Vol. 38, No. 3 December 2015

### SOUTHERN WEED SCIENCE SOCIETY

**News from the** 

# **SWSS**



### President's Message

What's Inside

**Brad Minton** 

Planning is well under way for the joint WSSA and SWSS meeting in San Juan, Puerto Rico, on February 8-11, 2016. Meeting registration is open through December 9<sup>th</sup> at the preregistration rate and hotel reservations at the conference rate will end on January 13, 2016. Other important deadlines include Abstract submissions by January 15<sup>th</sup> and slide presentations for oral papers by February 1<sup>st</sup>. Additional information such as links to the meeting registration and hotel reservations can be found on the SWSS website (swss.ws).

A preconference tour to the El Yunque Rainforest on the east side of the island will take place on Sunday afternoon. This is the only tropical rainforest in the U.S. National Forest System. Additional tours during the meeting include old San Juan and a local beach that guests can visit during the meeting.



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Future Meeting Site: 2016 San Juan, Puerto Rico Feb. 8-11, 2016

www.swss. ws

The annual SWSS Golf Tournament

will be held on Sunday with the proceeds going to the Endowment Foundation. Thanks to Hunter Perry for organizing the golf event again this year. The Foundation funded three Enrichment Scholarships each of the past three years which allowed students to gain experience in several different areas (industry, extension, university, USDA). These scholarships are supported by the money raised through the golf tournament and contributions by members.

Program co-chairs Peter Dotray and Kevin Bradley have organized a very interesting and informative meeting. The meeting will start Monday afternoon with the general session and WSSA awards followed by a WSSA social. The SWSS Business Meeting will be Wednesday afternoon followed by the SWSS awards and reception. The meeting program will include four symposia:

- 21<sup>St</sup> Century Challenges in Aquatic Weed Management
- The Intersection of Agricultural and Wild Areas: Management of Non-Crop Vegetation as Habitat for Pollinator, Beneficial and Iconic Species
- Use of Endemic Plant Diseases and Insect Pests for Biological Control of Invasive Weeds
- Weed Control in 2050: Imagining Future Strategies and Knowledge Needed to Achieve Them

There will be several concurrent sessions to accommodate the high number of papers and the meeting will conclude at noon on Thursday.

Our Student Contest Chair, Matt Goddard, and the rest of the committee have put together an excellent contest. The paper contest will be for the SWSS students and the poster contest will be for both the SWSS and WSSA

students. I am sure there will be a need for judges so please consider volunteering. It is a great way to provide helpful feedback to students and learn about interesting research.

I would like to announce the newly elected SWSS officers. The new Vice President is Bob Scott, new Industry Member-at-Large is Matt Goddard, new Academia Member-at-Large is Angela Post and the new Endowment Trustee is Perry Hunter.

Recently a request for proposals (RFP) was sent to the SWSS membership to solicit proposals for a future Business Manager in advance of Phil Banks' leaving in 2017. This will be done in conjunction with several affiliated societies, including the WSSA who is searching for a replacement for Joyce Lancaster who is retiring in 2017. Proposals can be submitted for any or all of the societies included in the RFP. The RFP can be viewed using this link: <a href="http://wssa.net/wp-content/uploads/RFP-for-Executive-Secretary-Services.pdf">http://wssa.net/wp-content/uploads/RFP-for-Executive-Secretary-Services.pdf</a>. Please share the RFP with prospective candidates or organizations that may be interested. The deadline for submitting proposals is 5 PM, CST on January 4, 2016.

I would like to take this opportunity to recognize and thank Phil Banks for his services to the SWSS the past several years. Phil does an outstanding job handling the business matters of the Society and supporting the planning for the annual program and meeting.

This will be my last newsletter as President of the Southern Weed Science Society. It has been a pleasure to serve as President and to work with the fine people of the Society. I would like to thank the board members, committees and all the volunteers that have contributed to the success of the Society. I look forward to seeing everyone in February and I wish you a safe and happy holiday season.

**Brad Minton** 

SWSS President

### **SWSS Foundation needs YOU!**

Consider adding a gift to the SWSS Foundation with your registration or at the meeting or by participating in one of their fundraisers.

Your contributions to the SWSS Foundations secure the future of the SWSS

### At A Glance...

The Sheraton Puerto Rico Hotel and Casino is the conference hotel for 2016. Discounted rooms will and special student rates will be available through **January 13, 2016** 

Abstracts are due by January 15, 2016

Presentations must be uploaded by February 1, 2016

All other instructions, agendas and registration forms can be found at the following website <a href="http://wssa.net/meeting/2016-meeting/">http://wssa.net/meeting/2016-meeting/</a> and at the end on this newsletter.

There will be no SWSS specific spouses program. Tours are available through WSSA.

### Instructions for submitting a title and abstract for the WSSA/SWSS Joint Meeting.

The abstract submission site for the 2016 Joint Annual Meeting of the WSSA and SWSS to be held Feb. 8-11, 2016 in San Juan, Puerto Rico is now open.

The student contest information is at the end of this document, so students - read all the way through.

Abstracts for all poster presentations, oral presentations, symposia presentations, and the student contests need to be submitted into this system.

First - the deadlines: Title/Author information is due by October 1, 2015

Abstract Text is due by January 15, 2016

Deadline for Uploading slides for oral/symposia presentations is February 1, 2016

How to Submit: There are slightly separate directions for individuals who are submitting into this system for the first time as opposed to those who have previously submitted an abstract for either the WSSA annual meeting last year or any of the regional meetings that use this system. And then there are some additional instructions for students entering a poster or oral presentation contest. Submitting Titles: Please do not submit your title in bold typeface or all caps. Just capitalize the major words in the Title as per the instructions.

If you are a first time submitter: The first thing you will need to do is create an account. Once you have created an account, you will be sent an email confirmation. The email will give you directions on setting up your password. Then you can log-in with your User Name (Email address) and Password. Some of the regional weed science meetings are using this system as well so to submit into the WSSA meeting you will need to "Join" the Joint WSSA/SWSS Annual Meeting.

If you are a previous submitter: If you have already used this system, for either a previous year's annual meeting or one of the regional meetings using this system, your information has been retained and you can login as usual and proceed directly to submitting your abstract title/author information/text. Just be sure you have "joined" the WSSA/SWSS 2016 and are submitting into the WSSA/SWSS 2016. In submitting author information, if your authors are already in the system, you will be able to select them from a drop down selection box. If they are not already in the system, you can "add an author" as you are submitting your title/author information. Choosing a Section: You will first need to indicate whether this is a poster or an oral presentation. Then there are the thirteen traditional WSSA oral presentation sections, the thirteen traditional WSSA poster presentation sections, four symposia, and the student contests. If you are not a student or if you are a student who is not participating in a contest, then you will select poster or oral and your top three choices for a section in which your title is to be placed and presented.

