

Sexual Dimorphism in Neuron Count and Density in *Anolis cristatellus*



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- Behavioral and evolutionary ecology
- Study animal communication, behavioral drive and axes of divergence



University of Missouri

Introduction

- The adaptive radiation of *Anolis* lizards in the Greater Antilles has resulted in species that differ morphologically and behaviorally
- Sexual size dimorphism play a role in ecomorphological diversity



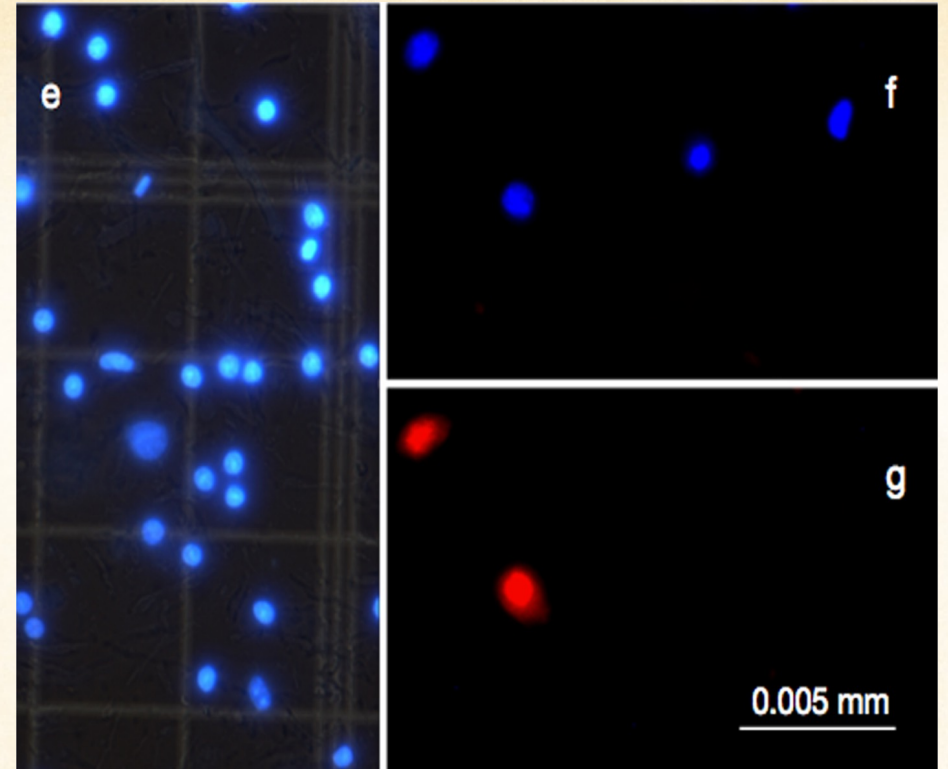
Project Goals

Research question: Evaluate if sexual size dimorphism impacts neuronal density in *Anolis cristatellus*

