Cotton Leafroll Dwarf Virus Planning Meeting

Jenny Wilson
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On behalf of
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The Heck Lab for Vector Biology

Polerovirus Team

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!)
Diagnostics: Developing a CLRDV ELISA test

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!
Diagnostics: Developing a CLRDV ELISA test

Already works for Potato leafroll virus!

Potato leafroll virus (PLRV)
Genus: Polerovirus
Diagnostics:
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
Diagnostics:
High throughput methods for RT-PCR
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
- Angela Kruse
- Saeed Hoissenizadeh
- David Igwe
- Laura Fleites
- Kevin Howe
- Olivia Gomez

Team Polerovius
- Stacy DeBlasio
- Jenny Wilson
- Maria Gutierrez-Feliciano
- Marina Mann