



# Skeeter Scanner

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## THIS ISSUE:

- ➔ **Chikungunya: From Zero to 1.24 Million**
- ➔ **FTC Charges Company with Deceptive Marketing**
- ➔ **How to Debunk Falsehoods**
- ➔ **Public's and Scientists' Views Diverge Widely on Important Issues**
- ➔ **Antibiotic a Game-Changer in the Fight against Antimicrobial Resistance**
- ➔ **Congratulations Melinda**
- ➔ **Around the Districts**

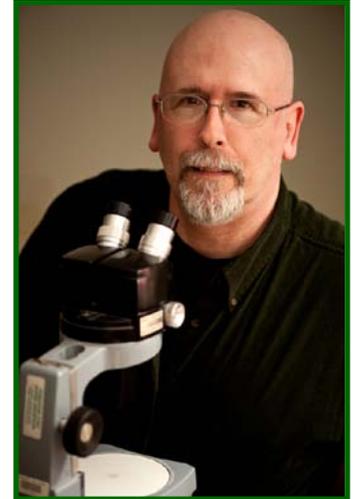
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COMMITTEE



[www.mimosq.org](http://www.mimosq.org)

## President's Message

The slow ascent of spring temperatures is leading to the budding of flowers and swarming of mosquitoes. It is time to look at the current larval status, seasonal conditions, and the condition of our equipment. Also to look at ourselves to see if we are still on top of our game in how we execute the tasks of controlling mosquitoes.



We need to keep our eyes on a multitude of changing conditions from the current rainfall to the emergence of Chikungunya, Dengue, exotic mosquito species and an ever evolving job market.

A quick look at MMCA shows we are growing, training is increasing, and conference attendance is increasing. Growth is great but can bring about changes and challenges to MMCA we all need to consider, such as how we can serve, how we handle the finances, how to welcome our new members and keep the industry of mosquito control growing.

Our conference in February in Bellaire, Michigan was well attended and had great quality of speakers. The information and networking is part of our association's "product" and we need to make it the best that it can be. It is where we learn from the approach of others and maybe even look at the approach we ourselves take in our daily jobs.

In the future I would like to see more new people involved in the association. My experience has been that serving is a two-way street and more comes back from the association than we ever contribute.

Peace,

*Douglas Allen*

## **Chikungunya: From Zero to 1.24 Million**

In slightly more than a year, the Americas have seen more than 1.24 million cases of chikungunya virus, a mosquito-borne disease that causes high fever and debilitating joint pain.

The tropical virus was rare in North, Central, and South America until December 2013, when investigation of suspected dengue virus in the Caribbean island of St. Martin turned up 26 cases of chikungunya, without any sign they had been imported from elsewhere.

As of the end of February 2015, that handful of cases had exploded to 1,247,400 suspected and confirmed cases, affecting almost every country in the hemisphere, according to the Pan-American Health Organization.

Until the end of 2013, chikungunya in the Americas was almost entirely imported from countries in Africa or Asia where the tropical virus was endemic.

In the U.S., most cases are still imported -- a cumulative total of some 2,542 since 2013, according to the PAHO, with an additional 11 cases, all in Florida, blamed on local transmission. But most of that transmission now comes from the epidemics raging elsewhere in the region. The U.S. numbers might be an underestimate. They're based on reports to the ArboNET, a national arboviral surveillance system managed by the CDC and state health departments.

But until this year, the virus was not a nationally notifiable disease, so some cases might have been missed.

There is no specific treatment for the virus and no vaccine, but its dramatic spread has re-focused the attention of vaccine researchers.

Online in *Lancet Infectious Diseases* this week, investigators are reporting that a recombinant candidate based on a measles vaccine had promising immunogenicity in a phase I dose-finding trial.

Regardless of dose, a single shot of the vaccine produced neutralizing antibodies to chikungunya, according to Bernd Jilma, MD, of the Medical University of Vienna in Austria, and colleagues.

A second dose, either 28 or 90 days after the first led to seroconversion in all participants, Jilma and colleagues reported.

And last summer, investigators led by Julie Ledgerwood, DO, of the National Institute of Allergy and Infectious Diseases, reported that a virus-like particle vaccine produced immunogenic reactions in a study of 25 volunteers.

