

Station News

The Connecticut Agricultural Experiment Station
Volume 6 Issue 12 December 2016



This Issue

The mission of The Connecticut Agricultural Experiment Station is to develop, advance, and disseminate scientific knowledge, improve agricultural productivity and environmental quality, protect plants, and enhance human health and well-being through research for the benefit of Connecticut residents and the nation. Seeking solutions across a variety of disciplines for the benefit of urban, suburban, and rural communities, Station scientists remain committed to "Putting Science to Work for Society", a motto as relevant today as it was at our founding in 1875.



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ADMINISTRATION

DR. THEODORE ANDREADIS participated in a meeting of Connecticut's Invasive Plant Council held in Hartford (November 15); attended the annual meeting of Connecticut's Working Lands Alliance held in Hartford (November 16); attended a board meeting of the Experiment Station Associates held at the Station (November 16); attended the annual meeting of the Connecticut Farm Bureau held in Wallingford (November 18); participated as Administrative Advisor to Multistate Research Project, NEERA1306, "Management of the Brown Marmorated Stink Bug" held at the Virginia Agricultural Experiment Station in Winchester, VA (November 30).

MS. VICKIE BOMBA-LEWANDOSKI attended training sessions for FE3 (Facilitating Environmental Excellence), Geology and Climate Change, Dinosaur State Park, Rocky Hill (November 7); FE3 (Facilitating Environmental Excellence) Recycle Right, Facts, and Methods to Sustainable Waste Management, Kellogg Environmental Center, Derby (November 8); and attended and hosted a CAES booth at the 97th Annual Connecticut Farm Bureau Annual Meeting, Fantasia, North Haven (November 18).

ANALYTICAL CHEMISTRY

DR. JASON C. WHITE participated in an APHL-sponsored teleconference call of laboratories funded under the FDA ISO Cooperative Agreement Program to discuss sustainability of funding beyond the current grant period, which ends in August 2017, and agreed to work with APHL staff on a letter to the FDA highlighting the importance of continued funding of these state programs (November 3); attended the monthly Laboratory Preparedness meeting at the CT Department of Public Health Laboratory in Rocky Hill (November 7); participated in an APHL-sponsored teleconference call regarding a peer reviewed manuscript submission focused on nanotechnology and water treatment to the *Journal of the American Water Works Association* (JAWWA) (November 7, 21); met with Dr. Fred Behringer of Surveillant LLC to discuss department regulatory and research programs, as well as opportunities for collaboration (November 8); gave a lecture at the University of Massachusetts Amherst entitled "Phytoremediation of weathered hydrophobic pollutants" to a graduate level phytotechnologies course (November 8); along with **MR. MICHAEL CAVADINI, MR. JOSEPH HAWTHORNE, DR. WALTER KROL, MR. CRAIG MUSANTE, DR. BRIAN EITZER, AND MS. TERRI ARSENAULT** participated in the monthly FDA FERN cCAP teleconference call (November 10); along with **DR. ROBERTO DE LA TORRE ROCHE** participated in a teleconference call with collaborators at the Harvard University T.H. Chan School of Public Health regarding ongoing collaborative experiments focused on the distribution of engineered nanomaterials in model digestive systems (November 14); served on the "International Scientific Advisory Committee for the "International Conference on Nanotechnology Applications and Implications of Agrichemicals Towards Sustainable Agriculture and Food Systems" in Beijing, China, which was sponsored by the Chinese Academy of Agricultural Sciences (CAAS) and the US Department of Agriculture (USDA) and gave an invited plenary lecture entitled "Nanomaterials and the food supply: Assessing the balance between applications and implications" and a technical lecture entitled "Accumulation of engineered nanoparticles in food crops: Correlating physiological and molecular response (November 17-18); and spoke by phone with Professor Jennifer Lewis of the University of California Berkeley regarding collaborative experiments involving nutrient analysis in plants (November 23).

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DR. CHRISTINA S. ROBB attended a board meeting (November 13); chaired the Young Investigator award and the accompanying Food Analysis technical sessions; and chaired the exposition committee for EAS 2016, which included coordinating the presence of the New York and New Jersey Weapons of Mass Destruction Civil Support Teams (WMD CSTs) at the 2016 Eastern Analytical Symposium (ESA) in Somerset, NJ (November 14-16).

