STATION NEWS

THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION

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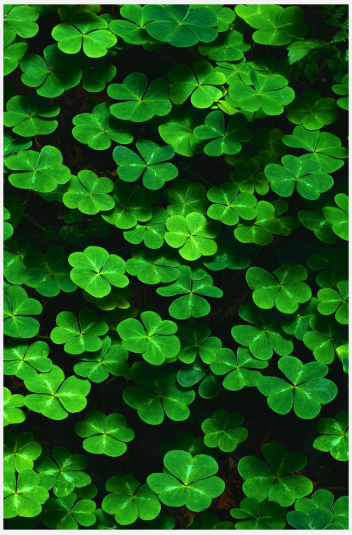
STATION NEWS

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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MARCH 2014

Departmental News

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DEPARTMENTAL NEWS

ADMINISTRATION

DR. THEODORE ANDREADIS presented an update on Station activities at a "Meet and Greet" meeting of the New Haven Farm Bureau held in Wallingford (15 attendees) (February 4); met with representatives from Bedoukian Research to discuss research on chemical bed bug attractants and repellants (February 6); attended a meeting of the Connecticut Invasive Plant Council in Hartford (12 attendees) (February 11); presented an update on Station activities at the annual meeting of the Tobacco Growers held at the Valley Laboratory in Windsor (100 attendees) (February 18); met with Dr. Randall Nelson and Dr. Jocelyn Mullins from the Connecticut Department of Public Health to review the Mosquito and Arbovirus Surveillance Program for 2014 (February 18); hosted Department of Agriculture Commissioner, Stephen Reviczky and Board of Control Vice President, Terry Jones and gave a tour of Station facilities and discussed research and regulatory activities (February 19); and met with Dr. Thomas Murray, Dr. Mark Yeckel and Mr. William Berger from the Frank Netter School of Medicine at Quinnipiac College to discuss their capstone student internship/mentor program (February 24).

ANALYTICAL CHEMISTRY

DR. JASON C. WHITE attended the monthly Laboratory Preparedness Advisory Group Meeting at the CT Department of Public Health Laboratory in Rocky Hill, CT (February 3), along with **MS. KITTY PRAPAYOTIN-RIVEROS** participated in the webinar on eLEXNET (FDA data exchange program) goal for 2014 (February 10); along with **DR. ROBERTO DE LA TORRE-ROCHE, DR. ALIA SERVIN** and **DR. JOSE ANGEL HERNANDEZ-VIEZCAS**, met with Mr. Robb Westby of JEOL to discuss the purchase of a new scanning/transmission electron microscope with energy-dispersive X-ray spectroscopy (February 11); participated in a USDA NIFA webinar on the use of the new NIFA Portal for required reporting (February 13); along with **DR. THEODORE ANDREADIS**, met with Commissioner of the Department of Agriculture Steven Reviczky and CAES Board of Control Vice President Terry Jones and discussed research and programs within the Department of Analytical Chemistry (February 20); along with **MS. KITTY PRAPAYOTIN-RIVEROS, MS. TERRI ARSENAULT, DR. BRIAN EITZER, MR. CRAIG MUSANTE, MR. JOHN RANCIATO, MR. MICHAEL CAVADINI, MR. JOSEPH HAWTHORNE, DR. WALTER KROL**, **DR. ROBERTO DE LA TORRE-ROCHE, DR. ALIA SERVIN** and **DR. JOSE ANGEL HERNANDEZ-VIEZCAS** participated in the Association of Public Health Laboratories (APHL) webinar training on "Ethics and Data Integrity for Technical Staff" (February 21); along with **DR. THEODORE ANDREADIS**, met with Professor's David Hill and Thomas Murray, as well medical student William Berger, of the Quinnipiac University Frank Netter School of Medicine to discuss potential collaborative internships at CAES for medical students (February 24); and was interviewed by freelance science reporter Ms. Virginia Gewin on the risks of nanotechnology (February 25).