Student Contests: Students wishing to participate in the contest will have several options - please read this carefully prior to submitting. WSSA students may submit into a PhD or MS poster contest. If you are a WSSA student member, click "yes" for student, click "yes" for contest; select the appropriate WSSA PhD or WSSA MS option; and then select your top three choices for the section in which you wish your poster to be placed. SWSS students may enter the SWSS PhD or SWSS MS poster contest. Click on "yes" for student; "yes" for enter contest; then click on either SWSS PhD or SWSS MS contest; your appropriate section will then appear as the only option for the section. Similarly, SWSS students may enter the oral presentation contest; select "yes" for student; "yes" for contest; and then either SWSS PhD Oral or SWSS MS Oral contest; the appropriate section will appear as the only option for the section selection. The URL for the abstract submission site is: http://wssaabstracts.com If you have questions along the way, please feel free to give me a call or send me an email. Joyce Lancaster 785-865-9250 jlancaster@allenpress.com

### Meeting Registration and Hotel Reservations for the joint WSSA/SWSS meeting

Registration for the 2016 WSSA/SWSS annual meeting in San Juan, Puerto Rico, Feb. 8-11, 2016, is now open. You can review a PDF of the meeting brochure to view a tentative schedule, read about student events, find out about tours, see all of the information pertaining to the Sheraton San Juan Hotel and Casino (our conference hotel), get travel and registration information, and review a registration form. The early-bird registration runs through December 9th - after that the registration rates increase. Students, please note that the 2016 student meeting registration amount of \$125 stays the same across all dates and includes the online access student membership for 2016. You can register online or there is a PDF of just the registration page that you can print and mail in with a check. There are multiple registration options, depending on whether you a member of WSSA, a member of SWSS, or a member of both. The best thing to do is review the rates in the brochure or as posted on the meeting registration page. Even though the rates are the same we need to be able to identify WSSA members and SWSS members separately unless you are a member of both - then choose that category. The group rate for the Sheraton is \$189 per night plus taxes for traditional king single/double rooms. There is a small block of student rooms available for \$89 per night - on a first come, first served basis. The discounted block rate is available through January 13, 2016. You can review more of the hotel details in the meeting brochure.

For Regular Members - to make hotel reservations online visit: <a href="https://www.starwoodmeeting.com/Book/WSSASWSS2016">https://www.starwoodmeeting.com/Book/WSSASWSS2016</a>
For Student Members - to make hotel reservations online visit: <a href="https://www.starwoodmeeting.com/Book/WSSASWSS2016Students">https://www.starwoodmeeting.com/Book/WSSASWSS2016Students</a>

If you would prefer to reserve your room by phone, please call 1-866-932-7269. Be sure to mention "WSSA" in order to get the discounted rate. And finally - the URL for the 2016 meeting page to access the meeting registration pages and abstract submission site. http://wssa.net/meeting/2016-meeting/ As always, please feel free to send an email or give me a call if you need any additional information or assistance. Joyce Lancaster jlancaster@allenpress.com 785-865-9250

### **SWSS Foundation Golf Tournament**

As we approach the end of the year and look forward to the 2016 annual meeting, please consider participation in the SWSS Endowment Foundation Golf Tournament. The tournament will be held on Sunday, February 7<sup>th</sup> at Dorado Beach Golf Resort. Please visit the SWSS website where you will find the required registration form (link below). To fully register, submit your registration form and payment information to Phil Banks (<a href="mailto:swss@marathonag.com">swss@marathonag.com</a>). There are only 7 slots available, so act quickly if you are interested. The deadline to register is December 16<sup>th</sup>. If you have any questions, contact Hunter Perry (<a href="mailto:dhperry@dow.com">dhperry@dow.com</a>).

We are looking forward to another enjoyable golf outing in 2016!

https://www.swss.ws/wp-content/uploads/2013/09/2016-SWSS-Golf-Tournament-Overview-and-Registration-2.pdf

### Join the Discussion

Has the time come for Weed Scientists to be more vocal? The recent news that registration of Enlist herbicide from DOW was halted based on data that basically exploits weed science findings from the past few years is disturbing. The basis of the lawsuit that shut things down is that Roundup and 2,4-D are synergistic for the control of some weeds, therefore they may be synergistically bad to some endangered species. The whole premise of this lawsuit ignores that fact that this combination is used and has been used for years. If there was a problem, would it have shown up by now? If Dow's claims are specifically to the 2,4-D Choline plus glyphosate, saying that it is better than 2,4-D amine plus glyphosate, first I'd like to see the data. Second where is the voice of reason in the judicial system or with EPA to call BS on the whole thing? Anyone can see that this is just an angle not yet taken to slow down or hinder not only the registration of a GMO, but also any new pesticide what-so-ever.

At times I have sat down with intentions to write popular press articles, as many of you may have, that lament the current lack of understanding of pesticide safety, GMO safety, the rapid and serious development of resistance, and the ever slowing registration process that we in Agriculture are dealing with. Maybe my fear is that my grants will be scrutinized, I may end up on the Today show getting grilled by Matt Lauer or some other news person who doesn't really understand the issue and has no idea what it takes to feed a hungry world. I may be branded a Monsanto puppet or a Bayer Puppet or just an Industry flunky. When you start talking about jeopardizing your reputation as a scientist, it gets serious.

Maybe I or we should stop worrying about this and just do it if asked. The other side sure takes the opportunity to lash out any chance they get, sound science or not. As scientists most of us, with a few notable exceptions who know who they are, are introverts, we avoid confrontation, rely heavily on data and do not mettle in the affairs of others. But that may not be what we need to defend our profession and our professionalism. I fear that if something does not change it may go the wrong way. To quote the side that filed the lawsuit against the EPA to stop the registration of DOW's Enlist herbicide when asked what about the need for this technology to control resistant weeds, they replied "this is just a first step in the long road of weaning US farmers off the need for overreliance on pesticides". This is a disturbing statement. Hmmm should I sign this....

SWSS Newsletter Staff



Please join the conversation. The next Newsletter will have room for replies (anonymous or not!) 300 words or so. Please send no later than March 15.

### **People and Places**

Trevor D. Israel (University of TN; Ph.D. May 2015), has accepted a Field Market Development Specialist position with Valent. He will be located in Sioux Falls, SD and will begin work in January 2016.

