

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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Images by T. Arsenault, K. Dugas, S. Williams

January snow scenes from our New Haven location submitted by CAES Staff. More on page 10.



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DEPARTMENTAL NEWS

ADMINISTRATION

DR. LOUIS A. MAGNARELLI was interviewed about the brown marmorated stink bug by WTNH-TV (Channel 8, January 3).

ANALYTICAL CHEMISTRY

DR. JASON C. WHITE met with University of New Haven undergraduate Scott Kalbfeld to design a 180-hour internship project (January 6), participated in the monthly Laboratory Preparedness Network meeting at the Department of Public Health in Hartford and presented a lecture entitled "Deepwater Horizon Oil Spill Response: Role of the CT Agricultural Experiment Station Department of Analytical Chemistry" (January 10), gave two presentations remotely for the Kansas State University Symposium on Brownfields and Urban Gardening entitled "Plant Uptake of Organic Contaminants: Fate and Transport" and "Sampling and Analysis of Organic Contaminants in Plants" (January 11), participated with Department staff in a FERN Chemistry Cooperative Agreement (CAP) Laboratory conference call (January 13), participated in a conference call of the planning committee for the upcoming 8th International Phytotechnologies Conference (January 13), and participated with Department Staff in the US FDA FERN "hotwash" call on the agency and network response to the Deepwater Horizon Oil Spill.

DR. BRIAN EITZER attended the Principal Investigator meeting of the Coordinated Agricultural Project on the Sustainable Solutions to Problems Affecting Honey Bees, the meeting of the NC1173 Multi-State Hatch project on Sustainable Solutions to Problems Affecting Bee Health, and presented a paper entitled "The CAP Stationary Apiary Project: Pesticide Analysis" at the American Bee Research Conference in Galveston, TX (January 4 -8).

DR WALTER KROL participated in an EPA Region 1 Conference call to finalize the arrangements for a meeting to be held in Chelmsford, MA on February 8, 2011 (January 10).



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ENTOMOLOGY

MS. TIA BLEVINS attended the CNLA/CGGA Winter Symposium and Expo held at MountainRidge in Wallingford (January 13).

MS. KATHERINE DUGAS participated in an EAB preparedness meeting at the Valley Lab in Windsor (20 attendees) (January 6); staffed a display booth on forest pests, Asian longhorned beetle, and Emerald ash borer at the Connecticut Nursery and Landscape Association Annual Meeting at MountainRidge in Wallingford (300 attendees) (January 13); staffed a display booth on forest pests, Asian longhorned beetle, and Emerald ash borer at the 2011 Annual Meeting of the CT Tree Protective Association held at the Aqua Turf Club in Plantsville (632 adult attendees) (January 20); staffed a display booth on forest pests, Asian longhorned beetle, and Emerald ash borer at the Connecticut RV and Camping Show in Hartford (3,000 attendees) (January 23); attended and staffed a display booth on forest pests, Asian longhorned beetle, and Emerald ash borer at the Connecticut Grounds Keepers Association 2011 Trade Show held at the Mohegan Sun Convention Center in Uncasville (January 28).

MS. ROSE HISKES participated in an EAB preparedness meeting at the Valley Lab in Windsor (20 attendees) (January 6); conducted a training session on forest pests, Asian longhorned beetle, and Emerald ash borer for Boy Scout Camp Directors in East Hartford (20 attendees) (January 6); gave a presentation on the CAPS program and grape pests to the Grape Grower Board in Farmington (15 attendees) (January 10); gave a talk on "Houseplants and forest pests" to the Orange Garden Club in Orange (35 attendees) (January 11); gave a talk on organic management of landscape and turf pests to the Organic Landcare Course in Newburyport, MA (45 attendees) (January 19); participated in a Forest Pest conference call (January 20); staffed a display booth on forest pests, Asian longhorned beetle, and Emerald ash borer at the Connecticut RV and Camping Show in Hartford (3,000 attendees) (January 21-22).

MR. IRA KETTLE manned the Asian longhorned beetle/Emerald ash borer and Don't Move Firewood table at the Connecticut RV and Camping Show held at the Convention Center in Hartford. We were thanked by some of the public for having our booth there. One lady stated that she considered our booth the most important display of the show. We had a lot of people come to our table; it was well received (January 22 and 23); manned the Asian longhorned beetle and Emerald ash borer booth at the Connecticut Grounds Keepers Association 2011 Trade Show held at the Mohegan Sun Convention Center in Uncasville (January 28).

