

# Improving Environmental Health and Literacy through School IPM Partnerships

*Kathy Murray, Maine Department of Agriculture, Conservation and Forestry*

*Ruth Kerzee, Midwest Pesticide Action Center*

*Margaret Huelsman, Improving Kids' Environment*

*Seth Dibblee, U.S. Environmental Protection Agency Region 5*



# School IPM Depends on Effective Partnerships!



Express-Times Photo | JIM  
MIDDLEKAUFF

*Photo credit: School Nutrition Foundation, a member of Partners for Breakfast in the Classroom, a partnership of the Food Research and Action Center, National Association of Elementary School Principals Foundation, National Education Association Health Information Network, and School Nutrition Foundation*

# School IPM Partnerships

- Northeast School IPM Working Group
- Midwest Pesticide Action Center and IKE
- U.S. EPA Region 5

Goal: Excellent Environmental Health and Safety that Supports Learning





# Northeast School IPM Working Group

- 45 members: wide representation of organizations, gov. agencies, universities, consultants, schools from 12 Northeast states and District of Columbia.
- Funded 2009-2013 by NE IPM Center. Leveraged additional funding from various sources.
- Continues to collaborate and network via listserv, website, and ongoing projects.



Northeastern  
**IPM**  
Center

# School IPM Demos, Workshops, Assessments



**Demos:** RI, NH, VT

**Workshops:**

RI, CT, MA, ME, NY, PA, VT,  
NH, MD

**Assessments:**

- National School IPM Survey (IPM Institute of N.A.)
- IPM and Asthma Metrics Demo (IPM Institute of N.A.)
- CT Turf Quality Assessment Tool
- NYSIPM 8 School IPM Metrics Demo
- Workshop participant surveys
- Working Group Impact Assessments (NE IPM Center)

# Developed and Piloted Tools for School IPM Implementation

NEIPMC.org

## Best Management Practices for School IPM

- Find Your Pest - ▼

- State Regulations (PDFs) - ▼

This online resource provides easy to use information to assist implementation of Integrated Pest Management on school property and facilitate reduced dependence on pesticides. Integrated pest management, or IPM, is a science-based approach to dealing with pests, and uses sensible methods that both protect human health and the environment, and generally reduce the cost of traditional pest treatments. Pests can be insects, plant diseases, weeds or animals.

### How to Practice Integrated Pest Management

[IPM Basics](#)

[Why Is IPM So Important in Schools?](#)

[How Can Your School Benefit from Using IPM?](#)

[The Use of Pesticides on School Property](#)

[IPM Policies and Protocols](#)

[The Steps of IPM](#)

[Common IPM Terms](#)

[Related IPM Websites](#)

[IPM Resources](#)

[Pesticide Use and IPM Laws by State](#)

### Site Specific Best Management Practices for School IPM

#### INSIDE

[Cafeteria, Kitchen, Storage Area](#)

[Classroom, Office, Staff Lounge, Hallway](#)

[Locker Room, Gym, Pool Area, Boiler Room, Crawlspace](#)

[Structural: Walls, Windows, Roofs, Eaves](#)

#### OUTSIDE

[Athletic Fields](#)

[Fencelines](#)

[Hardscapes: Parking Lots and Sidewalks](#)

[Low-maintenance Turf](#)

[Planting Beds and Gardens](#)

## Environmental Management System IPM Planner

We have provided the following framework to assist you in this process. It is based on the Environmental Management System (EMS) model, which is a comprehensive, systematic way to identify, prioritize, and manage environmental issues. The EMS model provides the framework for schools to develop policies and training, identify regulations and compliance issues, assign roles and responsibilities, enhance record keeping systems, implement standard operating procedures, etc. to accomplish this. Our goal is to assist your efforts to keep your schools healthy, within budget, and in compliance with state requirements.

