



National Institute of Food and Agriculture's Crop Protection & Pest Management Program Saves Lives, Dollars, & the Environment in Arizona

The **Arizona Pest Management Center (APMC)** delivers big impacts in agriculture, public health, schools & neighborhoods through applied research, education & regional collaboration for sustainable integrated pest management (IPM), funded by **USDA-NIFA's Crop Protection and Pest Management program**.



Dawn Gouge teaching urban IPM in the classroom.



John Palumbo conducting a vegetable IPM field trial.



Peter Ellsworth teaching cotton IPM during Farmer Field Day.

USDA-NIFA provides critical support through 3 competitive grant sub-programs:

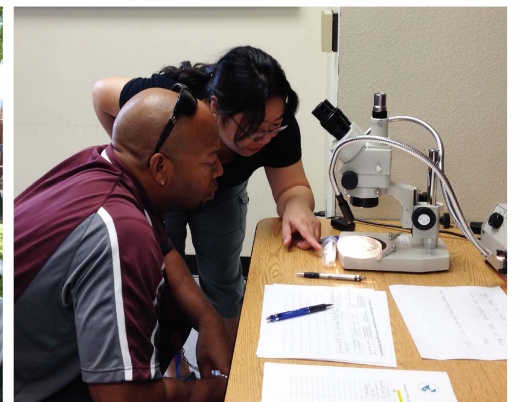
- Applied Research and Development Program – problem-solving research (\$4M)
- Extension Implementation Program – putting research into practice (\$10M)
- Regional Coordination Program – coordinating success & networking scientists & stakeholders (\$4.1M)



Teaching families about public health.



Doing outreach for thousands.



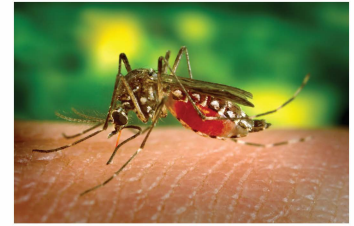
Bed bug management training.

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Protecting Human Health

- West Nile Virus can be deadly. Arizona has among the highest incidents of this mosquito-transmitted virus. In 2017, 109 confirmed cases resulted in 8 deaths. A University-County (Phoenix metro area) collaboration¹ prompted control of 8 mosquito populations carrying the virus, reducing disease risk.
- Approximately 100 Arizona residents die yearly due to asthma, and 615,000 are afflicted. Bed bug & cockroach allergens can trigger asthma attacks. Low-income elderly housing residents are particularly vulnerable. Our Community IPM team reduced cockroaches by 87% and bed bugs by 93% in Phoenix public housing for elderly & disabled.



Student conducting field research.

Protecting the Environment

- Our Cotton IPM Team reduced environmental & human health risks by preventing >21M lbs of insecticide active ingredient from reaching the environment.
- Cotton growers reduced broadly toxic insecticides by 92% & all insecticides by 82%.² On average, nearly 20% of cotton acres are never sprayed for insect pests.
- 80% of growers & pest managers adopt reduced-risk pest management practices because of timely research & information from our Vegetable IPM Team, with reported increased yields and fewer toxic pesticides used.³

Boosting the Economy

- Our Cotton IPM Team has saved growers more than \$542M since 1996, based on fewer sprays and improved yields.
- Research on brown stink bug control in cotton showed that *not spraying* for this insect increased economic returns for growers. After outreach, growers reduced sprays from 39% of acres to 3% of acres, saving over \$8M in just 1 year.
- 70% of growers & pest managers reported that outreach from our Vegetable IPM Team helped them avoid economic losses from insects, weeds & diseases. Most growers saved \$60-189 / acre on insect management alone, or \$480,000 –1.5M in annual savings to the typical grower.³



David Cappaert, Bugwood.org

1. In a collaboration supported by Centers for Disease Control & Prevention

2. Comparing 2006-2014 to 1991-1995 levels

3. Based on two 2016 surveys of vegetable IPM program participants (n = 77 & 49) where respondents represented the majority of vegetable production acres in Arizona.