

Question of the Day

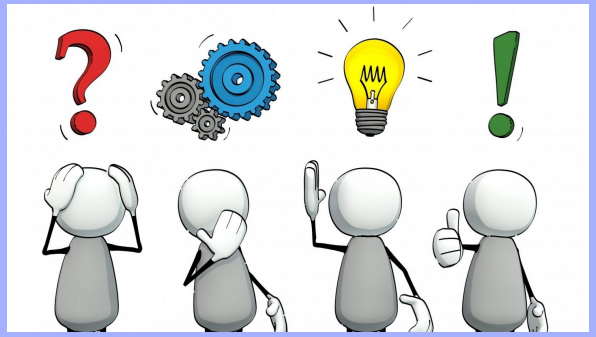
Does pineapple belong on pizza?



Prairie Vole Pair Bonding

Animals (even rodents!) can be monogamous: https://www.youtube.com/watch?v=i83k2KRV-Vc

Research involving prairie vole pair bonding: https://www.youtube.com/watch?v=puxLVIvmKfw





“Animals that mate for life”



Exam ation



https://www.ophirlab.com/

Let's apply our skills to real research!





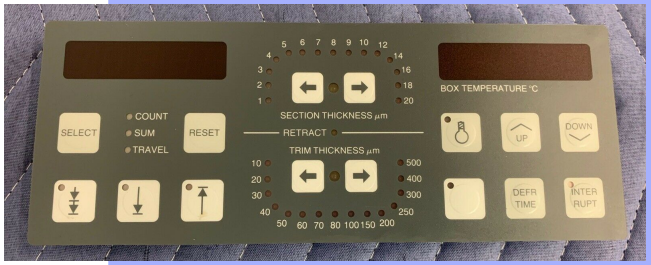
Project summary: Monogamy, Parental Care, & Reproductive Decisions

The Ophir lab is interested in exploring the individual variation in peptide hormones responsible for social behavior and their receptors, and understanding the behavioral and fitness consequences of this variation.

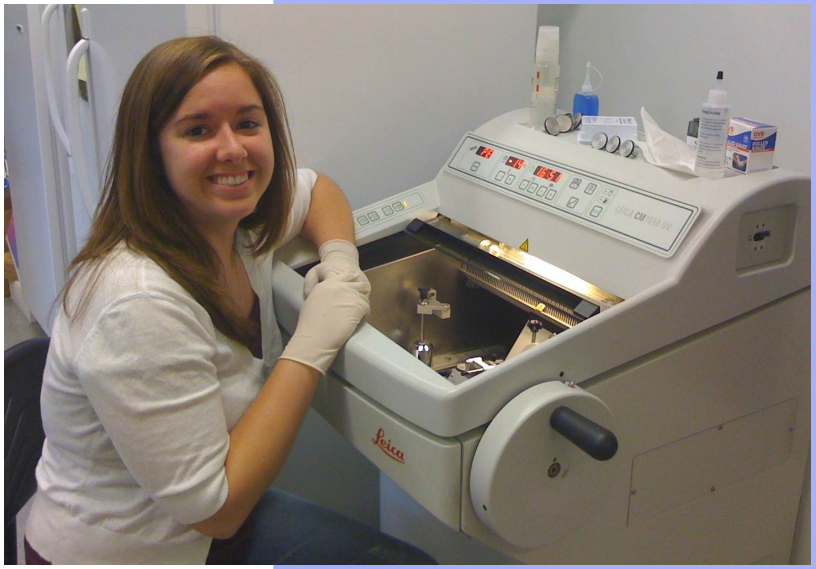
Specifically, I am working as a RA to investigate how early-life adversity can alter the neurochemical integrity of brain regions and pathways important for social interactions and pair bonding. Specifically, the team wants to understand how parental care can shape the development of social behaviors in offsprings and therefore alter social affiliation and pair bonding. The lab approaches these questions using genetic, epigenetic, and chemogenetic techniques to probe the function of the vasopressin and oxytocin systems.