Within an EMS, we use environmental management plans (EMP) to address specific environmental issues. We have provided the following guidance documents and tools below to help you easily develop a customized IPM Plan or enhance your existing IPM system, regardless of whether you have an EMS.

We have organized the following information using the EMS framework on the left. There are several types of document to aide you. Some documents provide reference and background information, while others are tools that you can customize for your own use. We recommend that you review the Environmental Management System document first to understand how we organized the information and the framework that we suggest using it in.

Please click on the links below to download and access the documents.

EMP Component	Type of Document or Information	Document
Environmental Management System	Description	<ul style="list-style-type: none"><li>Environmental Management System</li></ul>
Regulations	State IPM	<ul style="list-style-type: none"><li>NPMA State School Pest Management Regulations (PDF)</li></ul>
Policy	Statement — Provides Points to Address, Language to Customize	<ul style="list-style-type: none"><li>The IPM Institute of North America Policy Statement</li></ul>
Team	Structure — Types of People and Their Roles	<ul style="list-style-type: none"><li>What Is IPM and Who Are the IPM Team (DOCX)</li><li>Administrators Checklist (DOCX)</li><li>IPM Coordinators Checklist (DOCX)</li></ul>
Roles and Responsibilities	Matrix Sample — Vendor, Municipal Dept, District, School Departments, Staff	<p>IPM ROLES &amp; RESPONSIBILITIES</p> <ul style="list-style-type: none"><li>Between School &amp; IPM Contractor (DOCX)</li><li>IPM Roles and Responsibilities — City-Wide Form (DOCX)</li></ul>
Communication and Notifications		<ul style="list-style-type: none"><li>Notification Requirements by State — NPMA State School Pest Management Regulations (PDF)</li><li>School Notification Template (DOCX)</li><li>Request to Be Notified Form (DOCX)</li><li>Pesticide Application Notice (DOCX)</li><li>Pesticide Application Notice Poster (DOCX)</li><li>Sample Request for Notification (DOCX)</li></ul>

# Teaching IPM to the Next Generation of Earth's Stewards

- IPM education offers:
  - STEM (Science, Technology, Engineering, Math) education
  - Environmental education and stewardship
  - Project-based learning and service-learning opportunities
  - Career training
  - Supports IPM implementation on properties
  - Community engagement





# How Can we Improve IPM Literacy?

- Established regional stakeholder advisory group
- Conducted regional survey of teachers (N = 387)
- Opportunities:
  - Teachers felt IPM is relevant and important
  - Want hands-on activities and lessons
- Barriers:
  - Unaware that lessons were available
  - Lack the necessary knowledge to teach IPM
  - Standards-driven teaching schedule allows little flexibility

