Ag Notes
Harford County Newsletter

UNIVERSITY OF MARYLAND EXTENSION

May 2025

The Extension office will be closed on May 26 in observance of Memorial Day

University of Maryland Extension

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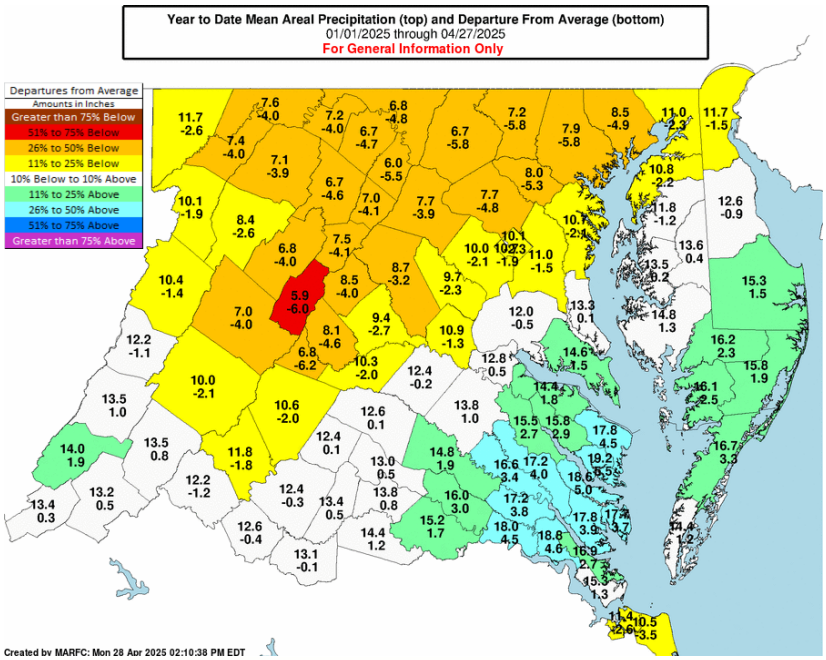
Hello, Harford County!

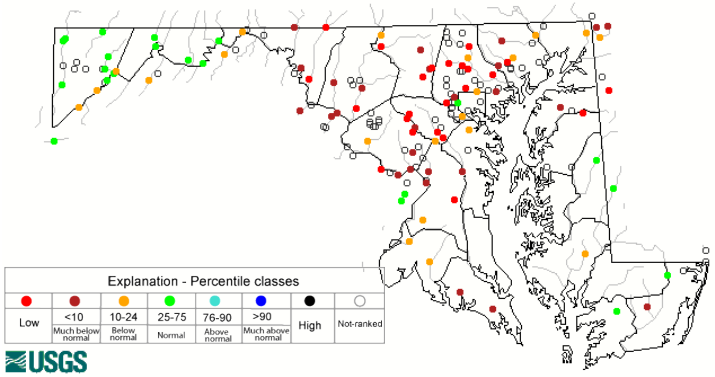
As I write this article, a significant proportion of the 2025 corn crop has gone in the ground over the past week and we are hoping for some much-needed rain to get the crop off to a strong start. Harford County is currently grappling with significant drought conditions due to a substantial precipitation deficit. From January through March 2025, the county experienced its driest start to the year in over 130 years, receiving almost five inches less precipitation than the historical average (Figure 1, upper). Additionally, we still have not made up the deficit from last year.

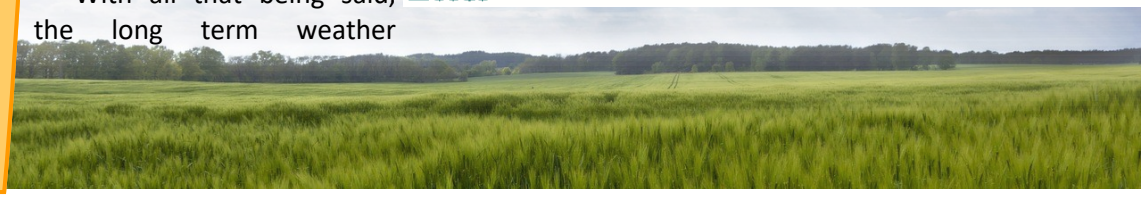
As of mid-April, approximately 85% of Maryland is under some level of drought, with the most severe conditions affecting northern Harford County and neighboring areas. Many farmers that I have talked to over the past few weeks say that this is the driest spring they can recall, many noting how low farm ponds and creeks are. The map in Figure 2 (lower) helps support this observation. This map shows streamflow compared to historical averages and you can see the red and orange dots represent streamflow in the bottom 5-10% (or in some cases even lower).