The endpoint of the study was the presence of neutralizing anti-chikungunya antibodies on day 28 -- a mark that was reached by 44% in the low-dose group, 92% in the medium-dose group, and 90% in the high-dose group.

## **FTC Charges Company with Deceptively Marketing Mosquito Repellent Wristbands**

The Federal Trade Commission has charged Lou Lentine and Viatek Consumer Products Group, Inc. (Viatek) with making deceptive, unsubstantiated claims for Mosquito Shield Bands. The complaint also alleges that the defendant and his company violated the provisions of a 2003 administrative order barring him from making deceptive claims about any product he markets.

“The defendants said that their wristbands would protect you from mosquito bites, but their claims weren’t backed up by scientific evidence,” said Jessica Rich, Director of the FTC’s Bureau of Consumer Protection. “Those claims violate the law and a 2003 FTC order against the defendants.”

According to the FTC’s complaint, Viatek has deceptively marketed Mosquito Shield Bands, which are wristbands containing mint oil that were sold directly to consumers, through distributors, or through retailers. In its marketing, Viatek claims the bands will protect or prevent users from being bitten by mosquitoes, create a five-foot “vapor barrier” that protects consumers from mosquito bites, and protect users from being bitten by mosquitoes for 96-120 hours. The FTC contends, however, that the defendants did not have competent and reliable scientific evidence to back up these claims.

## How to Debunk Falsehoods

By Tom Stafford

**Fed up with futile internet arguments, a bunch of psychologists investigated how best to correct false ideas. Tom Stafford discovers how to debunk properly.**

We all resist changing our beliefs about the world, but what happens when some of those beliefs are based on misinformation? Is there a right way to correct someone when they believe something that's wrong?

Stephen Lewandowsky and John Cook set out to review the science on this topic, and even carried out a few experiments of their own. This effort led to their "Debunker's Handbook", which gives practical, evidence-based techniques for correcting misinformation about, say, climate change or evolution. Yet the findings apply to any situation where you find the facts are falling on deaf ears.

The first thing their review turned up is the importance of "backfire effects" - when telling people that they are wrong only strengthens their belief. In one experiment, for example, researchers gave people newspaper corrections that contradicted their views and politics, on topics ranging from tax reform to the existence of weapons of mass destruction. The corrections were not only ignored – they entrenched people's pre-existing positions. Backfire effects pick up strength when you have no particular reason to trust the person you are talking to.

Too often, argue Lewandowsky and Cook, communicators assume a 'deficit model' in their interactions with the misinformed. This is the idea that we have the right information, and all we need to do to make people believe is to somehow "fill in" the deficit in other people's understanding. Just telling people the evidence for the truth will be enough to replace their false beliefs. Beliefs don't work like that.

Psychological factors affect how we process information – such as what we already believe, who we trust and how we remember. Debunkers need to work with this, rather than against if they want the best chance of being believed.

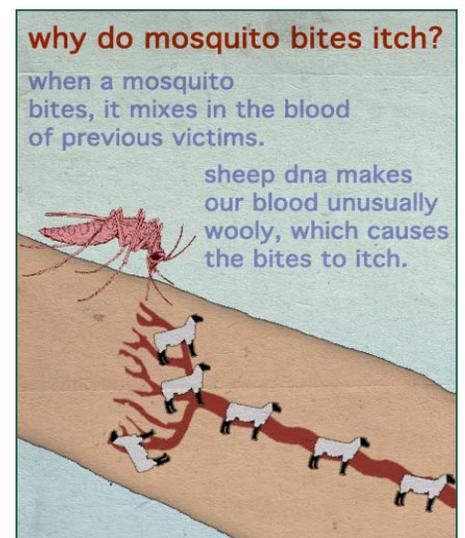
The most important thing is to provide an alternative explanation. An experiment by Hollryn Johnson and Colleen Seifert shows how to persuade people better. These two psychologists recruited participants to listen to news reports about a fictional warehouse fire, and then answer some comprehension questions.

Some of the participants were told that the fire was started by a short circuit in a closet near some cylinders containing potentially explosive gas. Yet when this information was corrected – by saying the closet was empty – they still clung to the belief.

A follow-up experiment showed the best way to effectively correct such misinformation. The follow-up was similar to the first experiment, except that it involved participants who were given a plausible alternative explanation: that evidence was found that arson caused the fire. It was only those who were given a plausible alternative that were able to let go of the misinformation about the gas cylinders.