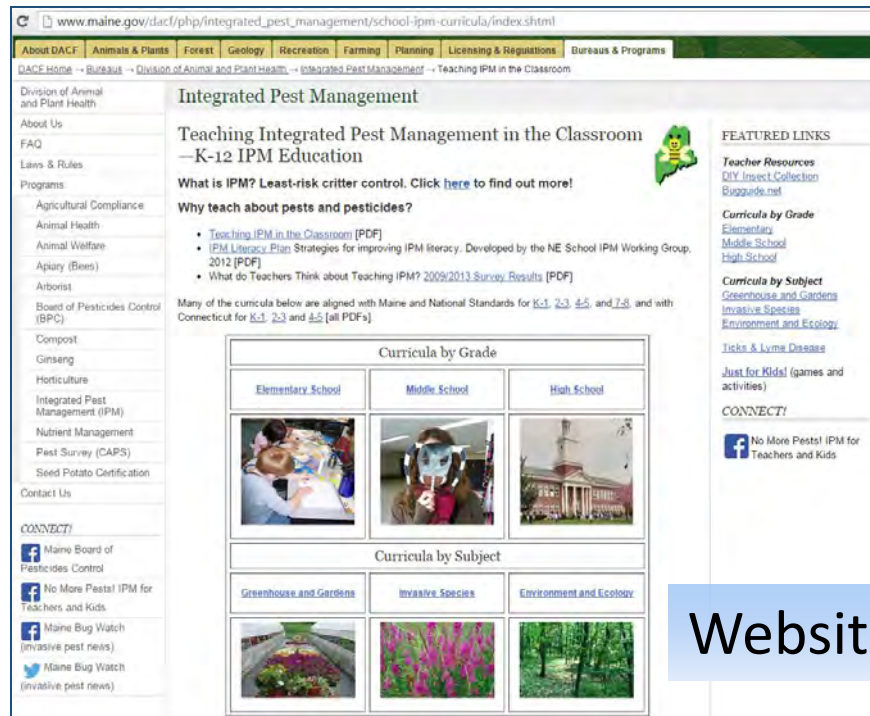




# Provide Easily Accessible Lessons and Resources



Promotional  
Brochure



Website



8th International Integrated Pest Management Symposium – March 23-26, 2015 – Salt Lake City, Utah

# Developed Lessons

- Five Greenhouse IPM lessons (grades 9-12)
- Bed bug lesson (grades 3-5)

## Aphids, Aphids, Everywhere!

Lesson 4

"Aphids are destroying the plants in the greenhouse! What do I do now?" First, it must be determined if action is necessary and if so, what actions should be taken? What are the costs and benefits of managing the pest versus doing nothing? In this activity, students will research, recommend, and possibly implement different management tactics if the tactics are found to be warranted and cost effective. Focus will be directed at using biological control (biocontrol) options to address current pest problems in the greenhouse.

## How Many Pests Are There?

Lesson 3

"What should I do? I found a pest!" After finding an unwanted organism or disease in the greenhouse, it must be scientifically determined if action needs to be taken to manage the pest. Routine scouting for pests and monitoring their populations are the foundations for making your integrated pest management (IPM) plan successful. This lesson has students routinely scouting for pests they identified in the previous lesson. They will also have the opportunity to employ different monitoring techniques.

## Don't Let the Bed Bugs Bite!

Grades 3-5

**Goals:** The purpose of this lesson is to introduce students to the characteristics of bed bugs, the reasons why humans consider bed bugs pests, and the ways that humans can prevent and safely handle a bed bug outbreak.

### Maine ELA Standards Covered:

- Conduct short research projects that build knowledge through investigation of different aspects of a topic.
- Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
- Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

### National Science Content Standards Covered:

- Characteristics of organisms
- Organisms and their environment

### Content Objectives:

Students will be able to draw an accurate picture of a bed bug.  
Students will be able to record three reasons why the bed bug is a pest to humans.  
Students will be able to identify ways of preventing bed bugs and how to safely address a bedbug situation.

### Language Objectives:

Students will be able to identify crucial parts of explanatory/informational text.

**Content:** The content of this lesson is an introduction to bed bugs using the provided handout and instruction on how to create a wanted poster or news report as an informational/explanatory text.

**Logistics:** The estimated time for this lesson is 45 minutes with potential follow-up time to finish the writing activity.

Suggested  
Grade

Subject  
Environment  
Technology  
Speaking

Standards  
Environment  
4.5 Integrated

**Suggested Level(s):**  
Grades 9-12

**Subject(s):**  
Environment & Ecology; Science & Technology; Reading, Writing, Speaking & Listening

**Standards:**  
Environment & Ecology  
4.5 Integrated Pest Management

Science & Technology  
3.7 Technological Devices

**Objective(s):**  
Students will

- develop a scouting/monitoring system for a specific pest found in the greenhouse
- implement their scouting/monitoring system in the greenhouse and record appropriate data
- create a scouting report form using spreadsheet/database software
- analyze data they collect about their specific pest
- critique the scouting/monitoring system they used





