



Western Society of Weed Science Newsletter

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Spring 2016

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President's Report by Kirk Howatt

Well I didn't get to see any hot air balloons coloring the skies over Albuquerque. But I didn't have much time to look with the many interesting presentations and lively discussions happening at our annual meeting. Thanks to all involved with the organization and operation of the events, especially Jane Mangold, Sandra McDonald, Brian Schutte, and Phil Banks who all made sure everything happened on schedule.

The pre-meeting reception provided an excellent social to initiate dialogue for the week. The forum allowed us to recognize several members who recently retired: Rick Arnold, NMSU; Leo Charvat, BASF Corp; Mary Halstvedt, Dow AgroSciences; Jodie Holt, UC; Phil Stahlman, KSU; Donn Thill, UI; Ralph Whitesides, USU; Frank Young, USDA-ARS. Many years of distinguished service were represented in the group.

Dr. Matt Schmader, Albuquerque Archeologist, provided an interesting tour of local sites. I hope many were able to explore some of the items highlighted. President Joe Yenish reminded us of historic meeting statistics, gave an update on the search for a Business Manager, and used personal experiences to remind all to take chances and get involved in our society. Science Policy Director Lee Van Wychen summarized recent activities and announcements from Washington, D.C. (report included). Terry Crawford, NMSU Economist, acknowledged difficulties in the current marketplace but assured that there is, and will be, need for our trained, qualified professionals in production agriculture. Finally, Mary O'Connell, NMSU Biologist, brought the discussion back to plants with comments on local medicinal plants and techniques to verify compounds of benefit.

About 10% more paper (89) and poster (62) presentations were included this year compared with the last couple meetings. A strong presence of students was noted. Nearly one-third of the presentations were given by 53 students, the greatest attendance I have in my records that start in 2004. The students are an invigorating sector of our society and demonstrate high standards of service and accomplishment. Thanks to the judges who had the difficult task of providing placings in the contest.

Meeting attendance has been flat to slightly declining the past few years. A situation for which the board continues to search for solutions. The location next year in Coeur d'Alene will be used by the Western Aquatic Plant Management Society as well. This joint meeting could help reduce our expenses but increase to our membership is uncertain. Program Chair Monte Anderson and Scott Nissen, Board Member at Large, will be working closely with WAPMS to develop a joint meeting to highlight the strengths of both societies. Symposia proposals are welcome and due before the summer board meeting (see newsletter announcement).

Writing about next year's meeting reminds me of the site selection for 2019. Thank you for your opinion in the straw poll at the Business Meeting. Additional information was received by the committee after our annual meeting that supported the general opinion. The Board approved committee recommendation for the 2019 WSWs Annual Meeting to be held at the Grand Hyatt in Denver.

Site Selection is one of several committees in the society. Even though the Education Committee was dissolved at the Business Meeting, important educational activities could be addressed through an Ad Hoc committee. So please bring forward any ideas you see relevant or prudent for our society. All open positions on the committees have been filled. Thanks to those who didn't run away when seeing me coming. Strong peer leadership is vital to the success of the society and student input is welcome. Two

students have been placed on committees to encourage involvement and professional development. Others are welcome to tell me of their interests.

I am grateful to those who have already supported me and will rely on more interactions with our strong leaders to advance the WSWs this year. You are welcome to share with me your questions, concerns, opportunities, or any comments. Thank you for your involvement.

WSWS 2016 Fellow Awards – by Jill Schroeder

The WSWs Fellows and Honorary Member Committee is pleased to announce the Fellow Awards for 2016 were presented to D. Joseph DiTomaso, University of California at Davis, and Dr. Jesse Richardson, Dow AgroSciences. The 2016 committee members were Tim Miller, Kassim Al-Khatib, and Jill Schroeder (chair). Kassim Al-Khatib will assume the role of committee chair for 2017. Please submit nominations for Fellow and Honorary member Awards for 2017 to Dr. Al-Khatib by December 1, 2016 (see newsletter announcement).



Jesse Richardson

Joseph DiTomaso



Roland Schirman - 2016 Presidential Award of Merit

Roland Schirman received the WSWs Presidential Award of Merit from Joe Yenish at the 2016 annual meeting in Albuquerque, New Mexico.