DR. CHRIS MAIER was interviewed about the brown marmorated stink bug by Matt O'Rourke of the Waterbury Republican-American (January 3); was interviewed about the brown marmorated stink bug by Dan Kain of Channel 3 News (January 5); visited the American Museum of Natural History in New York, NY, to work on the collection of longhorned beetles (January 18); displayed a poster on the "Invasive Brown Marmorated Stink Bug" at the 2011 Annual Meeting of the CT Tree Protective Association held at the Aqua Turf Club in Plantsville (632 adult attendees) (January 20).

DR. GALE E. RIDGE was reported by Google's online newsletter on her *Cimex* species complex research (January 5); spoke about the brown marmorated stink bug live on Chaz & AJ in the Morning on WPLR Radio (January 11); advised the Yale Peabody Museum on a live human bed bug display as part of a planned exhibit on blood-feeding arthropods (January 13); Ms. Rosie Eck, an art major from Oberlin College, studied natural science illustration with DR. RIDGE as part of an earned credit program for external studies (January 3-21).

DR. CLAIRE RUTLEDGE staffed a display booth on forest pests, Asian longhorned beetle, and Emerald ash borer at the 2011 Annual Meeting of the Connecticut Tree Protective Association held at the Aqua Turf Club in Plantsville (632 adult attendees) (January 20). Spoke on "Pest management: ticks and Lyme disease" at the Organic Land Care Course in Jones Auditorium (67 attendees) (January 30).



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DR. VICTORIA L. SMITH participated in the annual winter meeting of the CT Nursery and Landscape Association, held at MountainRidge in Wallingford, by manning a table in the exhibit hall (approx. 300 participants) (January 13); participated in a meeting of the Yale Biosafety Committee in New Haven (24 participants) (January 20); participated in a meeting of the National Cooperative Agricultural Pest Survey Committee, as the representative of the Eastern Plant Board, held at Eastern Region USDA-APHIS-Plant Protection and Quarantine Headquarters in Raleigh, NC (25 participants) (January 26-27).

DR. KIRBY C. STAFFORD III participated in an Emerald ash borer working group meeting at the USDA/APHIS/PPQ office in Wallingford (3 attendees) (January 3); participated in an Emerald ash borer planning group meeting at the Valley Lab in Windsor (20 attendees) (January 6); with DRS. GALE E. RIDGE and ANUJA BHARADWAJ, met with Robert H. Bedoukian, President, Bedoukian Research, Inc., Danbury, CT, to discuss potential natural compounds for tick and bed bug control (January 7); participated in a conference call to evaluate proposals for NERA Planning Grants (January 10); with DR. LOUIS A. MAGNARELLI, attended the meeting of the Commission on Human Rights and Opportunities for the review of our affirmative action plan (January 13); spoke on ticks and bed bugs at the Department of Laboratory Medicine, Yale University, in New Haven (49 attendees) (January 14); participated in a conference call about a CDC tick management research funding opportunity with the Centers for Disease Control and Prevention (January 20); spoke on “Pest management: ticks and Lyme disease” at the Organic Land Care Course in Jones Auditorium (67 attendees) (January 30).

DR. KIMBERLY A. STONER spoke about “Organic pest management” at a meeting organized by the Fairfield Organic Teaching Farm in Fairfield (25 attendees) (January 22); taught “Principles and Procedures,” “Overview of Pest Management,” and a case study of pest management in the NOFA Organic Land Care Course held in Jones Auditorium (45 attendees) (January 24, 26, and 28); spoke about resources for farmers at the Experiment Station, research on organic pest management, and pollinators at the “Getting Started in Organic Farming Conference” held in Jones Auditorium (45 attendees) (January 29); was interviewed about research on honey bees, native bees, and pesticides by Chris Woodside for CT Woodlands magazine (January 31).

MR. PETER TRENCHARD discussed Emerald Ash Borer Ash Stand survey at the emergency preparedness meeting on Emerald ash borer at the Valley Lab in Windsor (January 6); staffed the Station exhibit and presented material about Asian longhorned beetle, Emerald ash borer, and other invasives at the CNLA Winter Meeting held at MountainRidge in Wallingford (January 13); staffed the Station exhibit and presented material about Asian longhorned beetle, Emerald ash borer, and other invasives at the 2011 Annual Meeting of the CT Tree Protective Association held at the Aqua Turf Club in Plantsville (632 attendees) (January 20).