# Teacher Training and Classroom Demonstrations





# Outreach to Teachers and Youth at Events

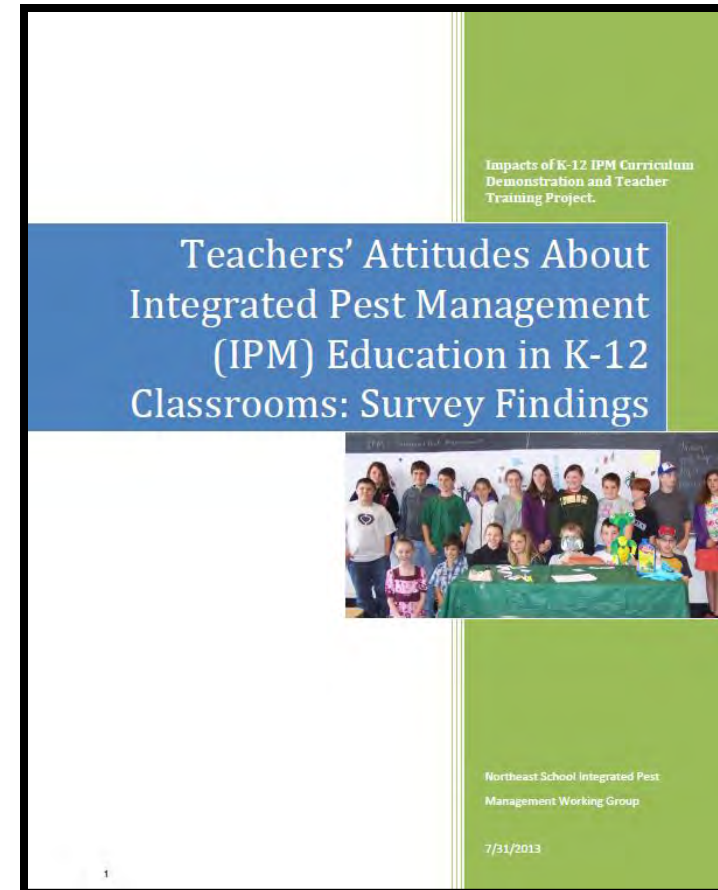
- Sustainability and Stewardship Events
- Science Education Events
- Gardening/Agriculture Events
- Community Events



# Surveyed Teachers Again

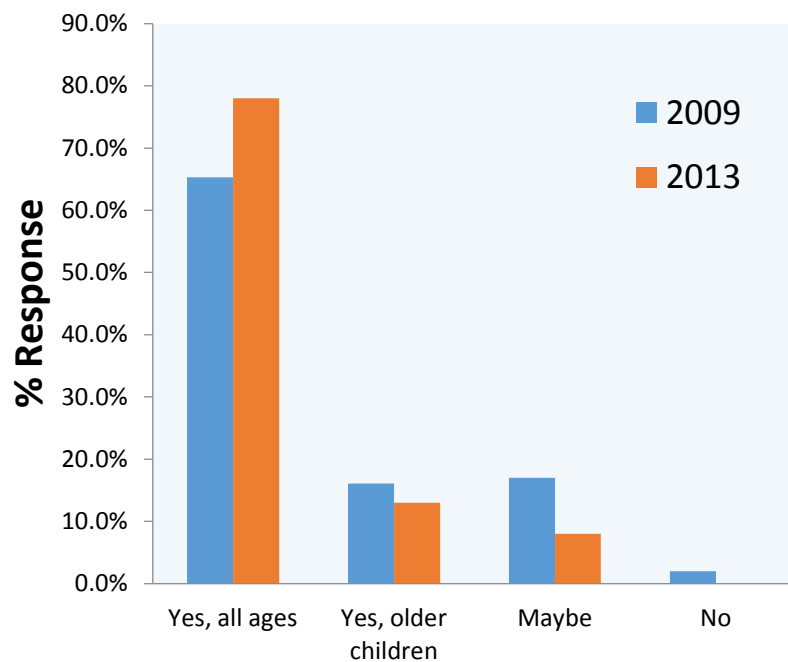
In what type of school do you teach?