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Student Liaison Report - by Breanne Tidemann

I hope you are all rested from the WSWs annual meeting in Albuquerque. It was a great meeting, with a record high student attendance of 53 students! We had a number of students presenting their research in both the poster and paper contests. The standard set by the students was again very high this year, and we'd like to congratulate those students that received student contest awards. The WSWs also offers the Elena Sanchez Scholarship program to promote student attendance and attract new students to the meeting. Congratulations to those students who received scholarships at the 2016 meeting. Please consider applying for this scholarship if you are eligible this fall. Keep your eye on your email for the announcement of the application and application deadline.

The student silent auction was a great success this year, raising \$3,893 to help fund student scholarships in the upcoming year. The scholarship would not be a success without our society members who not only make donations, but also by those members who purchase the items. We had fantastic items this year, and hope to keep this up for next year. This was our fifth silent auction and we look forward to donations and support for the auction next year.

Carl Coburn has now completed his term as student liaison and we'd like to thank him for his efforts over the last two years and wish him the best of luck in finishing his Ph.D. Carl has been very dedicated and enthusiastic as student liaison and we hope to continue his successes on behalf of the students. Stepping in to the Student Liaison Chair-Elect role is Caio Brunharo, a Ph.D. student at UC Davis. Be sure to congratulate him on his election to this position. We will be working hard to continue improving the annual meeting experience for students and continue the success of the silent auction.

WSWS students, please be sure to submit responses to the email survey that was sent out March 17th. Your responses are critical to making the meeting the best experience for you that we can and are taken very seriously by the board and the respective committees. Also keep an eye on your mailbox for the comments and scores from the student poster and paper contests. If you are interested in being more involved in the society, please get in touch. We are more than willing to help you get involved and appreciate support in preparing for the upcoming meeting.

We are on social media too! You can like us on Facebook (Western Society of Weed Science Student Section) or on Twitter @WSWSstudents. Feel free to share research results, interesting news articles, ask statistics questions, or anything else related on these pages. Caio and I welcome suggestions and comments regarding student events, the annual meeting, the silent auction, or any other topics. Please get in touch so we can truly represent the student members of the WSWs.

Breanne Tidemann, Student Section Chair
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Caio Brunharo, Student Section Chair (elect)
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Elena Sanchez Memorial Scholarship – Alan Helm

The awards committee received 9 applications for the Elena Sanchez Memorial Scholarship, all of which were outstanding in their own right. The quality of students in the field of weed science and the projects they are working on are impressive to say the least. This a direct reflection on the quality of scientists advising these students. Thank you for all of your hard work. With that said, the recipients of the Elena Sanchez Memorial Scholarship for 2016 are Derek Sebastian, Dean Pettinga, and Junjun Ou.



Awards Committee Report—by Alan Helm, Carol Mallory-Smith, Roger Gast

We received nominations for only one award this year, Outstanding Weed Scientist, Early Career. The nominations for this award again were impressive. However, there is not one of the members that does not deserve recognition for their contributions to the Western Society of Weed Science and weed science as a whole. Please take time to nominate your colleagues for the various awards available. We will accept the nominations at any time during the year so get started now. The Outstanding Weed Scientist, Early Career was awarded to Prashant Jha.



Prashant Jha - Outstanding Early Career Weed Scientist

Call for Symposia for the 70th Annual Meeting

Members of the WSWs are invited to submit proposals for symposia at the 70th Annual Meeting to be held at the Coeur d'Alene Resort, Idaho from March 13-16, 2017. The WSWs program committee will receive proposals and evaluate proposed symposia based on justification and objectives, the target audience, thorough agenda development, and detailed budget. Symposium proposals are due **June 15**. Symposia will be confirmed at the summer board meeting.

The program committee together with the WSWs Board of Directors may approve full or half-day symposia for the annual meeting. Proposals for meetings beyond Coeur d'Alene in 2017 are also encouraged; the 2018 meeting will be in Garden Grove, California. Topics that are relevant for the local audience are encouraged so that the WSWs can reach out to end users with knowledge and technology.

