Commercial Horticulture

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Coordinator Weekly IPM Report:
Stanton Gill, Extension Specialist, IPM for Nursery, Greenhouse and Managed Landscapes, sgill@umd.edu. 301-596-9413 (office) or 410-868-9400 (cell)

Regular Contributors:
Pest and Beneficial Insect Information: Stanton Gill and Paula Shrewsbury (Extension Specialists) and Nancy Harding, Faculty Research Assistant
Disease Information: Karen Rane (Plant Pathologist) and David Clement (Extension Specialist)
Weed of the Week: Chuck Schuster (Extension Educator, Montgomery County)
Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)
Fertility Management: Andrew Ristvey (Extension Specialist, Wye Research & Education Center)
Design, Layout and Editing: Suzanne Klick (Technician, CMREC)

Special Award
By: Stanton Gill, UME

The MNLGA honored our IPM team at the nursery field day on June 17 with an award for outstanding effort in IPM and Nutrient Management for the nursery and landscape industry in Maryland. The IPM team is made up of Karen Rane, Ginny Rosenkranz, Chuck Schuster, Paula Shrewsbury, Suzanne Klick, Nancy Harding, Andrew Ristvey, David Clement, Sara Tangren and myself. On the part of our IPM team, we want to say thank you for the recognition of our work in IPM and Nutrient Management. It is an honor to work with such a great industry.

POTTED GREEN ASH TREES NEEDED FOR RESEARCH!!!

The Shrewsbury Lab (Dept. of Entomology, UMD) is doing research on biological control of emerald ash borer. Ironically, we are in need of approximately 20 potted green ash trees (<2”dbh) for our research. Please email me if you have any or know of a potential source for these trees. Thanks. Paula’s email: pshrewsbury@umd.edu
Heavy Rains – Lots of Weeds?
By: Stanton Gill, UME
We have had reports from several nursery owners and managers that they are growing some of the largest and best weeds that they have in years. The drenching rainfall of 3 – 4 inches last week added to the already prolific rainfall of late spring and the early part of the summer season.

Last year we mentioned in one of the IPM Alerts the release of a new long lasting pre-emergent herbicide called Marengo from OHP Company. A couple of nursery owners and I tried this product out in the fall of 2014. This herbicide is not inexpensive, but its ability to hold up in the field for a long time needs to be considered when deciding to use this product or not. I tested it against SurGuard and both have held up well, even with the heavy rains this spring and early summer. We would love to hear your input if you used either of these pre-emergent herbicides as to how they are working in your nursery. Contact me at Sgill@umd.edu.

European Lecanium Scale
By: Stanton Gill, UME
This week, Brian Dahl invited me to a site in Boyds that had willow oaks loaded with European lecanium scale. I have been searching for a good Lecanium scale population to see in which stage they are in early July. I found several settled 1st instars on the foliage of the willow oaks. The females on the woody stem were still loaded with eggs and many crawlers were still emerging. I would guess we had crawlers coming out in the last week or so but they are still producing crawlers in Central Maryland at this point.

Control: Consider making a basal trunk flair application of Dinotefuran (Safari, Transtect). Since they are mainly settled 1st instar crawlers and more are emerging this week, you have the option of making a foliar application of either Talus or Distance.

Rust on Hypericum
Jean Scott is reporting rust on hypericum this week. High humidity and long leaf wetness periods favor rust disease development. It is critical to remove infected plant tissue or plants since rust fungi can produce large quantities of spores in a relatively short period of time. Fungicides can be effective in controlling this disease, but they are preventative and not curative.

Pesticide Usage Survey Reminder
This is just a reminder to return the 2014 Maryland Pesticide Usage Survey recently sent from MDA and the National Ag Statistics Service. If you already sent it back, “Thank you!” If you did not receive the survey or have any questions please call 1-800-675-0295. The results of this survey is the only comprehensive measure of pesticide use in Maryland and helps MDA develop the most appropriate programs for Maryland producers. Thank you in advance for your support of this project and Maryland Agriculture.
Septoria Leaf Spot
By: Karen Rane, UME

Septoria leaf spot on yellow twig and red twig dogwood is just one of the fungal leaf spot diseases that seem to be “exploding” in the landscape after the wet June weather. We usually see this disease a bit later in the season, but this sample with significant spotting arrived in the clinic today. The fungus overwinters in fallen infected leaves, and spores are spread by wind-driven rain. Leaf spots are often angular in shape, and sometimes have a yellow border. The disease usually does not have much impact on overall health of the shrub. Fungicides may help protect leaves from infection, especially if applied early (at budbreak), but in dry weather the disease often diminishes without treatment.