	2009 %	2013 %
Private K-12 school	4.7	4.8
Public K-12 school	76.0	72.0
Environmental or outdoor education school or center	4.9	6.0
Technical education school	2.1	3.0
other	12.4	14.3
<b>Number Responding</b>	<b>387</b>	<b>168</b>

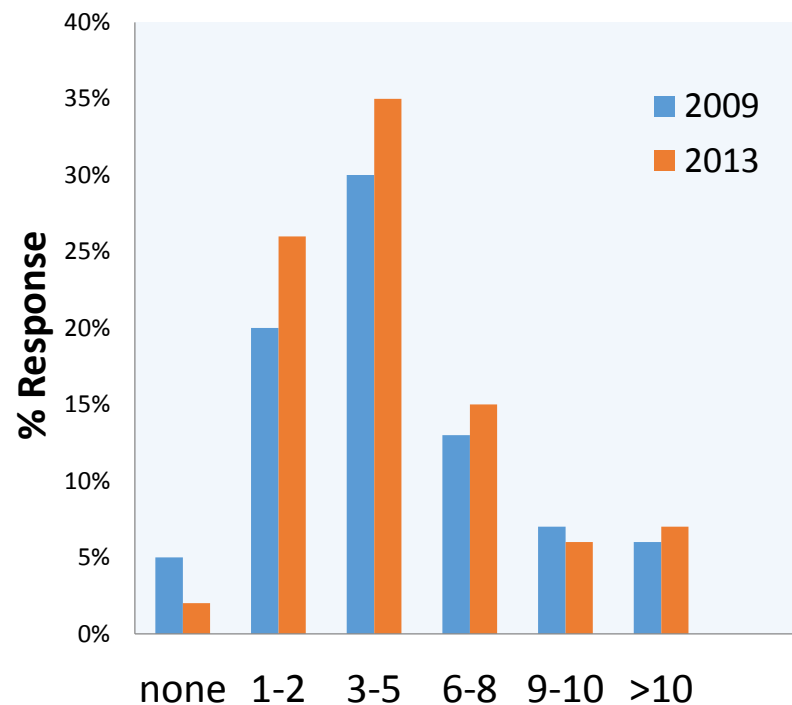


# Survey Results

## Should young people be introduced to IPM concepts?

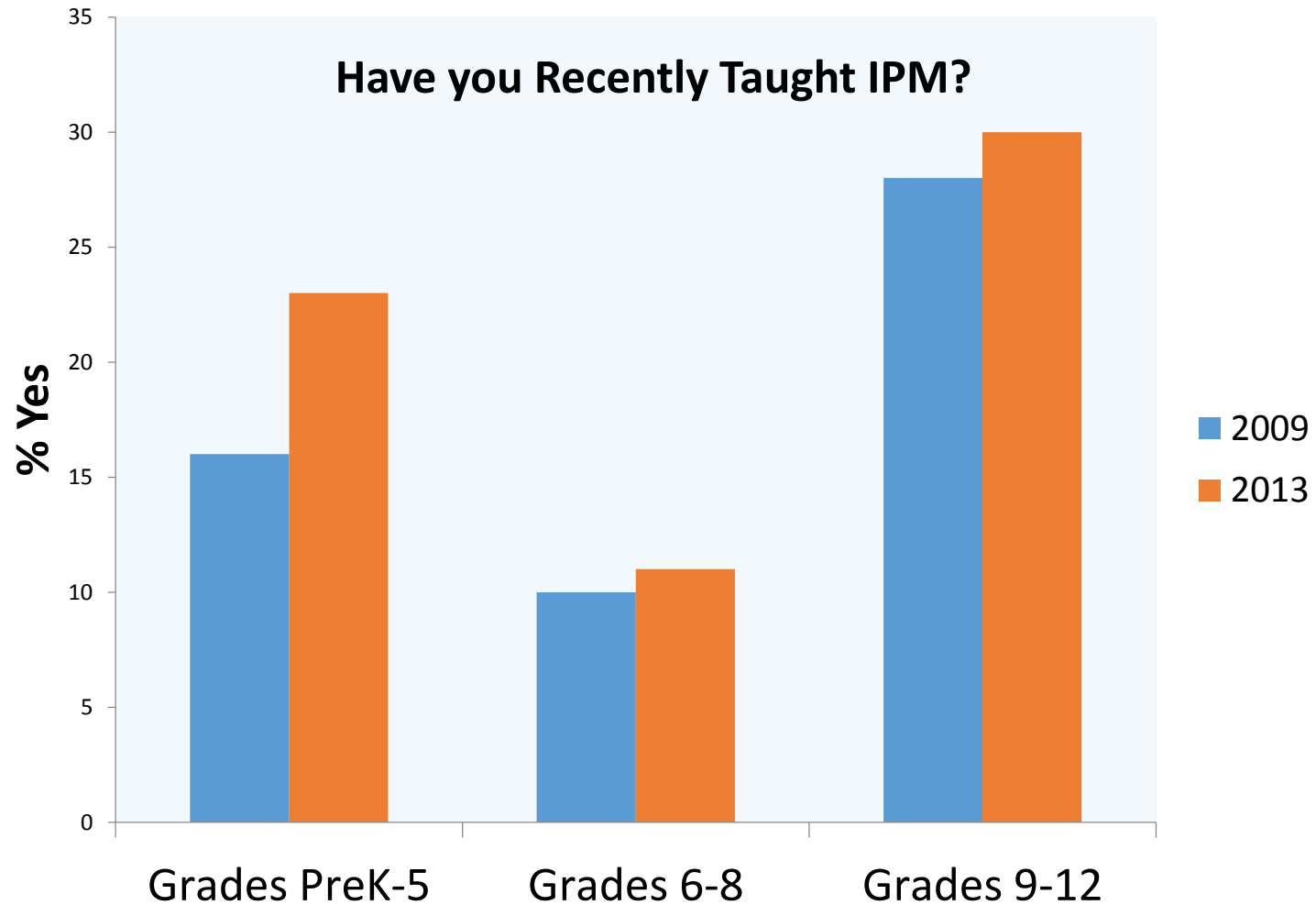