DR. BRIAN EITZER was a participant in the FERN cCAP mycotoxin working group phone call (20 participants) (February 6); along with **DR. KIM STONER** and **MS. TRACY ZARILLO** attended the principal investigator meeting of the SCRI funded grant on "Pollination Security for Fruit and Vegetable Crops in the Northeast" at the University of Massachusetts (15 participants) (February 1-10); and along with **DR. CHRISTINA ROBB, DR. WALTER KROL, DR. ALIA SERVIN,** and **DR. JOSE ANGEL HERNANDEZ-VIEZCAS** received training on the new Velos LC/MS system and Tracefinder software from Christa Feasley of Thermo Fisher Scientific (February 11).

DR. CHRISTINA ROBB participated in the Eastern Analytical Symposium (EAS) board meeting by web conference (February 14).

MS. KITTY PRAPAYOTIN-RIVEROS along with **MS. TERRI ARSERNAULT, DR. WALTER KROL, DR. BRIAN EITZER,** and **MR. CRAIG MUSANTE** participated in the webinar training on Proficiency Testing – compliance with the ISO/IEC: 17025 Standard (February 20).

ENTOMOLOGY

MS. ELIZABETH E. ALVES hosted three technicians from the Stamford Health Department here at the Station. She gave a presentation titled "Tick Identification: Common Hard-Bodied Ticks of Connecticut" and provided an opportunity to examine ticks by microscope (February 6).

DR. GALE E. RIDGE spoke about bed bugs to the Village for Families and Children in Hartford (40 attendees) (January 29); **DR. RIDGE** and **MS. KATHERINE DUGAS** were interviewed in January about the services of the Insect Inquiry Office by Jennifer Gersten for an article titled "The Sleuths Will See You Now," which was published in the Yale Daily News Magazine on January 30, 2014; spoke about bed bugs and community response to them to the Southwest Connecticut Mental Health Systems at Bridgeport Hospital in Bridgeport (70 attendees) (February 26); and met with Dr. Osvaldo Di Iorio in Buenos Aires, Argentina, to collaborate with Cimicid taxonomy. She is close to confirming a South American line of the species complex of *Cimex lectularius* L. (February 26 – March 9).

Dr. Gale Ridge and Dr. Di Iorio at the University of Buenos Aires

DR. CLAIRE E. RUTLEDGE taught "Insects that Attack Trees" at the Bartlett Arboretum in Stamford (10 adult attendees) (February 11); taught "Insects that Attack Trees" for the Arboriculture 101 course held at the CTPA Office in Wallingford (45 adult attendees) (February 12).

DR. KIRBY C. STAFFORD III spoke to visiting staff from the Stamford Health Department attending a tick identification session with **MS. ELIZABETH ALVES** (5 adult attendees) (February 6); spoke on tick integrated pest management at the NOFA Organic Land Care Course held at Three Rivers Community College in Norwich (60 attendees) (February 11); participated in a webinar trial run for a March national tick IPM webinar (February 21); with **DR. LAURA E. HAYES and DR. SCOTT C. WILLIAMS**, participated in a meeting with Maria Diuk-Wasser and her staff from Yale University to discuss possible collaborative research projects (6 attendees) (February 26).

DR. KIMBERLY A. STONER, with **DR. BRIAN D. EITZER** and **MS. TRACY ZARRILLO**, traveled to the University of Massachusetts-Amherst for a meeting of the project "Pollination Security for Northeastern Fruit and Vegetable Crops," supported by a grant from the Specialty Crops Research Initiative, and reported on research relating bee counts to pollen deposition on pumpkin and winter squash farms in Connecticut (February 10).

ENVIRONMENTAL SCIENCES

DR. JOSEPH J. PIGNATELLO was interviewed by Greg Ladke of CTNow.com about seeking patents at the CAES (February 4); met with Professor Raymond Gorte, Department of Chemical and Biomolecular Engineering, University of Pennsylvania to discuss mutual research interests (February12); and was elected as a member of the Connecticut Academy of Science and Engineering (CASE) (February 18).