With all that being said, the long term weather forecast from NOAA does indicate increased chances of precipitation now through July, so we could be relieved. We also have a lot of yield potential still out there, so we should remain optimistic!

Until next time,
-Andy







Beneficial Insects: Brown Lacewings

Veronica Yurchak, Extension Vegetable Specialist
University of Maryland Extension

The goal of this series is to increase awareness and knowledge of insect natural enemies in cropping systems and to help differentiate these beneficial insects from pests of concern. This week's feature predator is the brown lacewing.

Figure 1. Brown lacewing adult.

Brown lacewing adults (Figure 1) have been active in crop fields and non-crop areas across the region for a few weeks now. Overwintering as large larvae or pupae, brown lacewing adults started to emerge as temperatures began to increase in early spring. These adults will live for several months, and during this time, they will lay several hundred eggs and prey on a diversity of small, soft-bodied insects. As active predators with voracious appetites and a strong preference for aphids, the adult female lacewings even take the time to search crop fields for the odors of excreted honeydew to find aphid infested areas to lay their eggs (Figure 2). By doing this, they ensure their offspring are provided with a readily available food source immediately after hatching. With their prominent, hook-shaped mouthparts, lacewing larvae resemble tiny alligators (Figure 2) and can consume up to 200 aphids per week, earning them the nickname aphid lions. After developing through two larval stages, these aphid lions then construct a small silken cocoon on the surface of a leaf (Figure 2), transform into a pupa, and ultimately emerge as a new winged adult.

Figure 2. Brown lacewing egg (left), larva (center), and pupa (right).

Brown lacewings can be found in almost any cropping system and are most active at night and during overcast conditions. They can also be purchased commercially and released to help reduce pest populations. For this reason, they are especially important biological control agents in greenhouses where the use of pesticides is often not preferred and naturally occurring predator populations are typically nonexistent. Of all commercially available insect predators, the brown lacewing may be the most voracious and have the greatest versatility for pests of various fruit and vegetable crops. Compared to the closely related green lacewing, which feeds primarily on nectar, pollen, and honeydew as an adult, brown lacewings will continue to prey on pests throughout their adult life cycle. Altogether, the brown lacewing's propensity for aphids and secondary willingness to prey on a wide variety of other small insect pests makes them valuable contributors to natural pest management in numerous crops and production systems.

Cover Crops for Weed Control in Watermelon

Kurt Vollmer, Weed Management Specialist
University of Maryland Extension

Figure 1. Row-middle weed suppression with an oat cover crop.

Row-middle weed management in plasticulture vegetable systems can be challenging. Herbicides are utilized for weed control, but may be ineffective against target weeds or fail to provide season-long control. Cover crops aid in weed suppression through direct competition or physical suppression of emerging weeds. While cover crops alone cannot kill weeds, when paired with an effective postemergence herbicide, weed control can be greater than either tactic alone. Much of this is dependent on achieving enough cover crop biomass, but cover crops may hinder cash crop growth if allowed to grow for too long. Previous research in Maryland and New Jersey showed that an oat cover crop terminated at the heading stage (Feekes 10.1-10.5) produced sufficient biomass for weed suppression. Therefore, a study was conducted to evaluate weed control and watermelon yield in response to the termination timing of an oat cover crop planted between plasticulture rows.

Trials were conducted at the University of Maryland Wye Research and Education Center in Queenstown, MD and cucumber trials at the Rutgers Agricultural Research and Extension Center in Bridgeton, NJ in 2023. The study evaluated weed control and crop yield due to the presence or absence of an oat cover crop and the growth stage at which the cover crop was terminated (boot-[Feekes 9-10], or heading). Plastic was laid on April 12 (NJ) and April 13 (MD). 'Forage Maker' oats were seeded at 138 lb./A on April 14 at both locations. 'Captivation' watermelons were transplanted on May 26 (MD) and 'Cracker Jack' on June 2 (NJ). Oats were terminated by crimping with a tractor pass followed by a shielded application of Gramoxone SL 2.0 at 2 pt/A + nonionic surfactant at 0.25% v/v at the boot or heading stage.

