

Lab 10:  
Tick ID +  
Paper  
Discussion +  
Scientific  
Review



# Today's Lab

1. Tick ID powerpoint
  - a. Look at our specimens from Sesqui
  - b. Inaturalist IDs
2. Paper Discussion
3. Talk about Scientific Review



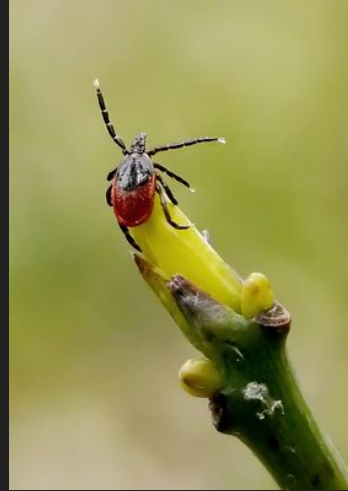
# Tick Host-Finding Strategies

“Questing”: Passive strategy. Ticks attach to vegetation and wait for a host to pass, attempting to climb on if they infect

(<https://www.youtube.com/watch?v=pLgw80mV4Hg>)

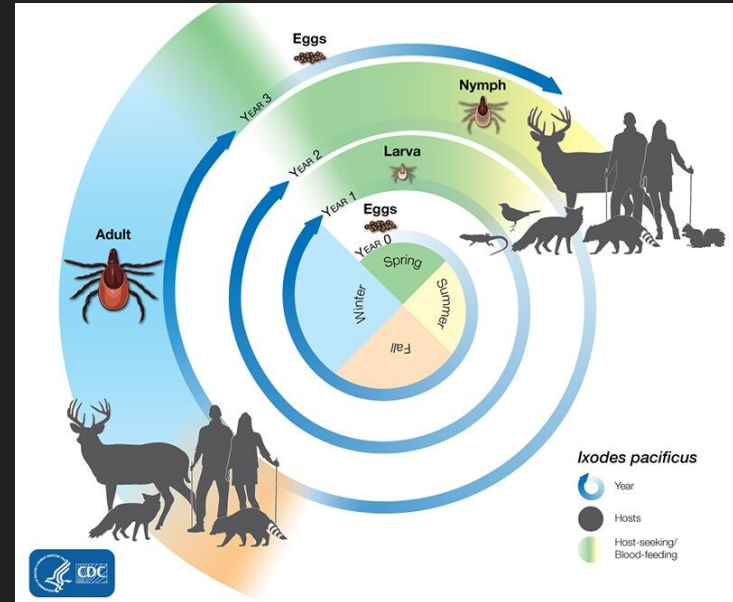
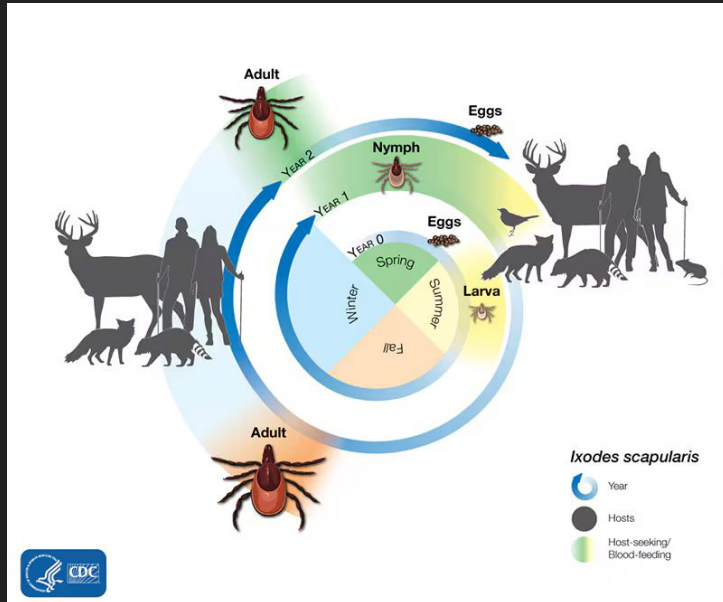
“Hunting”: Active host-searching. Attracted to carbon dioxide, heat, light colors, maybe blood type? (Zakovska et al., 2018)