### **WASHINGTON REPORT**

December 1, 2015 Lee Van Wychen

### **EPA Proposes Changes to Certification and Training Requirements for Pesticide Applicators**

The EPA has proposed changes to the existing regulations concerning the certification and training standards that have been implemented by individual states for the past 40 years. The proposed changes are intended to improve the competency of certified applicators of restricted use pesticides (RUPs), increase protection for noncertified applicators of RUPs operating under the direct supervision of a certified applicator through enhanced pesticide safety training and standards for supervision of noncertified applicators, and establish a minimum age requirement for certified and noncertified applicators. There is no doubt the proposed rule will have significant costs and impacts on state lead agencies, university extension programs, and the applicators subject to regulatory certification. The proposed rule is complex and includes numerous new, revised, and deleted definitions, and would change the way both state lead agencies and university extension programs do business with the public.

Chart - Comparisons of the major new proposed protections to the existing protections

Full Rule Proposal – Pesticides: Certification of Pesticide Applicators

EPA is accepting comments on the proposal until **December 23, 2015**. To comment, please see docket number EPA-HQ-OPP-2011-0183 at regulations.gov

### **Court Stops Nationwide Implementation of WOTUS Expansion Rule**

An Ohio federal appeals court ordered a nationwide hold on the Waters of the United States (WOTUS) rule on October 9, amid disparate rulings by courts around the country on the EPA's ability to define which waters fall under the Clean Water Act.

The stay was granted so the court may determine jurisdiction on the several pending WOTUS lawsuits challenging the rule, and sort out confusion about its requirements. A North Dakota federal district court had blocked enforcement of the rule in 13 states in August. The EPA said after the August ruling that it would still enforce the rule in the rest of the nation even though numerous lawsuits to overturn it were still pending in other federal courts.

The EPA and Army Corps of Engineers first proposed the WOTUS rule in April 2014 and finalized it in May 2015. The rule has been controversial from the start because it greatly expands the jurisdiction of the Clean Water Act by adding some two million acres of streams and 20 million acres of wetlands.

The Ohio federal appeals court decision, <u>available here</u>, was agreed upon 2 – 1 by the three-judge panel. "A stay allows for a more deliberate determination whether this exercise of executive power, enabled by Congress and explicated by the Supreme Court, is proper under the dictates of federal law. A stay temporarily silences the whirlwind of confusion that springs from uncertainty about the requirements of the new rule and whether they will survive legal testing," the opinion states. "A stay honors the policy of cooperative federalism that informs the Clean Water Act and must attend the shared responsibility for safeguarding the nation's waters."

The stay in implementation will only last until the judges determine whether the law gives them authority over the measure or the case must be remanded to a district court. Whatever the court decides will have to be in line with a ruling from the 11th U.S. Circuit Court of Appeals, which is considering the same issue. If the circuit courts don't agree, the jurisdictional issue will have to be decided by the Supreme Court, which could take several years.

A better fix to all of this would be for Congress to pass the bipartisan Federal Water Quality Protection Act that would repeal the WOTUS rule and require the administration to develop an alternative rule in consultation with state and local governments. In May, the House voted 261-155 to pass their bill (H.R. 1732). However, in the

Senate last month, they needed 60 votes to invoke cloture to end debate on their bill (S. 1140), but only got 57 votes. In addition, the President said he would veto the bill, so a two-thirds majority vote would be needed to override his veto.

### Weed Science Societies Comment on EPA Milkweed and Monarch Plan

Earlier this year, the White House's Office of Science and Technology Policy issued the <u>Pollinator Research Action Plan</u>. The plan focuses on increasing honeybee and monarch butterfly numbers through the creation and maintenance of pollinator habitat.

Following that, EPA published a white paper for comment titled "Risk Management Approach to Identifying Options for Protecting the Monarch Butterfly". The National and Regional Weed Science Societies (WSSA, APMS, NCWSS, NEWSS, SWSS, and WSWS) submitted the following comments:

Our scientific societies are nonprofit professional associations of academic research, extension, government, and industry scientists committed to improving the knowledge and management of weeds in managed and natural ecosystems. We appreciate the opportunity to comment on EPA's white paper titled "Risk Management Approach to Identifying Options for Protecting the Monarch Butterfly."

As stated in the white paper, this is the start of a process of stakeholder input and collaboration that will balance weed management needs with the conservation of milkweed for protecting the monarch butterfly. We are happy to be part of that process and would like to emphasize the following points:

- 1. More research is needed on milkweed species (Asclepias spp.).
- 2. Consideration for the management of herbicide resistant weeds.
- 3. Utilizing noncropped areas for milkweed habitat.
- 4. A complex issue without a "one size fits all" answer.

### More research is needed on milkweed species (Asclepias spp.)

There are 100 plus species of Asclepias across the United States. While some research has been done on common milkweed (Asclepias syriaca), there is a paucity of scientific information on the Asclepiadaceae family, whose members are the main food source for monarch butterfly larvae. Because common milkweed typically does not drive weed management decisions, there has been little public or private investment on researching this perennial weed's long term growth and reproduction, population dynamics, response to herbicides, impact on crop yield, and distribution. We agree with the white paper that this type of scientific information will be crucial in developing options to conserve monarch butterfly habitat.

### Consideration for the management of herbicide resistant weeds

We believe it is critical for the Agency to balance weed management needs, especially the management of herbicide resistant weeds, with efforts to assist the monarch butterfly. <u>Programs for herbicide-resistance management should employ the following best management practices</u>:

- 1. Understand the biology of the weeds present.
- 2. Use a diversified approach toward weed management focused on preventing weed seed production and reducing the number of weed seed in the soil seedbank.
- 3. Plant into weed-free fields and then keep fields as weed free as possible.
- 4. Plant weed-free crop seed.
- 5. Scout fields routinely.
- 6. Use multiple herbicide mechanisms of action (MOAs) that are effective against the most troublesome weeds or those most prone to herbicide resistance.
- 7. Apply the labeled herbicide rate at recommended weed sizes.
- 8. Emphasize cultural practices that suppress weeds by using crop competitiveness.

- 9. Use mechanical and biological management practices where appropriate.
- 10. Prevent field-to-field and within-field movement of weed seed or vegetative propagules.
- 11. Manage weed seed at harvest and after harvest to prevent a buildup of the weed seedbank.
- 12. Prevent an influx of weeds into the field by managing field borders.

Some of the above best management practices counter what is outlined in the white paper's "Analysis and Actions" section that discusses the possibility of lowering herbicide rates, modifying application timing, or establishing field buffers. These are all critical areas of concern to agricultural producers and should not be considered without a thorough discussion with producers and registrants to gauge their impact.