DR. GOUDARZ MOLAEI accepted an invitation by Yale University School of Public Health to serve as the external advisor for an MPH student Downs Fellowship project (February 10).

DR. PHILIP ARMSTRONG gave a lecture on arthropod-borne viral diseases to a group of about 25 students and 1 teacher as a part of the Principles of Infectious Diseases Course at the Yale School of Public Health (February 6).

MR. GREGORY BUGBEE gave a seminar entitled "Soil Science for Arborists" at the Bartlett Arboretum in Stamford (12 attendees) (February 6); participated in the PA-12-155 Nonpoint Source Phosphorus Subcommittee meeting at CT DEEP in Hartford (February 10); spoke to the Caudatowa Garden club on "Improving Soil in the Home Garden and Landscape" in Ridgefield (50 attendees) (February 11); and, with **MS. JORDAN GIBBONS**, gave an Invasive Aquatic Plant Workshop to an Environmental Science Class at Three Rivers Community College in Norwich (approx. 50 attendees) (February 19).

MR. JOHN SHEPARD spoke about and presented hands-on activities about the mosquito life cycle to seven pre-kindergarten classes as part of the STEM program at the Academy of Aerospace and Engineering Elementary School in Rocky Hill (140 students, 15 teachers) (February 26).

FORESTRY AND HORTICULTURE

DR. JEFFREY WARD was interviewed about roadside forest management by Patrick Skahill of WNPR (February 10); with **J.P. BARSKY**, hosted an interagency meeting for "Forester's for the Birds" at the Station (February 18); presented a paper "Improving the competitive status of oak regeneration using stand management and prescribed fires" at the Tall Timbers Fire Ecology Conference at Yale University (50 attendees) (February 21); attended the Tall Timbers Fire Ecology Conference at Yale University (February 20-22); spoke on "Stormwise" roadside forest management and rehabilitating high-graded stands research at the annual meeting of the Connecticut Chapter, Society of American Foresters in Middlefield (40 attendees) (February 25); and visited with Darryl Newman to view Planter's Choice's tree production fields in Watertown (February 25).

DR. ABIGAIL MAYNARD helped students with their science projects at Hamden Hall Country Day School (33 students, 2 teachers) (February 20); spoke about "Unusual Garden Vegetables" to the Long Hill Garden Club in Trumbull (87 attendees) (February 24); and participated in a meeting of the Producer Education and Innovation working group, Governor's Council on Agricultural Development (February 27).

DR. SCOTT WILLIAMS attended a graduate committee meeting of UConn Master's student Megan Floyd. (February 10); and with **MR. MICHAEL SHORT**, participated in a collaborative aerial deer survey with Department of Energy and Environmental Protection Wildlife Division Director Rick Jacobson and Deer Program Biologist Dr. Howard Kilpatrick (February 11).

MR. JOSEPH P. BARSKY met with Gary Haines, Aquarion Water Company, in Easton to discuss roadside forest management (February 21); and attended the Annual Winter Meeting of the Connecticut Chapter, Society of American Foresters in Middlefield (February 25).

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GRISWOLD RESEARCH CENTER

MR. ROBERT DURGY presented a talk entitled "Effect of Increasing Population on Ear Size of SE Synergistic Sweet Corn, var. 'Montauk'" at the New England Vegetable and Fruit Conference in Manchester, New Hampshire (67 attendees) (December 17); attended as a member of the steering committee and ran the audio-visuals at the Connecticut Vegetable and Small Fruit Grower's Conference in Windsor (260 attendees) (January 16); taught a University of Connecticut Master Gardener Program class on vegetables in Stamford (30 attendees) (February 17), in Vernon (52 attendees) (February 21), in Torrington (32 attendees) (February 26), in Norwich (37 attendees) (March 11), and in North Haven (47 attendees) (March 13); and taught Math Calculations and Calibration for Pesticide Applicator's Training in East Haven (28 attendees) (February 6) and in West Hartford (31 attendees) (March 4).