Larger Elm Leaf Beetle
David Keane, Howard County Recreation and Parks, found a larger elm leaf beetle, *Monocesta coryli*, on English elm last week. This beetle is a native beetle that is less common than the elm leaf beetle, *Pyrrhalta luteola*, which is an introduced species. There are parasites present in the landscape that usually keep populations of this beetle low.

Redheaded Pine Sawfly
Hal Neil found redheaded pine sawfly in Gaithersburg. The larva has a reddish head and yellowish white body with six rows of irregular black spots. Larvae feed gregariously and strip the needles from the top terminals and branches. This native sawfly has two generations per year in this area. Trees growing on shallow soils, wet or dry sites, or under other stressful conditions are most often attacked.

**Control:** For isolated trees, prune out branches where sawflies are aggregated. If numerous trees are infested, treat with Conserve or a synthetic pyrethroid.

MDA Pesticide Container Recycling Program for 2015
For more information:
Japanese Beetle Adult Activity
By: Stanton Gill, UME

Thanks for the emails on beetle activity. Two people from Washington County sent in emails reporting the start of Japanese beetle activity around Hagerstown. On the testing end of things, we set up field trials at two nurseries last Thursday, but then the rains came blowing in on Friday. We had to delay to make the applications until Monday June 29. We are working with Nancy Rechcigl, Syngenta Professional Products Corp., and Kurt Schwartau, Phyllom BioProducts Corp., California. We are testing Acelepyrn which presently has a label for use in landscapes in Maryland. We are also testing Mainspring which is not yet labeled in Maryland. A label for late 2015 or early 2016 for use in nurseries and greenhouses is expected. Phyllom has supplied a bacteria called *Bacillus thuringiensis galleriae*, Strain SDA-502.

I tested an application of Acelepyrn at my farm, applying one day before the rain storm when we received 4” of rain in one day. I examined the treated plants Sunday evening and there was not a Japanese beetle to be found. I found a large population on weeds nearby and they appeared to be happy and feeding well on the untreated weeds. Based on my work over the last 3 years with Acelepyrn, I would have to say it is a systemic insecticide that is very effective in controlling Japanese beetles. Our field trials will evaluate this material against the two new products that will be coming onto the marketplace.

White Grubs and Their management
By: Paula Shrewsbury, UMD

Based on the abundance of scarab beetle adults, especially Japanese and Oriental beetles, that are active this year there is a pretty good chance it is going to be another bad white grub year. There is still time to monitor for white grubs and if warranted apply a control measure. But you should be thinking about your management plan now.

White grubs are the immature stages of scarab beetles (family Scarabaeidae). In this area, the most damaging white grubs are larvae of Japanese and Oriental beetles. We sometimes have large populations of masked chafer grubs, but they tend to be less damaging. White grubs can be a problem in lawn, golf, and nursery turf, and container and B&B nursery stock. So far this summer we have seen high levels of adult scarab beetle activity, and a pretty steady occurrence of rain, both of which suggest this will be another great year if you are a white grub. Of course there will be the corresponding grub damage - similar to the last few years. This story could change if there was a drought for the next month or so. Scarab beetle eggs, which are laid in the soil, need moisture to survive. So a drought would result in high white grub egg mortality. For some reason it doesn’t seem right to wish for a drought! I recommend you monitor your turf and nursery stock closely for white grub damage and activity.