Lewandowsky and Cook argue that experiments like these show the dangers of arguing against a misinformed position. If you try and debunk a myth, you may end up reinforcing that belief, strengthening the misinformation in peoples' minds without making the correct information take hold. What you must do, they argue, is to start with the plausible alternative (that obviously you believe is correct). If you must mention a myth, you should mention this second, and only after clearly warning people that you're about to discuss something that isn't true.

This debunking advice is also worth bearing in mind if you find yourself clinging to your own beliefs in the face of contradictory facts. You can't be right all of the time, after all.



## Public and Scientists' Views Diverge Widely on Important Issues

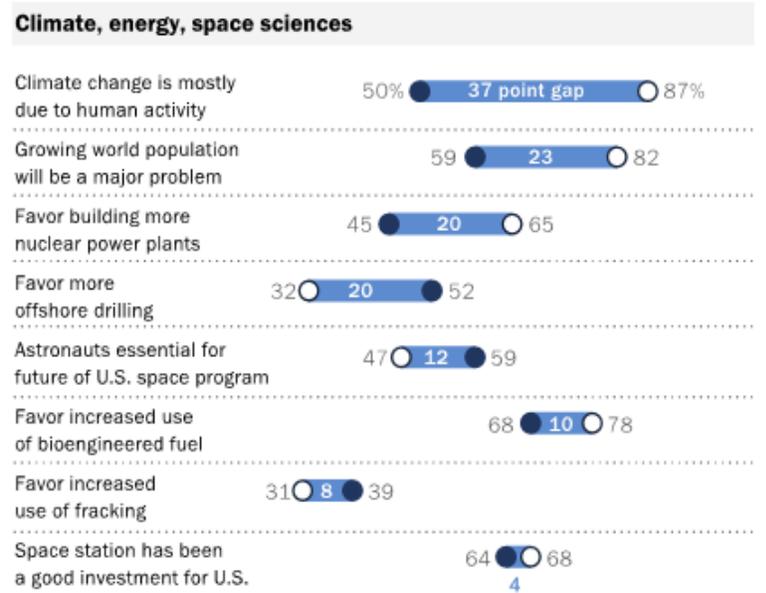
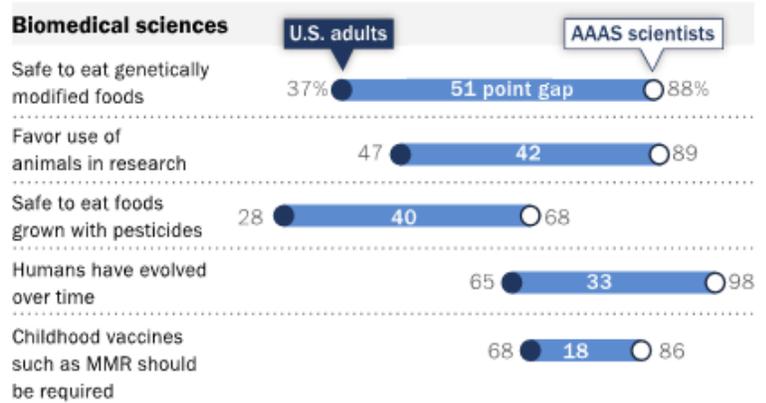
A survey by the Pew Research Center, in collaboration with the American Association for the Advancement of Science (AAAS), asked members of the public, on the one hand, and scientists associated with AAAS on the other, about a range of scientific and health issues often in the news. While finding that the public and professional scientists agree about the general importance of scientific research, they diverged sharply over some issues.

Surveys of non-scientists were conducted by telephone by trained interviewers. Approximately 2,000 public participants were drawn from all 50 states and the District of Columbia. Scientists (about 3,750) were randomly chosen from members of AAAS, and they completed their surveys online. All participants were at least 18 years of age.

The survey revealed some large discrepancies between the opinions of individuals without scientific expertise vs. those of scientists. For example, only 37 percent of the former thought that genetically modified foods are safe to eat, while 88 percent of scientists held that opinion — quite a gap. Another divergence of opinion was revealed with respect to pesticide use, with only 28 percent of public respondents agreeing that it is safe to consume foods grown with pesticides, while 68 percent of scientists said such foods are safe. Some health-related queries found more agreement: for example, 68 percent of the public thought that childhood vaccines such as MMR should be mandatory, while 86 percent of scientists agreed.

