

Station News

The Connecticut Agricultural Experiment Station
Volume 12 Issue 9 | September 2022



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.



CAES

The Connecticut Agricultural Experiment Station

Putting Science to Work for Society since 1875

This Issue

Administration	2
Analytical Chemistry	3
Entomology	4
Environmental Science and Forestry	6
Plant Pathology and Ecology	8
Valley Laboratory	10
Journal Articles Approved	12



DR. JASON C. WHITE participated in a NSF Center for Sustainable Nanotechnology (CSN) Zoom call on research ethics (August 1); participated in a monthly Zoom call of the Northeast Waste Management Officials' Association (NEWMOA) focused on PFAS (August 4); held a Zoom call with Prof. Jorge Gardea-Torresdey of the University of Texas to discuss collaborative research (August 4); participated in a Teams call with Mike Farrow of the US FDA to discuss the FDA LFFM program (August 5); along with **DR. SARA THOMAS** participated in the monthly call of the PFAS Testing Laboratory working group (August 5); participated in the bi-weekly CSN Plant Biosurfaces call (August 5); met with Mr. Felipe Franco de Oliveira and Ms. Vanessa Takeshita of the University of Sao Pãolo who are visiting CAES for a year as part of their PhD research programs (August 8); participated in the monthly FDA LFFM Human and Animal Food Program Zoom call (August 8); participated remotely in the Research Proposal Exam of Mr. Connor Protter of the University of Wisconsin (Dr. White is on his PhD committee) (August 8); participated in a Zoom call with collaborators from Johns Hopkins University and Auburn University to discuss collaborative research (August 9); gave a remote presentation titled "Nanotechnology-enabled Agriculture: A Path to Global Food Security?" at the 2022 Global Summit: Nanotechnology for a Healthier and Sustainable Future, University of Waterloo, Ontario, Canada (August 10); participated in the Spotted Lanternfly Strategic Planning Working Group Kick-Off call (August 11); participated in the monthly CSN Faculty meeting (August 11); hosted a Zoom call with Ms. Tanushree Parsai of the Indian Institute of Technology to discuss her Fulbright Scholarship application (August 12); met with **DR. CHRISTIAN DIMKPA**, **DR. NUBIA ZUVERZA-MENA**, and **DR. TRUNG BUI** to discuss PFAS-related research (August 12); participated in a Zoom call with collaborators at the University of Delaware and the Institute of Science and Technology for Ceramics in Italy to discuss a collaborative research proposal (August 15); along with **MS. VICKIE BOMBA-LEWANDOSKI** and **MR. MICHAEL LAST** participated in a Teams call with the BITS Business Lead for Natural and Physical Resources to discuss IT programs (August 16); along with **DR. SHITAL VAIDYA**, **DR. CHRISTIAN DIMKPA** and **DR. WADE ELMER** hosted a Zoom call with collaborators at Johns Hopkins University to discuss progress on a joint USDA research project (August 16); hosted the monthly Zoom CSN Nanochemistry-Plant call (August 16); along with **MR. GREGORY BUGBEE** met with Mr. Mark Heilman of SePRO and Ms. Margot Burns of RiverCOG to discuss issues related to invasive aquatic plant species (August 16); participated in a Zoom call with collaborators at Auburn University, Louisiana State University and the University of Georgia to discuss a collaborative USDA grant proposal (August 17); participated in the weekly CSN all hands call (August 17); participated in the monthly Farmland Preservation Advisory Board meeting (August 18); participated in the Dissertation Proposal Defense of Eric Ostovich; a PhD student at the University of Wisconsin; Dr. White is on his committee (August 18); along with **DR. CHRISTIAN DIMKPA** and **DR. NUBIA ZUVERZA-MENA** met with Dr. Ileana Vera Reyes to discuss her research to be conducted at CAES; Ileana is a Fulbright Scholar from Mexico (August 19); attended the weekly CSN Plant-Biosurfaces Zoom call (August 19); participated in a workshop at McGill University (Montreal Canada) titled "Assessing the Environmental Footprint of Plastics in Agriculture" (August 22-23); attended the 15th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials at the University of Montreal (Canada) and gave a platform presentation titled "Tuning agrochemical chemistry at the nanoscale to enhance stress tolerance, crop nutrition, and yield" (August 24-26); attended the PhD Dissertation defense of Mr. Ahmed Ali at the Stockbridge School of Agriculture at the University of Massachusetts Amherst; Dr. White is a com-

