

STATION NEWS

THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION



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STATION NEWS
PUTTING SCIENCE TO WORK FOR SOCIETY

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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DEPARTMENTAL NEWS

ANALYTICAL CHEMISTRY

MS. TERRI ARSENAULT attended the annual FDA FERN cCAP Technical Meeting in St. Paul, MN (September 17-19).

MR. MICHAEL CAVADINI attended the annual FDA FERN cCAP Technical Meeting in St. Paul, MN (September 17-19).

DR. BRIAN EITZER presented a talk entitled "Analysis of Pesticides in Corn Planter Exhaust Dust and Dosimeters Surrounding Corn Fields During Planting" at the 246th ACS National Meeting held in Indianapolis, Indiana (September 8-12) (75 attendees); participated in the on-site assessment and gap analysis by the FDA/ORA for our ISO Accreditation 17025 funding (September 10); participated in the monthly call of the North American Chemical Residue Workshop Organizing Committee (September 12); presented a talk entitled "Testing and Validation of T022 using High Resolution Mass Spectrometry" and helped lead a discussion group on instrumentation platforms at the FDA FERN cCAP annual meeting in St. Paul, MN (September 17-19) (50 attendees); and met with Joseph Doktorski, Laura Bailey, and Phil Epstein of AB Sciex to discuss data analysis tools used for liquid chromatography high resolution mass spectrometry on (September 30).

MR. JOSEPH HAWTHORNE participated in a webinar hosted by Chemical and Engineering news entitled "The Analysis of Nanoparticles by Liquid Chromatography Mass Spectrometry" (September 3).

DR. CHRISTINA ROBB participated in the on-site assessment and gap analysis by the FDA/ORA for our ISO Accreditation 17025 funding (September 10); attended the September board meeting of the Eastern Analytical Symposium in Somerset, NJ (September 20); viewed a FDA/CFSAN Food Defense Symposium webinar on (September 30); and attended an overview of new MS software with AB Sciex (September 30).

DR. JASON C. WHITE participated in a webinar hosted by Chemical and Engineering news entitled "The Analysis of Nanoparticles by Liquid Chromatography Mass Spectrometry" (September 3); along with **MS. TERRI ARSENAULT** and **MR. JOSEPH HAWTHORNE**; met with Yale University Environmental Engineering graduate student Wenqing Xu regarding the analysis of persistent organic pollutants (September 4); viewed an NIEHS informational webinar on an upcoming Request for Proposals focused on how contaminant availability limits remediation success (September 5); participated in an FDA FERN cCAP Technical Meeting Conference call regarding the organization and structure of the upcoming annual meeting (September 5); participated in an Organizational Committee conference call for the upcoming 10th International Phytotechnologies Conference in Syracuse NY (September 5,12); attended the monthly Laboratory Preparedness meeting held at the CT Department of Public Health Laboratory in Rocky Hill (September 9); participated in the on-site assessment and gap analysis by the FDA/ORA for our ISO Accreditation 17025 funding (September 10); was interviewed by Nancy Maddox of the APHL publication *Lab Matters*, which is doing a feature article on nanotechnology (September 11); along with **MR. JOSEPH HAWTHORNE AND DR. ROBERTO DE LA TORRE ROCHE** met with Mr. Jack Bennett and Ms. Sue Isch at the Dr. Katherine A. Kelley State Public Health Laboratory to begin collaborative experiments on the use of Scanning/Transmission Electron Microscopy with Energy Dispersive X-Ray Spectroscopy (September 12); attended the annual FDA FERN cCAP Technical Meeting in St. Paul, MN and gave a PowerPoint presentation entitled "CAES 2013 Laboratory Update" (50 attendees) (September 17-19); along with **DR. BRIAN EITZER, MS. KITTIPATH PRAPAYOTIN-RIVEROS, MS. TERRI ARSENAULT, MR. CRAIG MUSANTE, MR. MICHAEL CAVADINI, DR. CHRSTINA ROBB, MR. JOSEPH HAWTHORNE, DR. ROBERTO DE LA TORRE ROCHE, MR. JOHN RANCIATO AND DR. WALTER KROL** hosted Mr. Frank Greene of the CT Department of Consumer Protection Food Division and his staff to discuss cooperation in FDA funded sample collection and analysis (September 23); hosted a teleconference call on all investigators on our USD AFRI-funded grant



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on nanomaterial contamination of agricultural crops (September 24); along with **MS. TERRI ARSENAULT AND MR. JOSEPH HAWTHORNE** hosted Mr. Dermot Jones of CT DPH for on an onsite audit of State Certified programs (September 25); and participated with **MS. KITTI-PATH PRAPAYOTIN-RIVEROS, MS. TERRI ARSENAULT, AND MR. MICHAEL CAVADINI** in a bi-monthly mentor/mentee call with the Ohio Department of Agriculture as part of our FDA ISO Accreditation grant (September 26).