DR. BRIAN EITZER was a participant in the high resolution mass spectrometry working group of the FDA cCAP program phone call (November 2); met with Jennifer Tsuruda of Clemson University to discuss the analysis of pesticides in bee-related matrixes (November 15); was a participant in the MFRPS mentor-mentee call (November 17); and along with **DR. KIMBERLY STONER** met with Robert Koethe, Robert Hillger, and David Lehmann of the EPA to discuss a possible research project related to bees and ornamental nurseries (November 22).

ENTOMOLOGY

DR. KIRBY C. STAFFORD III gave the welcome and participated in the bed bug forum held at Quinnipiac University (November 8); provided a brief research update on the Northeast IPM online conference (November 9); participated on a gypsy moth conference call with Christopher Martin, CT State Forester and his counterparts in MA and RI (November 9); participated on a tick IPM working group conference call (November 9); participated in a meeting of the Cooperative Agricultural Pest Survey (CAPS) committee in Jones Auditorium (12 participants) (November 10); spoke on the gypsy moth outbreak and predictions for 2017 at the annual meeting of the Connecticut Association of Conservation and Inland Wetland Commissions (CACIWC) in Rocky Hill (30 attendees) (November 12); and participated in a conference call on Lyme disease predictive analytics with U.S. Biologic, Inc. and the CDC (5 attendees) (November 15).

MS. KATHERINE DUGAS assisted **DR. GALE RIDGE** with Bed Bug Forum X, “Bed Bugs Meet The Law,” held at Quinnipiac University (November 8); with **DR. KIRBY STAFFORD III** and **DR. VICTORIA SMITH**, attended and ran the State CAPS Committee meeting in Jones Auditorium at CAES (12 participants) (November 10); and attended the CT Pomological Society meeting in Glastonbury (November 29).

MR. MARK H. CREIGHTON spoke with students at John Winthrop Middle School in Deep River on Pollinator Health (November 9); attended The Southern Beekeepers Assembly in Groton, and spoke with 200 beekeepers on bee health related topics (November 19); and attended a workshop at the Wallingford Zoning Board and provided information and comments as they develop a Beekeeping Ordinance (November 21).

DR. CHRIS T. MAIER spoke on “Range Expansion of the Japanese Cedar Longhorned Beetle and the Viburnum Leaf Beetle” at a meeting of the Advisory Committee of the Cooperative Agricultural Pest Survey in Jones Auditorium (November 10); led staff and students of the University of Connecticut on a tour of the *Magicicada* (periodical cicada) Preserve in Hamden (November 11); displayed 3-year old nymphs of the periodical cicada at a meeting of the Connecticut Entomological Society in Jones Auditorium (November 18); and displayed the invasive spotted lanternfly and distributed fact sheets on it at the Annual Meeting of the Connecticut Pomological Society in Glastonbury (November 29).

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DR. GALE E. RIDGE was interviewed about the new landlord tenant bed bug law by Lorraine Weschler of the Waterbury Republican-American (November 3); held the tenth bed bug forum organized by the Connecticut Coalition Against Bed Bugs titled “Bed bugs meet the law” (182 attendees) (November 8), a panel of jurists and members of the board presented a program at Quinnipiac University in North Haven explaining the new law, “An Act Concerning the Rights and Responsibilities of Landlords and Tenants Regarding the Treatment of Bed Bug Infestations” that came into effect on October 1, 2016; the national systematics entomology (SEL) in Washington D.C. confirmed her identification of Khapra beetle, *Trogoderma granarium* found in Stamford (November 18); talked at a bed bug mattress training for the mattress recycling industry in Mansfield (10 attendees) (November 22); and was interviewed by Michael Holmes of the Yale Daily News about bed bugs at Yale University (November 30).

DR. CLAIRE E. RUTLEDGE presented “Biosurveillance: Using a native wasp to detect an invasive beetle” at the CAES lunchtime seminar series in Jones Auditorium (30 attendees) (November 2).