mittee member (August 30); hosted the monthly CAES J-visa recipient meeting (August 31); met by Zoom with colleagues at Johns Hopkins University to discuss collaborative research (August 31); and gave a presentation titled “Center for Sustainable Nanotechnology research at CAES” to the weekly CSN Zoom call (August 31).

ANALYTICAL CHEMISTRY

DR. YI WANG attended the American Chemical Society (ACS) Fall 2022 meeting in Chicago, IL (August 21-25). Dr. Wang gave an oral presentation for ACS’s Division of Agrochemicals titled “Nanoscale Sulfur Uniquely Suppresses Fungal Disease and Increases Biomass and Yield of Crop Plants” (~40 attendees).

DR. CHAOYI DENG attended the American Chemical Society (ACS) Fall 2022 meeting in Chicago, IL (August 21-25); presented a poster for ACS’s Division of Agriculture and Food Chemistry on “The Role of Leaf Surface pH in Controlling the Transformation of Nanoscale Cu on Plant Leaf Surfaces” (~15 attendees).

DR. NUBIA ZUVERZA-MENA and DR. SARA THOMAS visited Prof. Yanna Liang and Ms. Chelli at the University of Albany, New York on August 23, 2022. Prof. Liang and Ms. Chelli are site volunteers in the project titled “A Combined Approach for Phytoremediation and Industrial Hemp Production,” in which the main goal is the phytoremediation and removal of Per- and Polyfluoroalkyl substances (PFAS) from contaminated soil using hemp plants. The project is being funded under the auspices of the Magnarelli Research Grant, with the field site based in Loring, Maine. The team discussed progress on the research and outlined plans for continuing the collaboration.

NEW STUDENTS, STAFF, AND VOLUNTEERS



DR. ILEANA VERA-REYES started her research stay in the Department of Analytical Chemistry of CAES on August 8, 2022. She is a Research Fellow at the Bioscience and Agricultural Department at the Center for Research in Applied Chemistry (CIQA) Saltillo, in Coahuila, Mexico. At CIQA, Dr. Vera-Reyes contributes to laboratory research projects and teaching activities as an advisor or co-advisor. In addition, she teaches Organic Chemistry, Plant Biochemistry, and Plant Secondary Metabolism courses for the students of the Agroplasticulture Master's Degree program. Dr. Vera-Reyes’ research expanded to the biosynthesis and production of secondary metabolites like alkaloids, phenols, and terpenes using biotechnology techniques such as plant tissue culture and bioreactors. She also researches the synthesis of metallic nanoparticles with plant extracts and their application for controlling plant pathogens, along with their physiological and biochemical impacts on horticultural crops, including tomato, cucumber, zucchini. For these she uses proteomics and metabolomics tools. Dr. Vera-Reyes has been assessing the impact of bunch shading on anthocyanin, phenols profile on *Vitis vinifera* berry skin, and characterizing the tomato root exudate profiles under abiotic stress.

Dr. Vera-Reyes was awarded a research stay at CAES by the Fulbright-García Robles scholarship. During this laboratory visit, she will be developing a biodegradable polymer nanocompo-

site platform for simultaneously delivering macro and micronutrients to plants. The biodegradable polymer-nanocomposites will contain multiple nutrients including nitrogen, phosphorus, potassium, zinc and copper, and targeted for controlled and targeted delivery of those nutrients to the plant.

ENTOMOLOGY

DR. GOUDARZ MOLAEI was interviewed by CT Insider on tick population abundance and risk of human infection with tick-borne pathogens in Connecticut (August 9), and by Fox 61 on Lyme disease and vaccine development (August 12); supervised the Public Health and Entomology Tent, and assisted by **MS. NOELLE KHALIL**, presented a poster at Plant Science Day 2022, “Monitoring Ticks and Tick-borne Pathogens to Better Guide Public Health Action in Connecticut” (August 3); and directed the CAES Tick Testing Laboratory; of the 156 submissions, blood-engorged adult blacklegged ticks were tested for Lyme disease, babesiosis, and anaplasmosis, and results were reported (August 1–31).