Past symposia topics have included Lab Diagnostics for Injury Determination, Tree & Vine Weed Control, Ecology and Management of Downy Brome, *Ventenata dubia*, Invasive Toadflax, Ecological Effects of Invasive Plants, Kochia, Invasive Grasses, Jointed Goatgrass, Biological Control of Invasive Plants, Adjuvant Technology, Arundo/Phragmites, Application Technology, Knotweed, Crop Protection Chemistry vs. Genetically Modified Crops, Dose Response Functions, and Salt Cedar.

Abstracts of symposium presentations will be included in the proceedings; therefore, symposium organizers are responsible for ensuring all electronic title and abstract submissions. We look forward to your symposia proposals. If you have any questions, please contact Brian Jenks (brian.jenks@ndsu.edu) or Monte Anderson (monte.anderson@bayer.com).

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WSWS ONLINE EDUCATION

<http://passel.unl.edu/pages/index2col.php?category=weedscience#>

WSSA Journals Website Online

www.WSSAJournals.org

CALENDAR OF EVENTS

11th International Symposium on Adjuvants for Agrochemicals

June 13-17, 2016
Monterey, California
www.isaa2016.org

7th International Weed Congress

June 19-25, 2016
Prague, Czech Republic
<http://www.iwsc2016.org/>

Weed Science Society of America Annual Meeting

February 6-9, 2017
Tuscan, Arizona
www.wssa.net

Western Society of Weed Science Annual Meeting

March 13-16, 2017
Coeur d'Alene, Idaho
www.wsweedscience.org

2nd Global Herbicide Resistance Challenge

May 14-18, 2017
Denver, Colorado
www.ghrc2017.org

Reminder from the Necrology Committee – Ralph Whitesides, Chair

This past year five members of the Society have passed away – Dr. Richard William 'Bill' Ward Baldwin, Dr. Thomas Trost Bauman, Dr. Wayne Stuart Belles, Oliver George Russ, and Dr. Stanford N. Fertig. Their obituaries have been included in the 2016 WSWS Proceedings and maybe viewed on the website (www.wsweedscience.org).

If you are aware of any WSWS members who have recently passed away please notify Judit Barroso (judit.barroso@oregonstate.edu) or the Business Manager, Phil Banks (wsws@marathonag.com) so that we may remember them appropriately at the next meeting in Coeur d'Alene. Additionally, we would like to encourage anyone interested in serving on this committee to please volunteer. The committee is comprised of three members and the second year member will be the chair. The committee is responsible for obtaining the information (obituary or biography) on those members who have passed, keep the President of the society notified, and prepare a written report to be presented at the Society Business Meeting.

A Note from the Business Office by Phil Banks

If you did not attend the past meeting in Albuquerque, New Mexico and have not done so already, you should renew your WSWS membership for 2016. You can do this by logging into your account at the website (www.wsweedscience.org) and clicking on the Current Member Renewal under the Membership tab. You can also renew by sending me a check for \$30.00 along with your name and current contact information (form is included in this newsletter). If you have changed your address, job, phone number, or e-mail address, please take the time to update your information. Let me know if you have any questions or need additional information.

If you need to contact the office, please give us a call at (575) 649-7157 or e-mail at wsws@marathonag.com.

Phil Banks, WSWS Business Manager/Treasurer

During the awards luncheon, Phil Banks presented a "thank-you card" to Tom Whitson, Editor of Weeds of the West for his many years of dedication and hard work on the 25th anniversary of its publication.



2016 Student Paper and Poster Awards by Ryan Rector

The 2016 WSWS Student Paper Contest included 22 poster presentations and 25 oral presentations. All of the students who participated are to be commended for their excellent presentations. As has been done previously, the students with poster and oral presentations were each divided into two groups. According to the rules of the student paper contest, the number of winning places in the four groups varied from two to three, depending on the number of students in each group.

Undergraduate poster presentation winner was Jessica Bramhall, Kansas State University. Her winning poster was titled *Impact of Crop Competition on Fitness of Glyphosate-Resistant Kochia*.