### Utilizing noncropped areas for milkweed habitat

The utilization of noncropped lands to develop perennial milkweed habitat makes good biological sense. In general, higher infestations of perennial plants are expected in undisturbed areas. In addition, transportation rights-of-ways and utility corridors are uniformly distributed across the landscape which may aid monarch butterfly migration.

Weed scientists can advocate steps to promote habitats where pollinators and other iconic insects such as the monarch butterfly can flourish, beginning with the adoption of a prudent approach to weed management. While it is crucial that we control invasive, noxious, and herbicide-resistant weeds that can overtake crops and native plants, other weeds such as common milkweed might be left to grow in areas where it is likely to do no harm. The key is to exercise good judgment about which weeds to control, when and where.

### A complex issue without a "one size fits all" answer

Initiatives like the Monarch Butterfly Conservation Fund, the Iowa Monarch Conservation Consortium, and other science-based conservation initiatives will allow private and public landowners to develop local knowledge of milkweed species for their area. Milkweed conservation efforts will vary according to the management of other weed species present in their area and there will not be a "one size fits all" solution. For example, recommending reduced mowing or herbicide use on weeds in ditches where kochia (i.e. tumbleweed) is prevalent could create a public safety hazard due to the buildup of kochia carcasses.

We hope that EPA's actions are consistent with the Interagency Pollinator Health Task Force Report that recognized the importance of evidence-based decision making, collaborative public private partnerships, and expanded research that will balance local weed management needs with the conservation of the monarch butterfly.

We appreciate this opportunity to make initial comments on the white paper "Risk Management Approach to Identifying Options for Protecting the Monarch Butterfly" and look forward to working with the Agency on this important topic.

### Congress Passes a Continuing Resolution Funding Government Through Dec. 11

On Sept. 30, both the House and Senate passed a continuing resolution (CR) funding the federal government at FY 2015 levels through Dec. 11. It was a "clean" CR in that it contained no policy riders, but it did include \$700 million in emergency funding to fight wildfires in the West. Since 1977, there have been only four Congresses that have not needed a CR – the most recent was almost two decades ago, in 1997 – and lawmakers have sent the president an average of six CRs per year to avoid shutdowns.

Congress avoided a lot of budget heartaches this fall when they passed a 2 year budget-debt ceiling pact on October 29. The budget deal would raise the discretionary spending caps for defense and nondefense accounts by \$80 billion above the sequester level for FY 2016 and FY 2017. The increased discretionary spending is offset with cuts to various entitlement programs and revenue raisers.

The agreement also suspended the debt limit until March 15, 2017 so the U.S. doesn't default on its \$18.1 trillion debt in early November. Congress also passed a 3 week extension on federal highway funding that would have expired on Oct. 29. This is the 35th short-term extensions over the past six years. We'll see if the new Speaker of the House, Paul Ryan from Wisconsin, can capitalize on all the camaraderie on Capitol Hill following his election on Oct. 29 and negotiate a long term highway funding bill.

# <u>Weed Risk Assessment Models Prove Unreliable at Predicting Which Biofuel Crops Are Likely</u> to Become Invasive Weeds

The following WSSA press release highlighted a paper published in the latest issue of *Invasive Plant Science* and *Management* by L. Smith, D. Tekiela, and J. Barney titled: "Predicting Biofuel Invasiveness: A Relative Comparison to Crops and Weeds". I am redistributing this release because this paper represents a shift in policy on how we might "weed out" biofuel candidate species. Past biofuel policy recommendations have relied heavily on the outcomes of weed risk assessments conducted by APHIS.

<u>WSSA Press Release</u>: Several of the plants grown as biofuel crops have proved to be invaders in some environments – spreading rapidly and overwhelming surrounding natural ecosystems. Concerns about these weedy tendencies have led many to contend that risk assessments should be conducted before any bioenergy crop becomes widely cultivated. A new study featured in the journal Invasive Plant Science and Management, though, shows that current "gold-standard" weed risk assessment techniques simply aren't up to the task.

Scientists at Virginia Tech used two of the best-respected and most widely used weed risk assessment models to develop invasive species risk scores for three categories of plants. They assessed 16 bioenergy crops, 14 agronomic crops and 10 known invasive weeds introduced for agronomic purposes.

Both models failed to reliably distinguish weeds from crops. For example, cereal rye received a higher risk score than kudzu, which is a widespread and damaging invader across the Southeast.

"We found the majority of all the species we evaluated had high weed risk assessment scores, including crops that we predicted would score low," said Jacob Barney Ph.D., assistant professor of Invasive Plant Ecology at Virginia Tech. "It is clear we should be cautious about using current risk assessment models in setting biofuels policy."

In the absence of effective risk models, the Virginia Tech research team stressed the importance of field evaluations to determine whether crops are escaping field borders.

### NAS GE Crops Study to be Released in Spring of 2016

Many people around the world have a wide range of questions and opinions about the agronomic, environmental, socioeconomic, and health impacts of genetically engineered (GE) crops, and claims and research that extol both the benefits and the risks of these crops have created a confusing landscape for the public and for policy makers.



Committee chair Fred Gould, Professor of Entomology at North Carolina State University, outlines the study's objectives in this short video.

<u>http://nas-sites.org/ge-crops/2015/02/19/study-objectives-video/</u>

An ongoing study by the National Academies of Sciences, Engineering, and Medicine (NAS) seeks to address the confusion. The goal is to bring an independent, objective voice to the sometimes contentious debate around genetic engineering of crop plants. The study is reviewing current understanding of the socioeconomic, agronomic, environmental, and health effects of GE crops. In addition to assessing whether initial concerns and promises have been realized since the introduction of GE crops, it is also focused on the opportunities and challenges related to genetic-engineering technologies coming down the pike such as RNA-interference (RNAi) technology. member Carol Mallory-Smith from Oregon State is one of the twenty scientists serving on the committee that is conducting the study. The committee plans to complete the study and publish its report in the spring of 2016.

Since the launch of the study last year, the committee has heard from 80 presenters at a series of public meetings and webinars on a wide range of topics. All the presentations were recorded. Weed scientists may be particularly interested in: 1) Pest Management Practices Workshop, which included a panel on Contemporary Practices for Suppressing Weeds; 2) a webinar on US Agricultural Extension, which included a presentation by Dallas Peterson, Professor and Extension Weed Specialist, Kansas State University; 3) a presentation by Andreas Weber, Head of the Institute of Plant Biochemistry, University of Dusseldorf, on converting C3 plants to C4 plants; and 4) an introduction to RNAi technology and a discussion of strategies for using plant mediated RNAi in crop protection.