DR. VICTORIA LYNN SMITH participated in the 96th meeting of the National Plant Board, with discussions on *Phytophthora ramorum*, spotted lanternfly, and other quarantine pests and diseases, and in a panel discussion with a beech leaf disease update (July 31–August 4); and was interviewed by NBC-CT about spotted lanternfly (August 10).

DR. PHILIP ARMSTRONG was interviewed by the New London Day about the current mosquito season and the risk of EEE virus (August 18); by the Record Journal about West Nile virus transmission in 2022 (August 24); and by Estuary Magazine about mosquitoes and mosquito-borne diseases affecting the Connecticut River valley (August 26).

MS. TIA M. BLEVINS participated in a quarterly web conference with the regional USDA-APHIS-PPQ Export Certification Specialist to discuss phytosanitary certificate issuance and the Convention on International Trade in Endangered Species of wild fauna and flora (CITES) (August 18).

MS. ANGELA BRANSFIELD participated in the Federal Select Agent Program’s Responsible Official webinar, “Entity Scoring Process/Risk Tool/Complexity Score; eFSAP Information System User Discussion” (August 17).

MR. MARK CREIGHTON presented two talks in the demonstration tent on beekeeping systems in Connecticut; and provided a live educational hive display at Plant Science Day (August 3).

DR. ANDREA GLORIA-SORIA was interviewed by The Atlantic in regards to the upcoming paper by Herre et al. in Cell, “Non-canonical odor coding in the mosquito.” She was quoted: “you have no idea how good mosquitoes are at smelling us” <https://www.theatlantic.com/science/archive/2022/08/mosquito-smell-olfaction-genetic-unstoppable-bite/671177/> (August 15); hosted an international training via Zoom on using DIYABC to infer demographic histories of *Aedes aegypti* mosquitoes (August 18); reviewed a grant proposal for the Universidad de la Republica, Montevideo, Uruguay, Comisión Sectorial de Investigación Científica; and presented a talk (virtual), “Estudios sobre la migración del *Aedes aegypti*, utilizando marcadores moleculares” at the *I Curso Internacional de Control Integrado de Vectores*, in Cuba (August 29–September 2).

DR. MEGAN LINSKE participated in the Wildlife Society’s (TWS) Diversity, Equity, and Inclusivity (DEI) networking meeting (August 15); and participated in an introductory Zoom meeting with TWS Leadership Institute Mentee Summer Larose, REE-NIFA, to discuss mentorship program deliverables (August 18).

DR. CLAIRE RUTLEDGE: Presented an exhibit “Through the Eyes of a Wasp, the Rise and Fall of the Emerald Ash Borer in Connecticut” at Plant Science Day (August 3); and helped a Plant Health Fellow, Mia Varney, who interned in her lab this summer, present a talk, “Is There Hope for Ash Trees in Connecticut?” at the PHF forum (August 4).

MR. JOHN SHEPARD provided updates from the CT Mosquito Trapping and Arbovirus Surveillance Program as part of Arbovirus Situational Awareness conference calls organized by the Northeast Regional Center for Excellence in Vector-Borne Diseases (August 1, 15, 22, 29).

MS. TRACY ZARRILLO presented a barn display “Wild Bee Diversity in Connecticut” at the Plant Science Day (August 3); was interviewed by The Day community media about the vertical stratification of bees in forests (August 15); and attended iDigBio’s Digitization Academy: Introduction to Biodiversity Specimen Digitization (August 29–September 1).

