

Examining Factors of Egg Production in the Raccoon Roundworm, *Baylisascaris procyonis*



Gabriel Ruelas, Ventura
College
Majoring in Infectious Disease

Sara Weinstein, UCSB
Dr. Armand Kuris, UCSB

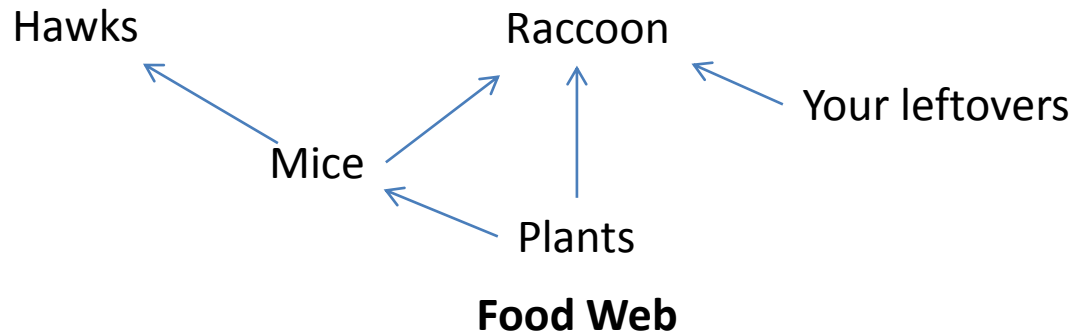
Ecology, Evolution & Marine Biology (EEMB)



National Science Foundation
WHERE DISCOVERIES BEGIN

Examining Trophic Interactions (Food Web)

Predator/prey and parasite/host relationships



Understanding parasitic life cycles and transmission between hosts

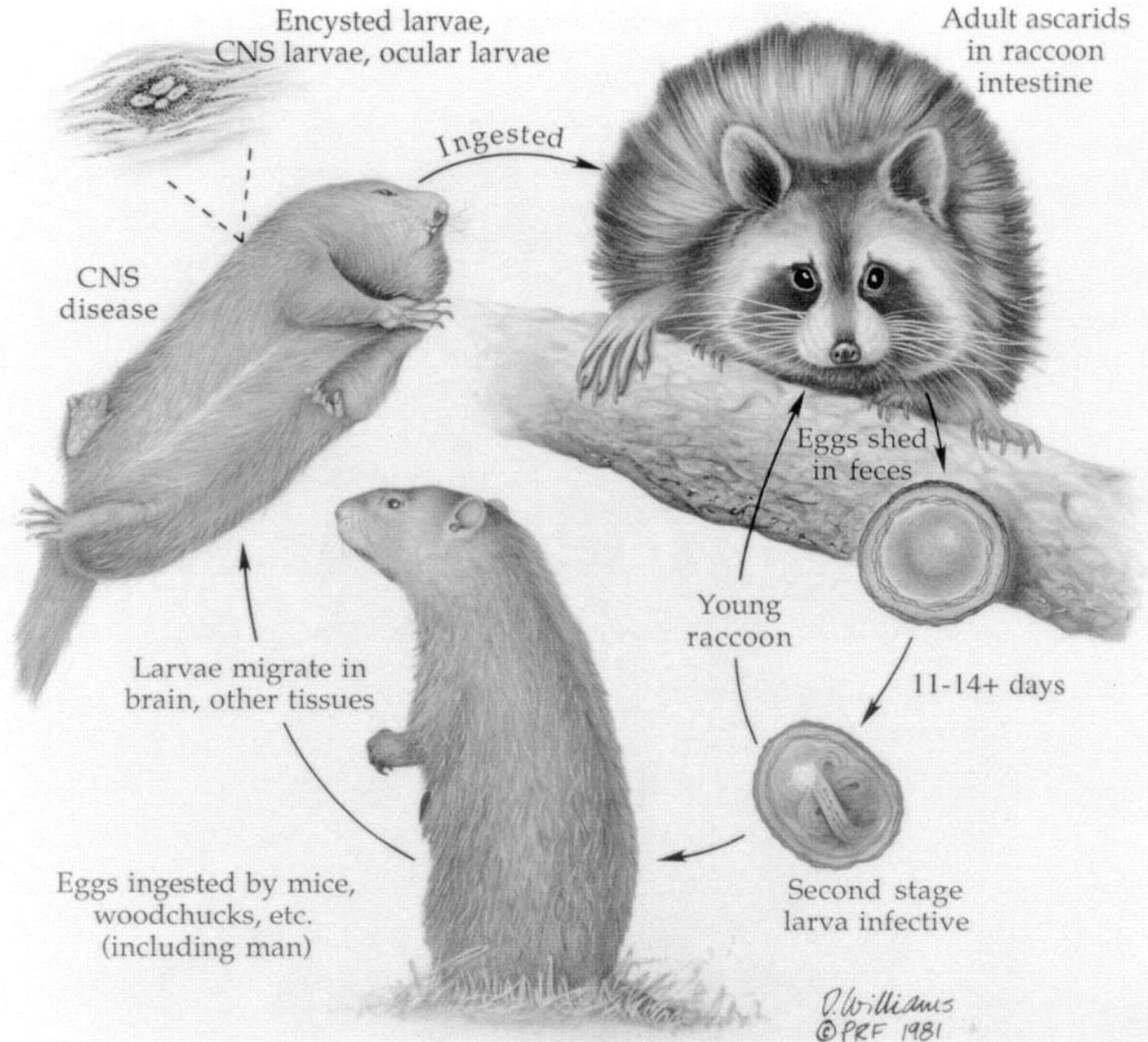
- Definitive Host (Raccoon)
- Intermediate Host (Mouse)
- Dead-End Host (People)