(<https://youtu.be/mq8bHAlly74>)



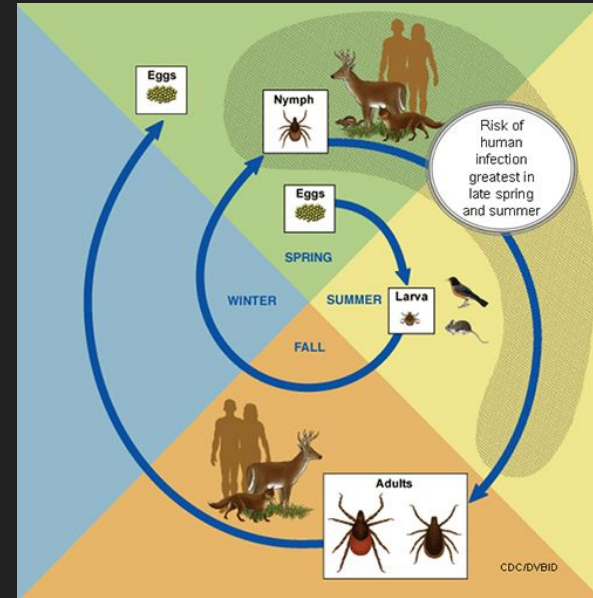
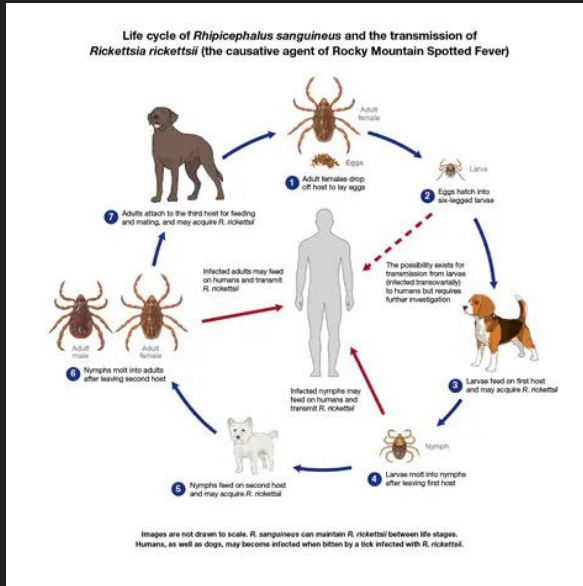
# Tick Life cycles

May be of different lengths, depending on species & area



# Tick Life cycles (continued)

May have similar host preferences across all stages, or may change across life cycle