Monitor: If you have observed areas with significant adult scarab beetle activity you should monitor now in those areas to determine if grubs are present. White grubs should be 1st and 2nd instars now. Dig soil cores or cut 1 sq. ft. sections of turf (about 2” thick) in areas where adult scarab beetle activity has been high and/or turf appears drought stressed or discolored. White grubs will be active in the upper few inches of soil in turf or root zone. Identify which species of grubs you have in your turf. They vary in the amount of damage they cause. White grub species can be identified by the rastor (hair) pattern on the underside of the abdomen. A hand lens or some type of magnification will be needed. For help in grub identification go to: http://ohioline.osu.edu/hyg-fact/2000/pdf/2510.pdf
**Crape Myrtle Aphids**

By: Stanton Gill, UME

I examined a couple of sites with crape myrtles late last week and found that the crape myrtle aphid is starting to build up in numbers. This aphid is specific to crape myrtle. With the large number of crape myrtles being planted in Maryland, D.C and Virginia we have seen this pest increasing greatly over the last five years. It has multiple, overlapping generations each year. Winged stages, called alates, are produced through the summer and the alates spread populations to other uninfested plants.

**Control:** If your customers have crape myrtles monitor them closely and try to keep the population suppressed with 0.5 – 1% horticultural oil application early in the season.

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**Management:** If you have high scarab activity and / or have had historical problems with white grubs, sometime within the next few weeks would be optimal to treat. If you have white grubs in your turf you should treat sooner than later to stop feeding damage. Once you get past late August the effectiveness of these products on the later instar grubs goes down. If white grub control is warranted in turfgrass many of the neonicotinoids such as imidacloprid, clothianidin, and thiamethoxam are labeled (read pollinator warnings carefully) and give good control. Mach2 is an insect growth regulator that provides good control of grubs. Acelepryn is a newer class of chemicals that has shown excellent control of grubs. Acelepryn has very low toxicity to mammals (no signal word required by EPA in MD) and pollinators (see below). Most of these products have long residual activity so an application within the next few weeks should provide control through the end of the season. The class of control products that you use from year to year should be rotated to reduce the likelihood of insect resistance.

What about the pollinators that might be active in turf? Do not forget to pay attention to pollinators and flowering plants and weeds. Everyone should already be aware of issues associated with pollinator health and the implications of the effects of pesticides on pollinators. In particular, pesticides in the neonicotinoid class have received a lot of attention as a cause of bee decline although most studies suggest that bee declines are caused by a complex of factors and neonicotinoids fall relatively low on the list. However, neonicotinoids like many chemicals can be harmful to bees if misused. Therefore, read and follow the directions on the label of products carefully. Be especially aware of warnings related to pollinators. One issue to be aware of is that many turf areas support flowering weeds that will attract pollinators such as honey bees, bumble bees, and other bee and insect groups. Entomologist Dan Potter and his group at the University of Kentucky demonstrated that bumble bees that fed on white clover following an application of a neonicotinoid were detrimentally affected, whereas applications of Acelepryn did not appear to have a detrimental effect on bumble bees. They also found that if you mowed the flowers off of white clover in the turf following application of a neonicotinoid, the new flowers no longer detrimentally affected bumble bees. So the take-home messages are to mow flowering weeds prior to or immediately following applications of neonicotinoid insecticides; or choose another product like Acelepryn for white grub management. Also read / follow the pesticide labels.

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**Brown Marmorated Stink Bugs**

Susan Bentz, U.S. National Arboretum started seeing adults the week of June 22 at the Beltsville/College Park South Farm on their Catalpa plantings and in/on pollination bags. Susan notes that there were few in number.
Scarab-topia – This is a great time if you are a scarab beetle
By: Paula Shrewsbury, UMD

Scarab beetles are in the family Scarabaeidae. This section is focusing on adult scarab beetles. We started seeing adult Japanese beetles and Oriental beetles about the 2nd week of June. A few weeks ago I started to see feeding damage on my buddleia (butterfly bush) from Asiatic garden beetle, and today I saw swarms of green June beetle adults! Wow! Unfortunately, that is not all of the scarabs. I still have not seen masked chafers or May/June beetles. Let’s talk a bit about the adults of each of these scarab beetles. To see pictures of these adult scarab beetles go to: http://ohioline.osu.edu/hyg-fact/2000/pdf/2510.pdf

**Japanese beetle adults** can cause significant damage to many species of ornamental plants (over 300), most commonly linden trees and roses. **Oriental beetle adults** are usually less conspicuous and damaging. I often find them feeding on the flower petals of many of my herbaceous plants. They seem to particularly like my Shasta daisies and cone flowers. Oriental beetles usually do not warrant control but they seem very abundant this year and I am seeing quite a bit of damage on herbaceous perennials (ex. flower defoliation). Japanese beetles often require control measures.

