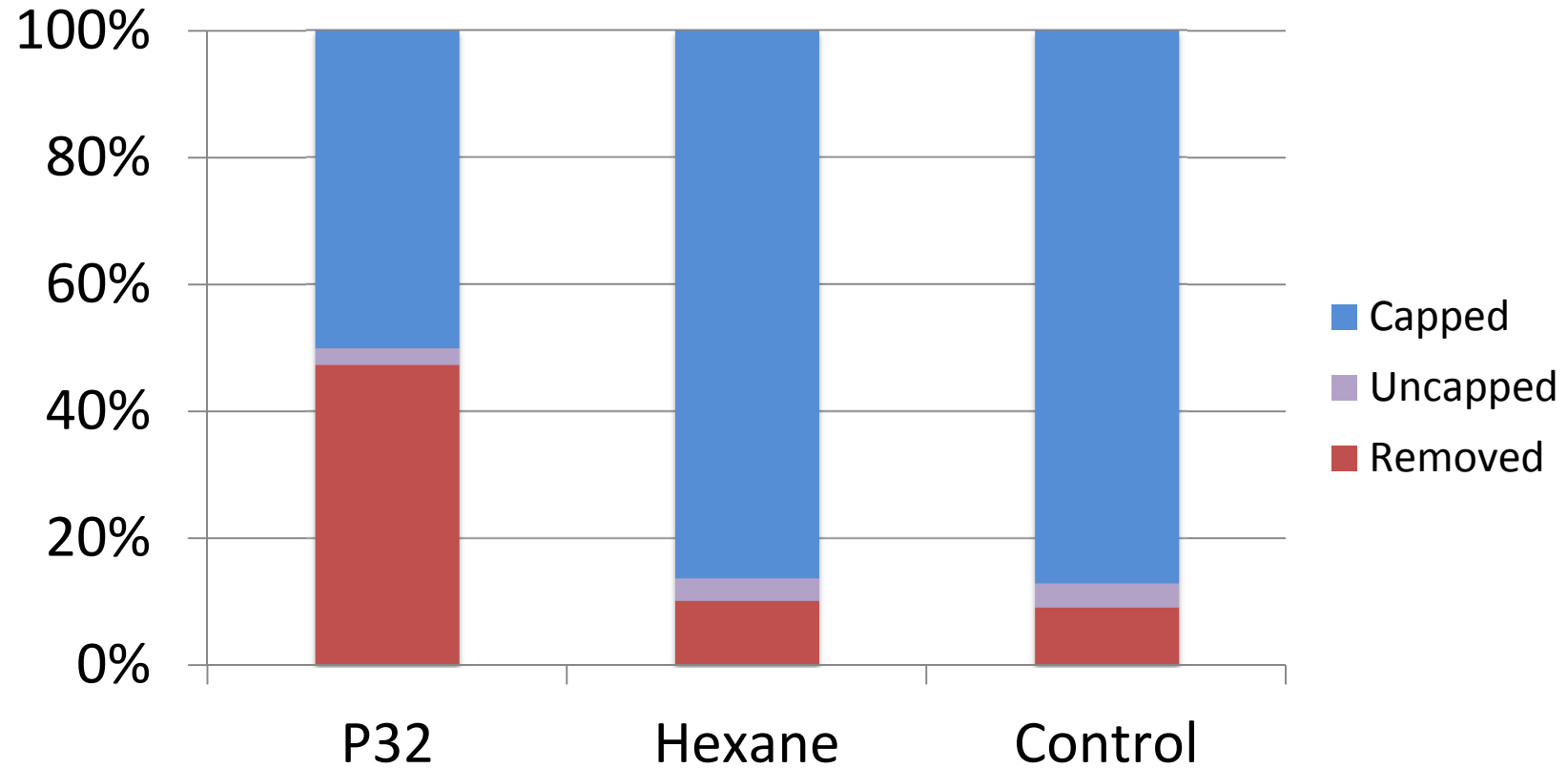
P32 - Hygiene Link

P32 is directly linked to hygienic behavior





Synthetic P32

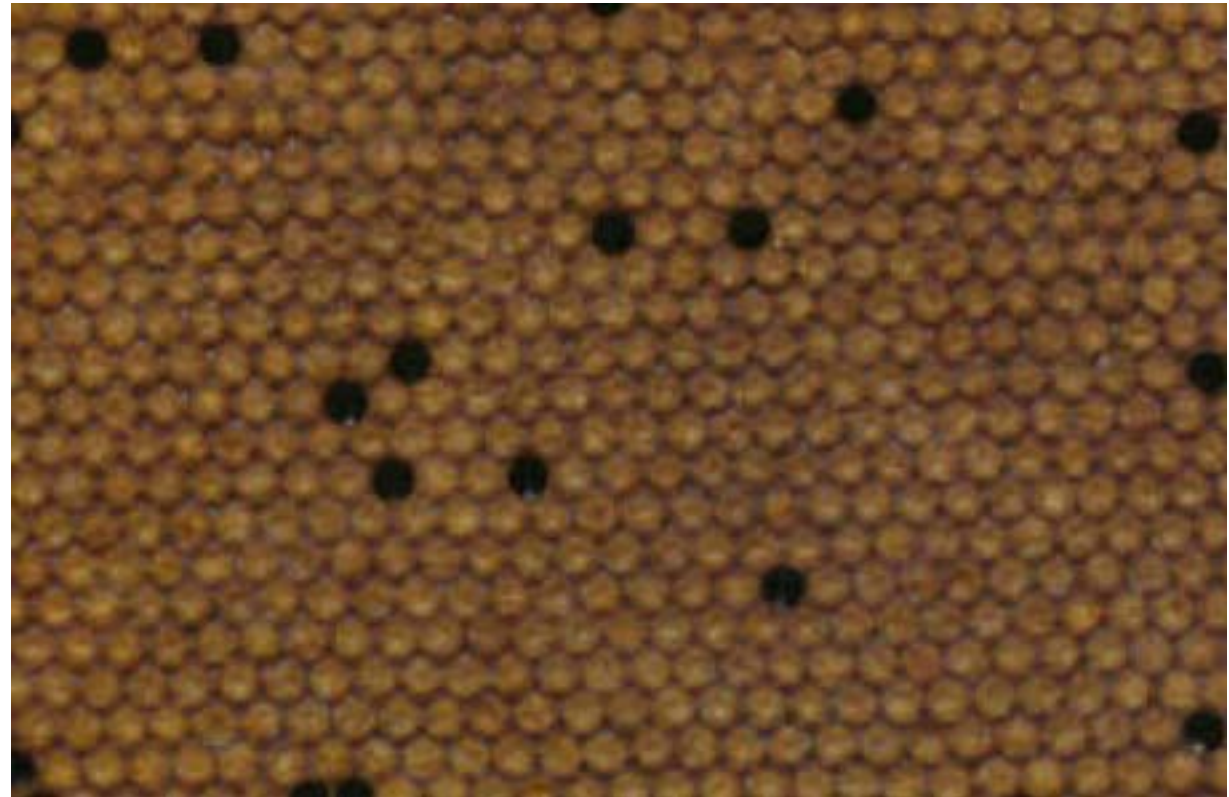


Synthesized P32 applied to wax caps induces hygienic uncapping and removal



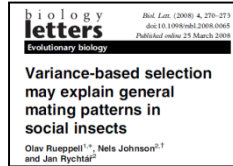
Practical Applications

- Selection tool for breeding hygienic honey bees
- Treatment for highly infested colonies





Review of the Past 14 Years in Numbers



Articles published: **68**



Presentations given: **> 230**



Students mentored: **111**



Grants received: **28 (>\$4.6M)**



Citizens engaged: **> 2500**



Bee stings suffered: **> 200**



Bees studied: **>1,000,000**





UNCG Honey Bee Research Facility





Take-Home Messages

- Honey bees are interesting insects and important pollinators





Take-Home Messages

- Honey bees are interesting insects and important pollinators
- UNCG is an excellent place to learn and work





Take-Home Messages

- Honey bees are interesting insects and important pollinators
- UNCG is an excellent place to learn and work
- Research benefits pollinators, the local community, and the global scientific community