Undergraduate Poster



Jessica Bramhall, Kansas State University, Manhattan
pictured with WSW President Joe Yenish

Albuquerque Poster Session



Poster presentations represented in the Weeds of Range and Natural Areas, Weeds of Horticultural Crops, and Basic Biology and Ecology projects had three winners. First place was Carl Coburn from University of Wyoming. His winning poster was titled *Methods for Confirming Resistance to Different Herbicide Mode of Action: Does One Size Fit All?* Second place winner in the same group was Albert Adjesiwor, University of Wyoming. His poster was *Physiological Mechanisms of Shade Avoidance Response in Beta Vulgaris*. And third place was Samantha Willden, Utah State University. Her poster was *Phenology of the Biological Control Agent of Dalmation Toadflax in Utah*.

The other group of posters represented the Agronomic Crops project. First place winner was Charlemagne Lim from Montana State University and his poster was *Survival and Fecundity of Glyphosate-Resistant Kochia with Variable EPSPS Gene Copies in Response to Glyphosate Selection*. Second place winner was Rachel Zuger, Washington State University and her poster was *An Overview of Herbicide-Resistant Weeds in Washington*.

Student Poster Contest Winners

Weeds of Range and Natural Areas, Weeds of Horticultural Crops & Basic Biology and Ecology



2nd - Albert Adjesiwor, University of Wyoming, Laramie
1st - Carl Coburn, University of Wyoming, Laramie
3rd - Samantha Willden, Utah State University, Logan

Weeds of Agronomic Crops



1st - Charlemagne Lim, University of Wyoming, Laramie
2nd - Rachel Zuger, Washington State University, Pullman

In the oral presentations, the students were divided into three groups with the first group consisting of presentations from the following projects: Weeds of Range and Natural Areas, Weeds of Horticultural Crops, Teaching and Technology Transfer. First place winner was Derek Sebastian, Colorado State University. His

presentation was *Winter Annual Grass Control and Remnant Plant Community Response to Indaziflam and Imazapic*. Second place winner was Travis Carter, North Dakota State University and his presentation was *Prairie Response to Canada Thistle Infestation*.

The second group of oral presentations were in the Agronomic Crops project. First place winner was Junjun Ou, Kansas State University and his paper was *Efficacy of Glyphosate and Dicamba Tank Mixes in Kochia*. Second place winner was Clint Beiermann, University of Wyoming and his presentations was *Effect of Winter Wheat Stubble Height on Dry Bean Growth and Development*. Third place winner was Curtis Hildebrandt, Colorado State University and his presentation was *Crop Safety Assessment of Mutagenesis-derived ACCase Resistant Wheat Lines*.

The other group of oral presentations represented the Basic Biology and Ecology project. First place winner was Breanne Tidemann, University of Alberta and her presentation was *Potential Effects of Harvest Weed Seed Control on Wild Oat Populations Based on Demographic Modelling*. Second place winner was Carl Coburn, University of Wyoming and his presentation was *Experimental Methods for Confirming Resistance to Synthetic Auxin Herbicides*. Third place winner was Neeta Soni, Colorado State University and her presentation was *Determining Seed Retention of Key Annual Weeds at Wheat Harvest*.

Student Paper Contest Winners

Weeds of Range and Natural Areas, Weeds of Horticultural Crops, & Teaching and Technology Transfer



2nd - Travis Carter, North Dakota State University, Fargo
1st - Derek Sebastian, Colorado State University, Fort Collins

Weeds of Agronomic Crops



3rd - Curtis Hildebrandt, Colorado State University, Fort Collins
1st – Junjun Ou, Kansas State University, Manhattan
2nd - Clint Beiermann, University of Wyoming, Laramie

Basic Biology and Ecology



2nd -Carl Coburn, University of Wyoming, Laramie
1st– Breanne Tidemann, University of Alberta, Edmonton
3rd– Neeta Soni, Colorado State University, Fort Collins

Appreciation is expressed to all of the judges who contributed their time and energy in compiling scores of each of the presenters in the oral and poster presentations.



PREREGISTRATION CLOSES SOON!

2nd Global Herbicide Resistance Challenge May 14-18, 2017 in Denver, Colorado, USA

Preregistration for the GHRC closes May 13, 2016 – hurry to get your discount. By preregistering, you can save on registration fees and reserve a spot. While we hope everyone who expresses a desire to attend has the opportunity to participate, we understand that life sometimes interferes with travel plans. Pre-registration is only an indication of interest not a monetary commitment.

