



**INSIDE THIS ISSUE**

# PD/GWSS Board Grants \$2.7 Million in New Research Funding

In support of cutting-edge research to find solutions to winegrape pests and diseases, the Pierce’s Disease and Glassy-Winged Sharpshooter Board recommended \$2.7 million in new funding for 15 research projects over the next three years.

**2024 RESEARCH FUNDING**

**\$2.7M**  
for 15 new projects

**\$685,308**  
for eight continuing projects

**\$57.7M**  
invested in research since 2001




The Board also continued funding eight previously approved multi-year projects for \$685,308 for the fiscal year 2024 – 2025. The recommendation was approved by California Department of Food and Agriculture Secretary Karen Ross.

The Board’s research program is overseen by a research coordinator, ensuring the industry gets the best research investment for their assessment dollars.

"The projects approved for funding represent great research on the ever-changing pest and disease challenges facing the California wine industry. While keeping the research on PD steady, the Board continues to receive and fund more projects on grapevine viruses and vectors and even added crucial work on the spotted lanternfly," said Dr. Kristin Lowe, PD/GWSS Board research coordinator.

The Board invites researchers to submit proposals every year and 26 applications were submitted for funding this year. The proposals were evaluated by independent scientific review panels and the Board’s research screening committee before being discussed by the full Board at its spring meeting.

The Board has invested over \$57.7 million since 2001 in research and outreach to protect vineyards, prevent the spread of pests and diseases, and deliver practical and sustainable solutions. The steadfast funding provided by the PD/GWSS winegrape grower assessment ensures that California’s winegrape industry can engage leading scientists in discovering solutions for PD and other serious pests and diseases of winegrapes. Learn more about Board-funded research at [bit.ly/3w27mtc](https://bit.ly/3w27mtc).

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**List of New Research Projects**

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**On the Research Front**

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- Interaction Between the Spotted Lanternfly and Pierce’s Disease of Grapevines
- Using a Stable, Plant-Derived, Antimicrobial Peptide to Control Pierce’s Disease

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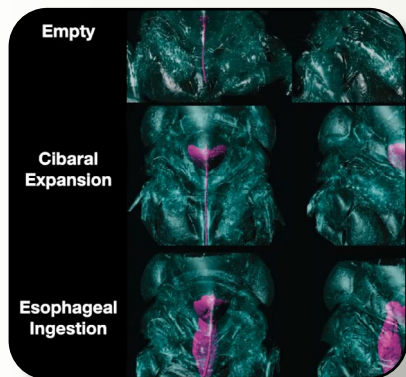
**Bill Introduced to Extend the Pierce’s Disease Control Program and PD/GWSS Board**

**Winegrape Growers, Researchers, and Stakeholders Gather to Strategize About Grapevine Viruses**

# New Research Funding in 2024

Topic	Title	Project Leader	Total Funding*
Pierce's Disease	Progression of Pierce's Disease Symptoms And <i>Xylella Fastidiosa</i> Colonization of Grapevines Under Field Conditions	Almeida, R, UC Berkeley	\$143,757
	Management of the Federal Permits for Multi-Investigator Field-Testing of Transgenic Grapevine Rootstocks in California	Dandekar, A, UC Davis	\$57,103
	Development of a Protoplasts-Based Platform to Knock-In Agriculture Relevant Genes into Grapevines	Debernardi, J, UC Davis	\$237,912
Pierce's Disease & Insect	Modeling the Bacterial Transmission Process by Integrating New Behavioral Insights into Computational Fluid Dynamics Simulations	Almeida, R, UC Berkeley	\$96,440
	Blocking the Acquisition and Transmission Cycle of <i>Xylella Fastidiosa</i> Bby Glassy-Winged Sharpshooter Using Genetic Control	Atkinson, P, UC Riverside	\$242,085
	Interactions Between the Spotted Lanternfly and Pierce's Disease of Grapevines	Rosa, C, Penn State	\$135,931
Insect	Preparing for the Arrival of Spotted Lanterfly: Outreach and Grower Engagement About the Value of Coordinated Area-Wide Responses	McRoberts, N, UC Davis	\$99,023
	Grape Germplasm Evaluation to Identify Potential Host Plant Resistance For Vine Mealybug	Riaz, S, USDA-ARS	\$306,560
Insect & Virus	Transmission of Grapevine Red Blotch Virus and Behavior of its Insect Vector	Fuchs, M, Cornell University	\$132,282
Virus	Development and Validation of HipleX Assays for Improved Detection of GLRaVs and GRBV In Grapes	Al Rwahnih, M, UC Davis	\$195,802
	Ecology of Grapevine Red Blotch Virus Disease	Almeida, R, UC Berkeley	\$107,257
	Plant-Level Early and Autonomous Field-Detection of Virus Infections in White and Black Grape Vines	Brilliante, L, CSU Fresno	\$397,017
	Foundations to Develop New Grape Cultivars Resistant to Grapevine Fanleaf Decline	Diaz-Garcia, L, UC Davis	\$159,763
	Investigating Fanleaf Symptom Development and Nematode Transmission to Imagine Novel Management Strategies	Fuchs, M, Cornell University	\$211,360
	Virus-Based Delivery of Interfering RNAs Targeting Grapevine Leafroll-Associated Virus(es)	Kuo, Y, UC Davis	\$217,254

