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Funding innovation for the floral industry



A core value of the [American Floral Endowment](#)'s mission is to help address industry challenges and struggles through the funding of cutting-edge research. AFE understands the important role research plays in sustaining the industry, and as a result, much of the research that has transformed industry practices in the past 60-plus years has been sponsored by AFE, helping to provide longer-lasting, better-quality flowers and plants. The Endowment is committed to continuing to support advancements like this, and accept new proposals from researchers each year.

AFE's Research Committee and the Society of American Florists Growers Council carefully review these proposals and evaluate them for their focus, reach, and benefit to the industry. If selected, an independent scientific peer review is carried out.

AFE announced that in 2024-25, it will support 12 research projects in total, including five new projects and seven continuing projects, with \$600,000 in funding from the Endowment's Research Funds.

New Projects

INSECT MANAGEMENT

- Mitigation of the Invasive Tropical Pest, Thrips Parvispinus: Clean Start and Biological Control: Rose Buitenhuis, Vineland Research and Innovation Centre
 - Objective: The goal of this three-year project is to develop sustainable long-term solutions for management of *T. parvispinus* in greenhouse ornamentals. Taking a systems approach, the project will investigate several IPM strategies that may be combined to provide optimal control of *T. parvispinus*.
- Innovative 3-Tiered Management of Western Flower Thrips in Ornamental Greenhouse Productions: Christian Nansen, UC Davis

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- Objective: In this three-tiered project, they will develop, test and promote a highly innovative approach to WFT management, in which they integrate three technologies: a state-of-the-art robotic rail system to release predatory mites, customized lighting (LEDs) and optimized formulations of certified organic insecticides with plasma-activated water.

NUTRITION AND WATER MANAGEMENT

- Floriculture Production Practices in Peat Reduced Substrates: Brian Jackson, North Carolina State University
 - Objective: Provide data on crop management strategies that can be immediately implemented in grower operations to improve production efficiency, reduce crop losses and improve crop quality while using more economical and sustainable peat alternatives.

PRODUCTION TECHNOLOGY/TOOLS

- Putting Floriculture A.I. to Work: Development of Smart Diagnostic Tools: Brian Whipker, North Carolina State University
 - Objective: 1. To expand a robust framework of leaf tissue standards to improve the accuracy of diagnosing nutritional issues of the top floriculture species. 2. Develop an algorithm that creates an automated AI interpretation tool for leaf tissue diagnostics for poinsettias, geraniums, New Guinea impatiens, petunia and gerbera. 3. Create a web-based diagnostic app for poinsettias, geraniums, New Guinea impatiens, petunia and gerbera growers to input their lab analysis results and obtain interpretations and recommendations.
- Reducing Peat-Use in Greenhouse Production through Wood Fiber Substrate Stratification: Jeb Fields, Louisiana State University
 - Objective: Reduce peat-use and reliance in greenhouse production through stratified substrate systems by (1) evaluating the effectiveness of wood fiber and other low-cost “filler” materials as sub-strata, (2) exploring shallow stratification to increase the proportion of filler materials and (3) amending the upper (high-performance) strata with wood fiber. They will fine-tune irrigation and fertility applications to strengthen comprehension of stratified-grown crops, water use and fertilizer efficiency.

Continuing Projects

PLANT BREEDING AND GENETIC ENGINEERING

- Use of CRISPR to Develop Powdery Mildew Resistance in Gerbera: Dayton Wilde, University of Georgia
 - Objective: 1. Gene editing of the gerbera MLO gene to confer powdery mildew resistance. 2. Develop a somatic embryogenesis system for gerbera. 3. Investigate non-transgenic means to introduce CRISPR constructs.

DISEASE MANAGEMENT

- Enhancing the Performance of Biological Control Agents for Botrytis Control: Jim Faust and Guido Schnabel, Clemson University
 - Objective: Prospective biological control agents for Botrytis blight often perform well in the lab but fail in the greenhouse. Their objective is to enhance the performance of

these organisms by understanding the reason(s) that they fail and then provide the conditions that will help them survive and succeed as disease management tools in the greenhouse environment.

- Asteraceae Petal Blight: Pathogen Identification and Methods to Facilitate Effective Control Strategies: Julia Kerrigan, Clemson University
 - Objective: Identify causal organisms from flowers received from different commercial locations and seasons. Develop methodology to distinguish these organisms. Screen fungicides for efficacy and resistance.
- Supporting the U.S. Specialty Cut Flower Industry through Diagnostics, Disease Management and Outreach ([Gus Poesch Funding](#)): Francesca Hand, The Ohio State University
 - Objective: Evaluate the use of anaerobic soil disinfestation for the management of pathogens affecting specialty cut flowers and develop outreach material to educate growers on plant diseases affecting cut flowers.

POST-PRODUCTION

- Development of Potent Ethylene Antagonists for Floricultural Crops: Rasika Dias, The University of Texas at Arlington
 - Objective: Development of potent anti-ethylene products for commercial use by selective targeting of ethylene binding sites, blocking ethylene bio-synthetic pathways and creating stabilized silver formations.

PRODUCTION TECHNOLOGY/TOOLS

- Identification and Application of Plant Growth Promoting Bacteria to Improve Floriculture Crop Plant Quality and Reduce Inputs: Michelle Jones, The Ohio State University
 - Objective: The goal of this proposal is to screen the OSU greenhouse rhizospheric bacteria collection to identify bacteria that can promote growth with lower fertilizer inputs and to characterize and optimize the growth promoting effects of these bacteria in containerized soilless greenhouse production systems.
- Developing Foliage Stock Plant, Liner and Finish Plant Production Protocols for Temperate Climates: Roberto Lopez, Michigan State University
 - Objective: To quantify how DLI, air and root-zone temperature and PGRs interact to affect cutting yield and rooting and produce high-quality liners and model how temperature influences leaf unfolding rates

To see a full list of the currently funded projects, [click here](#).

It's important to AFE to not only help fund this vital research, but also to help distribute it widely so as many people as possible can benefit from its results. Each month, a nationally recognized researcher is featured in AFE's [Grow Pro Webinar Series](#) to offer 'how-to' advice based on AFE-funded and other research projects. These topics focus on ways growers can increase profit, overcome current challenges, improve efficiency and implement more sustainable practices. These webinars are completely free to all, thanks to generous sponsors.

Lastly, AFE provides a Thrips and Botrytis Research library, launched in 2023, designed to address the widespread losses from these pests affecting the industry and provide solutions to growers through insightful fact sheets, webinars and engaging articles in both English and Spanish. This

library was made possible through a special research campaign launched in 2017 which raised \$1.5 million in pledges. [Visit the library here](#) to access free resources and education.

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