More about the NAS study, including all the meeting and webinar recordings, can be found at the study website, <a href="http://nas-sites.org/ge-crops">http://nas-sites.org/ge-crops</a>. If you have comments for the committee, they can be sent through the website, and you can stay informed about the study by <a href="mailto:subscribing to the email newsletter">subscribing to the email newsletter</a> or following the study on Twitter, <a href="mailto:QNASciences\_Ag">QNASciences\_Ag</a>, #GECropStudy.

### Update on *Bromus tectorum* Biocontrol Agent

Management of *Bromus tectorum* (downy brome, cheatgrass) remains a hot topic on several fronts as it fuels wildfires in the West and destroys sage grouse habitat. The New York Times recently published the following article: "Researcher Finds Way to Fight Cheatgrass, a Western Scourge". The article provides a nice update on the progress being made for a couple strains of *Pseudomonas fluorescens*, a native soil bacterium that inhibits root growth in *Bromus tectorum*, *Taeniatherum caput-medusae*, and *Aegilops cylindrica*. EPA approved the use of *Pseudomonas fluorescens* strain D7 as a biopesticide in August 2014. Dr. Ann Kennedy with USDA-ARS discovered and developed an application method for the bacterial strains. While the bacterium isn't a silver bullet for eradicating cheatgrass, the biocontrol agent can be a critical component in an area-wide cheatgrass management program that should be modeled after the successful TEAM Leafy Spurge area wide management program.

### Sage Grouse Not to be Listed as Endangered Species

The U.S. Fish and Wildlife Service (FWS) announced on Sept. 22, that it would not list the greater sage-grouse under the Endangered Species Act. This decision represents a change of direction for FWS, which announced in 2010 that the grouse was "warranted for listing", but now says that new information about the status of the species, potential threats, regulatory mechanisms, and conservation efforts by Federal, State, and private landowners indicate that listing is not warranted.

There is no shortage of controversy on either side of this decision. A *Washington Post* article by Darryl Fears titled "Decision not to list sage grouse as endangered is called life saver by some, death knell by others" does a

good job of capturing this debate and providing an overall "big picture" in this precedent setting conservation effort. No matter your political persuasion, there is still much research that needs to be done on restoring the sage brush habitat of the sage grouse and more importantly, on developing and establishing an area wide weed management program for *Bromus tectorum*. These sentiments are captured in an excellent commentary by Steve Williams, former Director of FWS from 2002-2005 and now president of the Wildlife Management Institute (WMI). His commentary "Sage Grouse Listing Decision is Hugh Accomplishment, But Not the Finish Line" is published in WMI's Outdoor News Bulletin.

### The Next Great GMO Debate - RNAi?

A good article in the *MIT Technology Review* on the various issues surrounding the advancement of RNA interference technology for pest management: <a href="http://www.technologyreview.com/featuredstory/540136/the-next-great-gmo-debate/">http://www.technologyreview.com/featuredstory/540136/the-next-great-gmo-debate/</a>

Lee Van Wychen, Ph.D. Science Policy Director National and Regional Weed Science Societies

### **Position Vacancy Announcements**

Type of Position: PhD/MS Graduate Research Assistantship in Weed Science (PhD preferred)

Employer: Texas A&M AgriLife Research

Description of employer: Texas A&M University, founded in 1876, is one of the few land-grant, sea-grant and space-grant academic institutions in the nation. With a total enrollment of over 58,000 students, with 13,000 of them being graduate students, Texas A&M is ranked one of the five largest universities in the US. A&M offers 120+ undergraduate degrees, 240 graduate degrees and several professional degrees as options for study. The Department of Soil & Crop Sciences is one of the largest such departments in the nation and is preeminent throughout the world. More details on the university and student life can be found at http://www.tamu.edu/student-life/index.html

Location: College Station, Texas

Salary: A competitive assistantship, all tuition and fees are waived, and individual health insurance is paid through the Texas A&M Graduate Health Insurance Program.

Closing date of competition: Screening of applicants is immediate and will continue until filled.

Date position available: January or May 2016 (January preferred)

Description of duties: The graduate assistant will focus on weed genetics, physiology, and fitness or weed ecology and biology.

Research will involve laboratory, greenhouse, and field experiments. The student is expected to publish findings in peer-reviewed scientific journals. Opportunities exist for presenting results in professional meetings and participating in scholarly activities relevant to the training needs and career goals of the candidate. The

successful candidate is expected to assist in teaching a limited number of academic labs within the Soil and Crop Sciences Department.

Qualifications sought: The preferred candidate must hold or be currently working towards an MS degree in weed science, agronomy, ecology, agroecology, plant science, horticulture or other agriculture related fields. The successful candidate must demonstrate a strong commitment to support farming community through research, an excellent work ethic, ability to work as part of a multi-disciplinary research team, ability to conduct independent research, and proficiency in English language (written and oral).

This position requires travel to research fields and a valid driver license is required. The candidate must meet all requirements for admission to Texas A&M University, http://admissions.tamu.edu/graduate/apply.

### Contact for additional information:

Dr. Muthu Bagavathiannan, muthu@tamu.edu; Ph: 979-845-5375 Application procedure Apply via e-mail

### Submit:

- 1. Curriculum vitae
- 2. A copy of academic transcript (most recent)
- 3. Contact details of three referees
- 4. GRE is a requirement, but candidates who have plans to appear for GRE in the near future can also apply Required documents should be sent electronically to:

Dr. Muthu Bagavathiannan, muthu@tamu.edu

Additional information: The Texas A&M University System is committed to the fundamental principles of academic freedom, equality of opportunity and human dignity. To fulfill its multiple missions as an institution of higher learning, Texas A&M encourages a climate that values and nurtures collegiality, diversity, pluralism and the uniqueness of the individual within our state, nation and world. All decisions and actions involving students and employees should be based on applicable law and individual merit. Texas A&M University, in accordance with applicable federal and state law, prohibits discrimination, including harassment, on the basis of race, color, national or ethnic origin, religion, sex, disability, age, sexual orientation, or veteran status.



### **SYMPOSIA**

- Weed Control 2050: Imagining Future Strategies and the Knowledge Needed to Achieve Them
- 21st Century Challenges in Aquatic Weed Management
- Use of Endemic Plant Diseases and Insect Pests for Biological Control of Invasive Weeds
- The Intersection of Agricultural Lands and Wild Areas Management of Non-Crop Vegetation as Habitat for Pollinator, Beneficial, and Iconic Species

### **GRADUATE STUDENT SYMPOSIA**

Who You Are is How You Lead



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Tour Information	4
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Travel Information	6
Registration Information	6
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### Presidents' Welcome

We would like to invite you to participate in the 2016 joint meeting of the Weed Science Society of America and the Southern Weed Science Society at the Sheraton Puerto Rico Hotel and Casino in San Juan, Puerto Rico on February 8-11, 2016. The Sheraton hotel has excellent meeting facilities and Puerto Rico offers lots of exciting things to see and do in conjunction with the meeting. This will be the 56th annual meeting of WSSA and the 69th meeting of SWSS in an integrated program co-chaired by Kevin Bradley and Peter Dotray.