PUBLICATIONS

1. **Stoner, K. A.**, Nurse, A., Koethe, R. W., Hatala, M. S. and Lehmann, D. M. (2022). Where Does Honey Bee (*Apis mellifera* L.) Pollen Come from? A Study of Pollen Collected from Colonies at Ornamental Plant Nurseries. *Insects*, 13, 744. DOI: [10.3390/insects13080744](https://doi.org/10.3390/insects13080744)

Abstract: Ornamental nursery plants are both a major agricultural industry in the U.S. and a major feature of the urban and suburban landscape. Interest in their relationship with pollinators is two-fold: the extent to which they provide a nutritional benefit to pollinators, and the extent to which they have the potential to harm pollinators by exposing them to pesticide residues in nectar and pollen. We identified plant genera as sources of trapped pollen collected by honey bee colonies located at commercial ornamental plant nurseries in Connecticut in 2015 and 2018 and quantified the percentage of pollen volume collected from each genus for each weekly sample over two seasons. Plant genera grown at these nurseries, particularly *Rosa*, *Rhus*, and *Ilex*, contributed substantially to pollen volume during weeks 23–27 of the year. Among the genera not grown in nurseries, *Toxicodendron* was also important during weeks 23 and 24, and *Trifolium* was important in both frequency and quantity throughout the season. *Zea* was a major component of pollen volume from weeks 28–36 in both sites, even though cropland was not over 11% of land cover at either site.

2. **Gloria-Soria, A.**, Faraji, A., Hamik, J., White, G., Amsberry, S., Donahue, M., Buss, B., Pless, E., Cosme, L. V., and Powell, J. R. (2022). Origins of High Latitude Introductions of *Aedes aegypti* to Nebraska and Utah during 2019. *Infection, Genetics and Evolution*, 103. DOI: [10.1016/j.meegid.2022.105333](https://doi.org/10.1016/j.meegid.2022.105333)

Abstract: *Aedes aegypti* (L.), the yellow fever mosquito, is also an important vector of dengue and Zika viruses, and an invasive species in North America. *Aedes aegypti* inhabits tropical and sub-tropical areas of the world and in North America is primarily distributed throughout the southern US states and Mexico. The northern range of *Ae. aegypti* is limited by cold winter months and establishment in these areas has been mostly unsuccessful. However, frequent intro-

ductions of *Ae. aegypti* to temperate, non-endemic areas during the warmer months can lead to seasonal activity and disease outbreaks. Two *Ae. aegypti* incursions were reported in the late summer of 2019 into York, Nebraska and Moab, Utah. These states had no history of established populations of this mosquito and no evidence of previous seasonal activity. We genotyped a subset of individuals from each location at 12 microsatellite loci and ~14,000 single nucleotide polymorphic markers to determine their genetic affinities to other populations worldwide and investigate their potential source of introduction. Our results support a single origin for each of the introductions from different sources. *Aedes aegypti* from Utah likely derived from Tucson, Arizona, or a nearby location. Nebraska specimen results were not as conclusive, but point to an origin from southcentral or southeastern US. In addition to an effective, efficient, and sustainable control of invasive mosquitoes, such as *Ae. aegypti*, identifying the potential routes of introduction will be key to prevent future incursions and assess their potential health threat based on the ability of the source population to transmit a particular virus and its insecticide resistance profile, which may complicate vector control.

ENVIRONMENTAL SCIENCE AND FORESTRY

GRANTS AWARDED

1. **DR. SUSANNA KERIÖ** was awarded a USDA Specialty Crop Block Grant to study Reduction and diagnosis of transplant shock in landscape trees in Connecticut nurseries and urban sites. \$96,313.

The Connecticut Agricultural Experiment Station (CAES) will partner with Connecticut city tree planting programs and nurseries to test mycorrhizal inoculation in order to reduce transplant shock in landscape trees and develop diagnostic tools to detect and predict transplant shock. Transplant shock affects landscape trees both in nurseries and in field planting sites, which increases tree mortality and causes economic losses to nurseries and the stakeholders planting the trees. According to CAES urban tree inventory in New Haven, the mortality of young urban maples has increased by 26% in 2010-2020. This highlights the importance of management that improves tree survival. Mycorrhizal inoculation can reduce sapling mortality, but quantitative data on the benefits of mycorrhizal inoculation for landscape trees is limited. Additionally, diagnostic tools that quantify tree recovery and predict tree outcomes are limited. The project has two goals: 1) quantify benefits of mycorrhizal inoculation on transplant shock of 300 landscape trees in urban tree planting sites and partnering nurseries, and 2) use non-structural carbohydrates as a diagnostic tool for quantifying the benefit of mycorrhizal inoculation for tree health, and for predicting tree survival.