GREG BUGBEE administered the multistate *Aquatic Supervisory License Recertification Pro-*

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gram at the annual Northeast Aquatic Plant Management Association Conference in New Castle New Hampshire (January 18-20).

DR. JOSEPH PIGNATELLO presented a report on research progress at the annual meeting of Multistate Research Project W2083 held in Honolulu, Hawaii (January 5-6).



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FORESTRY & HORTICULTURE

DR. JEFFREY WARD spoke on "Tree Biology" for the Arboriculture 101 class sponsored by The Connecticut Tree Protective Association, Jones Auditorium (50 students) (January 5); spoke on "Homeowner tree care" for the Fairfield Garden Club in Southport (4 attendees) (January 6); spoke on "How trees grow and tree care" to 12 students and 2 teachers at the Manson Youth Institute in Cheshire (January 11); along with **DR. SCOTT WILLIAMS**, participated in a Connecticut Urban Forest Council conference call (January 13); participated in the 89th Annual Meeting of the Connecticut Tree Protective Association in Plainville (January 21).

DR. MARTIN GENT participated in the Farm to Chef annual meeting at Saybrook Point Inn (200 attendees) (January 31).

DR. ABIGAIL MAYNARD gave a talk about the New Crops Program to the Milford Garden Club (42 adults) (January 11); attended the Connecticut Vegetable and Small Fruit Conference in Vernon (January 20); gave a talk about careers in agricultural research to juniors and seniors at Hamden Hall Country Day School (45 children, 3 adults) (January 28).

DR. WILLIAM NAIL met with Jerry Savino of Savino Vineyards in Woodbridge to discuss grapevine propagation and general vineyard management strategies for 2011 (January 6); attended the Connecticut Nursery and Landscape Association Winter Symposium in Wallingford (January 13); participated in a conference call meeting of the national Grape Community of Practice (GCoP) hosted by Eric Stafne of Oklahoma State University (January 31).

DR. SCOTT WILLIAMS met with UConn student Tessa Cooney to discuss deer research and a potential internship (January 10); met with University of New Haven graduate student Moises Torrent about possible white-tailed deer research projects (January 13); gave invited lecture titled "Wildlife Laws and Deer Damage Avoidance" at the 5-day accreditation course of the Northeast Organic Farming Association (35 attendees) (January 31).

PLANT PATHOLOGY & ECOLOGY

DR. SANDRA L. ANAGNOSTAKIS judged the nut exhibit at the Pennsylvania Farm Show in Harrisburg, PA (January 7); met with Scott Schlarbaum (University of Tennessee) at Forrest Keeling Nursery in Elsberry, Missouri, for planting of 4,370 Connecticut chestnut seeds in their special production system, and to deliver 4,370 seeds to be planted in nursery beds at the University of Tennessee in Knoxville (January 11); gave a talk on "Chestnut trees for Connecticut orchards and timber" at the 2011 Annual Meeting of the CT Tree Protective Association held at the Aqua Turf Club in Plantsville (632 adult attendees) (January 20).

DR. SHARON M. DOUGLAS participated in the monthly conference call of the APS Foundation Board of Directors (January 10); organized and participated in the 2011 Annual Meeting of the CT Tree Protective Association held at the Aqua Turf Club in Plantsville (632 adult attendees) (January 20); gave an invited presentation titled "Weather and diseases of woody ornamentals" at the 2011 Annual Meeting of the Rhode Island Nursery and Landscape Association in Warwick, RI (245 adult attendees) (January 25); gave a lecture titled "Understanding plant diseases" at the 2011 CT NOFA Organic Land Care Course (42 attendees) (January 28).

MS. MARY K. INMAN staffed the CAES booth and answered questions from arborists at the 2011 Annual Meeting of the CT Tree Protective Association held at the Aqua Turf Club in Plantsville (632 adult attendees) (January 20).



DR. YONGHAO LI attended the CNLA-CGGA Winter Symposium and Expo held at MountainRidge in Wallingford (January 13); staffed the CAES booth and answered questions from arborists at the 2011 Annual Meeting of the CT Tree Protective Association held at the Aqua Turf Club in Plantsville (632 adult attendees) (January 20).

