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### Introduction:

- Classic aging theory predicts that senescence will be more rapid when the probability of surviving to old age is low.
- We are testing aging theory as an explanation for sex differences in mortality and lifespan that occur within populations.
- We predict that senescence will occur faster for the sex (males) that experiences a higher rate of extrinsic mortality.

### Methods:



- **Mark Recapture of 6,591 individuals** tracked from hatching to death, through near-complete sampling of a closed island population 4 times/year, 2015-2019
- **Body condition** was measured as the residuals of the regression of Log Mass on Log Body Length.
- **Telomere length** was assayed with Real-Time qPCR using DNA extracted from nucleated red blood cells (O'Callaghan and French 2011).

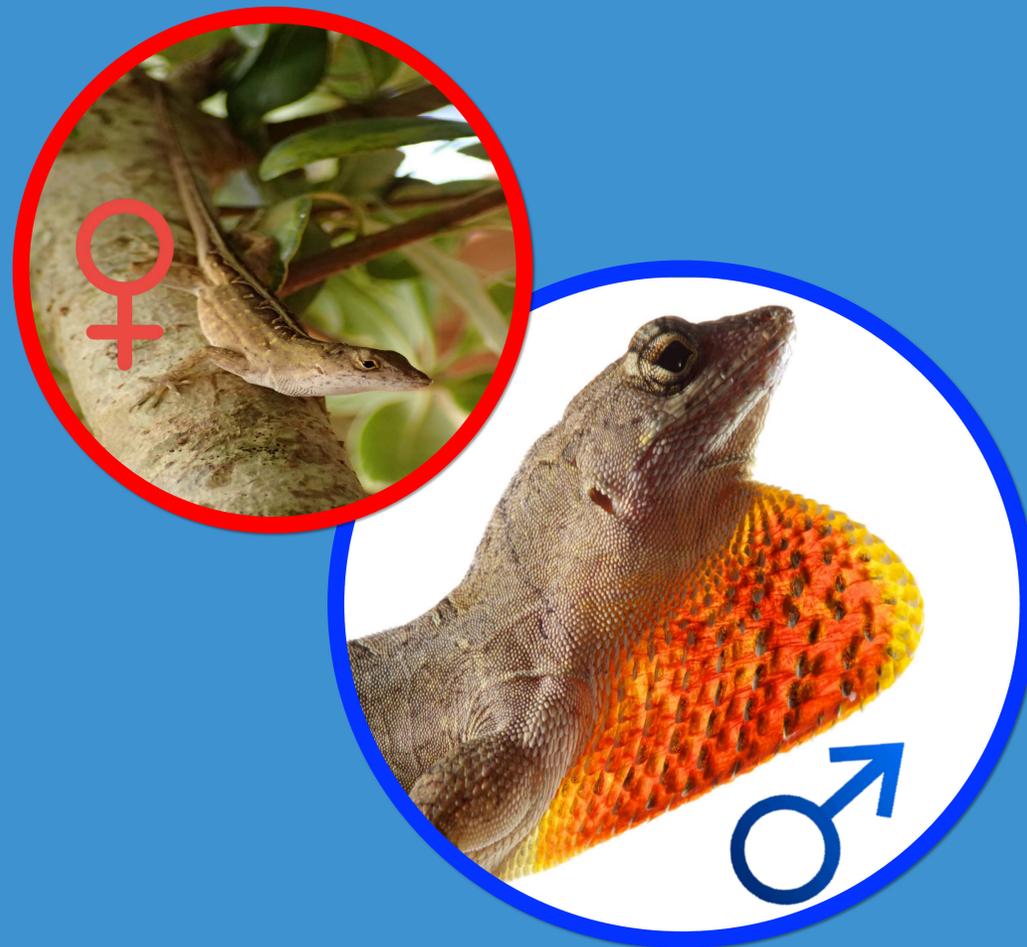


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# Brown anole males live shorter lives than females.

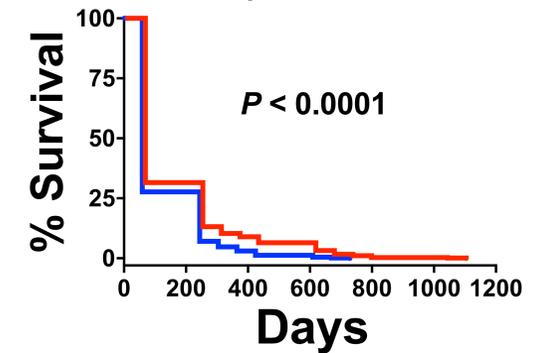
## Preliminary evidence suggests the sexes may age differently.



## Sex-specific mortality and senescence in a wild population of brown anole lizards

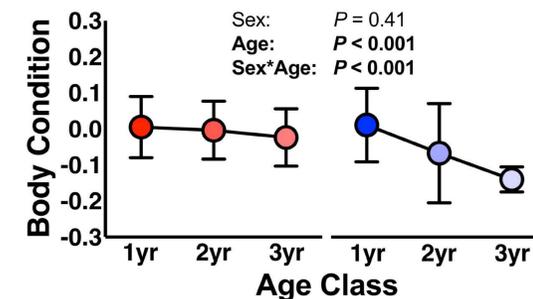
### Results:

**Males** have greater mortality and shorter lifespans than **females**.



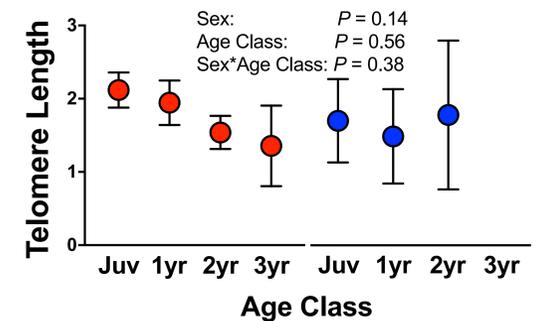
Mantel-Cox test was used to compare curves. Data show a cohort of individuals (n= 646 females; n= 653 males) first marked as hatchlings.

**Males** suffer a decline in body condition with age that **females** do not.



Data compare adult animals (n = 322 males; 578 females) of different ages. Data shown are means and SE.

**Pilot study shows no sex difference in telomere length.**



Data compare juvenile (19 female; 19 male), yearling (20 female, 19 male), 2 year-old (14 female, 7 male), and 3 year-old (3 females), wild individuals. Data shown are means and SE.

### Discussion:

- Wild males have increased mortality and shorter lifespans than wild females.
- Preliminary results are mixed for the prediction that males will senesce more rapidly than females.
- Future direction #1 is to compliment these cross-sectional analyses with a longitudinal study in the field.
- Future direction #2 is to conduct longitudinal studies in captivity to test whether sex differences in mortality and senescence persist.