First gene drive developed for crop pest targets invasive fruit fly that damages berries

Biologists at the University of California San Diego have developed a method of manipulating the genes of an agricultural pest that has invaded much of the United States and caused millions of dollars in damage to high-value berry and other fruit crops.

Research led by Anna Buchman in the lab of Omar Akbari, a new UC San Diego insect genetics professor, describes the world's first "gene drive" system—a mechanism for manipulating genetic inheritance—in *Drosophila suzukii*, a fruit fly commonly known as the spotted-wing drosophila.

As reported April 17 in the *Proceedings of the National Academy of Sciences*, Buchman and her colleagues developed a gene drive system termed Medea (named after the mythological Greek enchantress who killed her offspring) in which a synthetic "toxin" and a corresponding "antidote" function to dramatically influence inheritance rates with nearly perfect efficiency.

"We've designed a gene drive system that dramatically biases inheritance in these flies and can spread through their populations," said Buchman. "It bypasses normal inheritance rules. It's a new method for manipulating populations of these invasive pests, which don't belong here in the first place."

Editor's note: Read the full study

Read full, original post: Researchers develop first gene drive targeting worldwide crop pest