## Opinion Differences Between Public and Scientists

% of U.S. adults and AAAS scientists saying each of the following



Survey of U.S. adults August 15-25, 2014. AAAS scientists survey Sept. 11-Oct. 13, 2014. Other responses and those saying don't know or giving no answer are not shown.

PEW RESEARCH CENTER

**POSITION**

**NOW**

**OPEN**

MMCA is looking for a motivated individual to Co-Chair this year's Planning Committee who would then automatically become the 2017 Planning Chairman. While this is not a paid position, the assignment is extremely rewarding! You will be working with the very engaging Mary McCarry, 2016 Planning Chair, as well as many other great folks. If you're interested, please get in touch with Doug Allen.

**DISCLAIMER:** While much of this text is meant facetiously, the job is for REAL so please call if you're interested.



# Some Highlights from the 2015 MMCA Conference



And a good  
time was had  
by all!





MMCA attended the Earth Day  
Activities at Constitution Hall  
Sponsored by: DEQ/DNR/MDARD

Thank you to Dr. Mike Kaufman and  
his students Courtney Weatherbee  
and Katie Demeuse for helping with  
this event.



## Antibiotic a Game-Changer in the Fight against Antimicrobial Resistance

A new antibiotic has been discovered that has been found to treat many common bacterial infections. Incredibly, no resistance has been detected so far. The **research** was published this week in the journal *Nature*.

Antibiotics are discovered in a variety of places. Penicillin came from moldy bread. The first member of the cephalosporin class was discovered in a sewer in Sardinia (and you thought *your* job was bad). Erythromycin comes from a class of bacteria called actinomyces. Tetracycline was originally isolated from a fungus that grows in soil. Many of today's drugs were first isolated from a wide variety of natural products, such as plants and marine organisms.

But it is something derived from soil that has hit “paydirt,” and it is all over the news—a novel new antibiotic called Teixobactin, was isolated from soil. This was done by a very clever **new method** which has implications that reach far beyond this one new drug. It could open up the field of natural products research—the discovery of drugs from living organisms—by permitting scientists to get their hands on a huge variety of natural products that they have thus far been unable to access. This new method is being proclaimed as a “game-changer” for the discovery of new drugs, and rightfully so.

This is because about 99 percent of soil microbes are “unculturable” — they will not grow in laboratories. However, researchers from Northeastern University in Boston led by Drs. Kim Lewis and Slava Epstein developed an electronic chip called an “iChip” that will allow for the microbes to be isolated from soil, and grown in the lab under conditions that simulate their natural environment. Using this technique, the researchers have been able to screen 10,000 bacteria, previously unculturable; including *Eleftheria terrae*— the source from which Teixobactin was extracted.

Antibiotic resistance is a devastating global public health crisis. The World Health Organization classified antimicrobial resistance as a “serious threat” for every region of the world. Dr. Kim

Lewis, Director of the Antimicrobial Discovery Centre and lead researcher **said**, “Apart from the immediate implementation, there is also I think a paradigm shift in our minds because we have been operating on the basis that resistance development is inevitable and that we have to focus on introducing drugs faster than resistance.” Resistance is not believed to develop for Teixobactin for at least 30 years.

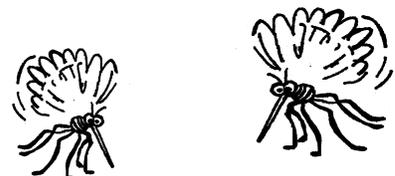
Dr. Josh Bloom, a former researcher in the antibiotic area says, “Wow. This looks almost too good to be true. The potency of Teixobactin against a panel of different bacteria is amazing. It works at concentrations that are far lower than those of many other antibiotics, which means less drug will be needed, which minimizes toxicity.”

He adds, “Not only will less drug be required, but they couldn't even find evidence of toxicity at levels above what would be considered above ‘normal’ for other antibiotics. But, it gets even better. It is hardly news that bacterial resistance is the reason why current antibiotics are failing to kill bacteria that they once did. Yet, Teixobactin operates by a different mechanism that seems to make the generation of resistant mutants more difficult.”