Termination timing had no effect on weed density, weed biomass, or watermelon yield. Oat cover crop reduced weed seed density 45% compared to no cover crop (Fig. 2), and weed biomass 74% (Fig. 3). The lack of differences in termination timing may be attributed to achieving sufficient cover crop biomass for weed suppression at the boot stage. The presence of an oat cover crop nor its termination date affected total yield, total fruit number, nor total marketable fruit number. However, marketable fruit weight was 20% higher in cover crop treatments compared to no cover treatments.

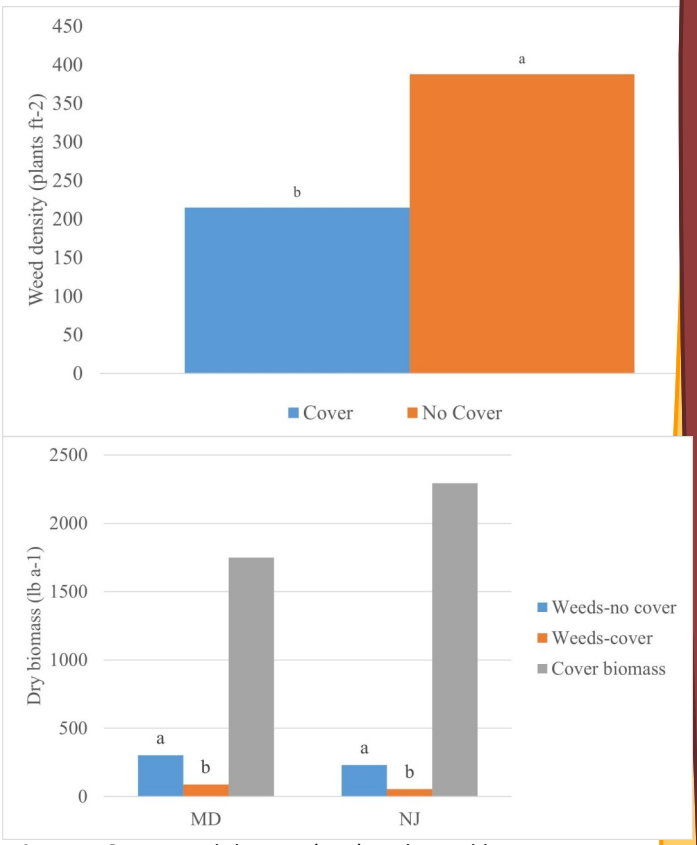


Figure 2 & 3. Weed density (top) and weed biomass (bottom). Bars with different letters are significantly different (α=0.05).

Key Points:

Results agreed with previous studies showing that that a spring-seeded grass cover crop can complement weed control programs in plasticulture production.

A cover crop can serve a similar role as a soil-applied herbicide, inhibiting weed emergence and growth.

Although an effective postemergence herbicide was used for both cover and no cover treatments, weed control was better when combined with a cover crop.

Attaining sufficient cover crop for late season weed suppression is essential, but it can potentially interfere with cash crop development. These results indicate that an oat cover crop can be terminated at an earlier growth stage, reducing the competition period between the cover and cash crop.

Fescue Toxicosis

Andrew Kness, Senior Agricultural Agent
University of Maryland Extension, Harford County

Over the past month, I have had a few inquiries about tall fescue toxicosis and fescue testing, so a quick overview here might benefit a wider audience.

Tall fescue has a natural symbiotic association with a fungus. The plant nourishes the fungus which lives inside the plant in exchange for the fungus providing improved nutrient and water uptake for the plant, drought tolerance, and pest resistance. This is what makes tall fescue such a durable and productive forage grass. However, the fungus naturally produces a toxic compound leading to fescue toxicosis.