DR. VICTORIA L. SMITH participated in the Autumn Meeting of the CT Cooperative Agricultural Pest Survey (CAPS), held in the Jones Auditorium (12 participants) (November 10); participated in a meeting of the Yale Biosafety/Recombinant DNA Committee, held at 135 College St., New Haven (25 participants) (November 17); and with Eric Chamberlain of USDA-APHIS-Plant Protection and Quarantine, conducted a seminar for holders of federal plant permits at Yale University, in conjunction with the Yale Environmental Health and Safety staff (25 participants) (November 18).

DR. KIMBERLY A. STONER participated in a panel on cover crops and pollinators in a workshop “Planning for Soil Health” sponsored by Connecticut Resource Conservation & Development, USDA-Natural Resources Conservation Service, CT NOFA & Northeast SARE. Massaro Farm, Woodbridge (55 participants) (November 2); interviewed by Natalie Weglarz and Aurora Courcy, students at John Winthrop Middle School in Deep River, Connecticut, and members of the Nidz Kidz, an eighth grade competitive Lego Robotics team about bees and how to protect them (November 2); spoke at the CACIWC (Connecticut Association of Conservation and Inland Wetlands Commissions) on “Native Plants for Pollinators” at the Sheraton, Rocky Hill (98 participants) (November 12); interviewed by Mary Wilson and Holly Kocet of Protect Our Pollinators in Newtown (November 17); and interviewed by Eric Chiarillo, a high school senior at Farmington High School creating a documentary-style public service announcement about bees (November 30).

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ENVIRONMENTAL SCIENCES

DR. JOSEPH PIGNATELLO gave the talk “Activated Carbon-Mediated Alkaline Hydrolysis of Methyl Bromide,” co-authored by Dr. Hsin-Se Hsieh at the Methyl Bromide Alternatives and Outreach Annual Meeting, Orlando, FL (approximately 100 attendees) (November 10); and displayed an invited poster, “Bioaccessibility of Native Polycyclic Aromatic Hydrocarbons and Derivatives in a Fuel Soot Using an *in vitro* Gastrointestinal Model,” at the 37th SETAC Congress/SETAC North America Annual Meeting, Orlando, Florida (November 6-10).

DR. PHILIP ARMSTRONG gave the talk “Mosquitoes and Zika Virus: Assessing the Threat” at the Connecticut Entomological Society meeting in Jones Auditorium (25 attendees) (November 18).

MR. GREGORY BUGBEE, gave an update on “Connecticut’s Invasive Aquatic Plant Problems” to the Connecticut Invasive Plant Council at the CT Department of Agriculture in Hartford (approximately 20 attendees) (November 15); gave a talk entitled “Pond Problems- A Growers Guide to Taming the Beast” at the Connecticut Pomological Society Annual Meeting in Glastonbury (approximately 120 attendees) (November 29); hosted, with **MS. JENNIFER FANZUTTI**, a meeting of the Northeast Aquatic Nuisance Species Panel in Jones Auditorium and greeted the panel with a talk on the history of CAES (approximately 20 attendees) (November 30); and gave a talk entitled “CAES Surveys of West Lake, Guilford” at the Guilford police station (approximately 40 attendees) (November 30).

DR. DOUG BRACKNEY gave the talk “The influence of genetic bottlenecks, RNAi-mediated diversification, and selective constraints on Powassan virus evolution” at the 65th Annual American Society of Tropical Medicine and Hygiene, Atlanta, GA (approximately 100 attendees) (November 13).

DR. GOUDARZ MOLAEI was interviewed by WTNH/WCTX News8 on ticks and tick-associated diseases in Connecticut (November 16).

FORESTRY AND HORTICULTURE

DR. JEFFREY S. WARD participated in the Society of American Forester’s House of Delegates at the national meeting in Madison (November 1-2); presented a poster “Independent effects of invasive shrubs and deer herbivory on plant community dynamics” at the 2016 Society of American Foresters National Convention in Madison, WI (November 3); participated in an Audubon Connecticut Science Committee meeting in Stratford (November 7); spoke on roadside forest management at the Stormwise Workshop in Durham (37 attendees) (November 15); met with Jerry Milne and Jim Warner (CT DEEP) and Lance Hansen (FALPS) to discuss citizen scientist monitoring of long-term forest dynamic plots in Barkhamsted (November 22); and met with Andy Hubbard (MDC) to discuss forest regeneration in Hartland (November 22).