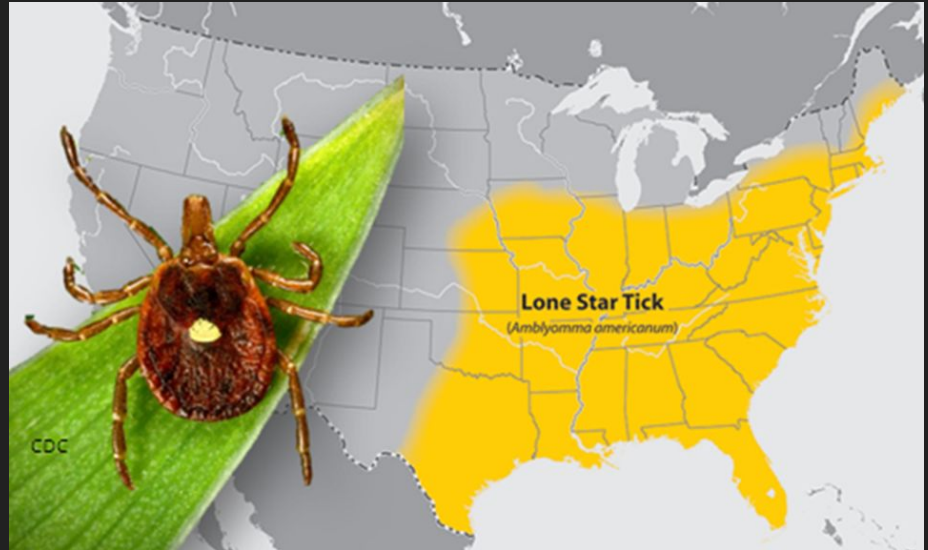
# Common Ticks of South Carolina

American dog tick (*Dermacentor variabilis*)

Brown dog tick (*Rhipicephalus sanguineus Latreille*)

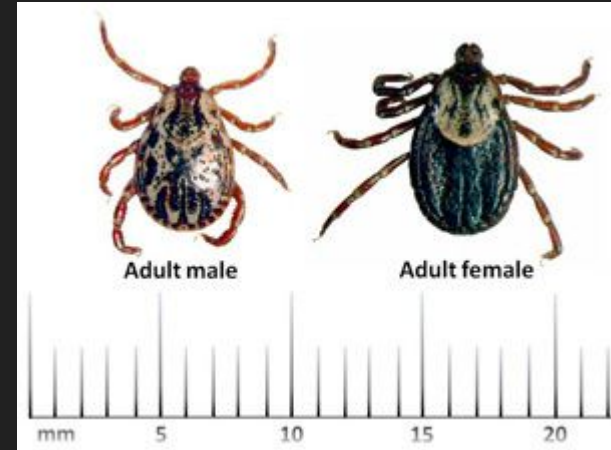
Blacklegged tick (*Ixodes scapularis*)

Lone Star tick (*Amblyomma americanum*)



# American dog tick (*Dermacentor variabilis*)

- Unfed males and females are reddish-brown and about 3/16-inch long.
- Females have a large silver-colored spot behind the head and will become 1/2-inch long after feeding or about the size of a small grape.
- Males don't change in size much after feeding
- Can vector Rocky Mountain Spotted Fever, tularemia



# Brown dog tick (*Rhipicephalus sanguineus* Latreille)

- Common parasite of dogs, but rarely infect humans
- The adult is reddish-brown and about 1/8-inch long
- Female may engorge to up to 1/2 inch long



LARVAE



NYMPH



ADULT MALE



ADULT FEMALE



ENGORGED

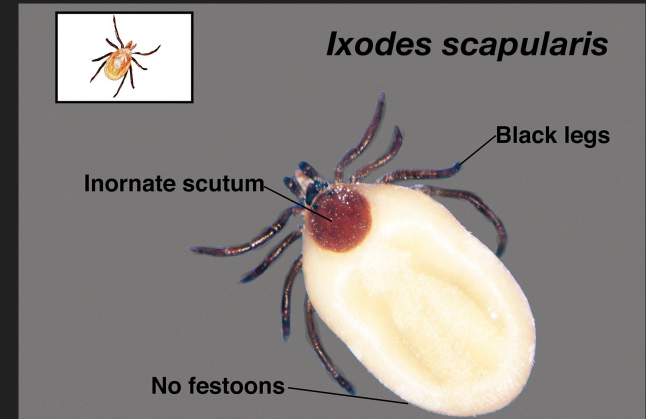
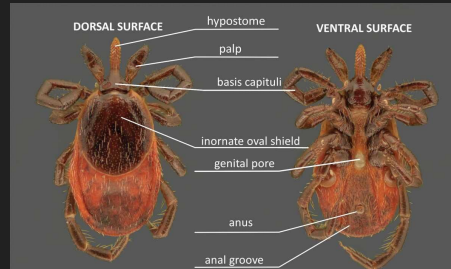
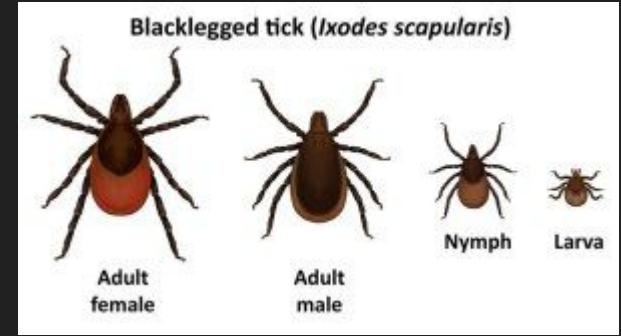