Fescue toxicosis is a condition in livestock (primarily affecting cattle and horses) caused by consuming grass infected with the fungus that produces toxic ergot alkaloids, mainly ergovaline, which causes the contraction of blood vessels (vasoconstriction). The condition causes reduced rate of gain in cattle, shortened tails, rough coat, heat stress, gangrene, and reduced fertility. Horses are much more sensitive to ergovaline; pregnant mares can have prolonged gestation or premature birth, reduced or lack of milk production, abortions, or stillborn foals. Foals that survive are often larger than normal with overgrown hooves, poor body coordination/locomotion, low body temperatures, and a reduced immune system due to the lack of colostrum produced by the mare. The impact of fesuce toxicosis is most severe in the last 1-2 months of pregnancy.

If you are concerned about fescue toxicosis, you can test for the presence and/or concentration of ergovaline in the forage or feed. In order to do this you need to be able to identify tall fescue and collect a representative sample to send to a lab. Tall fescue is a very common forage grass—it is essentially everywhere. Kentucky 31 (K-31) is an old forage-type tall fescue that was historically planted extensively for grazing and has spread throughout most of Maryland and the northern and temperate regions of the US. There are also several turf-type tall fescue varieties that have been planted in lawns all across the US. In short, tall fescue is everywhere. However, only some varieties (like K-31) actually host the toxic endopohyte that can cause fescue toxicosis, so a test can tell you if the toxic endophyte is present.

Here are some tall fescue identification tips. Tall fescue has a couple of diagnostic characteristics; the upper leaf surface has a distinct "corduroy" pattern to the leaf veins where the veins are all very prominent and there is generally no main midvein on the underside of the leaf. Most varieties of tall fescue also have a very sharp serrated leaf margin. Other common grasses that can look very similar to tall fescue are perennial and annual ryegrass; however, both of these grasses have a very glossy underside to the leaf with a predominant midrib vein.

Figure 1. Tall fescue leaf blade showing parallel "corduroy" leaf veins.

If you desire to sample for fescue toxicosis, here are links to sampling instructions and a recommended lab to send samples. It is very important to keep the sample cool during collection, storage, and shipment.

If you have toxic endophyte-infected tall fescue, here are a couple of management considerations. For broodmares, especially in the last 1-2 months of pregnancy, pull them off of any pasture that may have toxic tall fescue. It would be best to designate a pasture or paddock for broodmares that you have seeded to forage species that you know are not toxic. You can also counteract some of the vasoconstriction effects of ergovaline by incorporating clover, which is a vasodilator, into the forage mix. This can be a particularly effective strategy for cattle.

Finally, I want to mention that there are varieties of tall fescue that have a "novel" or "friendly" endophyte and these make great pasture and hay varieties for our region. You get all the benefits of the endophyte without the toxin. There are also "endophyte free" varieties; however, these have significantly reduced persistence and production, therefore novel or friendly endophyte varieties are preferred for new seedings.

Fusarium Head Blight Reminders

Andrew Kness, Senior Agricultural Agent
University of Maryland Extension, Harford County