DR. MARRA SHARES EXPERTISE IN BANGLADESH

Dr. Robert E. Marra spent three weeks in Bangladesh, from 25 December 2010 to 14 January 2011, conducting a training workshop in plant disease diagnostics for ten scientists in the Plant Pathology Department at the Bangladesh Agricultural Research Institute (BARI) in Joydebpur, a city about 40 km due north of the capital city of Dhaka. Bangladesh, a country whose population of 160 million (half that of the United States) occupies an area about the size of Wisconsin, has endured wars and unimaginable natural disasters since its birth as a nation in 1971, when it won its independence from Pakistan. Food security is of paramount importance, yet crop loss due to disease remains a major issue for this country.

The purpose of the training workshop was to give young scientists at BARI the knowledge and skills to carry out disease diagnostics using the department's surfeit of state-of-the-art equipment, which has never been used since it was acquired several years ago. Working in collaboration with Dr. Robert Wick of the University of Massachusetts at Amherst and Dr. Cheryl Smith of the University of New Hampshire, Dr. Marra introduced the ten scientists to molecular tools relevant to the diseases confronting agricultural scientists in Bangladesh. For purposes of demonstration, he chose the important potato late blight pathogen, *Phytophthora infestans*, as a "model system." Prior to the start of the workshop, Drs. Wick, Smith, and Marra visited small farms along the Old Brahmaputra River, scouting for, and finding, late blight, among other diseases. Using this plant material, the students learned several methods of diagnostics, as well as DNA extraction, and conventional and real-time PCR in the identification of *P. infestans* from potato as well as tomato samples. Molecular methods were also used in the identification of several important viruses of tomato. In other parts of the workshop, the students learned about the proper care and use of microscopes, and cultural methods for the selective isolation of plant pathogens from infected tissues.

During these three weeks, Drs. Wick, Smith, and Marra experienced a culture of friendliness, generosity, and hospitality they will not soon forget. Weekend trips to rural and ancient villages provided a wealth of insights into the history and culture of the indomitable Bengali people.



Figure 1: Dr. Marra explaining DNA extractions to workshop participants in the molecular biology laboratory.

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Figure 2: Drs. Wick, Smith, and Marra collecting late blight samples from potato fields along the Old Brahmaputra River (in background), after having crossed by boat from the Bangladesh Agricultural University in Mymensingh.



Figure 3: Dr. Marra discussing wheat diseases with workshop participants, in BARI wheat research plots.



Figure 4: Drs. Wick, Smith, and Marra with Dr. Tapan Kumar Dey (far left), head of the Plant Pathology Department, and three of the workshop participants, after the workshop closing

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VALLEY LABORATORY

DR. JOHN AHRENS attended meetings of the Northeastern Weed Science Society in Baltimore where he gave a paper entitled 'Further Experiments with Mesotrione for Postemergence Weed Control in Actively Growing Conifers', coauthored by Dr. Todd Mervosh (January 3-7). He also received the SOAR Award from IR-4 for his ongoing work helping to get herbicides registered for ornamental crops.

DR. RICHARD COWLES consulted with staff from the Smoky Mountains National Park and University of Tennessee and visited eastern hemlock conservation areas to help develop guidelines for insecticide treatments for genetic conservation, Gatlinburg, TN, Jan. 18 – 20 (5 participants). He presented an update to the Fir Genetic Improvement Committee of the CT Christmas Tree Growers' Association, Windsor, Jan. 25 (7 participants). He gave a lecture "Facts and Fallacies of Organics," on Jan. 27 and "Systemics Aren't Just for Suckers" on Jan. 28 to the CT Grounds Keepers Association (15 attendees each). He presented two presentations (total of 1.5 hours) on "Armored Scale Management in Christmas Trees" to the New Jersey Christmas Tree Growers' Association, Clinton, NJ, Jan. 29 (60 participants).



Investigation of treated stands of hemlocks in the Smokies involved fording streams, best done barefoot.

DR. JAMES LAMONDIA participated in a planning meeting of the Connecticut Agricultural Information Council (January 11); spoke about '*Phytophthora* moves to beans' at the Connecticut Vegetable and Small Fruit Growers' Conference in Vernon CT (January 20 – 175 persons); met with George Abawi and Curt Petzoldt of Cornell and Beth Gugino of Penn State to discuss research progress and plans on IPM grants (January 26) and spoke about 'Berry root problems' at the Empire State Fruit and Vegetable Expc in Syracuse NY (January 27, 84 people).