The joint meeting will get started on the afternoon of February 8 with the general session and WSSA Awards presentations. The general session speakers will focus on the history, agriculture, and ecology of Puerto Rico. The WSSA awards reception will follow the general session with all registered members and guests welcome to attend.

WSSA will again be hosting a poster contest for any graduate students participating in the meeting, while graduate student members of the SWSS region will have the opportunity to compete in an oral presentation contest sponsored by SWSS. The graduate student organizations will also be hosting WSSA and SWSS graduate student luncheons on Tuesday and Wednesday. A graduate

student workshop titled "Who You Are is How You Lead" will be facilitated by the WSSA and SWSS graduate student organizations to support professional development.

SWSS will host their awards ceremony on Wednesday afternoon, at which both the WSSA Poster and SWSS Oral graduate student contest award winners also will be announced. The SWSS awards ceremony will be followed by an awards reception, which is open to all meeting participants.

In addition to our regular poster and paper presentations at the meeting, there also will be four outstanding symposia. The four symposia will be on "Weed control in 2050: Imagining Future Strategies and the Knowledge Needed to Achieve Them;" "21st Century Challenges in Aquatic Weed Management;" "Use of Endemic Plant Diseases and Insect Pests for Biological Control of Invasive Weeds," and "The Intersection of Agricultural Lands and Wild Areas - Management of Non-Crop Vegetation as Habitat for Pollinator, Beneficial, and Iconic Species."

There will also be some extracurricular events before and during the meeting that attendees and guests can participate in. A preconference tour on Sunday afternoon to the El Yunque Rainfor-

est on the eastern side of the island will explore the flora and fauna of the only tropical rainforest in the U.S. National Forest System. There will be a Luquillo Beach tour on Tuesday and guests will also have an opportunity to sign up for additional tours through the hotel services.

The entire program will be posted on the WSSA web site (www.wssa.net) in advance of the meeting and a smart phone and tablet app will be available for downloading in advance of the meeting to help with planning and coordinating your schedules. Printed programs will be available for pick-up at the registration desk for the meeting. We feel that we have an exciting and interesting joint meeting of WSSA and SWSS planned for you to attend and look forward to seeing you in San Juan next February.

Dallas Peterson President, Weed Science Society of America

Brad Minton
President, Southern Weed
Science Society

### **Schedule of Events**

Please note that this is a tentative schedule of events

Saturday, February 6, 2016

7 a.m. -5 p.m. WSSA Board of Directors

Sunday, February 7, 2016

8 a.m. – Noon WSSA Board of Directors 1 – 5 p.m. SWSS Board of Directors

Rainforest Tour

Monday, February 8, 2016

7 – 8 a.m. WSSA Board/Committee Chairs

Breakfast

8 a.m. – 3:30 p.m. WSSA/SWSS Committee

Meetings

2 – 4 p.m. SWSS Board of Directors

4 – 6 p.m. General Session/WSSA Awards

Ceremony

6 – 8 p.m. Welcome Reception

(heavy hors d'oeuvres and cash bar)

Tuesday, February 9, 2016

8 – 10 a.m. Poster Session (Even numbered

Presentations)

10 a.m. – Noon Paper Sessions 10 a.m. – 2 p.m. Luquillo Beach Tour

Noon – 1 p.m. WSSA Graduate Student

Luncheon

1:30 – 5 p.m. Paper Sessions

5 – 6 p.m. WSSA Business Meeting

Wednesday, February 10, 2016

7 – 8 a.m. WSSA President's Breakfast with

Regional Presidents

8 – 10 a.m. Poster Session (Odd numbered

presentations)

10 a.m. – Noon Paper Sessions

Noon – 1 p.m. SWSS Graduate Student

Luncheon

1 – 5 p.m. Paper Sessions

5 – 6 p.m. SWSS Business Meeting/Awards

Presentation/Student Poster/ Paper Contest Awards

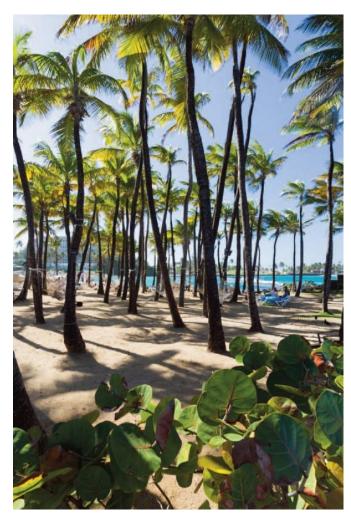
6 – 8 p.m. SWSS Reception

Thursday, February 11, 2016

8:30 a.m. - 12:30 p.m. Paper Sessions

1 – 3 p.m. WSSA Board of Directors

SWSS Board of Directors



## **Student Events**

**Graduate Student Poster Contest** 

There will be a graduate student poster contest in two groups — one for Master's students and one for Ph.D. students. All registered students of both the WSSA and SWSS may participate. Students wishing to participate will designate this at the time of abstract submission.

### SWSS Student Oral Presentation Contest

There will be two oral presentation contests for SWSS students only – an Ms contest and a PhD contest. Again, SWSS students wishing to participate will designate this at the time of abstract submission.

WSSA Graduate Student Luncheon

Tuesday, February 9......Noon – 1 p.m. Open to all WSSA students registered for the meeting.

SWSS Graduate Student Luncheon

Wednesday, February 10 ......Noon – 1 p.m. Open to all SWSS students registered for the meeting.