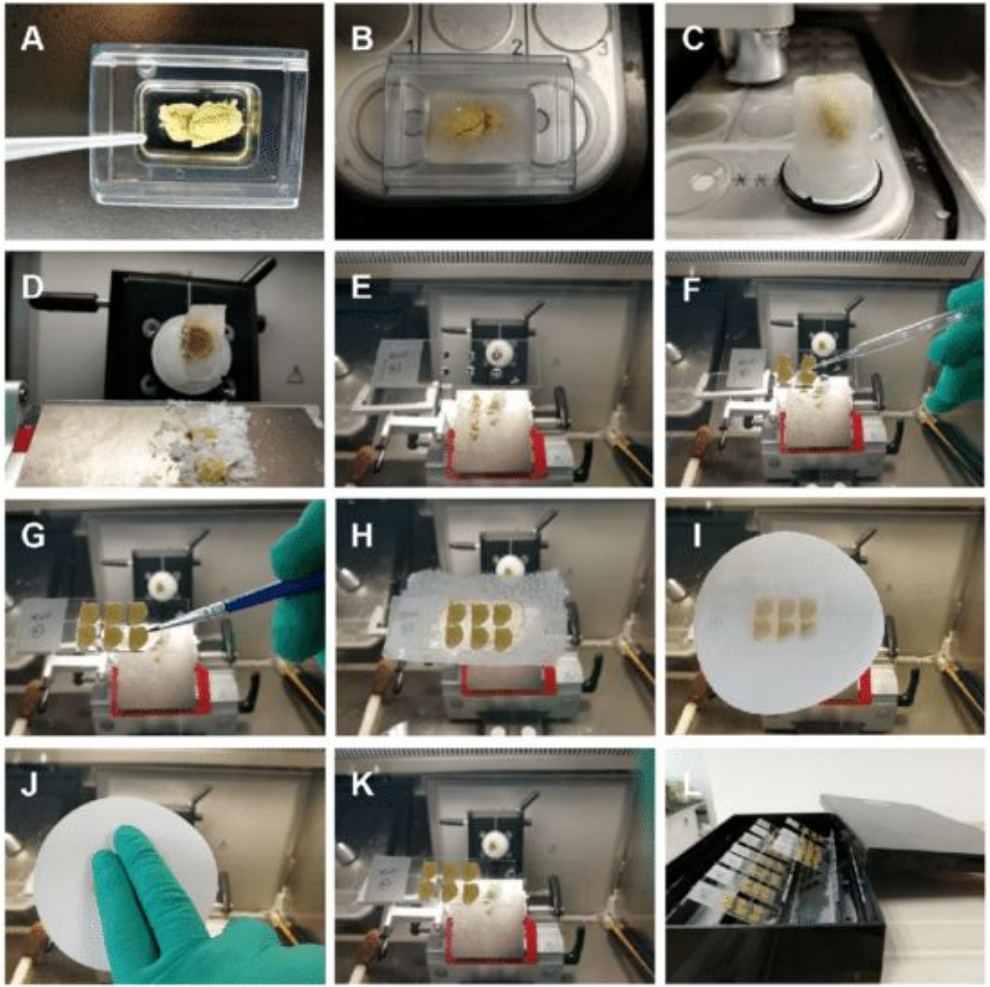
As you can see, the lab focuses on mechanistic and developmental levels of analysis!