PLANT PATHOLOGY AND ECOLOGY

DR. SHARON M. DOUGLAS gave an invited presentation titled "Plant Health Care: The Latest Disease Management Strategies" at New England Grows 2014 held at the Boston Convention Center in Boston, MA (2,500 attendees) (February 7); participated in the monthly meeting of the CTPA Board of Directors in Wallingford (February 11); was interviewed about the impact of this winter's weather on plants by John Burgeson of the Connecticut Post (February 20); and was interviewed about how snow and this winter's weather impact plants and agriculture by Robert Miller of the Danbury News-Times (February 21).

DR. WADE H. ELMER met with Andrew Lim, a 10th grade high school student from Greenwich High School, to discuss his project on soilborne diseases on grafted pepper plants (February 11); gave a presentation titled "Fighting Fusarium in Flowers" at the CT Flower Show held in the Connecticut Convention Center in Hartford (5 attendees) (February 20); co-organized and spoke on "Root Rot Diseases" at the UConn-CAES Spring Bedding Plant meeting in Vernon (45 attendees) (February 25); and co-organized and spoke on "Root Rot Diseases" at the UConn-CAES Spring Bedding Plant meeting in Torrington (37 attendees) (February 27).

DR. WADE ELMER mentored Ann Merrill, a senior at Greenwich High School, on "The role of earthworms and biochar in suppression of plant diseases." Her project advanced to the finals of the Intel Science Talent Search and she was the only student in the state to reach that stage of the research competition this year. She is currently in Washington, D.C., to defend her research project as she competes for the first-place prize of $100,000. She will also meet President Barack Obama, a number of scientists, and the 39 other finalists. Created by the Society for Science & the Public and sponsored by Intel, this competition brings together some of the nation's brightest high school seniors.

Ann Merrill, a senior at Greenwich High School, receiving her medal from Nobel laureate, H. Robert Horvitz.

DR. WADE ELMER also mentored a high school class from East Haven in the Academy of Digital Arts and Sciences Program on the use of biochar in remediating salt marshes affected by Sudden Vegetation Dieback. Their ninth-grade proposal titled "The Effects of the *Fusarium* fungus on Coastal Marsh Grasses" won first place at the Center for 21st Century Skills at Education Connection.

VALLEY LABORATORY

DR. RICHARD COWLES presented "Practical chemical ecology of SWD," in a meeting with participants Anna Botta-Catala and Ignasi Pons Badrinas, of BioIberica Company, along with visitors from University of Rhode Island and Cornell University, to review our current status in efforts to improve attractants for spotted wing drosophila, Valley Laboratory (6 participants) (February 10); spoke about "Neonicotinoids and bees," at Prides Corner Nurseries, Lebanon, (28 participants) (February 11); discussed "Spotted wing drosophila: Practical chemical ecology," via WebEx to a fruit extension and growers' meeting in Quebec (40 participants) (February 18); spoke about "Insect management and the role of pyrethroids," to golf course superintendents at a John Deere Landscaping seminar, Taunton, MA (40 participants) (February 26); and discussed "Climate change and insects in the landscape" in a panel discussion for the Ecological Landscaping Association, Springfield, MA (20 participants) (February 27).

MS. ROSE HISKES staffed the Connecticut Invasive Plant Working Group display table at the Hartford Flower and Garden Show in Hartford (February 23).