DEPARTMENTAL RESEARCH UPDATES

DR. SCOTT WILLIAMS participated in a Zoom meeting with Dr. Maria Diuk-Wasser (Columbia University) along with Dr. David Kalb and Dylan Ferreira (Rhode Island Department of Environmental Management) about proposed deer research in Rhode Island (August 2); participated in a Zoom meeting with CDC staff about research collaborations across the new Centers for Excellence in Vector-Borne Diseases (August 4); had a Zoom meeting with CDC staff and newly awarded CDC grant collaborators about future research direction (August 10); had a Zoom meeting with Dr. Maria Diuk-Wasser (Columbia University) and Mr. Charles Lubelczyk (Maine Medical Center Research Institute) about research strategy for newly awarded CDC

grant (August 18); spoke with UMass research affiliate Dr. Allison Snow about the possibility of treating deer on Nantucket, MA with acaricide for tick control (August 25).

MR. GREGORY BUGBEE gave invited lecture titled "The effects of grass carp on Lake Waubeeka" at the Lake Waubeeka Association annual meeting (approx. 150 attendees) (August 14); participated in the United States Army Corp of Engineers Connecticut River hydrilla management demonstration project meeting (August 17); as a panelist, participated in the summer meeting of the Northeast Aquatic Nuisance Species Panel summer meeting (August 24); with **MS. SUMMER STEBBINS** gave a virtual talk titled "Connecticut River Hydrilla Update" to the Connecticut River Management Working Group (15 attendees) (August 25); interviewed by Linda Edgerton of the Weed Science Society of America on hydrilla in the Connecticut River (August 31).

DR. SUSANNA KEIRÖ attended a meeting of the Connecticut Urban Forest Council as Executive Secretary (August 1); attended the NE1833 Multistate Chestnut Conference in Charlottesville, Virginia, and presented a talk on "Chestnut Research in CAES" (37 participants) (August 25-28).

DR. ITAMAR SHABTAI met with subcommittee members of the CT Council on Soil and Water Conservation to work on a Soil Health Action Plan for CT (August 9); met with colleagues from Lavras Federal University, Brazil, to discuss a manuscript that describes the adsorption mechanisms of organic phosphorous compounds to soil minerals (August 25).

DR. BLAIRE STEVEN attended the ISME-18 meeting of the International Society of Microbial Ecologists in Lausanne, Switzerland, and presented a research poster titled, "Bacteria alter the blood digestion of gnotobiotic mosquitoes" (August 14-19).

DR. JEFFREY WARD participated in a Connecticut Forest and Park Association (CFPA) Governance Committee meeting (August 9); met with Regional Water Authority employees Casey Cordes and Joshua Tracy in North Madison to discuss forest stand high-grading and rehabilitation (August 23); met with Jeremy Clark (CT DEEP Forestry) in Sharon, CT, to discuss management strategies for forests with high defoliation induced mortality (August 24); spoke on "Slash walls and oak regeneration" at the Southern New England Oak Resiliency: Lessons Learned, Looking Forward" Zoom workshop (16 attendees) (August 25); interviewed by Victoria Hellwig (Forest Ecosystem Monitoring Cooperative) about forest health and recreation (August 31).

DR. LEIGH WHITTINGHILL gave an invited lecture titled "Urban Agriculture for Food Security in Challenging Spaces" at Plant Science Day (100 attendees) (August 3); coauthored a research poster presentation titled "Comparison of Saffron (*Crocus sativus* L.) Phytochemical Contents form Different Growing Systems" at the American Society for Horticultural Science 2022 Annual Conference (August 3); presented a research lecture titled "Green roof technology in urban agriculture: Lessons learned in the last decade" at the Ecological Society of America annual conference in Montreal, Canada (50 attendees) (August 15).