Lab technique 1: Cryostat

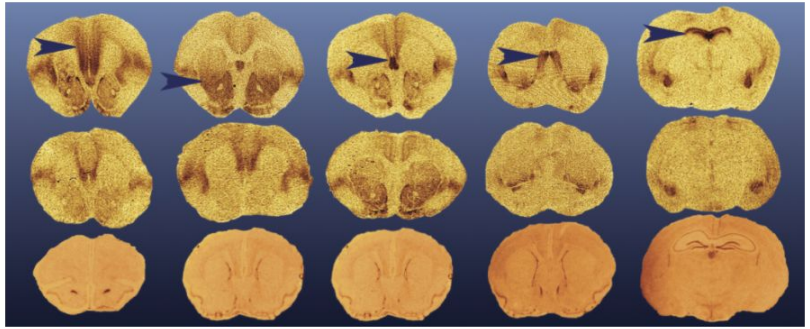


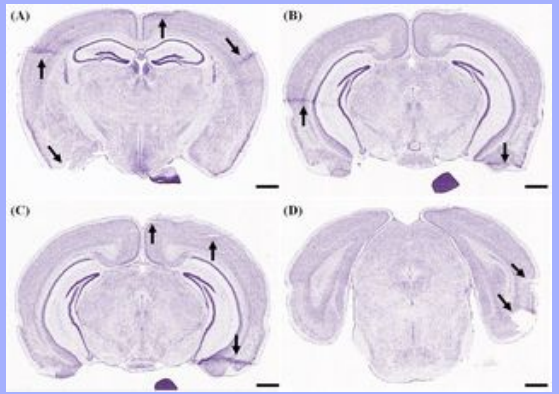






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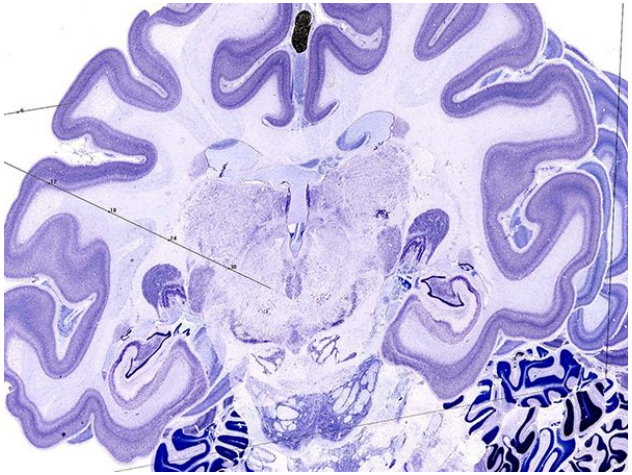


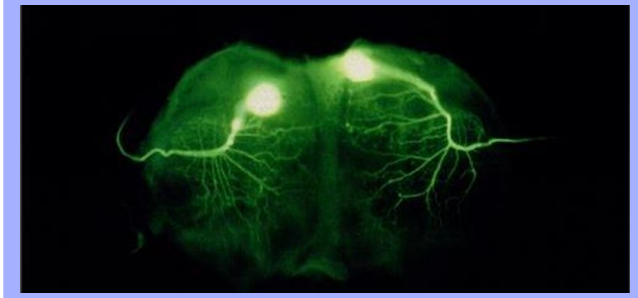


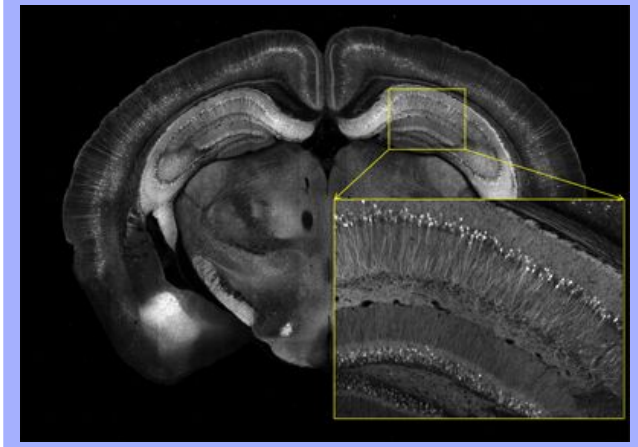
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Microscopy