## How Many IPM Lessons are you Willing to Teach?



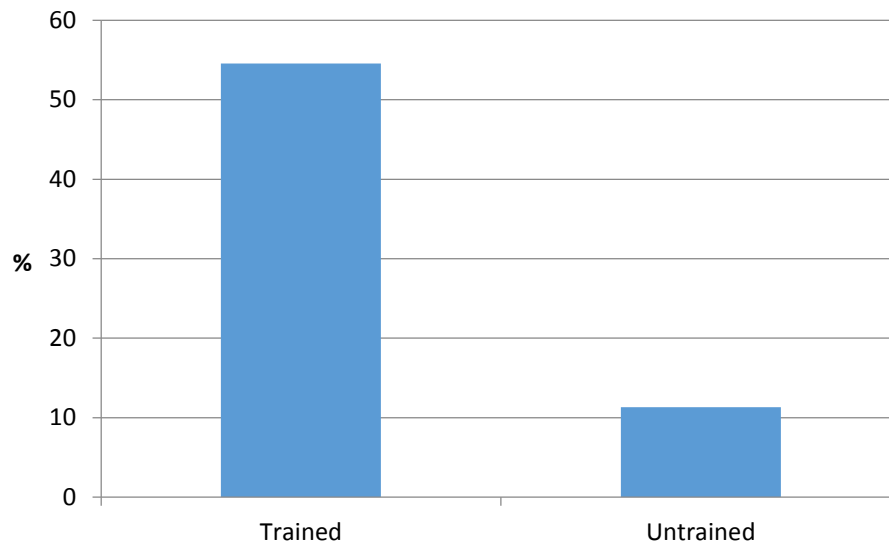


# Survey Findings



# Teacher Training is Critical

## Have you Recently Taught IPM?



8th International Integrated Pest Management Symposium – March 23-26, 2015 – Salt Lake City, Utah

# Partnerships to Engage Educators

Like us on Facebook!