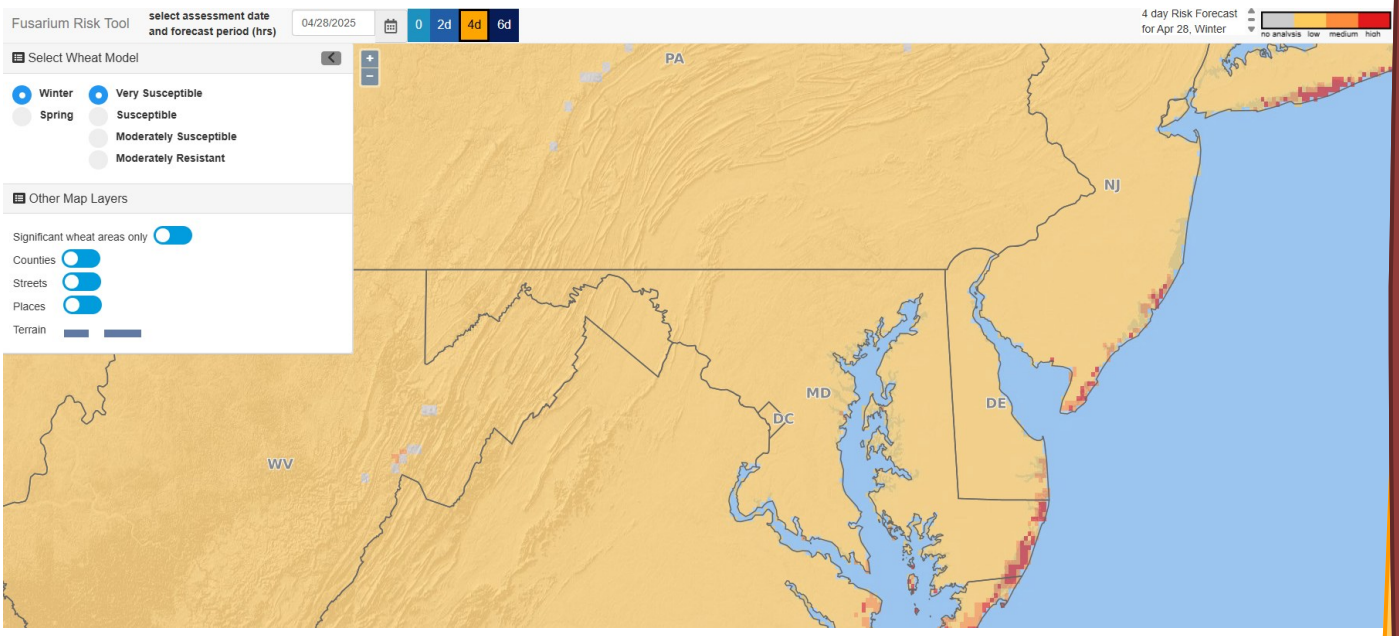


Figure 1. Fusarium head blight risk across the region showing a low risk for FHB development. Source: wheatscab.psu.edu.

Wheat is nearing head emergence and anthesis (flowering), which is the critical time for applying a fungicide to manage Fusarium head blight (FHB). The fungus that causes FHB is favored by moist conditions around anthesis. Currently, our dry weather is not favoring FHB development but that can change quickly (Figure 1). Monitor conditions by using the Fusarium Risk Tool available at wheatscab.psu.edu. If favorable conditions exist at flowering, fungi overwintering in old residue (primarily corn stover) will produce spores which are then wind blown and splashed onto the heads of flowering wheat where the spore will germinate and infect through the flower, eventually colonizing the developing kernel and causing FHB. The fungus causes reduced yields through a reduction in number and kernel weight. The fungus often also produces a mycotoxin called deoxynivalenol (DON), which is toxic to livestock as well as humans. Elevators sample incoming wheat loads for DON and will dock or reject loads based on DON contamination.

One way to manage FHB and DON in-season is to apply a well-timed fungicide to flowering wheat if weather conditions favor FHB infection. The Crop Protection Network publishes an annual wheat fungicide reference table available at https://cropprotectionnetwork.org/publications/fungicide-efficacy-for-control-of-wheat-diseases. This publication shows the relative effectiveness of various fungicides on managing common diseases of wheat, including FHB. The ratings are determined from hundreds of annual trials from University Extension Services across the US.

The most effective fungicides for FHB include Proline, Prosaro, Sphaerex, Miravis Ace, and Prosaro Pro. These products will also control rusts and other important late-season foliar diseases of wheat. Folicur, Tilt, and Top Guard are no longer as effective on FHB. Do not apply any products that contain FRAC group 11 active ingredients (strobilurins) after heading because this can cause an increase in DON production.

It is crucial to apply an effective fungicide within the optimal application window to achieve sufficient suppression of FHB. This window is anthesis (Feekes 10.5.1) to about 5 days after; some control can still be achieved up to 7 days after anthesis. Some products on the market allow for an earlier application starting at 1/2 head emergence (Feekes 10.3); it should be noted that this is a sub-optimal application timing and best control is still achieved once Feekes 10.5.1 is reached through 5-7 days after; it is actually better to be late than

Figure 2. Wheat head at anthesis (Feekes 10.5.1).

too early. If you apply at Feekes 10.3, you will not get protection of any heads that have not yet emerged from the tillers.

Feekes 10.5.1 is defined by at least 50% of the heads in a field have anthers emerging from the center of the head (Figure 2). Wheat flowers in three distinct stages: the center of the head will flower first (10.5.1), then the top (10.5.2), then the bottom (10.5.3).