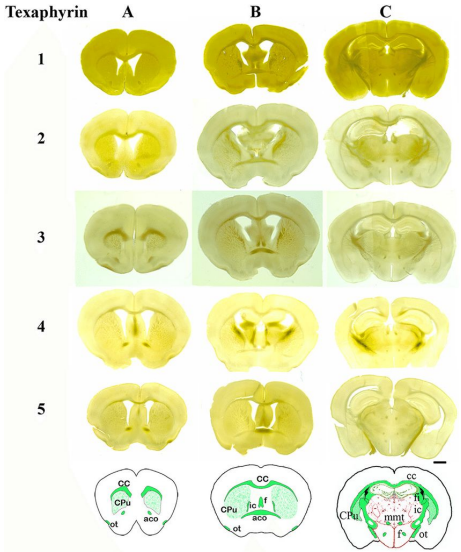
Microscopes are used in the lab to view brain "slices" plated on glass, make sure the correct chemical alterations have been made (e.g. altered serotonin pathway), and examine brain structures.







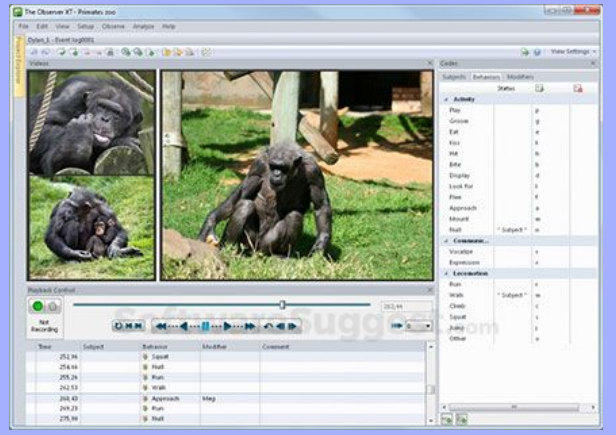






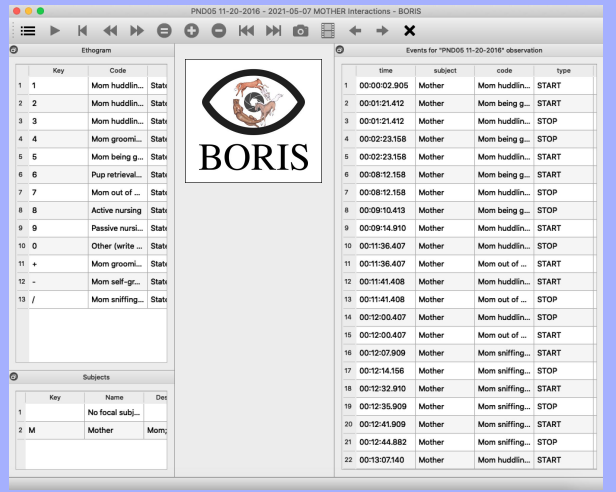
Lab technique 2: Noldus Observer XT & BORIS