DR. TODD L. MERVOSH presented a talk "Biological control program for mile-a-minute vine in Connecticut" (co-authors: DR. CARCLE CHEAH and Donna Ellis [UConn]) [50 attendees] at the annual meeting of the Northeastern Weed Science Society in Baltimore, MD (January 5, 2011).



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JOURNAL ARTICLES APPROVED JANUARY 2011

- Ahrens, John F.** Site Selection for Christmas Trees. The Real Tree Line, Newsletter CCTGA, Vol. 51, Feb 2011
- Anagnostakis, Sandra L.** History of Chestnut Research at The Connecticut Agricultural Experiment Station. *Frontiers of Plant Science*
- Cheah, Carole.** Connecticut's Threatened Landscape: Natural Enemies for Biological Control of Invasive Species. *Frontiers of Plant Science*
- W. Copes and **Wade H. Elmer.** Chapter "Other Options (ozonation, hydrogen peroxide, pressure, agitation, aeration, nanotechnology, etc.)". *Biology, Detection and Management of Plant Pathogens in Irrigation Water*, APS Press, Moorman, Buttner, Wohanka, Hong (eds.)
- Elmer, Wade H., James LaMondia,** and F. L. Caruso. Association Between *Fusarium* spp. On *Spartina alterniflora* and Dieback Sites in Connecticut and Massachusetts. *Estuaries and Coasts*
- Krol, Walter.** Catching "Pesticides in the Food We Eat". White Memorial Conservation Center Newsletter.
- Li, De-Wei.** Five Trillion Basidiospores in a Fruiting Body of *Calvatia gigantean*. *Aerobiologia*
- Maier, Chris T.** First State Records of Flower Flies (Diptera: Syrphidae): *Copestylum vittartum* Thompson in Connecticut and *Mixogaster johnsoni* Hull in Rhode Island. *Proc. Ent. Soc. Wash*
- Mervosh, Todd L.** Pre-emergence Herbicide Options for Christmas Trees. The Real Tree Line, (CT Christmas Tree Growers Association Newsletter)
- Mervosh, Todd L.,** Jeffrey S. Ward, **Joseph P. Barsky.** Management Options for Japanese Stiltgrass (*Microstegium vimineum*) in Natural Areas. *Weed Science Society of America, Abstracts, Vol. 51 (2011)*
- Rathier, Thomas M.** Cultural and Pest Management Update. The Real Tree Line
- Stoner, Kimberly** (Chair of Committee for Revision) and others. NOFA Standards for Organic Land Care: Practices for Design and Maintenance of Ecological Landscapes
- P. A. Wadl, D. Dean, **Yonghao Li,** L. M. Vito, B. E. Scheffler, D. Hadziabdic, M. T. Windham, and R. N. Trigiano. Development and characterization of Micro-satellites for Switchgrass Rust Fungus (*Puccinia emaculata*). *Conservation Genetic Resources (2011) 3:185-188*
- Ward, Jeffrey S.** The Dynamic Connecticut Forest. *Frontiers*
- Williams, Scott C., Jeffrey S. Ward,** and T. E. Worthley. It's Not the Heat, It's the Humidity: Deer Ticks Thrive in Japanese Barberry. 5th Annual Connecticut Conference on Natural Resources
- Williams, Scott C.,** M. A. Gregonis, H. J. Kilpatrick, and A. M. LaBonte. ABSTRACT – Survival and Dispersal of Rehabilitated White-Tailed Deer Fawns in Connecticut. 67th Annual Northeast Fish and Wildlife Conference.

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GRANT AWARDS JANUARY 2011

Applied to the Specialty Crop Research Initiative of the USDA for a grant on "Pollination Security for Northeastern Fruit and Vegetable Crops." Dr. Anne Averill of the University of Massachusetts is the lead Project Director. Drs. Kimberly Stoner and Brian Eitzer are both participants in the proposal.

...MORE JANUARY WINTER IMAGES



Image by K. Duagas



Image by W. Elmer



Image by W. Elmer



Image by T. Arsenault

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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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P.O. Box 1106, New Haven, CT 06504, or call (203) 974-8440. 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 at (203) 974-8442 (voice); (203) 974-8502 (FAX); or Michael.Last@ct.gov (E-mail).

Did you know that the brown marmorated stink bug, an important agricultural pest is present in Connecticut?