DR. DONALD E. AYLOR (Emeritus) gave an invited lecture titled “Aerial Dispersal of Pathogens Over Multiple Spatial and Temporal Scales: Interdisciplinary Challenges in Measurement and Modeling” at the Gordon Research Conference on Fluids in Disease Transmission and Contamination held August 14-18 at Mount Holyoke College, South Hadley, MA (78 adults) (August 16).

DR. ROBERT MARRA was interviewed by Lisa Rathke of the Associated Press about the impact of the region’s drought on fall colors (August 30); conducted annual remeasurements at Beech Leaf Disease Long-term Monitoring Plots, accompanied by USFS scientist Cameron McIntire, at the Hartford MDC Reservoir in Bloomfield (August 15); Tunxis State Forest in Barkhamsted (August 15); Meshomasic State Forest in Portland (August 16); Yale Myers Forest in Ashford, CT (August 16); Nathan Hale State Forest in Coventry (August 16); Naugatuck State Forest in Cheshire (August 17); Nehantic State Forest in Lyme (August 17); and with volunteer Nicole Crane at Hemlock Reservoir in Easton (August 25).

DR. QUAN ZENG participated in proposal review and panel discussion for Genome Canada’s 2022 CAGI Climate-Smart Agriculture and Food Systems, Génome, Québec (August 10-12), met Dr. Bruno Folchi from AgroVentures LLC and discussed about collaboration opportunities (August 26).

DR. YONGHAO LI presented “Gardening with Native Plants” at the Shelton Garden Club meeting in Shelton (23 adults) (August 1); participated in the National Plant Diagnostic Network Online Communication & Web Portal Committee meeting via Zoom (4 adults) (August 10); attended the Plant Diagnostic Network Northeast Regional meeting via Zoom (August 23); participated in the National Plant Diagnostic Network Online Communication & Web Portal Committee meeting via Zoom (6 adults) (August 24).

Dr. LINDSAY TRIPLETT presented an oral presentation co-authored by **Dr. Stephen Taerum** (lead author) and **Dr. Blaire Steven** titled “Microeukaryotes of the solanaceous plant phyllosphere” at Plant Health 2022 in Pittsburgh, PA (70 adults) (August 7); and presented a poster presentation titled “Functional microbiomes of rhizosphere protist predators” co-authored by **Dr. Ravikumar Patel** (lead author), Eboni Traverso, and **Blaire Steven** (42 adults) (August 6-10). Dr. Triplett served as one of two US organizers of the 12th Japan-US Seminar on Plant Pathology in Ithaca, NY from August 28–September 2, where she gave an oral presentation “How predators remodel the phytobiome for plant health” (91 adults) (August 29).

DR. RAVIKUMAR PATEL presented a poster titled “Survival of the sleepest: *Pseudomonas syringae* survives chemical controls by maintaining a toxin-associated dormant subpopulation” co-authored by **Lindsay Triplett**, at the 12th Japan-US Seminar on Plant Pathology in Ithaca, NY (85 adults) (August 29).

DR. STEPHEN TAERUM presented a virtual seminar for the Forestry and Agricultural Experiment Station, University of Pretoria, South Africa, titled “Exploring protist diversity and interactions in the phytobiome” (August 25). This was part of the FABI International Seminar Series (70 adults).

Members of **DR. WASHINGTON DA SILVA**’s group participated in the 2022 Plant Health Meeting in Pittsburgh, PA (August 6-10). **Ms. Juliana Souza Milagres** presented a poster titled

“The genomic region matters when synthesizing dsRNA for plant virus suppression via RNAi” co-authored by **Karol Alves Barroso** and **Washington da Silva**. **Ms. Karol Barroso** presented a poster titled “Direct application of nano-metal and metalloids to control potato virus Y infection” co-authored by **Karol Alves Barroso**, **Darlan Borges**, **Juliana Souza Milagres**, **Márcia Michelle Ambrósio**, **Wade Elmer**, and **Washington da Silva**. **Dr. Inès Karmous** presented a poster titled “Use of green synthesis of CuO and ZnO nanoparticles with Cannabis to suppress *Fusarium virguliforme* L. on soybean” co-authored by **Shital Vaidya**, **Washington da Silva**, **Karol Barroso**, **Juliana Milagres**, **Nubia Zuverza-Mena**, **Christian Dimkpa**, **Jason White**, and **Wade Elmer**.