Graduate Student Workshop — Who You Are is How You Lead

### **Schedule of Events**

Please note that this is a tentative schedule of events

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7 a.m. -5 p.m. WSSA Board of Directors

Sunday, February 7, 2016

8 a.m. – Noon WSSA Board of Directors 1 – 5 p.m. SWSS Board of Directors

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Breakfast

8 a.m. - 3:30 p.m. WSSA/SWSS Committee

Meetings

2 – 4 p.m. SWSS Board of Directors

4 – 6 p.m. General Session/WSSA Awards

Ceremony

6 – 8 p.m. Welcome Reception

(heavy hors d'oeuvres and cash

bar)

Tuesday, February 9, 2016

8 – 10 a.m. Poster Session (Even numbered

Presentations)

10 a.m. – Noon Paper Sessions 10 a.m. – 2 p.m. Luquillo Beach Tour

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Luncheon

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8 – 10 a.m. Poster Session (Odd numbered

presentations)

10 a.m. - Noon Paper Sessions

Noon – 1 p.m. SWSS Graduate Student

Luncheon

1 – 5 p.m. Paper Sessions

5 – 6 p.m. SWSS Business Meeting/Awards

Presentation/Student Poster/ Paper Contest Awards

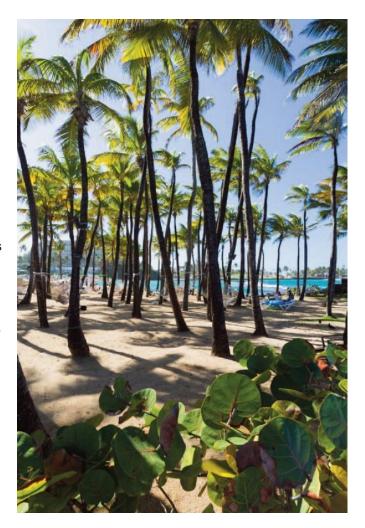
6 – 8 p.m. SWSS Reception

Thursday, February 11, 2016

8:30 a.m. - 12:30 p.m. Paper Sessions

1 – 3 p.m. WSSA Board of Directors

SWSS Board of Directors



### **Student Events**

**Graduate Student Poster Contest** 

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### SWSS Student Oral Presentation Contest

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WSSA Graduate Student Luncheon

Tuesday, February 9......Noon – 1 p.m. Open to all WSSA students registered for the meeting.

SWSS Graduate Student Luncheon

Wednesday, February 10 ......Noon – 1 p.m. Open to all SWSS students registered for the meeting.

Graduate Student Workshop — Who You Are is How You Lead



# **El Yunque Rainforest**

Cost: \$65 p/p including gratuities and tax



# Luquillo Beach

Tuesday, February 9
10 a.m. to approximately 2 p.m.
Luquillo's greatest assets are its' varied,
beautiful beaches and its' easy access
to San Juan and the rainforest. Balneario Luquillo is a calm crescent
shaped beach lined with coconut trees.
Playa Azul beach has a small surf, perfect for body surfing. The 'point' is protected and offers good snorkeling
(sometimes in the winter there is too
much current) and 'La Pared' often
offers good surfing waves. 'La Selva'
surfers beach is just east of Luquillo.

Cost: \$58 p/p including gratuities and



### **Hotel Information**

The Sheraton Puerto Rico Hotel and Casino is the conference hotel for 2016. The hotel address is 200 Convention Center Boulevard, San Juan, Puerto Rico. The Sheraton is a AAA, four diamond property, ideally situated in the Puerto Rico Convention Center District adjacent to the Convention Center and facing the Bay of San Juan. The hotel is only minutes away from historic Old San Juan and the San Juan Luis Muñoz Marín International Airport.

### Reservations

One of the reasons we have been able to retain relatively low meeting registration costs is that we receive free meeting space from the hotel if we achieve our contracted guest room minimum. However, we are charged attrition fees and meeting space rental fees if we do not meet this threshold. Thus, your reservation at the Sheraton Puerto Rico Hotel and Casino, rather than another location, ensures the success of the meeting for the Societies and enables us to keep registration rate increases to a minimum in the future.

As part of our contract, we've negotiated complimentary guestroom internet for all attendees staying at the hotel, complimentary use of the fitness studio; complimentary use to towels and chaise lounges at the sun and pool deck; and complimentary casino match play coupon of \$10 per person. The group rate for a standard guest bedroom is \$189 per night plus tax, available 3 days prior and 3 days after the event dates of February 4 - 12, 2016, subject to availability.

The Sheraton is making available 25 "student rooms" from Sunday February 7 through Thursday February 11 at the reduced rate of \$89 plus tax single occupancy/double occupancy. This is first-come, first-served, so you need to reserve these early. Student reservations will be cross-checked with the registrant list to ensure that only those who qualify for the rooms obtain them.

There is a personalized web site for the 2016 WSSA/SWSS Annual Meeting. You can access the site to book, modify, or cancel a reservation from August 5, 2015 to February 13, 2016.

### Regular Members

To make reservations online, visit:

https://www.star woodmeeting.com/Book/WSSAS-WSS2016

#### Student Members

To make reservations online visit:

https://www.star woodmeeting.com/Book/WSSAS-WSS2016Students

If you'd prefer to reserve your room via phone, please call: 1-866-932-7269—be sure to mention "WSSA" in order to get the discounted rate.

Our discounted block is available through Thursday, January 13, 2016. Reservation requests received after the cut-off date will be based on availability and may be subject to the hotel's prevailing rates.

Check-in time at the Sheraton is 3 p.m. with check-out at noon.

Room Type	Rate
Traditional King Single/Double	\$189
Triple Occupancy (2 Beds)	\$219
Quad Occupancy	
Junior Suite Single (King Bed)	\$189
Club City View Double	\$189
Club City View King	\$189
Student Single/Double Occupancy	\$89
Student Triple/Quad	\$89





# **Transportation**

The Sheraton Puerto Rico Hotel & Casino is only a short drive from the San Juan Luis Muñoz Marín International Airport (SJU).

### Getting Here By Air

The hotel is easily reached by flying into the San Juan Luis Muñoz Marín International Airport, one of Caribbean islands' major international airports. Many major domestic and international airlines serve San Juan Luis Muñoz Marín International Airport.

### By Taxi

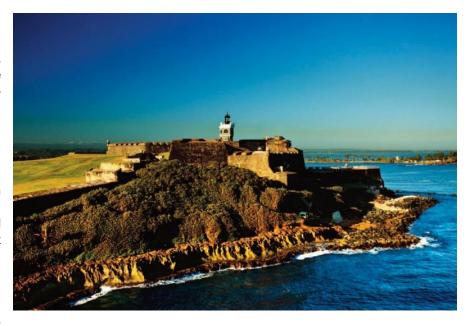
Follow signs in the airport for ground transportation and taxi service. A typical taxi fare in the summer 2015 was \$20.

### Getting Around By Car

A wide range of rental car companies are available at the airport. Additionally, Avis car rental is located conveniently on property in the parking garage.







# **Registration Information**

Registration Fees

Please see the registration form for costs on registration. Take advantage of the early bird discounts and register on/before December 9, 2015.