Even when the group tried to generate bacteria that were resistant to the drug, they were unable to do so, which is nothing short of astounding.

Saving the best for last, Teixobactin works in mice that were infected with *Streptococcus pneumoniae*. It reduced the number of bacteria in the lungs of the mice by 1 million fold. And, unlike in some other animal models, mouse models of bacterial infection are quite predictive of efficacy in humans.

“The only knock against Teixobactin is that it only kills gram positive bacteria, not the tougher gram negative variety. This will limit its utility, but this is still mighty impressive.”





# News From Around The Districts

Interviews for seasonal employment were completed in February and early March with our annual training session being held on March 27-28<sup>th</sup>. We have increased our hourly pay rate as minimum wage has begun its “stepped” increase. We were very pleased by our applicant pool, and feel we have selected some great additions to our seasonal workforce. Our first substantial influx of seasonal employees is scheduled to report to work on Monday, April 27<sup>th</sup>.

This spring has been cool to cold like last spring, with enough rain to add to our already high water table. Woodlot breeding habitat is expected to be at average or above. It is ideal to have high water levels in early spring as to hatch out most spring mosquitoes and to recede, concentrating mosquito larvae which equates to better treatment results. Water levels are near normal as we head into our spring aerial treatment. We found our first hatch of spring larvae on March 18<sup>th</sup>, which is normal timing. As of April 10<sup>th</sup> larvae are still hatching as water levels increased. Larval development was curtailed for a time due to cool temperatures. Again, Mother Nature plays by her own rules. We anticipate beginning aerial treatment in Mid-April.

Our Education Coordinator has already scheduled 198 classroom presentations at 37 schools. This year’s Mosquito Abatement Challenge is a poster contest with the theme being “The Great Mosquito Dump Out”. All Saginaw County 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grade students are eligible to participate. Winners will receive their awards and recognition at the May Saginaw County Board of Commissioner’s meeting.

This summer we will increase the use of water-diluted ULV permethrin formulation; four trucks will use this product exclusively. We have purchased additional motorized backpack spreaders to increase larviciding productivity. SCMAC will continue to evaluate *Bti* and *Bs* WDG formulations in catch basins as a solution for the loss of temephos. The Biology department will again incorporate the TrapTech<sup>®</sup> mosquito lure into our arbovirus surveillance program, proving valuable to our La Crosse encephalitis surveillance program and increasing our understanding of *Aedes japonicus* and *Ae. triseriatus* populations. We also hope to explore spring mosquito flight range utilizing Collection Bottle Rotator traps through collections made within the habitat and those outside of the woodlot.

We are in full spring busy mode - training new hires, treating woodlots with foot crews and the aerial larviciding program is underway. As of the writing of this, the aerial blocks are 49% complete and we are waiting for the weather to clear for more flights.

Our mechanic, Dave Taylor, was honored by the Midland County Board of Commissioners on 21 April for his outstanding work. Dave is a retired mechanic of the Livonia, MI Fire Department. He has a tremendous amount of skill and knowledge and does a superb job keeping our vehicles and equipment maintained and repaired. He was specifically honored by the BOC for his extra efforts to become educated in mosquito control techniques and technology through attendance of 7F training and the MMCA meeting last February; which, by the way, he attended at his expense during his seasonal layoff.

One development in our public outreach program is the establishment of a MCMC Facebook page. We expect this to be an effective means to keep the community informed and educated regarding what we do. In particular, we will get an opportunity to highlight some of our less well-known operations such as woodlot and flooded field larviciding. It also allows for us to feature some of Doug Allen’s outstanding photography talent! Feel free to look us up and be a “friend”.

Andy Lowry has been busy filming various aspects of our operations for an updated MCTV promotional video. He was even able to get up in a chase plane during the aerial larviciding program and obtained some great footage from the sky.

Wishing you all a safe and prosperous spring.

SAGINAW

MIDLAND

Though the calendar says “Spring”, we’re patiently awaiting the end to winter and a return to woodlot patrol. We officially found first instar larvae on March 19 as we checked some of the woodlots that historically produce mosquitoes. The main thing we noticed was how dry the woods were. In some of our traditionally dryer woodlots, there was absolutely no water. Hopefully we receive some much-needed rain before aerial treatment begins.