\*grant durations will be one to three years



3D imaging showing the feeding anatomy of the glassy-winged sharpshooter

### Modeling Sharpshooter Feeding Behavior with a Novel 3D Approach to Insect Behavioral Visualization

**Project leaders: Rodrigo Almeida and Elizabeth Clark, University of California, Berkeley**

Little is known about how infected insects transfer *Xylella fastidiosa* (*Xf*) to plants during feeding. The team used 3D imaging to illuminate the anatomy of three important insect vectors of *Xf*. It used these 3D reconstructions to generate 3D computational fluid dynamics simulations to understand how xylem sap-feeding occurs. This work provides a basis for understanding the physics of fluid flow from the xylem vessel and the insect feeding complex. This approach can be applied to explore how and why some insects are more effective at transmitting *Xf* than others. Watch a video update at [youtu.be/Z1gb0rq\\_bek](https://youtu.be/Z1gb0rq_bek)

### Interaction Between the Spotted Lanternfly and Pierce's Disease of Grapevines

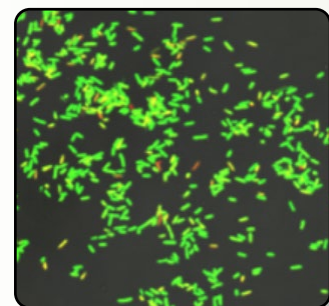
**Project leader: Cristina Rosa, The Pennsylvania State University**

The team is investigating the potential for the spotted lanternfly (SLF) to spread grapevine red blotch disease and Pierce's disease (PD). They are studying the combined effects of PD and SLF on grapevines under varying irrigation regimes and water stress conditions, to offer better management recommendations for vineyards which may face both issues in the future. The project also includes sharing knowledge about SLF biology and control learned in the eastern U.S. with grape growers and extension personnel in California to help them prepare.



The spotted lanternfly could spread Pierce's disease and grapevine red blotch disease.

Photo: Emelie Swackhamer, Penn State University, Bugwood.org



Examining the bactericidal activity of the SAMP solution under the microscope

### Using a Stable, Plant-Derived, Antimicrobial Peptide to Control Pierce's Disease

**Project leaders: Hailing Jin and Caroline Roper, University of California, Riverside**

The team developed a stable antimicrobial peptide (SAMP) from the Australian finger lime that can directly kill pathogens, induce host defense response, and suppress insect vectors, making it a good candidate for developing into both a prophylactic and curative treatment for Pierce's disease. The team is testing the most effective solutions and application strategies of SAMP for controlling PD. Greenhouse studies are being performed to assess the efficacy of SAMP as a prophylactic and post-inoculated treatment by using SAMP with different delivery methods, including foliar spray and injection.

# Bill Introduced to Extend the Pierce's Disease Control Program and PD/GWSS Board

Every five years since the PDCP and the PD/GWSS Board were first established, they have been extended by the passage of required legislation that sets parameters for the program and allows California winegrape growers to hold a referendum to assess the value of this ongoing collaboration.

Assemblymember Dawn Addis (D-Morro Bay) introduced Assembly Bill 1861 to extend the program another five years. Winegrape growers will vote on the PD/GWSS Referendum, which funds the Board's research work and certain program activities, in spring 2025, which would extend the winegrape assessment through 2031. Learn more at [bit.ly/PDGWSSassessment](https://bit.ly/PDGWSSassessment).

"The wine industry is integral to the economic success of the Central Coast and all of California," said Addis. "I'm excited to author AB 1861 that extends a crucial line of defense for our wine industry against invasive disease. We have a track record of collaboration among state, local, federal government, and the industry itself when it comes to battling Pierce's disease and the glassy-winged sharpshooter. I'm proud to extend this collaboration and to be part of the ongoing success of California's wine regions."

# Winegrape Growers, Researchers, and Stakeholders Gather to Strategize About Grapevine Viruses

As the PD/GWSS Board endeavors to optimize its investment in grapevine virus research, it facilitated a two-day visit with the National Academies' Committee on Grapevine Viruses and Disease Research in March.

During the collaborative event, the committee engaged with leading researchers to delve into ongoing and prospective grapevine virus research. Additionally, the committee explored the management and impacts of these viruses with winegrape growers, pest control advisors, and nursery operators.

The insights gleaned from these conversations will be pivotal in shaping the committee's final report, slated for release later this year. This comprehensive document will serve as a guiding compass for the Board's research funding strategy.

Learn more about the project, watch the March meeting recording, and submit comments and questions to the NAS committee on the project website at [bit.ly/46AvvSr](https://bit.ly/46AvvSr).

**33,000**  
**TRAPS DEPLOYED**  
in 46 counties  
to monitor  
for GWSS

**32,700**  
regulated nursery  
stock shipments  
in 2023

**99.9%**  
of regulated nursery  
stock shipments  
are free of GWSS  
at destination