Complete the “I plan to Attend” form available at <http://www.ghrc2017.org/registration-1.html> to pre-register and receive a \$50.00 discount on registration (Full and Student). A discount code is assigned to the individual not the organization.

Visit the official website (www.ghrc2017.org) for detailed information about the program, registration, call for abstracts, hotel accommodations, travel, sponsor/exhibitor opportunities and much more! It will be updated periodically.

2016-2017 WSWS Officers and Executive Committee



Seated: Caio Brunharo, Chad Cummings, Monte Anderson, Joe Yenish, Kirk Howatt, Tim Miller, Brianne Tidemann

Standing: Prashant Jha, Dirk Baker, Charlie Hicks, Brian Jenks, Phil Banks, Scott Nissan, Brad Hanson, Marty Schraer

WASHINGTON REPORT

April 1, 2016
Lee Van Wychen

National Weed Survey

Last year, the National and Regional Weed Science Societies conducted a survey of the most common and troublesome weeds in 26 different cropping systems and natural areas across the U.S. and Canada. **Common** weeds refer to those weeds you most frequently see, while **troublesome** weeds are those that are most difficult to control (but may not be widespread). There were nearly 700 responses from 49 states, Puerto Rico, and eight Canadian provinces. The entire data set for 2015 is available for download at: http://wssa.net/wp-content/uploads/2015-Weed-Survey_final.xlsx

Specific to the states and provinces that comprise the WSWS membership, I have included the top 5 most common and troublesome weeds in grass cropping systems (top) and in natural areas (bottom). "Times Listed" is the number of survey respondents who listed that weed as one of their top five species for that particular cropping system or natural area.

Top 5 Weeds in WSWS Grass Cropping Systems*					
Rank	Most COMMON	Times Listed	Rank	Most TROUBLESOME	Times Listed
1	wild oat	15	1	kochia	16
2	kochia	15	2	wild oat	15
3	wild buckwheat	12	3	downy brome/cheatgrass	10
4	Russian thistle	8	4	Canada thistle	9
5	common lambsquarters	8	5	wild buckwheat	8

*Grass cropping systems included spring cereal grains, winter cereal grains, and turf systems

Top 5 Weeds in WSWS Natural Areas**					
Rank	Most COMMON	Times Listed	Rank	Most TROUBLESOME	Times Listed
1	downy brome/cheatgrass	24	1	knapweed spp.	27
2	Canada thistle	24	2	Canada thistle	22
3	knapweed spp.	14	3	downy brome/cheatgrass	21
4	kochia	13	4	leafy spurge	19
5	leafy spurge	12	5	toadflax spp.	19

** Natural areas included forests, parks, wildlife refuges, pastures, rangeland, and right-of-ways

Going forward, the National and Regional Weed Science Societies will conduct this survey every year, but split it into a 3-year rotation. The 2016 survey will cover the most common and troublesome weeds in broadleaf crops (i.e. alfalfa, canola, pulse crops, etc.), fruit & nut crops, and vegetables. The 2016 survey is currently open and available at: <https://www.surveymonkey.com/r/2016weeds>. In 2017, the survey will cover weeds in grass crops/pasture/turf. In the 3rd year of the rotation, 2018, the survey will cover weeds in aquatic/non-crop/natural areas.

EPA Inspector General Investigating Herbicide Resistance

The EPA's Office of Inspector General (OIG) has launched an evaluation of how effective the agency is at delaying or preventing the spread of herbicide resistance weeds. While this evaluation was not part of [EPA OIG's original FY 2016 annual work plan](#), my understanding is that it is a logical offshoot of an EPA-OIG evaluation of the Office of Pesticide Programs' Genetically Engineered Corn Insect Resistance Management Program which they expect to finish up this summer. I had a very pleasant interview with the EPA OIG team conducting the herbicide resistance evaluation on March 29. The overall objective of the meeting was to obtain external perspectives on federal work to address herbicide resistance, particularly as it pertains to emerging issues and potential opportunities for improvement. The OIG team asked many excellent questions about herbicide resistance, including:

- Please discuss your perspective on federal regulation of GE crops and herbicides.
 - Do you have any opinion on or knowledge of the coordination and interactions between FDA, USDA, and the EPA on GE crops?
 - How well do you feel federal regulators work with and incorporate the perspectives of outside organizations?
 - How well does the regulatory system work to allow farmers and manufacturers to be nimble in adapting to herbicide resistance?
- In your opinion, does the federal community do a good job of managing GE crops and protecting against herbicide resistance?
- What is the extent of the problem of herbicide resistant weeds in agriculture? Please quantify this in financial terms, if possible.
- What are the issues facing in the agricultural community in conveying issues of resistance to federal regulators?
- Please discuss what you see as the greatest challenges facing the agricultural community in herbicide resistance. Are there any instances of resistance emerging in the past about which you can talk, specifically how farmers were affected, how herbicide manufacturers addressed resistance, and what, if any, federal actions were taken in response?
- Please discuss your thoughts on the registration and then withdrawal of Enlist Duo. What were the problems in the registration process? What is the impact of this on farmers?
- What are the areas where more work is needed or missed opportunities that the federal government should encourage?
- How well do you feel issues of risk are communicated by the federal government when it comes to GE crops and herbicide resistance?

The weed science community has been dealing with many of these herbicide resistance issues for several decades and I would encourage you to share your expertise with the EPA OIG herbicide resistance team if they reach out to you.

EPA Proposes New Paraquat Restrictions

EPA has proposed new restrictions and mitigation measures for paraquat, which is currently undergoing registration review. Paraquat is an important option for non-selective weed control. It is widely used in non-crop areas and fallow and as a defoliant for crops like cotton and potatoes. We also know that paraquat is highly toxic in mammalian systems and can be lethal if ingested in small amounts. Since 2000, there have been 17 deaths caused by accidental ingestion of paraquat. These cases have resulted from paraquat being illegally transferred to beverage containers like Gatorade bottles and coffee cups, and later mistaken for a drink and consumed. EPA is proposing the following changes:

1. New closed-system packaging designed to make it impossible to transfer or remove the pesticide except directly into the proper application equipment;
2. Special training for certified applicators who use paraquat to emphasize that the chemical must not be transferred to or stored in improper containers;
3. Changes to the pesticide label and warning materials to highlight the toxicity and risks associated with paraquat.
4. Prohibiting application from hand-held and backpack equipment; and,
5. Restricting the use to certified pesticide applicators only (individuals working under the supervision of a certified applicator would be prohibited from using paraquat).

Paraquat is already a Restricted Use Pesticide for use only by certified applicators or persons under their direct supervision. We support increased education and enhanced warning materials for paraquat, but have concerns about application prohibitions or restrictions. EPA's proposed restrictions on paraquat will be available for comment until **May 9, 2016**. If you have specific concerns or suggestions, please contact me. EPA will consider all public comments before finalizing these proposed actions later this year. For more details: <http://www.regulations.gov/#!docketDetail;D=EPA-HQ-OPP-2011-0855>

EPA Seeks Comments on Decision to Register Dicamba-Tolerant Crops

EPA is making available a 30-day public comment period for a proposed regulatory decision to register dicamba for use in controlling weeds on genetically-engineered (GE) dicamba-tolerant cotton and soybeans. After the comment period closes on **April 30, 2016**, EPA will review all of the comments and reach a final decision, which they expect to issue in

late summer or early fall. In other words, **dicamba will not be registered for use on dicamba-tolerant varieties in the 2016 growing season.** USDA-APHIS has already announced its final decision to allow the sale of dicamba-tolerant GE crop seeds on January 20, 2015.

EPA's proposed decision outlines a Herbicide Resistance Management Plan (HRMP) to ensure that use of dicamba on GE cotton and soybeans successfully manages weed resistance problems. The proposed HRMP includes: 1) robust monitoring and reporting to EPA; 2) grower education; and 3) remediation programs. In addition, EPA is proposing a time limited registration of the proposed uses that would **expire in five years.** At the end of 5 years, EPA can work to address any unexpected weed resistance issues that may result from the proposed uses before granting an extension or allow the registration to terminate if necessary. The label will also contain information on resistance management consistent with **WSSA's Best Management Practices (BMPs)** for comprehensive resistance management approaches.

