



# Cotton Leafroll Dwarf Virus Planning Meeting

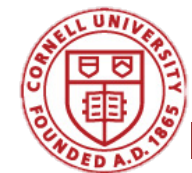
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Jenny Wilson

PhD Candidate, Cornell University

On behalf of

Michelle Heck, USDA-ARS



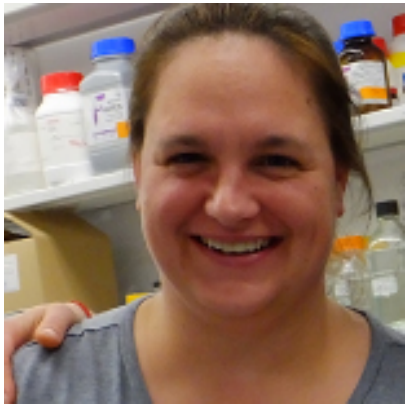
# The Heck Lab for Vector Biology

## *Polerovirus Team*

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**Michelle Heck**  
USDA-ARS



**Stacy DeBlasio**  
*Staff Scientist*  
Virus-Host Interactions



**Jenny Wilson**  
*PhD Candidate*  
Virus-Vector  
Interactions

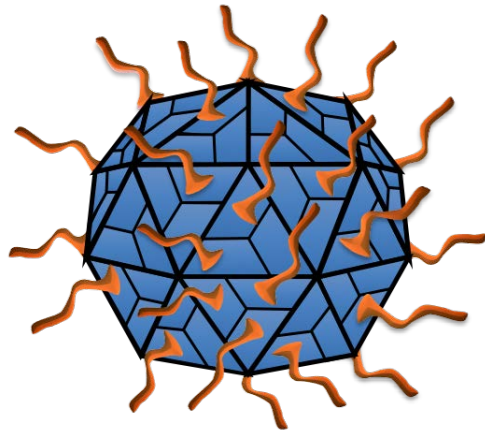


**Maria Gutierrez-  
Feliciano**  
*Plant and Aphid  
Caretaker*



**TBD**  
*Postdoctoral Researcher*  
(We're hiring!)

# Diagnosics: Developing a CLRDV ELISA test



poliovirus capsid



Coat protein



"Spike" protein

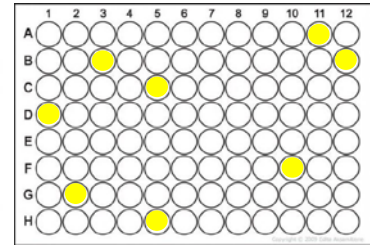
## METHOD:



purify spike protein



raise antibody against spike protein



develop ELISA and dip stick tests using antibody



Josh Chappie  
protein purification whiz



We can also help purify virus!