Zoonosis: Animal → Human



Raccoon at Ortega Dining Commons, UCSB

Life cycle of *Baylisascaris procyonis*



D. Williams
© PRF 1981

- Raccoon Roundworm Egg:
- Infectious
 - Can remain viable for years
 - Resistant to bleach & low temperatures
 - Larva Migrans cause Baylisascariasis
 - Deactivated by heat treatment (>62 Celsius)



B. Procyonis Egg: 78 μm by 63 μm

What do I Want to Know?

Is there a relationship between...

1. Worm length and egg production?
2. Worm weight and egg production?
3. Uterus weight and egg production?
4. Heat treatment and egg quantities?

- Will Help :
- Determine potential infection in animals/humans
 - Prevent/Control Disease

How Do We Count Eggs?

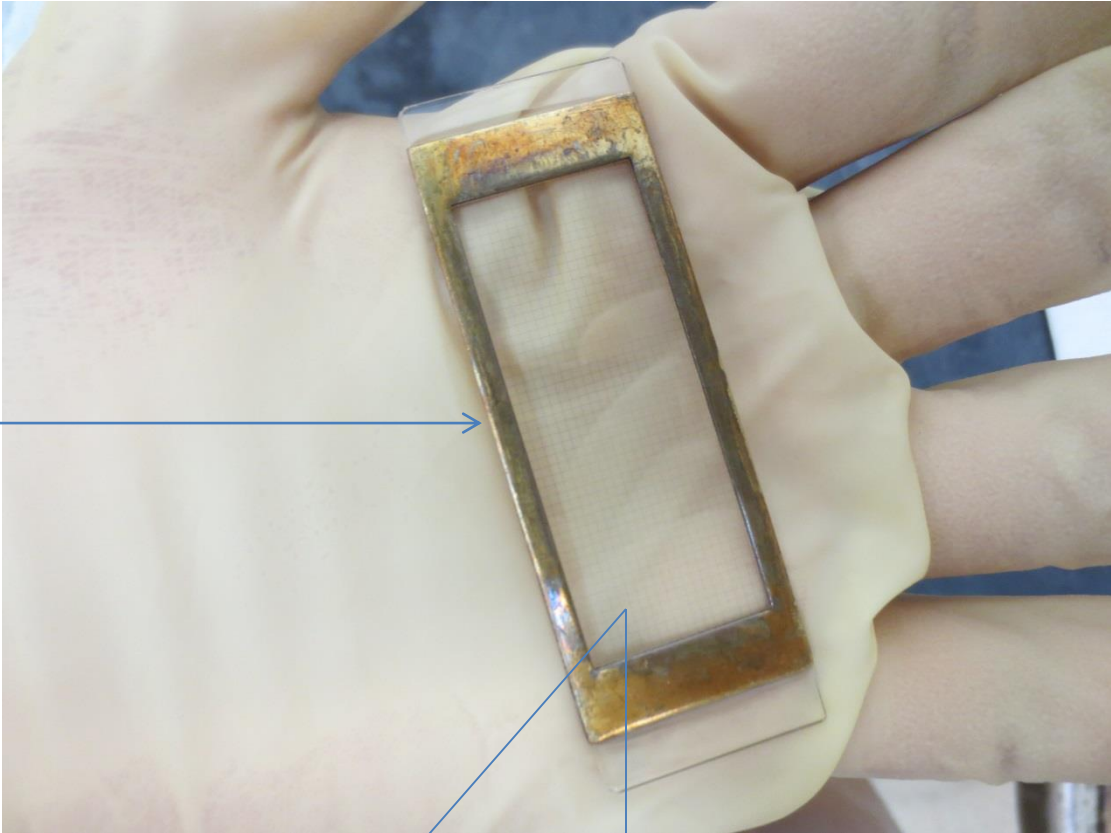
1. Female is measured & weighed
2. Uterus is extracted & weighed
3. Uterine tissue is ground up
4. Solution run through filter
5. Egg containing solution is placed on counting slide
6. Data collected & Analyzed