EPA's human health risk assessment showed no exceedance of their levels of concern for human health, resulting in a determination that the pesticide's use, as approved, will not cause health risks to people living near treated fields, even at the edge of those fields. Even so, EPA added protective measures to ensure there is reduced off-field movement of the herbicide:

- The herbicide may not be applied from aircraft.
- The herbicide may not be applied when wind speed is over 15 mph.
- A **within-field buffer that ranges from 110 to 220 feet in all directions**, depending on application rate, has been set to protect endangered plants and will also further protect bystanders and non-target plants.

EPA's proposed registration of the new use for dicamba on GE cotton and soybean **will allow use in 34 states:** Alabama, Arkansas, Arizona, Colorado, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Mexico, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Virginia, West Virginia, and Wisconsin. (**States NOT** on the proposed label: AK, HI, WA, OR, CA, NV, ID, MT, WY, UT; and CT, RI, MA, VT, NH, and ME.) Additional states may be added to the labeling once an endangered species assessment is completed and demonstrates that a no effects determination is appropriate for any such state.

Public comments on the EPA's proposed regulatory decision must be submitted no later than **April 30, 2016.** Comments may be submitted to the EPA docket [EPA-HQ-OPP-2016-0187](https://www.epa.gov/ingredients-used-pesticide-products/epa-seeks-comment-proposed-decision-register-herbicide-dicamba) at www.regulations.gov.

For more details: <https://www.epa.gov/ingredients-used-pesticide-products/epa-seeks-comment-proposed-decision-register-herbicide-dicamba>

WOTUS- Congress Doesn't Have 2/3rds Majority to Repeal; Federal Courts Will Decide

The majority of the House and Senate supported legislation (H.R.1732; S.1140, S.J.Res.22) that would have forced the Obama administration to rewrite the controversial Clean Water Act rule that expanded "Waters of the United States (WOTUS). However, neither chamber had the necessary 2/3's majority needed to override an Obama veto.

On February 22, the Sixth Circuit Court of Appeals concluded that it has jurisdiction to review challenges regarding the administration's rule that expanded the scope of WOTUS under the Clean Water Act. Given the Sixth Circuit Court's decision from October 9, 2015 to put the controversial WOTUS rule on hold nationwide, things would seem to look good for those challenging the rule such as the American Farm Bureau Federation and the National Association of Manufacturers. However, there are still on-going legal proceedings regarding court jurisdiction that have to be resolved.

NPDES Fix Possible as Part of Bipartisan Sportsmen's Bills

Last year the House Agriculture Committee passed The Reducing Regulatory Burdens Act of 2015 (H.R. 897). This legislation had passed the House in two previous sessions of Congress but failed to get floor consideration in the Senate. H.R. 897 clarifies Congressional intent and eliminates the duplicate regulatory requirement of a National Pollutant Discharge Elimination System (NPDES) permit for the use of herbicides in, over, or near waters of the United States that are already approved for use under FIFRA. In the Senate, Crapo (R-ID) and McCaskill (D-MO), along with 14 other Senate Co-sponsors, introduced S. 1500 as a companion bill to H.R. 897, but it has not gotten a vote on the Senate floor. However, S. 1500 was offered and accepted as an amendment to the long awaited "Bipartisan Sportsmen's Act of 2016"

(S. 659) by the Senate Environment Public Works (EPW) Committee on Jan. 20. We're hoping that S.659 gets a vote in the Senate sometime soon. Similar legislation called the "Sportsmen's Heritage and Recreational Enhancement Act of 2015" (SHARE Act, H.R. 2406) was passed by the House of Representatives on Feb. 26 by a 242-161 vote.

Glyphosate Not Found in Breast Milk

Results of a study commissioned by the German Federal Institute for Risk Assessment (BfR) in which renowned research laboratories in Europe developed two independent analytical methods with high sensitivity to test 114 breast milk samples showed that none of the analyzed samples contained glyphosate residues. The BfR confirmed in its opinion that based on the physicochemical properties of glyphosate and on data on the toxicokinetics and on metabolism in laboratory and farm animals that no relevant transfer of glyphosate to breast milk occurs. The study results were published in the January 25, 2016 issue of the Journal of Agricultural and Food Chemistry.