DR. JAMES LAMONDIA spoke about 'Strawberry black root rot and soil health' to the New England Vegetable and Berry Growers Association in Hudson, MA (115 attendees) (February 1); interviewed about patents and licensing efforts at the Valley Lab by Greg Ladky of CTnow.com (February 6); spoke about diagnosis and control of boxwood blight and diseases of nursery crops at Summer Hill Nursery (6 attendees) (February 10); met with Barry Labendz and John Suscovich to discuss hops and barley research and farm brewery support (February 11); welcomed growers to the Annual Tobacco Research Meeting and spoke about research topics and recent developments at the Station, spoke about research on management of tobacco pathogens including poty viruses, black shank, target spot and blue mold fungicide resistance, spoke about the CORESTA pesticide residue program and strategies to reduce pesticide residues in wrapper leaves and discussed CT grown labeling for tobacco and CT DoAg Venture grant opportunities (100 attendees) (February 18); participated in a meeting of the Connecticut Agricultural Information Council in East Windsor to select the Connecticut Outstanding Young Farmer Award winner and prepare for Ag Day at the Capital (February 19); spoke to a joint meeting of the Windsor Locks and East Windsor Lions Clubs in Windsor Locks about research conducted and services provided by the Experiment Station in New Haven and Windsor (72 attendees) (February 20); taught a class on identification, biology and management of tree diseases to students in the Connecticut Tree Protective Association's Arboriculture 101 class in New Haven (38 attendees) (February 26); spoke about the Station to an Arboriculture class from the Suffield High School Agriscience Program (11 attendees) (February 27); and met with Bill Leahey and Steve Jarmoc of the Connecticut-Massachusetts Tobacco Growers Association to discuss Connecticut Grown marketing (February

DR. TODD L. MERVOSH participated in a symposium planning meeting for the Connecticut Invasive Plant Working Group at the Valley Laboratory (February 11).

MS. DIANE RIDDLE spoke about soil testing and demonstrated the soil testing process to an Arboriculture class from the Suffield High School Agriscience Program (11 attendees) (February 27).

DEPARTMENTAL RESEARCH UPDATES FEBRUARY 2014

Krol, W.J.; Eitzer, B.D.; Arsenault, T.; Incorvia-Mattina, M.; White, J.C. 2014. Significant Improvements in Pesticide Residue Analysis in Food Using the QuEChERS Method. *LC/GC North America* 32 (2): 116-125.

ABSTRACT: The quick, easy, cheap, efficient, reliable and safe (QuEChERS) extraction protocol combined with both gas chromatography / mass spectrometry (GC/MS) and liquid chromatography / mass spectrometry (LC/MS) was adopted in our laboratory in 2006 for the analysis of pesticide residues in food samples as part of the State of Connecticut regulatory monitoring program. We have compared directly the QuEChERS-based procedure to our previous analytical method and, indirectly, to the FDA pesticide residue monitoring program data. Prior to the adoption of the QuEChERS method, our findings indicated that approximately 65% of the food samples analyzed in our laboratory were free from pesticide residues; the FDA pesticide monitoring program reported similar results. However, since 2006 and the implementation of the QuEChERS method, our findings indicate that only 30% of such samples are free of residues; 70.0% of the analyzed products were found to contain at least one pesticide residue. Similarly, the number of food samples containing violative pesticide residues (6.8% from 2006 -2010) was more than double the ~3% reported in previous years. The use of the QuEChERS method followed by both GC/MS and LC/MS analysis has enabled the detection of greater numbers of residues at lower levels, thus providing the consumer, and regulatory agencies, with a better understanding of the prevalence and levels of pesticide residues in the food offered in the marketplace.

Bai, Y.; Wu, F.; Petersen, E.J.; **White, J.C**.; Xing, B. 2014. 100 nanometers: A potentially inappropriate threshold for ecological effects of nanoparticles. Environ. Sci. Technol. DOI: 10.1021/es500365k.