-60 square subsample

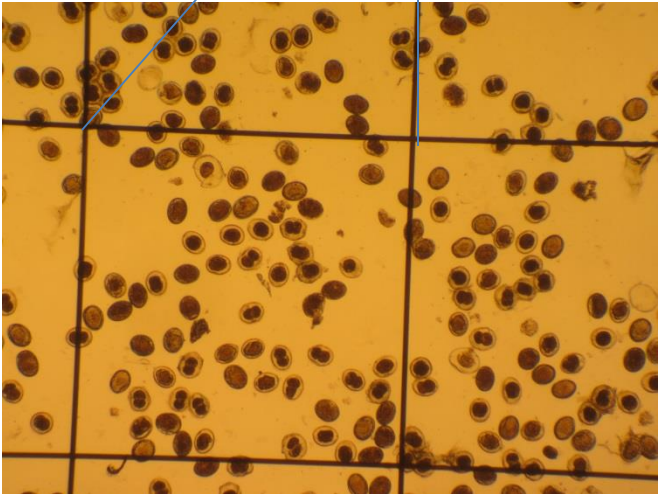
-Multiply by average & total mL used to get overall quantity



Tissue grinder

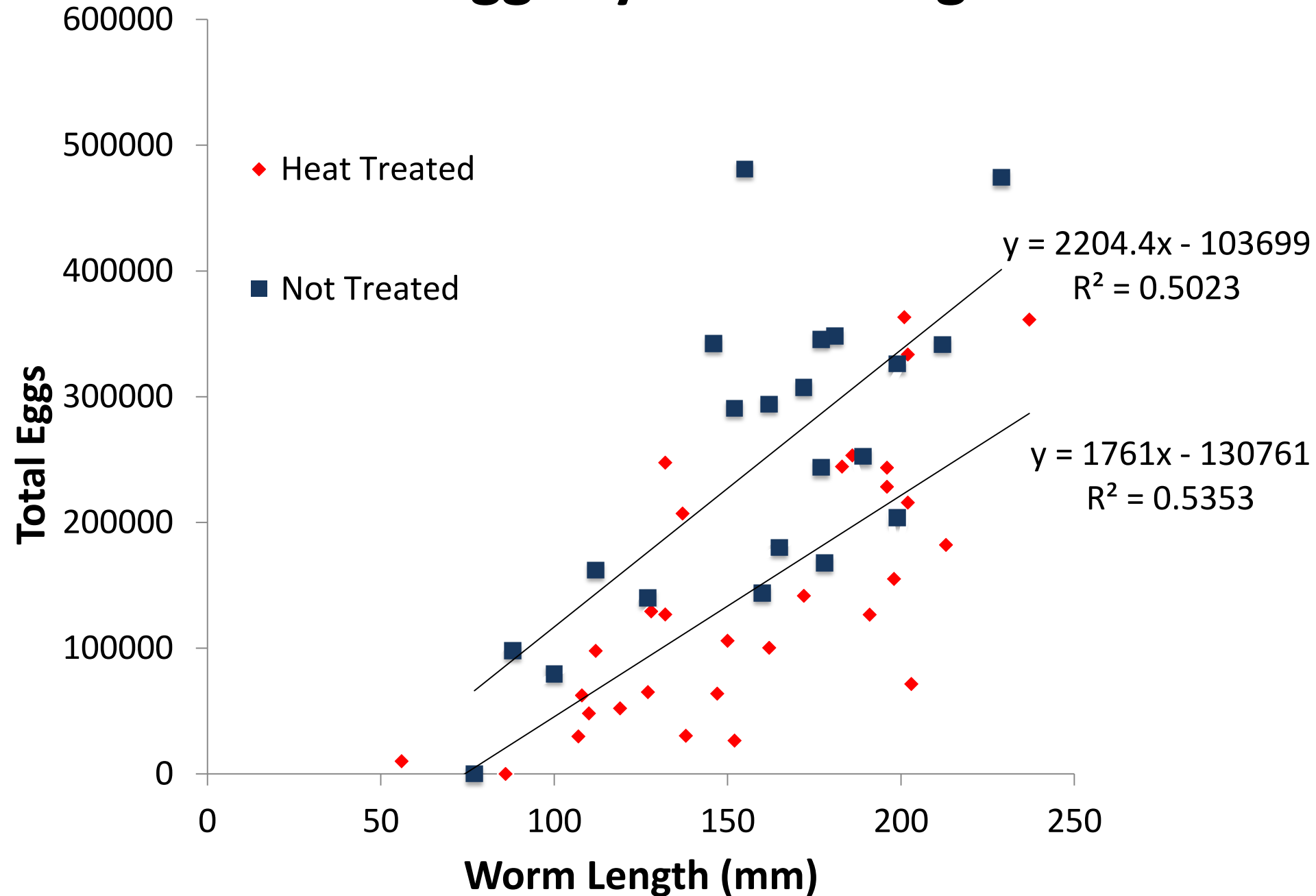


Counting Slide

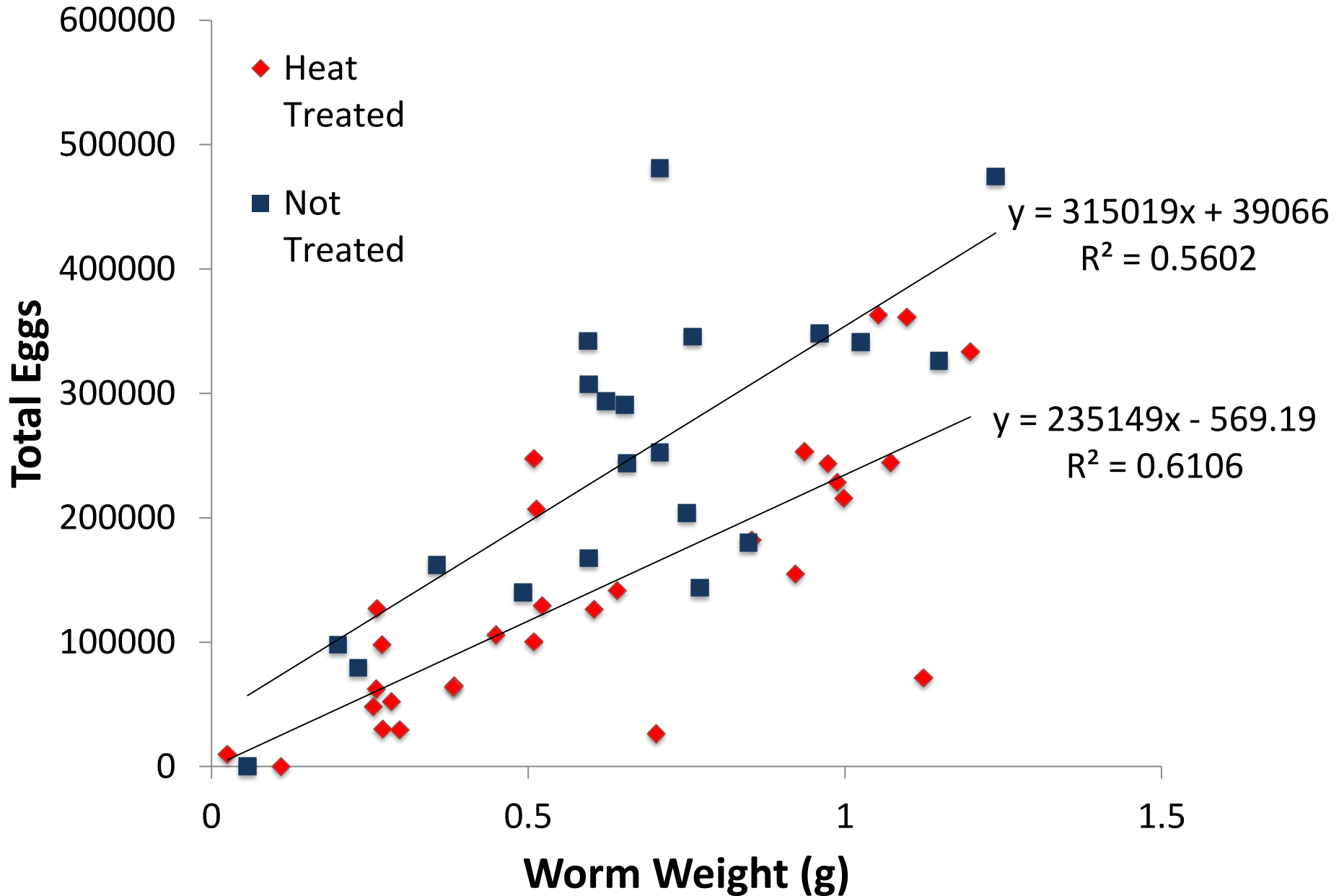


1square= 1 μ L

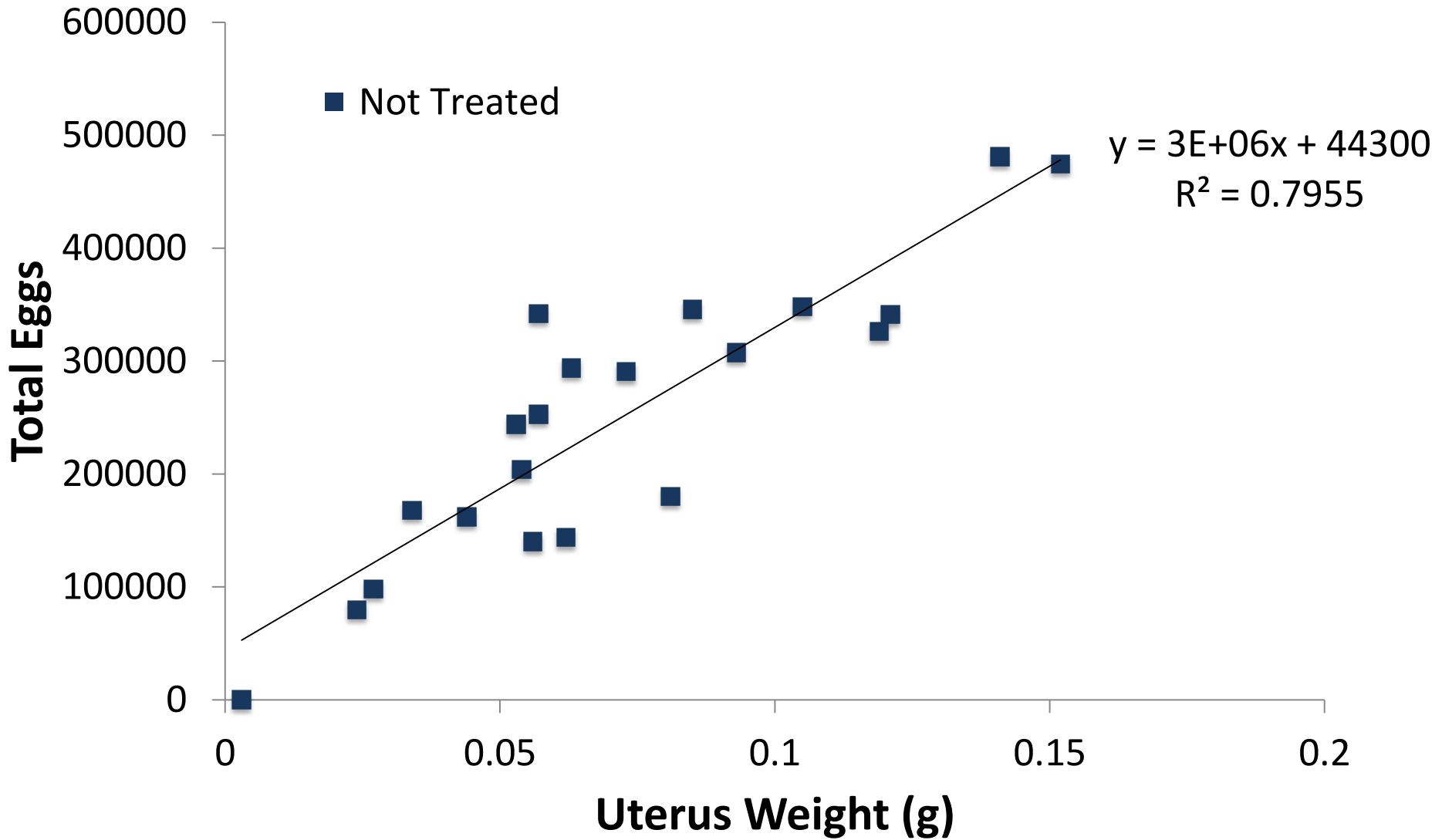
Total Eggs by Worm Length



Total Eggs by Worm Weight



Total Eggs by Uterus Weight



Conclusions/Future Work

Was There a Relationship Between...

1. Worm Length and Egg Production? **Yes**
2. Worm Weight and Egg Production? **Yes**
3. Uterus Weight and Egg Production? **Best Indicator**
4. Does Heat Treatment have any effect on Egg Quantities? **Definitely**

More counts are needed to ensure accuracy

This work lays the foundation for future work that will explore daily egg output for a worm population

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WHERE DISCOVERIES BEGIN

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