DR. ABIGAIL A. MAYNARD discussed the New Crops Program at Rose’s Berry Farm in Glastonbury (November 15) and attended the annual meeting of the Connecticut Pomological Society in Glastonbury (November 29).

DR. SCOTT C. WILLIAMS gave an invited lecture about environmental employment opportunities at Middlesex Community College, Middletown (9 students, 1 teacher) (November 1); with **DR. JEFFREY WARD** and **MS. MEGAN LINSKE** met with Guilford Environmental Planner Kevin Magee about deer exclusion techniques (November 17); and with **MR. MICHAEL SHORT**, **MR. JOSEPH P. BARSKY**, and **MS. MEGAN LINSKE** hosted the Connecticut Future Farmers of America (FFA) Association's Forestry Career Development Event at Lockwood Farm. Thirty-two students from 8 different schools competed in their general forestry knowledge, forestry equipment, tree identification, wood products, tree measurements, and compass use (November 18).

MR. JOSEPH P. BARSKY attended the quarterly meeting of the Connecticut State Consulting Committee for Agricultural Science and Technology Education at the Valley Laboratory (November 3) and gave a presentation on "Career opportunities in science and agriculture" at Cheshire High School (64 students) (November 15).

PLANT PATHOLOGY AND ECOLOGY

DR. WADE ELMER presented a talk entitled "Biocontrol options for management of soil-borne pathogens in ornamentals" to the 2016 Advanced Biocontrol School sponsored by Penn State Extension in Lancaster, PA (45 attendees) (November 3).

DR. FRANCIS FERRANDINO participated in a special meeting of the Connecticut Wine Council at Department of Agriculture Building in Hartford to discuss an off-season (Winter) educational program that would feature an enologist (November 3).

DR. YONGHAO LI visited Dr. Tingbo Jiang at the Northeast Forest University, Harbin, China and discussed woody ornamental diseases with staff and graduate students in his laboratory (5 adults) (November 1-4), and attended the NPDN System for True, Accurate, and Reliable Diagnostics (STAR-D) Round-up 2 workshop in Ithaca, NY (November 16-18).

DR. ROBERT MARRA attended the Conference on Urban Resilience and Sustainability at Kroon Hall, Hixon Center for Urban Ecology, Yale School of Forestry and Environmental Studies (November 4), presented a two-hour seminar on "The Impact of Drought and Other Stressors on Important Tree Diseases of the Northeast," to the UConn Extension Master Gardener Program (24 attendees) (November 14).

DR. NEIL SCHULTES delivered a lecture on "Genetically Modified Plants in Agriculture" to a Science Class (Sci 031) at Yale University (6 students) (November 18) and attended the Annual meeting of the CT Pomological Society in Glastonbury (November 29).

DR. QUAN ZENG presented an invited presentation "Streptomycin resistance of fire blight pathogens in Northeastern U.S." at the Second Annual Integrated Pest Management (IPM) Online Conference (November 9); gave a guest lecture and lead laboratory practices on "Plant Bacteriology" at the University of Connecticut (November 16); met Dr. John Inguagiato at the Department of Plant Science and Landscape Architecture, University of Connecticut and discussed phytoplasma and bacterial diseases on Connecticut golf courses (November 16); and attended the Connecticut Pomological Society Meeting and discussed drought and disease issues with growers (November 29).

DR. JATINDER S AULAKH attended the Connecticut Invasive Plant Working Group symposium planning committee meeting at Sessions Woods Wildlife Management Area, Burlington (November 29).

DR. RICHARD COWLES presented “Push-pull and pest management,” at Dr. James Miller’s retirement celebration, East Lansing, MI (120 attendees) (November 7); spoke on “Neonics and Bees” at the CTEC meeting, Plantsville (200 attendees) (November 22); and was recognized by the CT Pomological Society at their annual meeting and given the Award of Merit, Glastonbury (November 29).

MS. ROSE HISKES, with **DR. GALE RIDGE**, **MS. KATHERINE DUGAS**, and **MS. HEIDI STUBER**, assisted with and participated in the Bed Bugs Meet the Law, Bed Bug Forum X at Quinnipiac University in North Haven (November 8); participated in the Cooperative Agricultural Pest Survey (CAPS) meeting at The Connecticut Agricultural Experiment Station in New Haven (November 10); gave a talk on Invasive Plants at the Connecticut Association of Conservation and Inland Wetlands Commissions (CACIWC) Annual Meeting and Environmental Conference at the Sheraton Hartford South Hotel in Rocky Hill (73 attendees) (November 12); and participated in a Connecticut Invasive Plant Working Group (CIPWG) meeting in Burlington (November 29).