ABSTRACT: Nanoparticles (NPs) have dimensions between 1-100 nm and properties that differ from corresponding bulk and ionic forms. Many studies have demonstrated size-dependent physicochemical properties and environmental impacts for NPs. Although not explicit in the literature, data suggest the existence of threshold particle sizes for NP-induced environmental impact1-3. Importantly, the threshold sizes of NP environmental impacts differ from 100 nm. In fact, an inappropriate focus on a static value of 100 nm as the benchmark for “nano” or “not nano” has oversimplified and confounded understanding of this complex phenomenon. When a particle varies from the threshold size, regardless of proximity to 100 nm, environmental behavior changes dramatically.1–3 However, particle size in the environment is not static and dynamic processes of aggregation, dissolution, and reduction will occur. As such, investigation into NP threshold sizes for environmental impact is important not only for understanding environmental behavior but also for minimizing exposure and risk.

Gardea-Torresdey, J.L.; Rico, C.M.; **White, J.C**. 2014. Trophic transfer, transformation, and impact of engineered nanomaterials in terrestrial environments. Environ. Sci. Technol. 48:2526–2540.

ABSTRACT: Engineered nanomaterials (ENMs) are released into the environment with unknown implications in the food chain. Recent findings demonstrate that ENMs may accumulate and/or increase concentrations of the component metal or carbon nanomaterials in the fruits/grains of agricultural crops, have detrimental or beneficial effects on the agronomic traits, yield, and productivity of plants, induce modifications in the nutritional value of food crops, and transfer within trophic levels. Given this information, important questions needed to be resolved include: a determination of actual or predicted concentrations of ENMs through the development of new and perhaps hybridized analytical tools, assessment of the nutritional content modifications and/or accumulation of ENMs, component metal, and co-contaminants in edible plants and their implications on human diet, nutrition, and health, assessment of the consequences of ENM-induced changes in soil health, physiological process, and yield on agricultural production and food security, and transfer of ENMs in trophic levels. Given the significant implications of ENMs exposure and the rather large knowledge gaps that exist, it will be prudent to observe judicious and targeted use of ENMs so as to minimize environmental release until a comprehensive environmental fate and effects assessment can be undertaken.

Ward, J.S., **S.C. Williams**, and T.E. Worthley. 2013. Comparing effectiveness and impacts of Japanese barberry (*Berberis thunbergii* DC) control treatments and herbivory on plant communities. *Invasive Plant Science and Management* 6:459-469.

ABSTRACT: Two factors that can degrade native plant community composition and structure, and hinder restoration efforts, are invasive species and chronic overbrowsing by ungulates such as white-tailed deer. Beginning in 2007, the effectiveness, costs, and impacts of Japanese barberry control treatments and herbivory on nonnative and native plant communities was examined at eight study areas over 4 to 5 yr. Prescribed burning and mechanical mowing by wood shredder or brush saw were utilized as initial treatments to reduce the aboveground portion of established barberry and were equally effective. Without a follow-up treatment, barberry had recovered to 56 to 81% of pretreatment levels 50 to 62 mo after initial treatment. Follow-up treatments in mid-summer to kill new sprouts included directed heating and foliar herbicide applications. Relative to untreated controls, follow-up treatments lowered barberry cover 50 to 62 mo after initial treatment by at least 72%. Although all follow-up treatments were equally effective, the labor cost of directed heating was four times higher than for herbicide applications. Follow-up treatment type (directed heating vs. herbicide) had minimal impact on species other than barberry. White-tailed deer herbivory had a larger impact on other species than did barberry control treatments. Native grass and fern cover was higher outside of exclosures. Areas inside exclosures had higher cover of Oriental bittersweet and multiflora rose, but not Japanese barberry. Thus, recovery of native communities will require more than simply removing the dominant invasive species where deer densities are high. Excellent reduction of Japanese barberry cover can be achieved using either directed heating or herbicides as follow-up treatments in a two-step process, but other invasive plants may become a problem when barberry is removed if deer populations are low.