FULLY ENGORGED



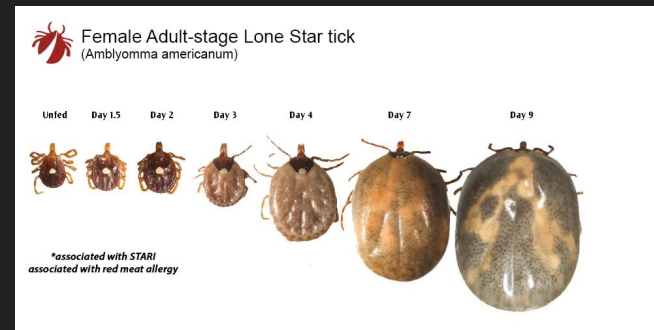
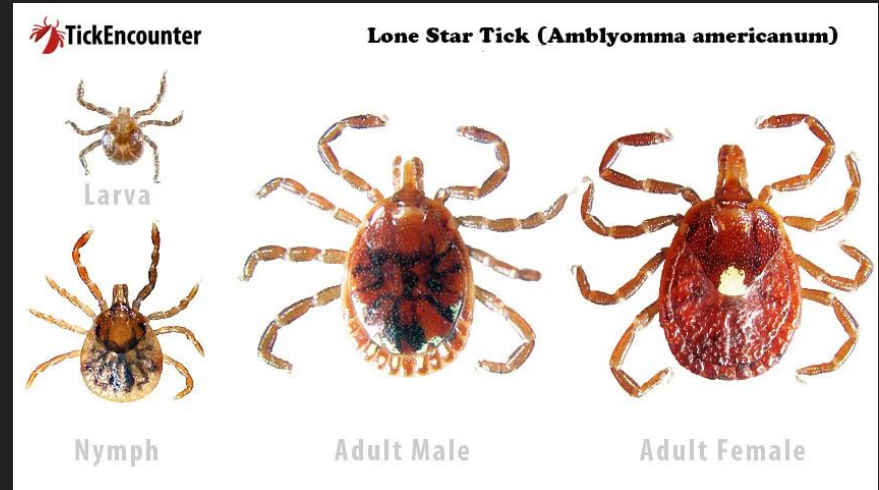
# Blacklegged tick/Deer Tick (*Ixodes scapularis*)

- Has 3 life stages. Larvae often feed on mice, lizards, etc. Nymphal and adult stages (relatively broad host range)
- Adults are reddish-brown and about 1/8-inch long (roughly half the size of american dog tick)
- Hard bodied tick with
- Can vector Lyme disease, babesiosis.



# Lone Star tick (*Amblyomma americanum*)

- Adults are about 1/8-inch long and brown. The adult female has a white spot in the middle of her back.
- Males sometimes misidentified as black-legged tick
- Bites associated with Alpha-gal syndrome (red meat allergy)
- Vectors Rocky Mountain spotted fever, but less commonly than american dog tick