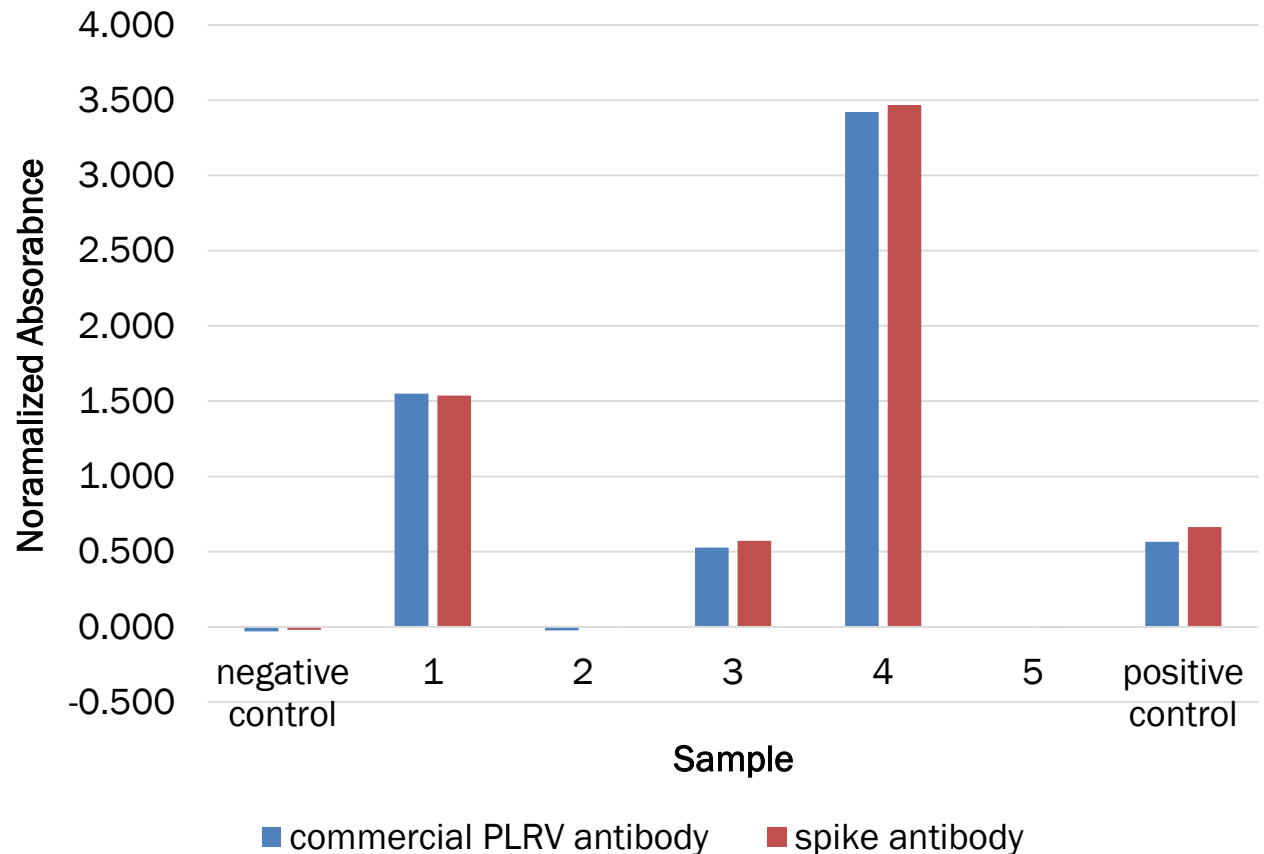
# Diagnositics: Developing a CLRDV ELISA test

Already works for *Potato leafroll virus!*



*Potato leafroll virus*  
(PLRV)

