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**Project Title:** Working Group Meeting to Establish Objectives and Collaborations for Brown Marmorated Stink Bug

**Project Type** Minigrant

**Project Summary** We will hold a two-day formal BMSB working group meeting that will provide a forum for sharing the latest research results and field observations, and establish research and extension priorities.

**Background and Justification**
Recently, the brown marmorated stink bug (BMSB), *Halyomorpha halys* (Stål) was introduced from Asia into the mid-Atlantic region. The epicenter of this infestation is believed to have originated in Allentown, PA in the mid 1990s (Hoebeke and Carter 2003). Since then, BMSB has spread to New Jersey, Maryland, Delaware, West Virginia, and Virginia. Limited populations also have been detected in Mississippi, Ohio, Oregon, and California.

BMSB is polyphagous pest whose host range includes tree fruit, ornamentals, hardwood trees (Bernon 2004, Nielsen and Hamilton 2009a,b), and cultivated crops such as soybean (Bernon 2004). Among host plants surveyed in the mid-Atlantic, several hosts emerged as supporting populations of BMSBs at different periods throughout the season. Nymphal abundance appeared to be associated with maturing fruit and pods. Important hardwood and ornamental hosts included *Paulownia tomentosa* Thunb., *Viburnum opulus*, *Fraxinus americana* L., *V. prunifolium*, and *Rosa rugosa* (Nielsen and Hamilton 2009a).

However, BMSB is known to attack high value crops, such as tree fruit, in Asia. In the mid-Atlantic, BMSB populations were detected on apple and pear, particularly later in the season in Pennsylvania and cage studies revealed the potential for BMSB damage on both stone and pome fruits (Nielsen and Hamilton 2009b). In the region encompassing western Maryland and the eastern panhandle of West Virginia and western Maryland, populations have steadily increased annually since first detection in 2003 and 2004, respectively. During the 2009 growing season, serious economic injury to peach, apple, and Asian pear due to large BMSB populations was commonly detected in commercial and experimental orchards late in the season. Some commercial growers used late-season pyrethroid applications, a class of insecticides found to be effective against BMSB (Nielsen et al. 2008), in an attempt to control BMSB and mitigate economic injury, while other growers were unaware of the extent of BMSB injury until harvest (Leskey, personal obs.) Although development of a trap-based monitoring system for BMSB is being pursued (Khrimian et al. 2008, Aldrich et al. 2009, Nielsen, Hamilton and Shearer (In Prep.), there is no established monitoring method or treatment threshold for this pest. Further, BMSB biology within orchards has only recently come under study, and the potential scale of the economic threat is unknown.

In addition to the agricultural threat posed by BMSB, this invasive species also is emerging as a serious nuisance pest for homeowners. In the fall, BMSB adults move from host plants and seek overwintering sites, particularly in homes and other buildings. During this behavioral shift, profound numbers of adults will move toward and aggregate on the outside of structures and eventually seek entry within. In 2009, several schools in the eastern panhandle of
WV were forced to cancel recess because of the large numbers of BMSBs orienting toward buildings and interfering with the student activities. In addition, many local newspapers and television stations in MD, WV, PA, NJ, VA, and DE have reported on this fall aggregation behavior, highlighting the problems for homeowners. After entry into overwintering sites, BMSB exhibits thagmosis and will often be found aggregating in large numbers in small confined spaces such as behind bookshelves, beneath mattresses, inside filters of window-mounted AC units within homes or between layers of stacked building materials in garages. At businesses such as hotels, owners have been forced to display signs explaining the presence of BMSB within their facilities. These observations highlight the societal impact imposed by the presence of this pest within the region and the need to address homeowner and business owner concerns.

In October 2009, an informal meeting was held at the Appalachian Fruit Research Station (AFRS), Kearneysville, WV to discuss BMSB research. Participants included scientists from AFRS, USDA-ARS personnel from Beltsville, MD and Newark, DE, Virginia Tech, and West Virginia University. Based on this initial meeting, participants agreed that a next logical step would be to organize a larger, regional meeting to discuss the current state of BMSB research, identify key questions for research, and establish research, extension, and regulatory priorities.

**Project Objectives.** We will hold a two-day formal BMSB working group meeting that will provide a forum for sharing the latest research results and field observations, and establish research, extension, and regulatory priorities.

**Project Description.** In Spring 2010, we will hold a BMSB working group meeting at the Appalachian Fruit Research Station in Kearneysville, WV. Participants will be invited to attend the meeting and will include stakeholders (tree fruit and other commodities), pest control operators, University personnel, regulatory personnel, University researchers and extension personnel, government researchers, and crop consultants.

The meeting will be held over the course of two days. On Day 1, key participants will be asked to prepare and deliver relevant presentations encompassing BMSB research, field observations, stakeholder concerns, or other relevant information. Time also will be allotted to discussion. Approximately 15 presentation slots will be made available. A designated representative will be responsible for documenting the key points of presentations and subsequent discussions.

On Day 2, the group will convene to establish research, extension, and regulatory priorities for BMSB. The group will begin by creating a list of priorities under each category, followed by ranking them within the category. Finally, an overall list of priorities will be generated and ranked by participants.

**Evaluation Plans and Expected Impact.** The co-PDs will summarize the content of the meeting and provide a copy to all participants. They also will submit a list of priorities to the NE IPM Center. This meeting will provide a forum that will facilitate interaction among key researchers, extension and regulatory personnel, and commercial stakeholders working with or affected by BMSB. The presentation session will provide an opportunity for participants to learn about challenges for managing BMSB in agricultural and urban environments to better enable them to formulate a comprehensive and timely list of priorities.
### Event | Time Table | Description | Outcome
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Invite Participants | Winter 2010 | Invited participants will include stakeholders, government researchers, university researchers and extension personnel, regulatory officials, pest control operators, and private consultants. | A minimum of 25 participants will be invited to attend the meeting.  

BMSB Meeting | Spring 2010 | Day 1 will include presentations by and discussion among participants. Day 2 will be used to establish research, extension, and regulatory priorities. | This meeting will facilitate information exchange and collaborations and establish priorities.  

Report | Summer 2010 | Co-PDs will send a summary of meeting to all participants and provide priorities to be published by the NE IPM Center. | A current set of priorities related to BMSB research, extension, and regulatory activities will be made available.  

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**References.**