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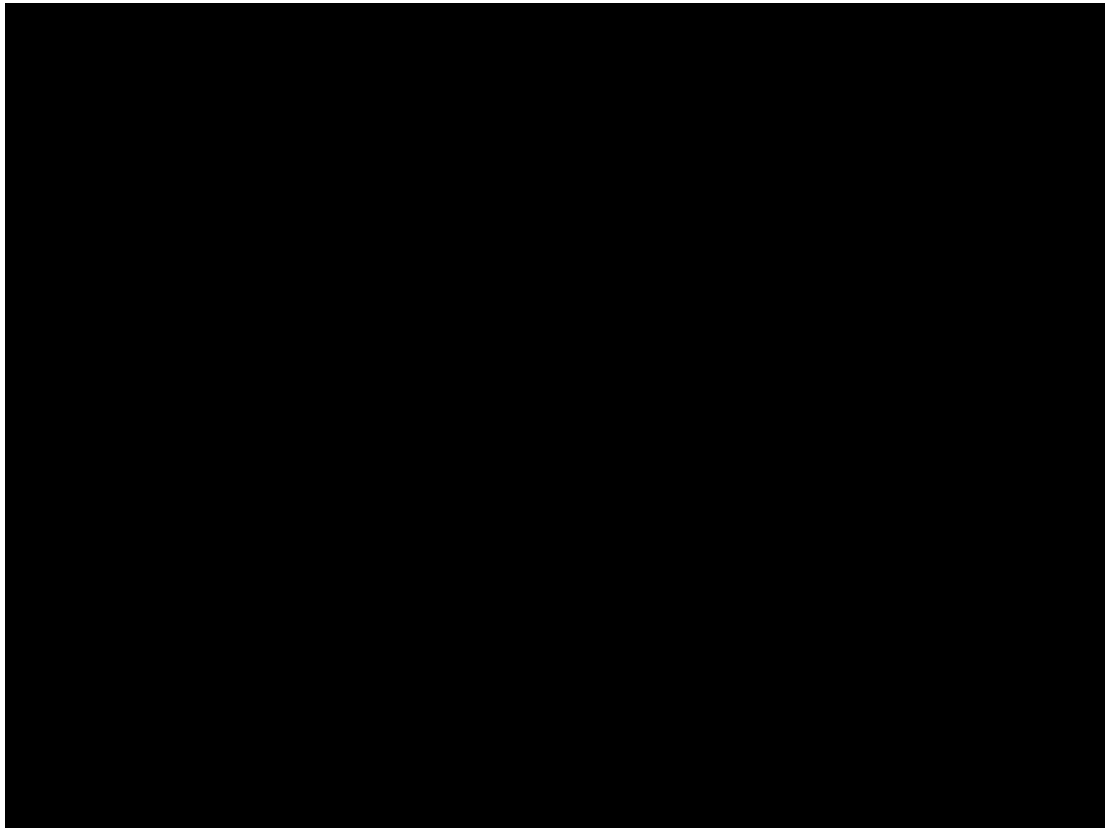


Behaviors coded for are…

- Aggression
- Nursing of mother for her pups
- Sniffing
- Digging



Vole Behavioral Video



https://www.ophirlab.com/

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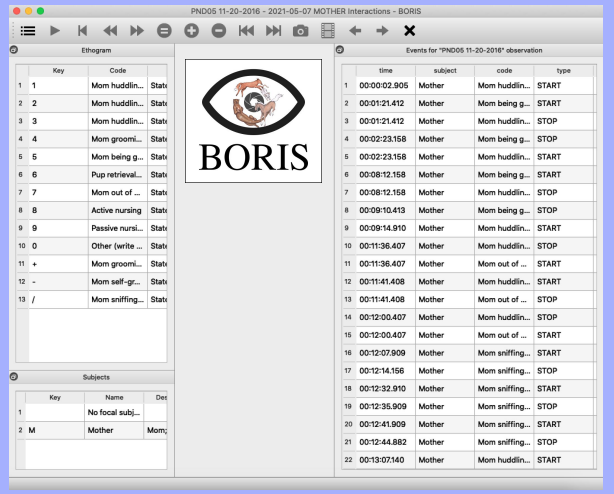
We predict behaviors vary depending on protein-based diet vs. fats-based diet

Lab technique 2: Noldus Observer XT & BORIS

SIMPLIFIED behaviors coded for are...

- Aggression
- Nursing of mother for her pups
- Sniffing
- Digging

Let's actually open up BORIS & do some work!



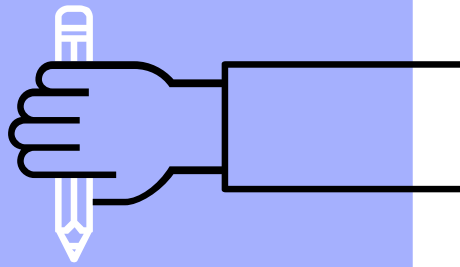


This research project mainly uses developmental and mechanistic levels of analyses & hypotheses to ask how the parental behavior of voles influence their offspring.



Group activity!





End of Day 3

Any questions?
Please ask away!