ENTOMOLOGY

MR. MARK H. CREIGHTON set up a booth with his observation hive and spoke about honey bees and beekeeping at Harkness State Park Family Day in Waterford (538 attendees) (September 8); gave a talk on "The History of Beekeeping in Connecticut" at the East Hampton Public Library (30 attendees) (September 12); and set up a public education booth on the honey bee and an observation hive and spoke to 1498 people about honey bee topics and beekeeping in the Connecticut Building at the Big E in West Springfield, MA (September 24).

MS. KATHERINE DUGAS staffed a forest pest table at the Hebron Harvest Fair in Hebron (645 people stopped by the booth during the weekend) (September 5-8); attended the Connecticut Tree Protective Association Emerald Ash Borer Tour Day in Middlebury (46 attendees) (September 12); with **MS. ROSE HISKES** and **MR. MARK CREIGHTON**, staffed a forest pest booth at the Big E in West Springfield, MA (605 people stopped by the booth) (September 24); and staffed a forest pest table at the New London Farmer's Market (20 attendees) (September 25).

MS. ROSE HISKES staffed a forest pest table at the North End Hartford Farmer's Market in Hartford (52 people stopped by the booth) (September 4); staffed a forest pest table at the Hebron Harvest Fair in Hebron (645 people stopped by the booth) (September 5-8); organized and led 12 volunteers looking for the Emerald ash borer and Asian longhorned beetle in 708 host trees along the Rail Trails of Vernon; gave the "Insect Yearly Report" and an Asian longhorned beetle update at the Nursery and Landscape Research Tour at the Valley Lab in Windsor (21 attendees) (September 10); gave a short introduction to the forest pest program and handed out Connecticut identification cards at the Emerald Ash Borer Tour Day, organized by the Connecticut Tree Protective Association, in Middlebury (46 attendees) (September 12); with **MR. STEPHEN SANDREY**, staffed a forest pest table at the Somers 4 Town Fair in Somers (765 people stopped by the booth) (September 13-15); gave a talk on "Insect Pests of Vegetables and Landscapes" and a forest pest update at the Heritage River Garden Club in Southbury (43 attendees) (September 18); participated in a CAPS conference call (September 19); hosted the Connecticut Nursery and Landscape Association's Plant Identification Workshop for students in the Connecticut Accredited Nursery Professional course at the Valley Lab in Windsor (21 attendees) (September 21); with **MS. KATHERINE DUGAS** and **MR. MARK CREIGHTON**; and staffed a forest pest booth at the Big E in West Springfield, MA (605 people stopped by the booth) (September 24).

DR. CHRIS T. MAIER exhibited a species of periodical cicada found in Connecticut for the first time and several new entomological publications at a meeting of the Connecticut Entomological Society at the University of Connecticut in Storrs (September 20).

DR. GALE E. RIDGE edited and reviewed bed bug management practices and pesticide treatment lists for the Mercy Housing and Shelter Corporation. The mission of this organization is to provide housing and supportive services for the homeless and at-risk homeless in Connecticut as well as nationally (September); was interviewed about bed bugs by staff at the Yale Daily News (September 18); presented a talk demystifying the human bed bug to staff at the Connecticut Mental Health Center in New Haven (40 attendees) (September 19); and expanded this lecture on bed bugs as a visiting scholar at the Department of Biological & Environmental Sciences, Western Connecticut State University, in Danbury (80 attendees) (September 25).

DR. CLAIRE E. RUTLEDGE gave a talk titled "Emerald ash borer in Connecticut" at the Nursery and Landscape Research Tour at the Valley Laboratory in Windsor (25 adult attendees) (September 10); gave a talk titled "Emerald ash borer in Connecticut" at the Emerald Ash Borer Tour put on by the Connecticut Tree Protective Association in Middlebury (50 adult attendees) (September 12); and gave a talk titled "Biosurveillance: using a native wasp to find an invasive



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beetle” at the weekly seminar of the Department of Entomology, University of Arkansas, in Fayetteville, AR (30 adult attendees) (September 20).