Genus: *Polerovirus*



# Diagnositics: High throughput methods for RT-PCR



Smash leaf discs into  
FTA cards at room  
temperature

Viral RNA can be extracted  
from punches of these cards

Stewart Gray  
USDA-ARS  
Superstar  
Potato  
Virologist

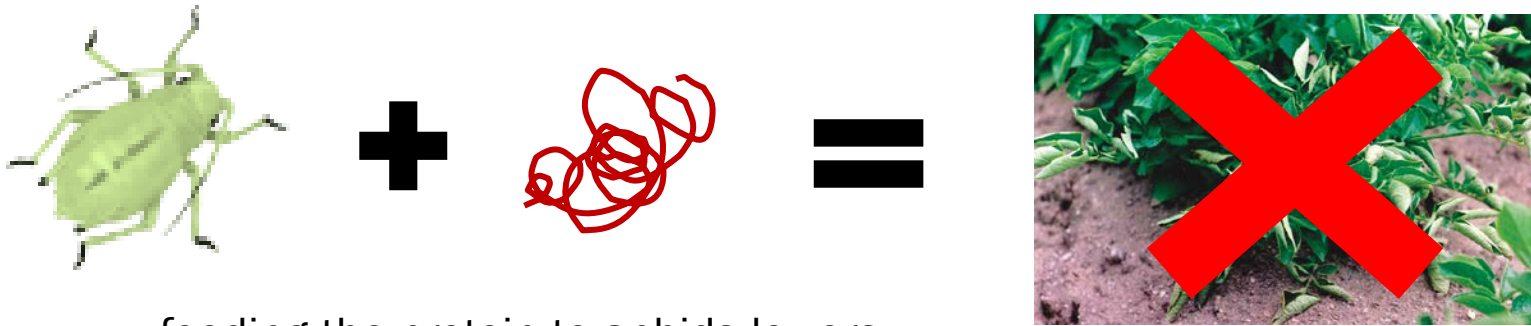


# Diagnostics: High throughput methods for RT-PCR

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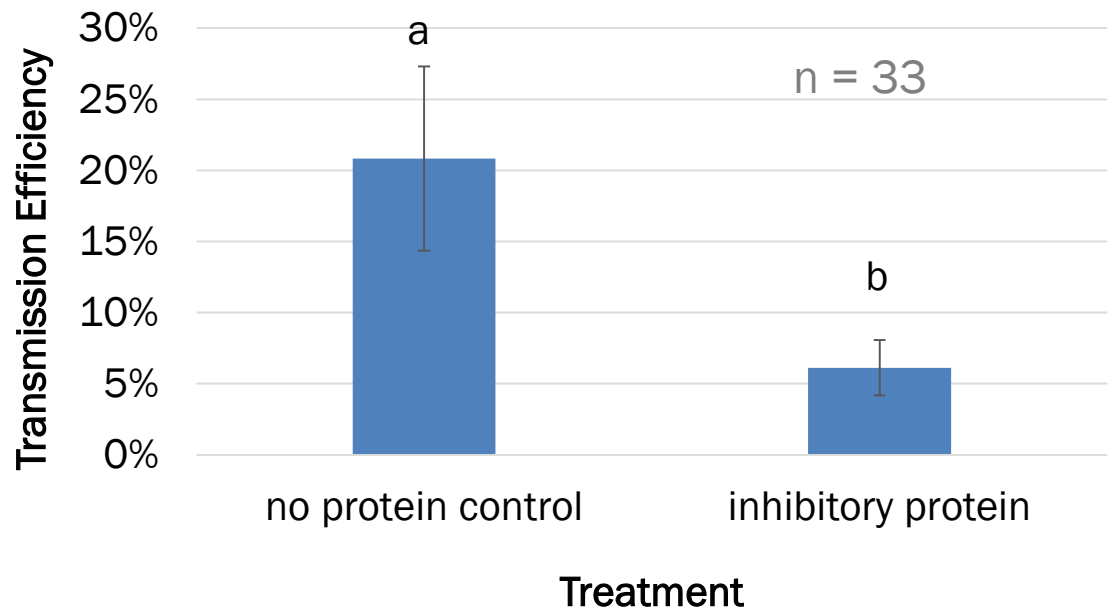


# Management: Blocking aphid transmission of CLRDV



feeding the protein to aphids lowers transmission

Reduces the chance of a plant becoming infected by an average of 55%, with efficacy ranging from 20% to 74% reduction.



# What can the Heck Lab do for you?

## Expertise in...

- Molecular virology
- Transmission biology
- Novel control strategies
- Bioprospecting
- Protein-protein interactions
- Proteomics
- Transcriptomics
- Small RNA sequencing
- Microscopy
- Bioinformatics

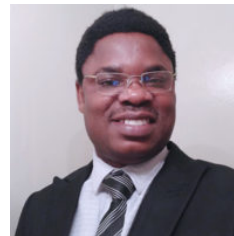


Michelle Heck

## Team Citrus Greening



John Ramsey



David Igwe



Stacy DeBlasio



Angela Kruse



Laura Fleites

## Team Polerovius



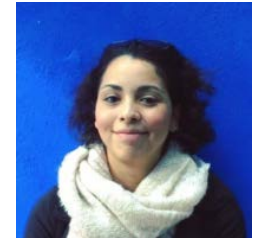
Jenny Wilson



Saeed  
Hoissenizadeh



Kevin Howe



Maria Gutierrez-  
Feliciano



Marina Mann



Olivia Gomez