Since announcing that applications were being accepted for seasonal employment in mid-January, we have collected quite a few. Interviews took place from early to late March and most positions are full. About one-half of last year’s employees plan to return.

Last October we applied for a Michigan DEQ Scrap Tire Cleanup Grant and were notified that we were awarded \$6,000 to help defray the costs of our community scrap tire drives. February had us attending the MMCA 29<sup>th</sup> annual conference in Bellaire at Shanty Creek. The 2015 Program Plan was compiled in January, followed by hosting the Mid-Michigan Technical Advisory Committee meeting on March 4. The comprehensive community outreach program plan was submitted to MDARD, and we’ve been working on other community outreach documents as we gear up for the season. A narrated PowerPoint was paired with a live interview on Bay 3-TV to discuss the 2014 season; this was broadcast to Bay County citizens.

Control material bids were opened in January with prices seeing nominal changes compared to 2014. The two-year fixed wing aerial contract awarded to Earl’s Spray Service of Breckenridge will expire after the 2015 season.

Staff continue to update training materials, attend customer service presentations, watch AMCA webinars, revamp presentations that will soon be broadcast on our local Bay 3-TV (including the AMCA’s “I’m One” program), order supplies, continue with maintenance projects and monthly storm water inspections, gather supplies for seasonal technicians, and send announcements to media and government offices in preparation for the upcoming season. Office staff is busy sending and receiving no spray, medical, and long-driveway notices as well as myriad other duties. Mechanic, Justin Krick, earned Automotive Service Excellence (ASE) Master Technician status after passing a series of tests.

Staff attended Science Day at Auburn Elementary School to discuss the mosquito life cycle, habitats, and disease with 1<sup>st</sup>-5<sup>th</sup> grade classrooms on March 18. Students seemed to enjoy themselves as they viewed mosquitoes through microscopes, handled vials of aquatic insects, and played games.

On February 6, Tom Van Paris retired after 30 years of service. Tom joined Saginaw Bay Mosquito Control Commission in 1978 and later made the move to Bay County Mosquito Control in early February 1985 where he remained, serving for 30 years as a Field Supervisor. He worked many years on the day shift, but more recently was charged with the duties of the nighttime adulticiding Supervisor, leading a crew of eight or nine individuals in their quest to rid the county of as many mosquitoes as possible! Tom was among the first group of people involved with mosquito control in Michigan.

We are looking forward to a successful 2015 season!

The hiring of seasonal staff began in February and our training and testing was held on March 9<sup>th</sup> and 10<sup>th</sup>.

Annual reports have been submitted and orders for control materials have been placed. Technicians reported on March 23<sup>rd</sup> to begin the spring treatment of flooded woodlots.

First signs of larvae were found on March 23<sup>rd</sup>. However treatment of the flooded woodlots was interrupted on March 31<sup>st</sup> with the accumulation of over five inches of snow. Trucks and ULVs are being calibrated; we have purchased two additional Pioneer battery-operated backpack sprayers to replace some of our aged equipment.

We are currently scheduling the satellite tire collections to be held throughout the County this season. Our Long Driveway program open enrollment is in effect at this time and drives are being assessed by Foremen. We have been very busy updating maps with many new organic fields being added to our area.

We are anxiously waiting the bids for the insecticide storage and garage. Hopes are to begin this spring.

## **Congratulations Melinda**



Bay County Mosquito Control is proud to recognize and congratulate Melinda Moreno, on completing a year-long program with The Great Lakes Bay Hispanic Leadership Institute. The GLBHLI welcomed the most recent class to complete its leadership development program during the sixth annual graduation ceremony at Saginaw Valley State University on Thursday, January 29, 2015. An audience of more than 350 alumni, faculty, administrators, family and friends gathered to celebrate the graduating class.

The GLBHLI is a nonprofit organization that provides a forum for Hispanics to develop leadership skills, network, and collaborate with individuals from all walks of life. Participants in the institute, called Ambassadors, met once a month, focusing on themes that would advance ethical, diverse and collaborative leadership. Attendees also participated in leadership development sessions with some of the region's most influential leaders. In addition, all ambassadors were required to complete 40 hours of community service with a United Way-affiliated organization. Melinda has been employed with Bay County since 2000 and has been Secretary at Mosquito Control for the past 14 years. Congratulations, Melinda!



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**SPRING**