DR. DEWEI LI was interviewed by Kimberly Janeway, a reporter from Consumer Reports about mold problems with front-loading washing machines (November 29).

DR. JAMES LAMONDIA was interviewed about CAES Specialty Crop projects by Steve Jensen of the Connecticut Department Agriculture (November 14); was interviewed about the value of the broadleaf tobacco crop in Connecticut by Rebecca Murphy of the Connecticut Department of Agriculture (November 15); was interviewed about hops research and the Specialty Crop Block Grant hop project by Greg Hladky of the Hartford Courant (November 22); and was interviewed about malting barley research by Greg Hladky of the Hartford Courant (November 23).

DR. KATJA MAURER attended the quarterly CT Hops Growers Association meeting (10 attendees) (November 10).

Deng, Y.; Eitzer, B.; White, J.C.; Xing, B. 2016. Impact of multiwall carbon nanotubes on the accumulation and distribution of carbamazepine in collard greens (*Brassica oleracea*). *ES: Nano* DOI:10.1039/C6EN00419A.

Abstract: Pre-existing pharmaceutical residues in agricultural soils may encounter engineered nanomaterials, resulting in poorly understood co-contamination interactions. In this study, the bioaccumulation and translocation of the pharmaceutical residue carbamazepine (100 µg/L) in collard greens (*Brassica oleracea*) was evaluated upon concurrent exposure to pristine or carboxyl-functionalized multiwall carbon nanotubes (pCNTs or cCNTs) at 50 mg/L under hydroponic exposure and at 500 mg/kg in soil-grown conditions. *B. oleracea* toxicity was more evident under hydroponic exposure, with growth inhibition dependent on carbamazepine concentrations; however, biomass enhancement was noted in cCNTs-treated plants. Without CNTs, *B. oleracea* accumulated and translocated significant amounts of carbamazepine; up to 2500 µg/kg in the leaves and 300 µg/kg in the roots, depending on growth condition. The co-exposure of carbon materials notably suppressed carbamazepine accumulation in both hydroponic and soil systems. Specifically, root carbamazepine content in soil-grown plants was suppressed 29%, 53% and 89% by pCNTs, cCNTs and AC, respectively. Generally, the adsorption capacity of the carbon materials correlated well with the suppression of carbamazepine accumulation. The results also suggest that functionalization of CNTs enhanced carbamazepine translocation potential and significantly affected nanomaterial/co-contaminant interactions as compared to its pristine analog. These findings show that the CNTs in the environment may significantly affect the bioavailability and translocation pattern of coexisting organic contaminants.

Pasquali, F.; Agrimonti, C.; Pagano, L.; Zappettini, A.; Villani, M.; Marmiroli, M.; White, J.C.; Marmiroli, N. 2017. Nucleo-mitochondrial interaction in yeast in response to cadmium sulfide quantum dots. *J. Hazard. Mat.* 324:744-752.

Abstract: Cell sensitivity to quantum dots (QDs) has been attributed to a cascade triggered by oxidative stress leading to apoptosis. The role and function of mitochondria in animal cells are well understood but little information is available on the complex genetic networks that regulate nucleo-mitochondrial interaction. The effect of CdS QD exposure in yeast *Saccharomyces cerevisiae* was assessed under conditions of limited lethality (<10%), using cell physiological and morphological endpoints. Whole-genomic array analysis and the screening of a deletion mutant library were also carried out. The results showed that QDs: increased the level of reactive oxygen species (ROS) and decreased the level of reduced vs oxidized glutathione (GSH/GSSG); reduced oxygen consumption and the abundance of respiratory cytochromes; disrupted mitochondrial membrane potentials and affected mitochondrial morphology. Exposure affected the capacity of cells to grow on galactose, which requires nucleo-mitochondrial involvement. However, QDs exposure did not materially induce respiratory deficient (RD) mutants but only RD phenocopies. All of these cellular changes were correlated with several key nuclear genes, including TOM5 and FKS1, involved in the maintenance of mitochondrial organization and function. The consequences of these cellular effects are discussed in terms of dysregulation of cell function in response to these "pathological mitochondria".