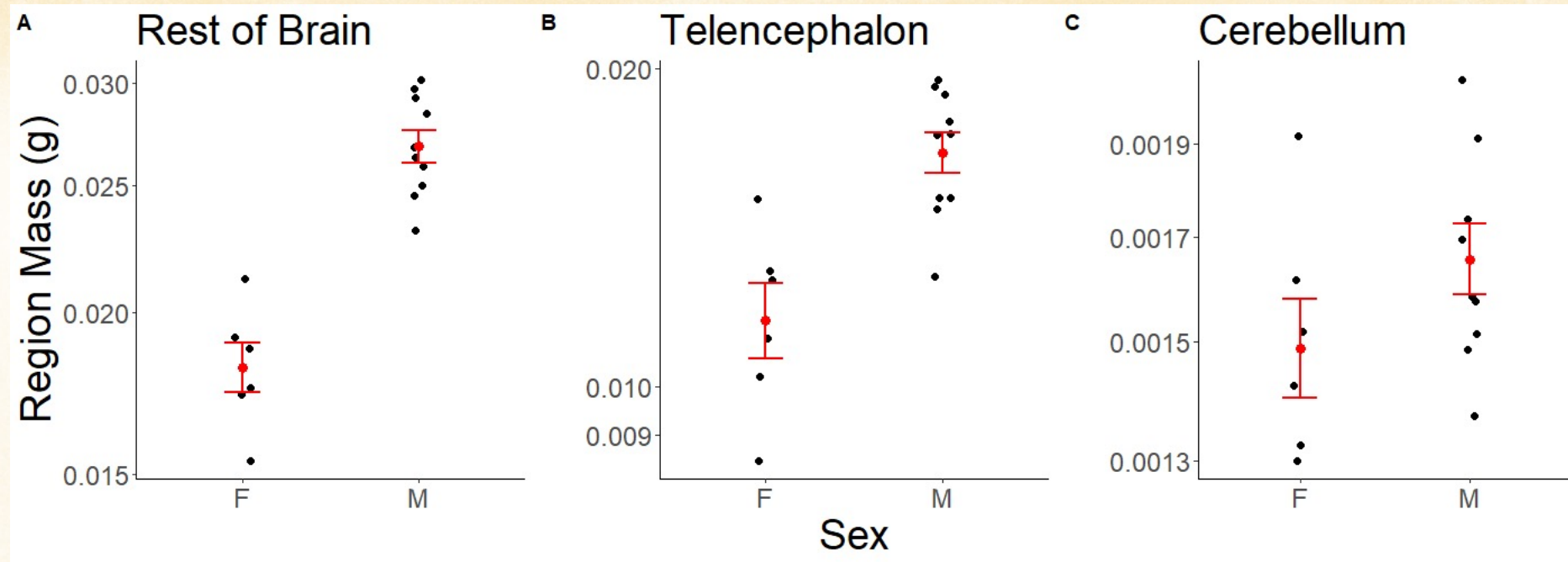


Materials and Methods

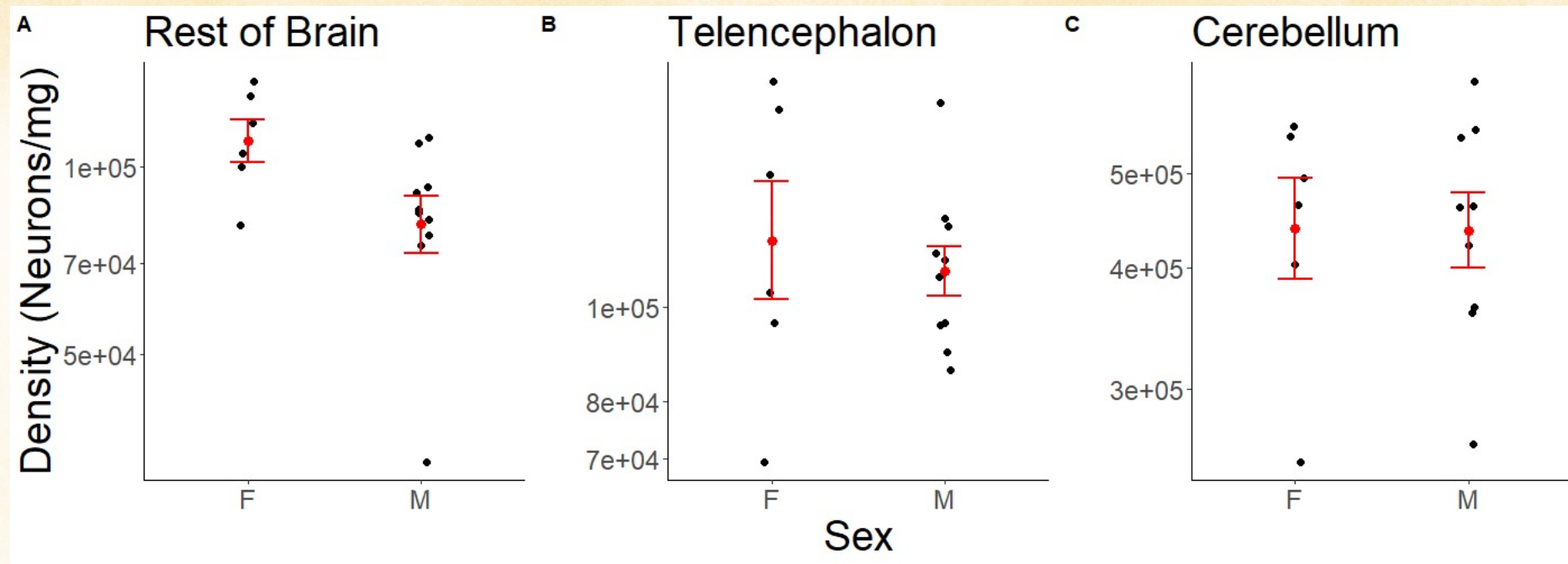
- Brains were dissected into three parts and ground
 - cerebellum, telencephalon, rest of brain
- Isotropic fractionation
 - staining of cells using DAPI and NeuN
 - allows for counting of cells under fluorescent microscope