DR. VICTORIA L. SMITH participated in the Nursery and Landscape Research Tour, held at the Valley Laboratory in Windsor, with a presentation titled “Regulatory Status of Boxwood Blight” (60 participants) (September 10); and participated in a meeting of the Yale Biosafety and Recombinant DNA committee in New Haven (20 participants) (September 19).

DR. KIRBY C. STAFFORD III met with Susan Hom, Commission on Human Rights and Opportunities, in Hartford (September 12); was visited by Patti Miller, DVM, PhD, a veterinary medical officer from Georgia, to discuss research and job opportunities in the area (September 16); met with Drs. Cameron Faustman and Michael O’Neil from the University of Connecticut to discuss USDA reporting requirements (September 16); chaired a conference call of the Multi-state Activities Committee for the northeast region (September 17); spoke on the state perspective on the Emerald ash borer quarantine and state permit requirements at an EAB forum for the CT Tree Protective Association in Jones Auditorium (52 attendees) (September 18); was interviewed about ticks and Station activities by Jennifer Dursten, Yale Daily Magazine (September 20); participated in a national meeting of the Experiment Station Section and Experiment Station Directors and chaired a meeting of the northeast Multi-state Activities Committee in Columbus, OH (September 24-26); and was interviewed about activities around the Station by Jan Spiegel of The Connecticut Mirror (September 30).

ENVIRONMENTAL SCIENCES

DR. THEODORE ANDREADIS was interviewed about the current status of eastern equine encephalitis and West Nile virus in Connecticut by Amanda Cuda, Connecticut Post (September 6) and was interviewed about the possible impact of climate change on the resurgence and expansion of eastern equine encephalitis virus in the northeastern US by Henry Gass, ClimateWire, an environmental newswire in Washington, D.C. (September 24).

MR. MICHAEL THOMAS Participated in a board meeting of the Connecticut Entomological Society at the Yale Peabody Museum of Natural History in New Haven (September 5); demonstrated insect collecting and preservation techniques to the Yale University EEB Terrestrial Arthropods class at the Yale Forestry Camp in Norfolk, CT (12 students) (September 6-7).

FORESTRY AND HORTICULTURE

MR. JOSEPH P. BARSKY participated in a planning meeting for Project StormWise at the UCONN Cooperative Extension Center in East Haddam (September 3); met with James Fisher and Lukas Hyder of the White Memorial Foundation to discuss invasive species control methods (September 6); hosted and gave an overview of current forest research programs to Bruce Reynolds of Cheshire (September 11); co-organized and led a workshop entitled, “ABC’s of Tree ID” to area high-school students and teachers at Connecticut Forest and Park Association, Middlefield (10 students, 3 teachers) (September 21); attended a “Foresters are for the Birds” training workshop at the University of New Hampshire in Durham, NH (September 27); staffed a CAES display of current research programs at the Brooksvale Fall Festival, Hamden (September 28) (1000 attendees) (September 28); and staffed a CAES display of current research programs at the Brooksvale Fall Festival, Hamden (September 28) (1000 attendees) (September 28).

DR. MARTIN GENT gave a talk on 'Extending the growing season' at the Colchester Public Library (20 attendees) (September 19).

DR. ABIGAIL MAYNARD judged fruits and vegetables at the North Haven Fair (September 5).



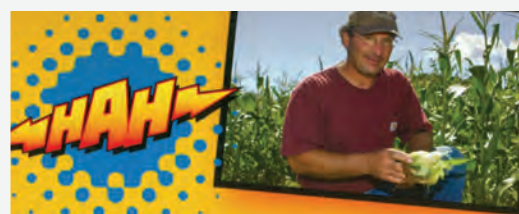
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DR. SCOTT WILLIAMS with **MR. MICHAEL R. SHORT** and **MS. MEGAN FLOYD** conducted a small mammal trapping demonstration and deer enclosure explanation to students in the Wildlife Techniques class in the Department of Natural Resources and the Environment at the University of Connecticut, Storrs (25 students) (September 16).

DR. JEFFREY WARD spoke on "Spread and containment of running bamboo" at the Valley Laboratory Nursery and Landscape Research Tour (20 attendees) (September 10); administered practical and oral examination to arborist candidates for the Connecticut Tree Protection Examining Board (September 11); spoke on running bamboo characteristics and control on "Town Matters" in Montville (September 12); interviewed about forest health by Steve Grant for the Hartford Courant (September 12); participated in a Connecticut Invasive Plant Council meeting in Hartford (September 17); spoke on "Outdoor identification of woody plants" at the Federated Garden Club Study School in Derby (42 attendees) (September 25); and spoke on "Running bamboo (*Phyllostachys* spp.) in Connecticut" at the CT Real Estate Instructors Seminar in New Haven (65 attendees) (September 27).