**Control:** Research has shown that once Japanese beetles start feeding on plants the plant releases some sort of cue that calls in other Japanese beetles to the plant. A good practice is to remove Japanese beetles as soon as you see them, before they do much feeding damage. If you do not have “lots” of plants you can hand remove beetles. I suggest a 16 oz Solo type plastic cup half filled with water and a teaspoon or so of dish liquid. Place the cup under the leaf the beetles are on because when you go to grab the beetles they usually “drop” from the plant. An appropriately placed cup will result in beetles dropping to their death rather than beetles escaping. Last week Stanton discussed products with Neem as a lower risk product. Studies have found these materials are effective, but they usually have to be applied every 4 or so days. Another option is Acelepryn. Acelepryn has been found to be effective for Japanese beetle adult control for 3-4 weeks. There are also other labeled products. If you are applying pesticides to flowering plants be sure to read the labels carefully.

**Green June beetle** adults are large metallic green and gold scarab beetles. They are often seen swarming around trees (often those with thin skinned fruits on which the beetles feed) or over turfgrass where they are likely looking for mates or a site to lay their eggs. As adults these beetles seldom warrant control measures. Their large size makes them a little scarier than they should be.

**Asiatic garden beetles** are tricky little guys. Asiatic garden beetle adults are nocturnal – only active at night. During the day they hide in turf and grassy areas near their food plants and largely go unnoticed. At night temperatures below 70°F the beetles fly very little. On warmer nights you can see hundreds flying around and feeding on plants, especially in July and August. These beetles are also attracted
to lights so large numbers can accumulate at outdoor lights. If you have a plant that is being defoliated and you never see an insect feeding on it you should monitor it at night. For example my butterfly bush was / is being heavily defoliated and I never saw an insect on the plant. The other night I went out with my flashlight at 9:00 p.m. and saw less than 10 beetles on my plant, by 9:30 there were hundreds on and swarming around my butterfly bush! Surprise! Asiatic garden beetle adults feed on about 100 species of plants but seem to like butterfly bush, boxelder, cherry, and more. They do not skeletonize leaves like Japanese beetles. Asiatic garden beetles often defoliate the majority of leaves leaving behind only the mid-vein. Their occurrence in high numbers is patchy and localized so they often do not warrant control. Reducing weedy habitat can reduce Asiatic garden beetle densities. A cup of soapy water should work on these beetles too. Otherwise management is similar to that of Japanese beetles.

**Beneficial of the Week**

**By: Paula Shrewsbury, UMD**

**Lots of scales… Lots of parasitoids feeding on scales!**

When I think of the key pests in our industry scales, both soft and armored species, are always near the top of the list. Interestingly, scales outbreak more frequently in managed environments relative to more natural habitats. There is something (or multiple somethings) about “managed” environments such as production nurseries and landscapes that favor scale insects and / or disfavor natural enemies. This is clearly demonstrated by the many scale species we discuss in our weekly reports. Right now there are a number of scale species that are in their crawler stage which is the stage most susceptible to many pesticide products. Even though scales can be very abundant and sometimes damaging things could be worse. For many scales there are natural enemies (parasitoids and predators) that attack, consume, and kill them. Things however, could be better too. For example, we have monitored white prunicola scale and the rates of parasitism on the scale (or what percentage of the scale population is killed by parasitoids). We estimated that less than 10% of the white prunicola scale population was parasitized… not enough! Similarly, we have found rates of parasitism to be less than 25% for obscure scale which attacks oak, and Japanese maple scale that attack a very wide range of host plants. This is why I promote and do research on the conservation of natural enemies to try and increase natural enemy densities and impact on scales and other pest insects. For example, many natural enemies, both parasitoids and predators, feed not only on insects but also on floral resources such as nectar and pollen. So if possible plant flowers in habitats where you manage plants and pests. The addition of flowers also provides favorable refuge for natural enemies, and potential alternate prey (other types of insects to feed on). In addition to making managed landscapes and nurseries more favorable habitats for natural enemies we also have to consider the pesticides that we use. Pesticides should be selected not only
based on their efficacy against the pest but also for their impact on natural enemies. Some pesticides are “harder” on natural enemies than others. This is especially critical if there are “signs” of parasitoid activity on your scale populations. How do you know if parasitoids are attacking the scales on your trees and shrubs? It usually is NOT by seeing adult wasps – they are very, very tiny - making them difficult to see. Adults are fast moving and the immature stages often develop within its insect host making it difficult to monitor for parasitoid activity by watching for adults or larvae. You have to look for “signs” of parasitism. When some insects such as aphids or whiteflies are parasitized there is often a change in color and/or size of the insect. Think of aphid mummies where the parasitized aphid looks “bloated” and usually tan or darkened in color. Unfortunately most scales do not change in size and color. A more universal sign is a discrete circular hole in the cover of the armored scale (see images), or body of the soft scale. When wasps reach the adult stage within their host’s body, they then chew their way out to freedom. This chewing results in a circular hole. So when you are monitoring your plants and find scales, be sure to look at the scale for circular holes which indicate parasitoids are active in your scale population. If you see natural enemy activity, which we commonly find, take this into account when you are selecting which pesticides to apply for scale suppression. Select products that have less detrimental impact on natural enemies like oils or insect growth regulators. My advice today… plant flowers to provide season long bloom and resources to natural enemies, and choose your pesticides wisely!