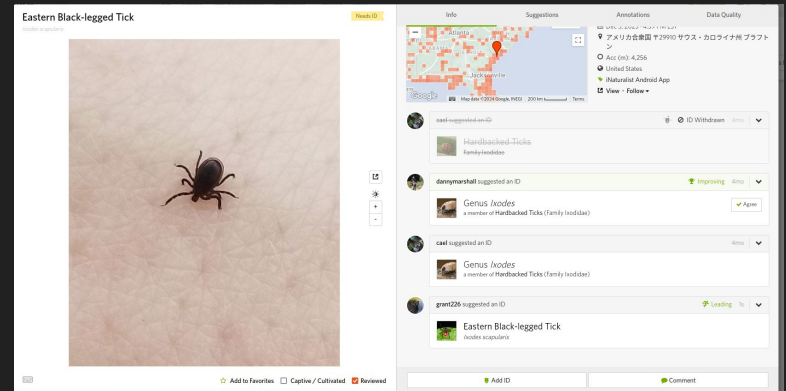
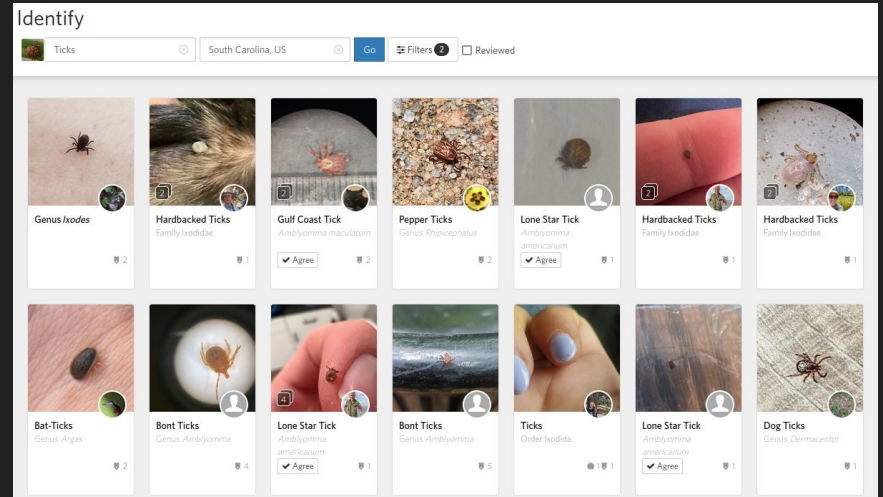


# Let's ID some ticks!

What are the ticks we found in class last week? -Microscopes are set up!



More practice: Create an iNaturalist account ([here](#)). Identify 15 tick records for the Southeast!