LOCKWOOD FARM



CONNECTICUT AGRICULTURE EXPERIMENT STATION'S LOCKWOOD FARM — FARM HERO

Each growing season Lockwood Farm, located at the Connecticut Agricultural Experiment Station in Hamden, donates its entire harvest to Connecticut Food Bank. Donating everything from acorn squash to zucchini, more than 102,000 pounds of fresh fruits and vegetables have made it to the dinner plates of low-income Connecticut families over the last 10 years. It is through generous donors like Lockwood Farm that Connecticut Food Bank is able to increase the distribution of fresh produce which is often too expensive and is most lacking from the diets of people who struggle with hunger. We are grateful for our partnership with Lockwood Farm and value the dedication and generosity of its Farm Manager, Rich Cecerelli.



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PLANT PATHOLOGY AND ECOLOGY

DR. SANDRA L. ANAGNOSTAKIS reported on CAES chestnut research at the annual meeting of the Northeast Regional Project on chestnuts (NE-TEMP-2101) held in Berea, KY (September 5-8); attended the board meeting at the Greentree Foundation (Manhasset, Long Island, NY) to update them on the status of their Chestnut Arboretum—the first in the country. They are supporting CAES research with occasional financial donations, and space for experiments on 500 acres where there are no deer. The Arboretum at Greentree will have all of the species of chestnut planted along a handicapped-accessible path across from the building where the UN holds special meetings. The trees are well labeled, and visitors who come for the UN meetings will be able to go for a short walk and see chestnut trees from their homelands, and compare them with other species. An informative sign at the beginning of the path says that this was established with trees and help from CAES (September 28).

INTERNATIONAL CHESTNUT ARBORETUM

AN ARBORETUM IS A PLACE WHERE MANY KINDS OF TREES AND SHRUBS ARE GROWN FOR EXHIBITION AND STUDY. THE INTERNATIONAL CHESTNUT ARBORETUM AT GREENTREE IS DEVOTED TO EXHIBITING SPECIES OF CHESTNUT TREES FOUND WORLDWIDE.

THE INTERNATIONAL CHESTNUT ARBORETUM IS BEING DEVELOPED BY GREENTREE FOUNDATION IN COOPERATION WITH THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION AND DR. SANDRA ANAGNOSTAKIS.

GREENTREE IS A UNIQUE PLACE WHERE ALL EIGHT SPECIES OF CHESTNUT TREES ARE EXHIBITED. THE EIGHT SPECIES OF CHESTNUTS ARE GENERALLY PLANTED IN SMALL CLUSTERS OF EACH SPECIES AROUND THE OVAL.

THE CLUSTERS OF CHESTNUT SPECIES IN THE ARBORETUM REPRESENT GEOGRAPHICAL LOCATIONS IN THE HISTORIC JOURNEY OF THE CHESTNUT TREE. THERE IS A MYTHOLOGY SURROUNDING THE CHESTNUT TREE THAT HAS GIVEN RISE TO A MYTHOLOGY THAT ATTEMPTS TO EXPLAIN ITS ORIGIN IN VARIOUS LOCATIONS AROUND THE WORLD. THOUSANDS OF YEARS AGO, THERE WERE VARIOUS OVERLAND TRADE ROUTES COMING FROM CHINA IN THE EAST THROUGH INDONESIA, INDIA, CENTRAL ASIA, PERSIA, ARABIA, SOMALIA, EGYPT, AND EUROPE AND UP AND DOWN THE MEDITERRANEAN. TRADE BY SEA ENABLED SOUTHERN ROUTES TO BE DEVELOPED FROM CHINA TO EUROPE. PEOPLE WERE PROBABLY MOVING CHESTNUTS ALONG THESE ANCIENT ROUTES. THE ROMANS TOOK THEM ON TO ENGLAND.

CHESTNUTS FROM THE FAR EAST AND THE CAUCASUS MOUNTAINS DO NOT LOOK ANYTHING LIKE THE CHESTNUTS GROWING WILD IN ORCHARDS IN ITALY AND GREECE. THERE IS AN APOCRYPHAL STORY THAT HAS AN ANCIENT MONASTERY IN SOUTHERN TURKEY AS THE SITE OF EUROPEAN CHESTNUTS BEING CROSSED WITH ASIAN CHESTNUTS.