Have a safe and fun July 4th holiday! I hope you see lots of interesting insects!

**Weed of the Week**

*By: Chuck Schuster*

Recent calls from individuals attempting to control a sudden growth of a weed tree caused a return to this particular species. Tree of heaven, *Ailanthus altissima*, also known as ailanthus, shumac, stinking sumac, and Chinese sumac, is a tree weed found in many locations throughout the United States. This tree weed invades urban, forests, landscapes and agricultural areas as a fast growing tree displacing the more desirable trees. This tree was introduced into the United States in the late 1700’s as an ornamental species. Grown in nurseries and sold for use as a shade and street tree, even with its root suckers and prolific seed production it was not considered a problem for many years.

Tree of heaven has smooth gray bark and can have a DBH of thirty six inches. Leaves are alternate along a single stem with 15 or more individual leaflets. Leaflets are lanceolate with an entire margin except that near the base they can be found with one to five teeth. Leaves emit an unpleasant odor which is why it has some of its nicknames. The roots can produce saplings up to ten feet away from the main trunk and will do so when the tree is cut if appropriate actions are not taken. The trunk bark is tan to brown in color. Fruit is produced and form seeds in clusters that have a winged structure called samaras. This is a prolific seed producer; a mature tree can produce as many as 300,000 seeds per year.
Control of this weed tree can be done using several methods. Cutting is not the preferred method as stump and root suckers will appear quickly, and additional treatment will be necessary. Small forests can grow from roots when the main stem is cut and not treated properly. Basal Bark application of smaller trees (six to ten inch diameter) is successful. Spray the herbicide on the trunk during the late winter to early spring time period (Mid February to mid April) and applications can continue on through the summer months for the smaller trees. Use 20% triclopyr (Garlon 4) in an oil base carrier. Ready to use products that include Pathfinder II are also available with the same active ingredients. Hack and squirt (stem injection) is more effective on the larger trees and needs to be done during the summer months with an immediate herbicide application after cutting. Products that will work with this method include triclopyr at a 20% rate. Glyphosate has been used but is not always effective, and may require more than one application. Foliar application of herbicides will work, but the site must be free of desirable plant species as these herbicides will damage or destroy most species. Products for foliar applications include triclopyramine (Garlon 3A) using a rate of 2% AI, glyphosate (Roundup, Rodeo, Accord and Razor Pro) using a 2% AI solution, both being applied during active growth, from early June through early September. Other products have been used for foliar sprays but have a residual soil activity that will prevent non target plants from growing.