Gent, M.P.N. 2016. Effect of temperature on composition of hydroponic Lettuce. *Acta Horticulturae* 1123:95-100

Abstract: Temperature changes the composition of plants through its effects on metabolism and nutrient uptake. Hydroponic lettuce growing in naturally sunlit greenhouses was subjected to two temperature treatments. Minimum temperatures were 20 or 10°C, and ventilation temperatures were 26 and 16°C, for warm and cool treatments, respectively. Tissue composi-

tion data for three plantings were subjected to analysis of variance with fixed effects of warm or cool temperature, high or low daily light integral, and am or pm harvest time. Plant size was included as a covariate. Warm compared to cool temperature increased relative growth rate by 85% for small plants of 3 to 10 g fresh weight (FW), compared to 30% for medium plants of 40 to 89 g FW. Warm temperature increased specific leaf area for plants grown under a low light integral of 4.5 mol m⁻² d⁻¹, compared to a high light integral of 15 to 17 mol m⁻² d⁻¹. Dry matter content was 20% greater for plants grown under cool compared to warm conditions. Total reduced nitrogen was 7% less under cool temperature. The concentration of nitrate was 40% lower, while the concentration of sugars was about 50% higher, under cool compared to warm temperature. Cool temperature increased the tissue concentrations of malic acid and potassium, but had no effect on phosphorus.

Zeng Q. 2016. Fire blight and streptomycin resistance. Northeast IPM Center Outreach Webcast Plant Management Network Webinar

<http://www.plantmanagementnetwork.org/edcenter/seminars/outreach/Apple/FireBlight/>

Abstract: Fire blight is a devastating disease of apple and pear, and the management of fire blight is challenged by the evolution and spread of streptomycin resistance in the pathogen population. Understanding how streptomycin resistance is distributed and spread not only will help the growers to adopt the most appropriate management options, but also will provide indications of how to avoid promoting and spreading streptomycin resistance in the future. In this presentation, we reviewed the disease biology, management options, the history and current updates of the streptomycin resistance in North America, and presented the most recent research updates on the identification of alternatives for antibiotics in fire blight management. By the end of this presentation, the practitioner should have a better understanding of the appropriate management practices that help to restrict the development and spread of streptomycin resistance, and the alternative tools that are currently available and underdevelopment for fire blight management.

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Assessing the Economic Impact of Inversion Tillage, Cover Crops, and Herbicide Regimes in Palmer Amaranth (*Amaranthus palmeri*) Infested Cotton," by Leah M. Duzy, Andrew J. Price, Kipling Balkcom and **Jatinder Aulakh** International Journal of Agronomy. Volume 2016 (2016), Article ID 1524389, 9 pages <http://dx.doi.org/10.1155/2016/1524389>

Abstract: Cotton (*Gossypium hirsutum* L.) producers in Alabama are faced with a rapidly expanding problem that decreases yields and increases production costs: herbicide-resistant weeds. Producers increasingly rely on integrated weed management strategies that raise production costs. This analysis evaluated how tillage, cover crops, and herbicide regime affected net returns above variable treatment costs (net returns) for cotton production in Alabama from 2009 to 2011 under pressure from Palmer amaranth (*Amaranthus palmeri* S. Wats.). Annual net returns were compared for two tillage treatments (inversion and noninversion tillage), three cover crops (crimson clover [*Trifolium incarnatum* L.], cereal rye [*Secale cereal* L.], and winter fallow), and three herbicide regimes (PRE, POST, and PRE+POST). Results indicate that under heavy Palmer amaranth population densities one year of inversion tillage followed by two years of noninversion tillage, along with a POST or PRE+POST herbicide application had the highest net returns in the first year; however, the economic benefit of inversion tillage, across all herbicide treatments, was nonexistent in 2010 and 2011. Cotton producers with Palmer amaranth infestations would likely benefit from cultural controls, in conjunction with herbicide applications, as part of their weed management system to increase net returns.