Li, Y. H. 2014. Anthracnose of Cucumber. The Connecticut Agricultural Experiment Station Fact Sheet.

http://www.ct.gov/caes/lib/caes/documents/publications/fact_sheets/plant_pathology_and_ecology/anthracnose_of_cucumber_01-30-14.pdf

ABSTRACT: Anthracnose is a common disease of cucumber, which affects all aboveground parts and causes leaf spot, blight, stem canker, and fruit rot and results in early defoliation, yield losses, and lower quality fruit. The article describes characteristic symptoms of the disease, effects of host resistance and environmental contradictions on disease development, and strategies for its control.

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Li, Y. H. 2014. Botrytis Blight of Herbaceous Ornamentals. The Connecticut Agricultural Experiment Station Fact Sheet.

http://www.ct.gov/caes/lib/caes/documents/publications/fact_sheets/plant_pathology_and_ecology/botrytis_blight_of_herbaceous_ornamentals_01-30-14.pdf

ABSTRACT: Botrytis blight is a very destructive disease of a wide range of herbaceous ornamentals. The pathogen can infect most parts of a plant and cause leaf and blossom blight, stem canker, crown rot, and damping-off. Botrytis blight can also cause economic losses during shipment of potted plants and cut flowers. This fact sheet is a brief description of diagnostic symptoms of Botrytis blight on some common host plants and disease management.

ARTICLES OF INTEREST FEBRUARY 2014

Tobacco Research Meetings Held at the Valley Laboratory

Despite seven inches of snow throughout the day, one hundred people attended morning or afternoon sessions of the Connecticut Agricultural Experiment Station's annual Tobacco Research Meeting held at the Valley Laboratory Gordon Taylor Conference Room on February 18, 2014. Dr. James LaMondia and Director Dr. Theodore Andreadis welcomed growers and spoke about research topics and recent developments at the Station. The meeting addressed a wide variety of issues of concern to growers. Dr. James LaMondia spoke about the CORESTA pesticide residue program and strategies to reduce pesticide residues in wrapper leaves and research on management of tobacco pathogens including poty viruses, black shank, target spot and blue mold fungicide resistance. Thomas Rathier spoke about soils and nutrient losses in tobacco. Dr. James LaMondia spoke about Connecticut grown labeling and CT DoAg Venture grant opportunities. Gary Keough of the New England Agricultural Statistics Service provided updates on the CT Valley tobacco crop statistics. Ross Eddy of the Farm Services Administration provided updates on FSA services to growers. Jane Canepa-Morrison, Michelle Salvas, Nathaniel Child and James Preste 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 and 53 persons received credit.

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GRANTS AWARDED FEBRUARY 2014

Dr. Robert Marra has been awarded a grant for $89,000 from the USDA for research on the boxwood blight pathogen, *Calonectria pseudonaviculata*. This project will use next-generation sequencing and genomic analysis of RNA transcripts ("transcriptomics") to identify genes associated with fungicide resistance in this economically important plant pathogen, and to develop molecular detection assays for early identification of these genes in commercial applications.

Engaging private forest landowners in stewardship to promote forest health and biodiversity. **Ward, J.S**. National S&PF Competitive Resource Allocation (Redesign Grants) $76,533

ABSTRACT– Connecticut's forests cover 59% of the landscape and are vital for much of the state's wildlife. The biological richness of these forests contributes to ecosystem health, water and air quality; and provides forest product-based economic benefits, recreational and tourism opportunities and tranquility for state residents. Unfortunately, the biological diversity and health of Connecticut forests are increasingly threatened by fragmentation, parcelization, uniform age structure, and an incomplete understanding of species distribution and associations. The goals of this project are to 1) use an interest in birds and other wildlife to engage family forest landowners, managers, and decision makers in workshops that instill an appreciation for forests and an understanding of management practices 2) conduct site assessments and prepare site-specific forest management recommendations for 100 private and NGO forest landowners, affecting >10,000 acres, and 3) inventory at risk bird species and create spatially explicit maps of their distribution and habitats. These maps will be a great tool in long-term conservation planning that strives to preserve biological diversity and maintain the health of Connecticut forests.

THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION

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