## Literacy Plan



### Integrated Pest Management Literacy Plan

For K-12 Education



Promo  
Video





School IPM Working x

www.northeastipm.org/working-groups/schools/

ABOUT US  
IPM IN ACTION  
GRANT PROGRAMS  
WORKING GROUPS  
Marmorated Stink Bug

## School IPM Working Group

This regional group, consisting of 15 representatives from land grant IPM programs, government, private industry, and nonprofits from 11 northeastern states, met in Connecticut for first time in fall 2009. They coordinate with school IPM working groups in the three other regions and with the national school PMSP group. The group has gathered information from each northeastern state by using the EPA School IPM Report Card. They also conducted an IPM demonstration at a

Northeastern IPM Ce x


www.neipmc.org

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We promote and fund integrated pest management for environmental, human health, and economic benefits.

Search

Got Pests? Need Funding?



### News, Events, Jobs, and More

**Several USDA NIFA Grant Opportunities Recently Released: Applicants May Contact Us** The USDA NIFA has released several grant requests for applications for research, education, and extension projects. Staff at the Northeastern IPM Center have reviewed all of these RFAs and identified grant opportunities where IPM-related activities and projects could be relevant.

**Conversación Intima entre Amigas sobre las Chinchas de Cama** Listen to a conversation in Spanish about dealing with bed bugs and a sensible, friend-to-friend response in this new video.

**Belmaker Fills StopPests Position** Dennise Belmaker has joined the StopPests in Housing Program at the Northeastern IPM Center.

**AFRI Food Security Challenge Area** USDA NIFA. Focused on developing more sustainable, productive, and economically viable plant and animal production systems. **Total funding:** ~\$16 million. **Letter of intent due:** April 2, 2015. **Application due:** June 4, 2015.

<b>ABOUT US</b> Mission & Goals People Publications Contact Us	<b>IPM IN ACTION</b> What Is IPM? Current News Success Stories IPM Resources	<b>GRANT PROGRAMS</b> Northeast IPM Grants Funded Projects Stakeholder Priorities Grant Opportunities	<b>WORKING GROUPS</b> Marmorated Stink Bug Pollinator Spotted Wing Drosophila More Working Groups	<b>PARTNERS IN IPM</b> State Federal Nonprofit & Private Regional	<b>IPM PLANNING</b> IPM Guidelines Crop Profiles PMSPs Evaluating Impacts
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This page developed and managed by the Northeastern Integrated Pest Management Center, located at Cornell University. Regional IPM Centers are sponsored by the USDA National Institute of Food and Agriculture.



# K-12 Education Project Collaborators



Lyn Garling,  
PA IPM



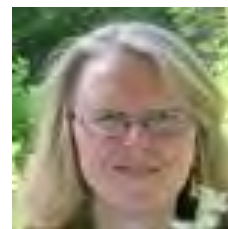
Amber  
Brunskill,  
PA IPM



Donna  
Ellis,  
UCONN



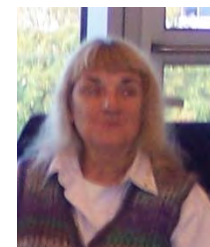
Carol  
Westinghouse,  
Informed Green  
Solutions, VT



Ed Crow, MD  
Dept Agriculture



Lynn Braband,  
NYSIPM



MaryBeth  
Bennett, WVU



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