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JOURNAL ARTICLES APPROVED NOVEMBER 2016

Anderegg, W. R. L., A. Wolf, **Adriana Arango-Velez**, D. Baldocchi, B. Choat, D. Chmura, S. Jansen, T. Kolb, Y. S. Lin, et al. Plant water potential improves prediction of stomatal models. *Global Change Biology*

Maier, Chris T. and David R. Smith. *Xiphidria prolongata* (Hymenoptera: Xiphidriidae): first North American hosts and state records for Connecticut and New York. *The Great Lakes Entomologist*

Stafford, Kirby C., III. The gypsy moth strikes again. *Connecticut Gardener*

Zeng, Quan, J. Wang, P. G. Giordano, F. Bertels, M. I. Chilvers, Regan B. Huntley, J. M. Vargas, G. W. Sundin, J. L. Jacobs, and C. H. Yang. Recombination of virulence genes in divergent *Acidovorax avenae* strains that infect a common host. *PLOS Pathogens*

Zhang, K., M. Schaab, G. Southwood, E. Tor, L. Aston, W. Song, **Brian Eitzer, Sanghamitra Majumdar**, et al. A collaborative study: determination of mycotoxins in corn, peanut butter, and wheat flour using stable isotope dilution assay (SIDA) and liquid chromatography-tandem mass spectrometry (LC-MS/MS). *Journal of Agricultural and Food Chemistry*

GRANTS RECEIVED NOVEMBER 2016

Awarded from Connecticut Department of Agriculture through the USDA Specialty Crop Block Grant 1/2/17-1/1/19.

Nano-Fertilizer to Suppress Crop Disease and Promote Yield

Dr. Jason White, State Chemist, vice director and
Chief Analytical Chemist
The Connecticut Agricultural Experiment Station
\$60,000

Breeding Honey Bees Resistant to Varroa Mite

Dr. Richard Cowles, Assistant Scientist
The Connecticut Agricultural Experiment Station
\$59,254

Planting Habitat for Specialty Crop Pollinators

Dr. Kimberly Stoner, Associate Scientist
The Connecticut Agricultural Experiment Station
\$59,997

Hops as a Specialty Crop

Dr. James LaMondia, Chief Scientist
The Connecticut Agricultural Experiment Station
\$63,000

ARTICLES OF INTEREST NOVEMBER 2016

DR. JASON C. WHITE speaking at the International Conference on Nanotechnology Applications and Implications of Agrichemicals Towards Sustainable Agriculture and Food Systems" in Beijing China (top). **DR. WHITE** and Dr. Christian Dimkpa of the International Fertilizer Development Center (IFDC) in front of the Beijing National Stadium or "Birds nest" (bottom).



2016 CONNECTICUT-FFA FORESTRY CAREER DEVELOPMENT EVENT

On November 18th the Department of Forestry & Horticulture hosted the Connecticut-FFA Forestry Career Development Event (CDE) at the Pavilion at Lockwood Farm. This marks the 5th year that CAES has hosted this event. This years' Forestry CDE evaluated students' knowledge of forest management practices, forest mensuration, map reading skills, knowledge of chainsaw parts and safety, and tree identification.

Thirty two students from eight State FFA Chapters participated in this years' event, with the 4-student team from E.O. Smith High School Agricultural Education Program taking first place. Students from E.O Smith FFA will represent The State of Connecticut in regional and national competition at the 2017 Easter States Exposition and the 2017 National FFA Convention in Indianapolis, IN.

DR. SCOTT WILLIAMS, MICHAEL SHORT, JOSEPH P. BARSKY of the Dept. of Forestry & Horticulture, and **MEGAN LINSKE** of the Department of Entomology organized and oversaw the event. (3 photos)



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NEW ADDITIONS TO THE VALLEY LABORATORY FAMILY

Madeline Julia Salvas was born November 22, 2016 to **Michelle and Geoffrey Salvas**. She was 6.0 lb and 18 in. Mom and Madeline are doing great.



Katja and Reinhard Maurer welcomed baby *Joshua* on December 4, 2016. He was 5 lb, 11 oz. and 18.5 in long. His favorite activities are snuggling with Mommy and eating.





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Valley Laboratory, Windsor

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Station News was prepared and edited by Dr. Theodore G. Andreadis, Ms. Vickie Bomba-Lewandoski, and Ms. Sandra Carney.

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