Comparison of the Mass of the Different Regions Between Males and Females



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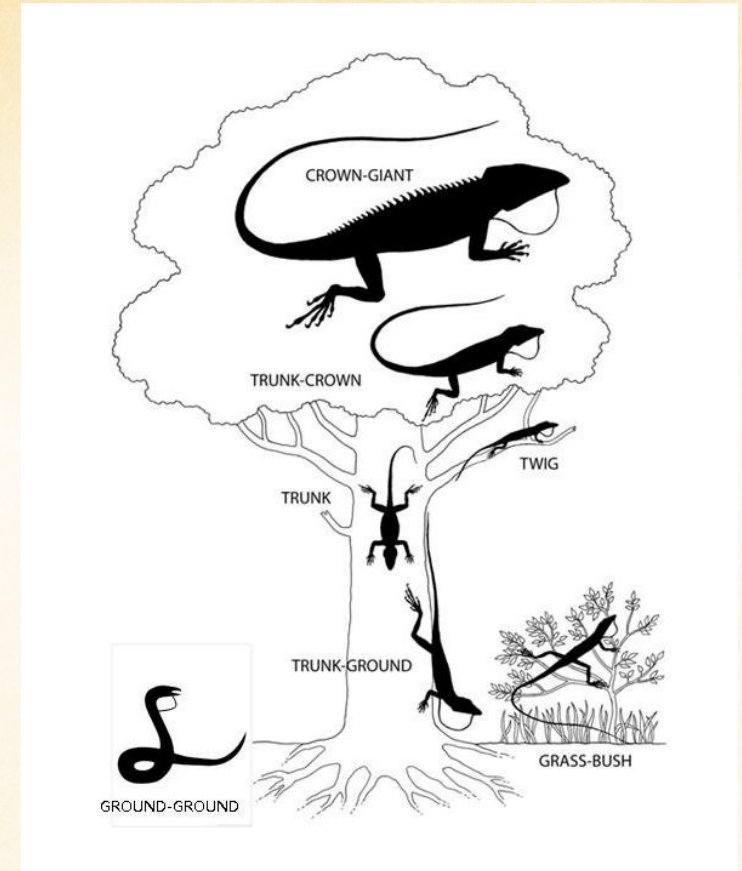
Conclusions

- Significant difference in telencephalon, and rest of the brain mass between sexes
- No significant difference between neuronal density between sexes in telencephalon and cerebellum
 - Trend towards significance in rest of the brain



Next Steps

- Study different ecomorphs
 - Evaluate if degree of sexual dimorphism is reflected in neuronal density
- Determine nuclei density in livers
 - Control for study



How Research Has Impacted Me

- Became more independent
- Allowed for unique opportunities
 - ABRCMs
- Established strong relationship with faculty mentor and students
- Changed my career goals
 - Planning to earn my DVM/Ph.D.