It is also important to use proper application technique. Your goal with a fungicide application to manage FHB is to achieve thorough coverage of the wheat heads. To do this, use plenty of water as a carrier (at least 10-15 gallons/A) and use angled nozzles. Dual-angled nozzles are the best, which are angled forward and rear. If you do not have dual angled nozzles, the next best thing is a single nozzle angled forward 30-45 degrees. Boom height should be between 8-10 inches above the crop canopy. A non-ionic surfactant will also help improve coverage. If you are using a drone to apply a fungicide, be sure to use 4-5 gallons/A water as a carrier to achieve the best coverage.

You can begin scouting for FHB symptoms around three weeks after flowering; bleached florets will be visible on the heads (Figure 3). At harvest you may also notice small, shriveled kernels; these are infected with the FHB pathogen and likely contain DON. Combine settings should be adjusted to blow as many shriveled kernels out of the grain sample as possible to limit DON contamination in the final grain sample.

Figure 3. Wheat head with symptoms of FHB, including bleached spikelets.

If you're storing your wheat, dry it quickly to 15% for short term storage and below 12% for long term storage since wet grain can lead to a spread of FHB and increase DON in the bin.

IPM Web Series

Weeds, diseases, and insects are often a major concern for growers in Maryland. Integrated pest management (IPM) programs incorporate multiple pest management strategies into their production practices. Join us monthly for timely topics to help manage pests on the farms. Hosted via Zoom, on the third Thursday of every month at noon, these one-hour sessions are both informative and interactive, providing an opportunity for participants to learn and engage with specialists in the field.

- May 15th - Managing squash bugs and cucumber beetles in cucurbit crops - Dr. Tom Kuhar, Virginia Tech
- June 26th - Palmer amaranth and pigweed control - Dr. Kurt M. Vollmer, University of Maryland Extension Specialist-Weed Management
- July 17th - Corn tar spot update and management - Andy Kness, University of Maryland Extension
- August 21st - Managing late-season corn earworm - Hayden Schug, University of Maryland Extension
- September 18th - Neo-P and other strawberry diseases - Dr. Mengjun Hu, University of Maryland
- October 16th - Cover crops for weed management - Dr. Dwayne Joseph, University of Maryland Extension

Pesticide Credits will be available but vary by date. Please contact Emily Zobel (ezobel@umd.edu) or Hayden Schug (hschug@umd.edu) for more information.

If you need a reasonable accommodation to participate in this event, please contact Emily Zobel (ezobel@umd.edu) or Hayden Schug (hschug@umd.edu).

Register at agnr.umd.edu/events/ag-integrated-pest-management-web-series/?featured_date=3036

Maryland State Fair Scholarships

The Maryland State Fair is sponsoring four $2,000 scholarships in memory of F. Grove Miller to Maryland youth who are enrolled in a four-year college, post-secondary college or trade school, and one $2,000 scholarship in memory of Marlin K. Hoff to a Maryland youth who has carried a dairy project and is enrolled in a four-year college, post-secondary college or trade school. Applications are due **June 1st** and can be found marylandstatefair.com/scholarships/.

Super Sacks Needed for Ag Plastic Recycling

Wendy Doring with the Harford County office of recycling, is asking farmers to donate any super sacks to the program that you may not be using. Harford County's ag plastic recycling program has been so successful that they have run out of super sacks. Please reach out to Wendy if you can be of any assistance: (410) 638-3417 or wdoring@menv.com.

Great resources are just a click away!

Andrew Kness
Senior Extension Agent, Agriculture and Food Systems

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Back-issues can be found at: https://extension.umd.edu/locations/harford-county/agriculture-and-nutrient-management

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Dates to remember

13 May. Strawberry Twilight Tour. Wye Research & Education Center, Queenstown, MD. 5-7 PM. Register online or call (410) 827-6016.

15 May. Monthly IPM Webinar: Squash Bugs & Cucumber Beetles. 12 noon. Free. Register online or call (410) 228-8800.

27 May. Pasture Walk. Chesapeake Therapeutic Riding, Street, MD. 6-8 PM. Register online or call (301) 405-1547.

3-4 Jun. Fundamentals of Nutrient Management Training (prep for Nutrient Management Exam). MDA Annapolis. Register online at bit.ly/NMP_Training.

12 Jun. Pasture Walk. Central MD Research & Education Center, Ellicott City, MD. 6-8 PM. Register online or call (301) 405-1547.

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