Dr. Lindsay Triplett co-organized the 12th Japan-US Seminar in Plant Pathology, an international conference supporting Japanese and American scientific cooperation in plant pathology since 1966. Attendees represented 17 US and 15 Japanese universities.



Dr. Jim LaMondia spoke to farmers and other attendees at the Tobacco Field Day on August 24, 2022.

EVENTS

TOBACCO FIELD DAY Twenty-five people attended the Connecticut Agricultural Experiment Station Valley Laboratory’s Tobacco Field Day held at the Valley Laboratory on August 24, 2022. **DR. DEWEI LI** welcomed growers. Tours of field plots were conducted; **DR. JIM LAMONDIA** spoke about target spot management and fungicide trials, breeding for resistance to multiple pathogens and new varieties under development, Fusarium wilt resistance, PVY and tobacco ringspot viruses, and with **MR. JIM PRESTE** discussed reduced tillage pros and cons and cover cropping. Jim Hyde of USDA NRCS and Julie Fine contributed to the discussion of reduced tillage and soil quality. Pete Kisselburgh (Arthur Carroll Insurance) answered questions about risk management in tobacco and the tobacco insurance program. **JIM PRESTE, MICHELLE SALVAS** and **ETHAN PAINE** assisted with much of the behind the scenes work for the meeting. The meeting qualified for pesticide applicator re-certification credit in Connecticut and Massachusetts.

DR. JATINDER S. AULAKH presented a poster titled “Preemergence Herbicide Tolerance Trials in Herbaceous Cut Flowers” at the 112th Plant Science Day (43 attendees) in Hamden, CT (August 3); gave a research demonstration field tour to a Christmas Tree Nursery Producer, Larry Downy, from Quebec, Canada (August 26); and talked about weed management at the annual fall meeting of the Connecticut Christmas Tree Growers Association at Dumas Christmas Tree Farm in Durham, CT (~60 attendees) (August 27).

DR. RICHARD COWLES displayed the Barn Exhibit “Management of Armored Scales in Christmas Trees” at Plant Science Day in Hamden (August 3). He presented “Insect and disease management” at the Massachusetts Christmas Tree Growers’ Association field meeting, Hancock, MA, (60 attendees) (August 20). He presented “Insect management” at the CCTGA summer meeting, Durham (60 attendees) (August 27).

MS. ROSE HISKES participated in a Connecticut Invasive Plant Working Group (CIPWG) Symposium planning committee meeting via Zoom (16 attendees) (August 4). With Charlotte Pyle and Ken Feathers, led an Invasive Plant Walk and Talk in Storrs (11 attendees) (August 20).

DR. SRIKANTH KODATI attended Annual Conference (Plant Health 2022) of American Phytopathological Society that was held at Pittsburgh, PA (August 5-10). He presented a poster during the conference titled “Survival of conidia of the boxwood blight pathogen *Calonectria pseudonaviculata* under different relative humidity conditions” (August 9). He also presented the research updates on hops to the growers on Valley Laboratory Tobacco Field Day (25 attendees) (August 24).

DR. JAMES LAMONDIA conducted a tour of Valley Laboratory tobacco plots and breeding lines for Dunn and Foster (August 1), Lewis Flowers (Universal Leaf) (August 2), and Helios Morra and Carlos Pucinelli (Alliance One Tobacco) (August 5); spoke about Management of boxwood blight as a part of a boxwood blight symposium at the APS annual meeting August 10 (65 people); was interviewed by William Nelson, Premium Cigar Association, The Magazine, about the impacts of climate change on cigar wrapper tobacco in Connecticut (August 15); participated in the Society of Nematologists Honors and Awards committee selection of awardees (August 15); toured plots and discussed advanced broadleaf breeding lines with John Foster and Cuban plant breeder Dr. Alejandro (August 20); and hosted a Tobacco Field Day at the Valley Laboratory where he spoke about target spot management and fungicide trials, breeding for resistance to multiple pathogens and new varieties under development, Fusarium wilt resistance, PVY and tobacco ringspot viruses, and with **MR. JIM PRESTE** discussed reduced tillage and cover cropping (August 24).

