

# Management of BMSB in US Specialty Crops

USDA-NIFA

Specialty Crops Research Initiative (SCRI)  
Coordinated Agricultural Project (CAP)

2-year \$3.75 million

5-year, \$9.1 million

# 2011-2016 BMSB SCRI Project

- Led by Tracy Leskey, USDA-ARS, Kearneysville, WV
- Focus on tree fruits, vegetables and ornamentals in the Mid-Atlantic (NC – NY)
- Information developed
  - Pheromone ID and trapping systems
  - Biology and ecology of BMSB in mid-Atlantic & Oregon
  - Examined impact of natural enemies in different habitats
  - Developed chemical control strategies
  - Developed website that serves as a clearinghouse for BMSB information ([StopBMSB.org](http://StopBMSB.org))

# BMSB SCRI 2 Grant

- Builds upon and expands SCRI 1 both in participation and scope of study.
- Focus is on
  - Landscape ecology
  - Biological control
  - Management strategies based on agroecology and behavior
  - Economics of biological control
  - Outreach/Extension program

# BMSB SCRI 2 Participation and Organization Structure

- Participants
  - 43 co-PI's
  - 17 States
  - 18 Institutions (17 Land Grants/USDA-ARS)
- Organizational structure
  - Lead PD
  - 6 co-PDs: 5 geographic regions + USDA-ARS
  - 7 objective leaders

Pacific NW  
Betsy Beers

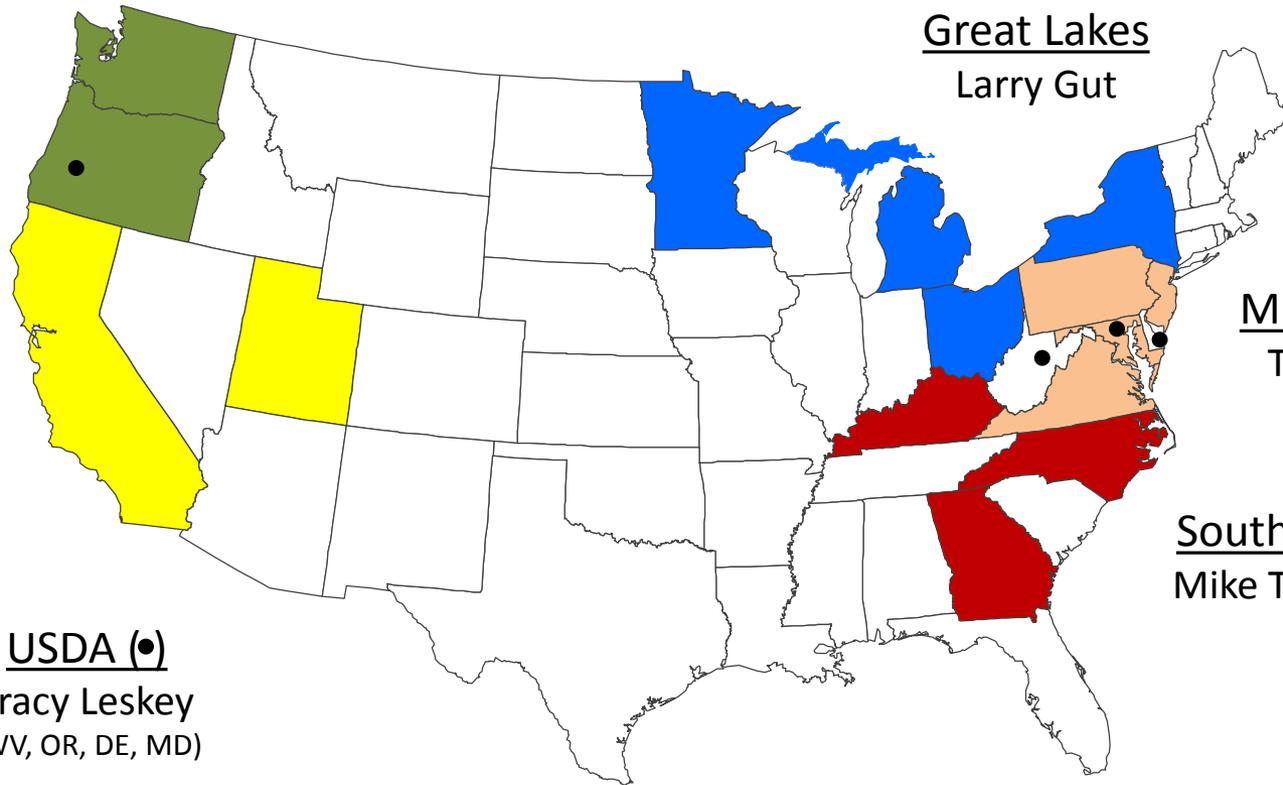
West  
Kent Daane

USDA (●)  
Tracy Leskey  
(WV, OR, DE, MD)

Great Lakes  
Larry Gut

Mid-Atlantic  
Tom Kuhar

Southeast  
Mike Toews



# Specialty Crop Advisory System

- Regional Advisory System
  - Regional PIs and stakeholder advisors (3).
  - Annual meetings to update stakeholders and obtain feedback on project direction.
- National Advisory System
  - 21 member advisory panel consisting of 15 regional advisors and 6 national advisors (APHIS, EPA, USDA, national commodity organizations).
  - Annual meetings for feedback and advise on project.

# Crops Addressed

- Direct Focus of Management Strategies
  - Tree Fruits
  - Tree Nuts
  - Fruiting Vegetables
- Indirectly to Understand Landscape Ecology
  - Field crops (corn, cotton, soybean, others?)
  - Ornamentals
  - Non-managed wooded habitats

# Objective 1

(Dave Crowder, WSU)

- Predict risk from BMSB damage through enhanced understanding of agroecology and landscape ecology
  - Monitor BMSB in different crops and habitats using pheromone traps.
  - Assess suitability of landscapes based on host suitability and climate x BMSB biology interactions
  - Integrate landscape-level habitat maps and data on abiotic factors to predict BMSB distribution and risk.

# Objective 2

(Kim Hoelmer USDA-ARS; Ann Hajek Cornell)

- Implement widespread biological control, incorporating Asian parasitoids and native natural enemies.
  - Asian parasitoids (*Trissolcus japonicus*)
  - Native parasitoids
  - Native predators
  - Entomopathogens-microsporidia

# Objective 3

(Anne Nielsen, Rutgers)

- Develop decision support tools and strategies compatible with biological control and informed by risk.
  - Decision support tools to assess abundance and mitigate damage (traps, thresholds, etc.)
  - Insecticide uses compatible with biological control
  - Improve agroecosystem sustainability through spatially focused or habitat manipulation strategies
  - Integrate IPM tools across landscapes

# Objective 4

(Jay Harper, Penn State)

- Managing the economic consequences of BMSB.
  - Assess economic potential of biological control of BMSB on specialty crops – focus on *T. japonicus*.
  - Develop estimates of costs and benefits of specific management practices for BMSB.

# Objective 5

(Steve Young, NEIPM Center)

- Outreach plan: Deliver new information on BMSB to stakeholders.
  - Maintain and develop knowledge repository (StopBMSB.org)
  - Expand relevancy of outreach resources to all US regions.
  - Evaluate social benefits of improved conditions resulting from increased awareness and adoption of sustainable practices.
  - Evaluation – including progress on objectives