GREENTREE IS ALSO A SITE OF LONG-TERM RESEARCH (BY DR. SANDRA ANAGNOSTAKIS) AIMED AT RESTORING THE AMERICAN CHESTNUT TO THE NATIONAL LANDSCAPE.




CHESTNUTS:

- 1 CASTANEA PUMILA (ALLEGHENY CHINQUAPIN)
- 2 CASTANEA SEGUIINII (DWARF CHINESE CHESTNUT)
- 3 CASTANEA HENRYI (CHINESE CHINQUAPIN)
- 4 CASTANEA MOLLISSIMA (CHINESE CHESTNUT)
- 5 CASTANEA DENTATA (AMERICAN CHESTNUT)
- 6 CASTANEA SATIVA (EUROPEAN CHESTNUT)
- 7 CASTANEA CRENATA (JAPANESE CHESTNUT)
- 8 CASTANEA OZARKENSIS (OZARK CHINQUAPIN)





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DR. SHARON M. DOUGLAS was interviewed about fall foliage and premature color in some Connecticut trees by Kate Rayner of WFSB Channel 3 (September 4); participated in the CAES Nursery and Landscape Tour at the Valley Lab and answered questions about boxwood blight (September 10); participated in the monthly Board of Directors meeting for the CTPA (September 10); participated in the September meeting of the CT Tree Protection Examining Board and helped administer the oral exam to candidates for the arborist license (September 11); and participated in a conference call of the Boxwood Blight Working Group (September 24).

DR. FRANCIS J. FERRANDINO has replaced Dr. William Nail as a member of the CT Wine Council and attended his first meeting at the Department of Agriculture in Hartford (September 4).

DR. YONGHAO LI gave a talk titled "Disease Update for the 2013 Season" at the CAES Nursery and Landscape Research Tour at the Valley Lab in Windsor (28 attendees) (September 10) and gave a talk titled "Needlecast Diseases of Christmas Trees" at the annual fall meeting of the CT Christmas Tree Growers Association in Brooklyn (45 attendees) (September 21).

DR. ROBERT E. MARRA attended a meeting of the West Haven Tree Commission to discuss current best practices in planting street trees (September 9); gave a talk titled "Dutch Elm Disease, Elm Yellows, and Boxwood Blight" at the New York Botanical Garden in New York, NY (80 attendees) (September 13); had a phone conference with Dr. Jonathan Hulvey (University of Massachusetts-Amherst) to discuss a collaboration on the transcriptomics of fungicide resistance in the boxwood blight pathogen, *Calonectria pseudonaviculata* using next-gen sequencing such as RNAseq (September 17); and participated in a conference call of the Boxwood Blight Working Group to present updates on research and review research topics for the coming fiscal year (September 24).



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GRANT AWARDS SEPTEMBER 2013

DR. ROBERT E. MARRA was awarded a grant for \$155,990 from the National Science Foundation for a two-year project titled "Internal Decay and Carbon Loss in Living Trees." The project will be based at CAES, but also involves collaborations with Dr. Nicholas Brazee at the University of Massachusetts-Amherst and Dr. Shawn Fraver at the University of Maine (September 4).

JOURNAL ARTICLES APPROVED SEPTEMBER 2013

Douglas, Sharon M. and Mary K. Inman. Seed Germination and Purity Analysis 2013

Maynard, Abigail A. Vegetable Amaranth Trials 2008-2010. Station Bulletin

Peterson, Richard B., Jason C. White, et al. Potential artifacts when evaluating the ecotoxicological effects of nanomaterials. Environmental Science and Technology

Vossbrinck, Charles R., Bettina A. Debrunner-Vossbrinck, and Louis M. Weiss. Phylogeny of Microsporidia (Book Chapter). Microsporidia: Pathogens of Opportunity, John Wiley & Sons, Inc.

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AGRICULTURAL
EXPERIMENT
STATION**

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

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

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

*Putting Science to work
for Society.*



Entrance to The Connecticut Agricultural Experiment Station in New Haven on Huntington Street



Main Laboratories, New Haven



Lockwood Farm, Hamden



Griswold Research Center, Griswold



Valley Laboratory, Windsor

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Station News was prepared and edited by Dr. Theodore G. Andreadis, Dr. Jason C. White, Ms. Tia Blevins, Mrs. Roberta Ottenbreit, and Mrs. Vickie Bomba-Lewandoski.