DR. DEWEI LI presented a lecture titled “Technical Writing” at the summer seminar session of the graduate schools of Jiangsu province, China via Tencent Meeting (258 attendees) (August 17).



Pavlicevic, M., **Abdelraheem, W.**, **Zuverza-Mena, N.**, O’Keefe, T., **Mukhtar, S.**, **Ridge, G.**, **Ranciato, J.**, Haynes, C., **Elmer, W.**, **Pignatello, J.**, Pagano, L., Caldara, M., Marmiroli, M., Maestri, E., Marmiroli, N., and **White, J. C.** Biochar and nanoparticles as delivery systems for plant-growth promoting bacteria. *Front. Plant Science*.

McMillan, J. R., **Olson, M.**, **Petruff, T.**, **Shepard, J. J.**, and **Armstrong, P. M.** Impacts of *Lysinibacillus sphaericus* on mosquito larval community composition and larval competition between *Culex pipiens* and *Aedes albopictus*. *Scientific Reports*.

Li, X., Peijnenburg, W. J. G. M., **White, J. C.**, He, E., Van Gestel, C. A. M., and Qiu, H. Particle size-dependent accumulation, depuration, and biodistribution of microplastics in the annelid *Enchytraeus crypticus*. *Environmental Science and Technology Letters*.

Tao, R., Zhang, Y., Yang, J., Yang, T., **White, J. C.**, and Shen, Y. Biochar nanoparticles alleviate salt-stress in tomato (*Solanum lycopersicum*) seedlings. *Environ. Sci.: Nano*.

Singh, Y., Kumar, U., Panigrahi, S., Balyan, P., Mehla, S., Sihag, P., Kapoor, P., Sagwal, V., **White, J. C.**, Singh, K. P., and Parkash Dhankher, O. Nanoparticles as novel elicitors in plant tissue culture applications: Current status and future outlook. *ACS Nano*.



CAES

The Connecticut Agricultural Experiment Station

Putting Science to Work for Society since 1875

The Connecticut Agricultural Experiment Station

Main Laboratories
123 Huntington Street
New Haven, CT 06511-2016
Phone: 203-974-8500



Main Laboratories, New Haven



Lockwood Farm, Hamden

Lockwood Farm
890 Evergreen Avenue
Hamden, CT 06518-2361
Phone: 203-974-8618

Griswold Research Center
190 Sheldon Road
Griswold, CT 06351-3627
Phone: 860-376-0365



Griswold Research Center, Griswold



Valley Laboratory, Windsor

Valley Laboratory
153 Cook Hill Road
Windsor, CT 06095-0248
Phone: 860-683-4977

Putting Science to
Work for Society.

The Connecticut Agricultural Experiment Station

Back and Current issues of Station News are located on our website at <https://portal.ct.gov/CAES/Publications/Publications/Station-News>

Equal employment opportunity means employment of people without consideration of age, ancestry, color, criminal record (in state employment and licensing), gender identity or expression, genetic information, intellectual disability, learning disability, marital status, mental disability (past or present), national origin, physical disability (including blindness), race, religious creed, retaliation for previously opposed discrimination or coercion, sex (pregnancy or sexual harassment), sexual orientation, veteran status, and workplace hazards to reproductive systems unless the provisions of sec. 46a-80(b) or 46a-81(b) of the Connecticut General Statutes are controlling or there are bona fide occupational qualifications excluding persons in one of the above protected classes. To file a complaint of discrimination, contact Dr. Jason White, Director, The Connecticut Agricultural Experiment Station, 123 Huntington Street, New Haven, CT 06511, (203) 974-8440 (voice), or Jason.White@ct.gov (e-mail). CAES is an affirmative action/equal opportunity provider and employer. Persons with disabilities who require alternate means of communication of program information should contact the Chief of Services, Michael Last at (203) 974-8442 (voice), (203) 974-8502 (FAX), or Michael.Last@ct.gov (e-mail).



<https://portal.ct.gov/CAES>