Plant of the Week
By: Ginny Rosenkranz

**Distylium** is an evergreen shrub that has been hybridized to produce 3 very hardy cultivars, ‘Vintage Jade’, Emerald Heights® and Blue Cascade®. The small leafed foliage (1 ¼ to 2 ½ inches) is alternately arranged in a herringbone pattern on the sturdy stems and ranges from a medium green to a dark bluish green. All cultivars are more compact than their parent plants and at this time are considered disease and insect resistant shrubs for full sun to partial shade landscapes. The plants are in the witchhazel family and the resemblance is seen in the small reddish maroon flowers that bloom in early spring. With the recent extremely cold winters, **Distylium** is being looked at as a more cold tolerant replacement for Indian hawthorn, cherry laurels, juniper, boxwood and small-leaved Japanese hollies. They are considered very heat as well as cold tolerant and grow in USDA zones 6 – 9. The plants grow best in well drained slightly acidic soils, but once established will tolerate both drought and wet soils. **Distylium** ‘Vintage Jade’ is the most compact of the three, growing only 2 feet tall and 5-6 feet wide, Emerald Heights® has a vase shape in its upright growth habit and can reach 5-6 feet tall over time while Blue Cascade® grows only 3-4 feet tall with a nice spreading, slightly cascading habit and dark matte blue green foliage. ‘Vintage Jade’ can be used as a groundcover, a low border or hedge; Blue Cascade® is a good size and shape as a foundation planting, a hedge or specimen plant and Emerald Heights® can create a good privacy hedge due to its large size.
Phenology

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<td>Veronicastrum virginicum (culver’s root)</td>
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Degree Days (As of July 1)

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To check degree day (DD) accumulations in your local area go to: http://www.yourweekendview.com/outlook/agriculture/growing-degree-days/. Note: degree days reported in this newsletter use a base temperature of 50 °F, a start date of January 1st, and the date of monitoring as the end date.

New and Alternative Crops for Greenhouse and Nursery Growers
August 5 2015 (8:00 a.m. - 3:15 p.m.)
Location: Brookside Gardens, Wheaton, MD

- Native plants: How to grow in the greenhouse from seed and cuttings. Dr. Sara Tangren, University of Maryland Extension, HGIC
- Producing cut flowers and vegetables using hydroponics from a working greenhouse operation. Matthew Bauer, Flowers by Bauer, Harford County, MD
- Hops as an alternative crops. Tom Barse, Stillpoint Farm
- Ginseng: Is it green gold? Dr. Marla McIntosh, University of Maryland
- Hydroponic fertility. Cari Peters, Peters Lab, PA
- Growing native annuals and perennials for marketing as pollinator plants and to benefit beneficial insects and mites. Dr. Sara Tangren, and Stanton Gill, University of Maryland Extension
- Tour of Brookside Production Facility. Joe Kraut, Head Grower, Brookside Gardens

FALCAN 2015 Truck and Trailer Safety Seminar
August 19, 2015
Urbana Volunteer Fire Hall, Urbana, MD
Seminar topics include: requirements and inspection points for pick-ups, one-tone and alrger turkc and trailers; permits, licenses, covers, tie-downs etc., For details and to register: http://falcanmd.com

MAC-ISA Arborist Certification Course
August 17-19
NVCC Loudoun Campus, Sterling VA
Taught by Joe Murray: Class to prepare for the Arborist exam or get 24 ISA CEUs if already certified. Topics include all domains of the ISA Arborist Test, such as Tree Biology, Soil Science, Pruning, Plant Health Care, etc. Ability to register 1, 2 or 3 days may be available, contact the office. For more information or to register visit www.mac-isao.org or for questions call 703-753-0499.
Upcoming Conferences:

**Alternative Greenhouse Crops Conference**  
August 5, 2015  
Location: Brookside Gardens, Wheaton, MD

**PGMS Green Industry Field Day and Trade Show**  
July 16, 2015  
Location: American University, Washington D.C.  

**FALCAN Truck and Safety Seminar**  
August 19, 2015  
Location: Urban Fire Hall, Urbana, MD  
[http://falcanmd.com](http://falcanmd.com)

**LCA Hands-on Training Seminar**  
September 16, 2015  
Location: Johns Hopkins University, Montgomery County Campus

**Interiorscape Conference**  
October 1, 2015  
Location: Rawlings Conservatory, Baltimore, MD

**4th Annual TreesMatter Symposium**  
November 4, 2015  
Location: Silver Spring Civic Center, Silver Spring, MD

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Photos are by Suzanne Klick or Stanton Gill unless stated otherwise.

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