How to Register

By Mail

Complete the registration form, include payment, and send to:

WSSA Meeting Registration

810 East 10th Street

Lawrence, KS 66044-7065

Online (for credit card registrations only)

Meeting registration can be accessed and paid for directly online by going to the meeting registration section of the WSSA web site: http://www.wssa.net

A printable PDF registration form can be found at www.wssa.net. Complete the form, including payment information and e-mail to WSSAmeeting@allenpress.com.

By Fax (for credit card registrations only)

Complete the attached registration form, or print one from our website, and fax to 785-843-6153.

### Questions

Call 1-800-627-0326 or e-mail us at WSSAmeeting@allenpress.com.

### **Cancellation Policy**

Written notice of cancellation received on or before January 11, 2016 will be refunded, less a \$50 processing fee. No refunds will be issued for cancellations after January 11, 2016. Participants unable to attend the conference can make substitutions.

# **Registration Form**

Print or type name clearly as you wish it to appear on your badge. One form per registrant (only a spouse/guest may be included on the same form). Spouse/guest must be registered in order to attend the WSSA/SWSS receptions on Monday and Wednesday evenings.

First Name	Last Name		Affiliation	Street
State Zip/I	Postal Code Phone Phone			Fax
E-mail	Emergen	cy Contact		Phone
E-mail Please Specify Any Special Needs				Spouse/Guest
Name (if registering				
Registration Type - All regis	tration payments in U	S dollars.		
3, 3,	Early Bird – Dec. 9	Dec. 10 - Jan. 8	January 9 & after	Subtotals
WSSA Member	\$325	\$425	\$475	\$
SWSS Member	\$325	\$425	\$475	\$
Member of Both	\$325	\$425	\$475	\$
WSSA Student Member**	\$125	\$125	\$125	\$
SWSS Student Member**	\$125	\$125	\$125	\$
Student Member of Both**	\$125	\$125	\$125	\$
Student-Non-Member**	\$125	\$125	\$125	\$
Non-Member	\$425	\$575	\$625	\$
WSSA Emeritus/Retired Fellow***	* Complimentary	Complimentary	Complimentary	\$
SWSS Retired Fellows/Distinguish	•		,	
Service Award Winners***	Complimentary	Complimentary	Complimentary	\$
Guest	\$50	\$50	\$50	\$
Registration includes the Awards Recept	tion on Monday evening.			
** Student registration includes attended	dance at the Awards Reception	, the Graduate Student Lunc	heon and 2016 WSSA	online student
membership.				
*** WSSA Emeritus or Retired Fellows	s and SWSS Retired Fellows an	d Distinguished Service Awa	ard Winners may registe	r for the annual
meeting without a registration fee	e. Registration for this group incl	udes the Awards Reception	on Monday evening.	
Special Events - Optional				
Rainforest Tour	\$65 per person	No		\$
Luquillo Beach Tour	\$58 per person	No		\$
				_
Total for Registration and Optiona	al Events			\$
Forms of Dovement				
Forms of Payment	an Evarana a Diagovar			
o MasterCard o VISA o Ameri	•	F	Data	Dein
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Name on Card				Signature
Do not cond cook Diseas make the	ooko povoblo to "MACCA"	All food much be maid in I	الا السمام محما ماسمين	on IIC harden
Do not send cash. Please make che	ecks payable to WSSA. <i>F</i>	an rees must be paid in t	o iunus and drawn c	ภา บอ มิสกหร.

### **Cancellation Policy**

Written notice of cancellation received on or before January 11, 2016 will be refunded minus a \$50 processing fee. No refunds will be issued for cancellations after January 11, 2016. Substitution of registrants is allowed.

### Return Form

WSSA & SWSS Meeting Registration, 810 East 10th Street, Lawrence, KS 66044 Email: wssameeting@allenpress.com • Fax: WSSA at 785-843-6153



# **Tennessee Weed Science Short Course**

### Herbicide Modes of Action and Resistance in Weeds www.tnwss.org

# July 24 to 28, 2016 **Knoxville, TN**

**Courtyard Marriott Knoxville West/Bearden** 250 Brookview Center Way Knoxville, TN 37919 865-690-7680

Please complete and mail to: TN Weed Science Society Attn: Tom Mueller P. O. Box 53141

Knoxville, TN 37950 or www.tnwss.org

### Tennessee Weed Science Short Course

Need a concentrated, focused short course to refresh your knowledge of herbicide modes of action and herbicide resistance? This is the course for you!!

### What is included in the course?

- 1. >26 hours of instruction, hands-on demonstrations and field trips
- 2. All students receive comprehensive workbook detailing course content

### How much does the course cost?

Course fee starts at \$2200 per person, and includes the following:

- All speakers fees
- Course materials, handouts
- Breakfasts, lunches, and breaks

Yes, I want to attend the 2016 TN Weeds Short Course				
Name:	Company/affiliation			
Mailing Address				
City	StateZip			
Phone	Email:			
For more information, please contact Tom Mueller at (865) 974-8805 or <u>tmueller@utk.edu</u> or visit our website at www.tnwss.org				

### **Presentations by:**

#### Steve Duke, USDA-ARS

Published > 400 peer-reviewed articles (as well as numerous books) on herbicide mode of action, allelopathy, herbicide-resistant crops, and nonweed pest management. He is currently the Editor-in-Chief of Pest Management Science.

#### Dale L. Shaner

Weed science researcher for 36 years at University of California, Riverside, American Cyanamid/ BASF and USDA-ARS. Expertise in herbicide mechanism of action, herbicide resistance and herbicide-soil-plant interactions.

### Patrick J. Tranel, Univ of Illinois

Professor at the University of Illinois with expertise in herbicide resistance and weed molecular biology, genetics, and genomics.

#### Jerry M. Green, Green Ways Consulting

Weed scientist at DuPont for 34 years. Expertise in herbicide development and product support, optimization of mixture performance, and pesticide formulations and adjuvants.

### Greg R. Kruger, Univ of Nebraska

Expertise in herbicide spray technology with emphasis on best practices to maximize herbicide efficacy while minimizing drift.

#### Gregory R. Armel, BASF

With experience in both academia and industry, Greg's primary area of expertise is in herbicide discovery and development. Currently, Greg is the Global Herbicide Product Development Manager for BASF.

#### Franck E. Dayan, Colorado State University.

Research Plant Physiologist for 20 years. Area of emphasis includes the mode of action of natural and synthetic herbicides, and mechanisms of resistance to herbicides. He is treasurer of the International Weed Science Society and past president of the Phytochemical Society of North America

#### Thomas C Mueller, University of Tennessee

Professor at UT for 24 years, with emphasis on environmental fate of herbicides and herbicide resistance. He is the course coordinator and contact  $2^{1}$ person.