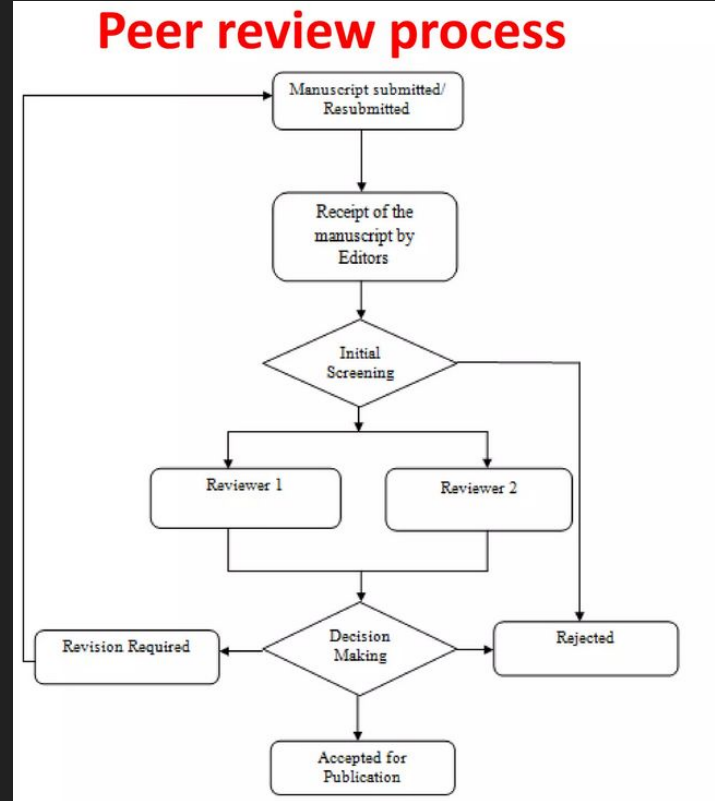


# Changing Gears: Scientific Review

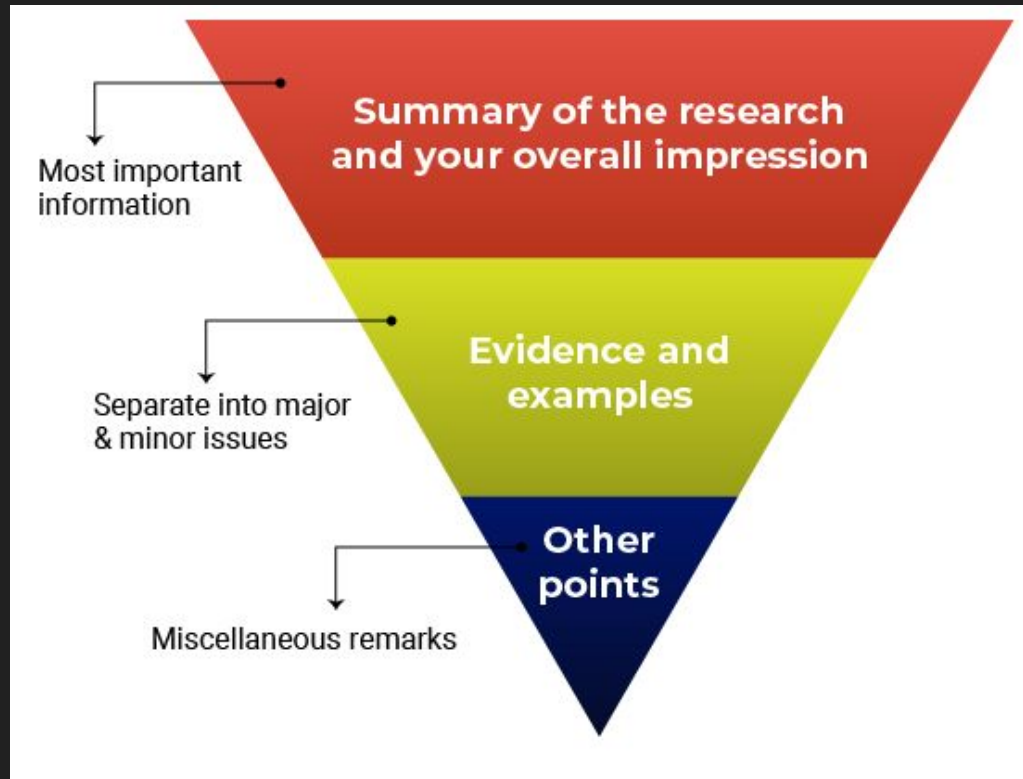
The peer review process is an essential part of science!

It helps make sure we're doing good science by ensuring quality and sound communication.

Reviewers are an important part of the process-their reviews help decide whether the paper is accepted or not, as well as help guide revisions to improve the quality of paper



# The structure of a Scientific Review:



# Good Resources for Review Structuring/Writing

[Plos: How to Write a Peer Review](#)

[BES: Writing a Peer Review for Ecology and Evolution](#)

[Some example reviews of different structures](#)



# Sources (non-exhaustive)

<https://schoolipm.tamu.edu/2016/07/14/ticks-to-look-out-for-by-southern-states/>

Zakovska, A., Janecek, J., Nejezdhelebova, H., & Kucerova, H. L. (2018). Pilot study of *Ixodes ricinus* ticks preference for human ABO blood groups using a simple in vitro method. *Annals of Agricultural and Environmental Medicine*, 25(2).

[https://www.cdc.gov/ticks/life\\_cycle\\_and\\_hosts.html](https://www.cdc.gov/ticks/life_cycle_and_hosts.html)

<https://web.uri.edu/tickencounter/fieldguide/>