Overwintering Monarch Butterfly Numbers Triple, Then Hit with March Snowstorm

On February 27, the World Wildlife Fund and the Mexican National Commission of Protected Natural Areas reported that the total forest area in central Mexico occupied by overwintering monarch colonies was 4.01 hectares. This is up from last year's number of 1.13 hectares and 0.67 hectares the year before that. This year's reported population is estimated to be 200 million monarchs compared to the long-term average of 300 million. The National Strategy to Promote the Health of Honey Bees and Other Pollinators has set a short-term target of 225 million monarchs overwintering in Mexico (approximately six hectares of covered forest) by 2020 through national/international actions and public/private partnerships.

Many anti-GMO groups have been plastering the internet with all kinds of misinformation about the impact of herbicide tolerant crops on milkweed numbers, and thus on monarch numbers. But the fact remains that milkweed spp. have never been a dominant "driver" weed species in farm fields across the Midwest. Farmers have been effectively managing milkweed patches in their fields with tillage and/or herbicides long before the advent of genetically-engineered crops. When I was a crop scout and research assistant in college, the places where I always saw the most milkweed species was in the road ditches, right-of-ways, and other non-tilled, non-farmed areas.

To me, the major factors dominating monarch butterfly population fluctuations are the loss of overwintering habitat in Mexico (the oyamel fir forest is reportedly only 2% of once it once was) and the weather. Unfortunately, only 2 weeks after the overwintering monarch population numbers were announced in February, a March 11 snowstorm with subfreezing temps and 50 mph wind gusts hit Mexico's overwintering grounds for the monarch. Only time will tell how many monarchs perished, but the estimates range from 3 – 50% of the reported overwintering population of 200 million.

Weed scientists can advocate steps to promote habitats where pollinators or 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. Let's hope that science and facts prevail in people's decisions for promoting monarch butterfly habitat.



National Invasive Species Awareness Week (NISAW) was February 21-27, 2016. Invasive weeds alone represent a multibillion dollar annual drain on our economy, so it's important that we educate ourselves, become mindful of

invasive species and use what we know to guide our actions throughout the year. Here are some tips for staying informed and making wise decisions:

- Learn about invasive species, especially those found in your region. Your [county extension office](#) and the [National Invasive Species Information Center](#) are both trusted resources.
- Fully comply with all U.S. government regulations regarding the [transport of agricultural products](#) into the country through U.S. Customs.
- If you camp, don't bring firewood along. Instead, buy wood where you'll burn it, or gather it on site when permitted.
- Clean hiking boots, waders, boats and trailers, off-road vehicles, and other gear to stop invasive species from hitching a ride to a new location.

The following webinars were recorded during NISAW and are available at www.NISAW.org

- "Let's Take a Hack at 'Hack and Squirt' Individual Plant Treatments"
- "Volunteers Make a Difference in an Early Detection Rapid Response Citizen Science Program"
- "Protecting the Sierra Nevada from Invasive Plants: Incorporating Climate Adaptation into Wildland Weed Management"
- "Treating Firewood is a Hot Topic: Seasoning, Solarizing, Kiln Drying and Heat Treatment"
- "Weed Wrangle: A Template for Engaging Local Communities through Citywide Invasive Plant Events"

In addition to those webinars, February 22 was "rollout day" in Washington, D.C., for the CAST Commentary: [A Life-cycle Approach to Low-invasion Potential Bioenergy Production](#). With the assistance of the National Coalition for Food and Ag Research (NC-FAR), CAST presented the timely paper to a morning session of Senate staffers and then at a lunch gathering of House staffers where I served as moderator. In the afternoon, CAST and the Environmental Law Institute co-hosted a presentation regarding bioenergy and invasive species where CAST EVP Kent Schescke served as moderator. Jacob Barney (Virginia Tech) and Read Porter (Environmental Law Institute) presented key information from the new commentary and commenters included Aviva Glaser (National Wildlife Federation), Anthony Koop (USDA/APHIS), and Jonathan Jones (USDA/APHIS). The webinar was recorded and is available [HERE](#).

National Invasive Species Awareness Week concluded with a Congressional Reception and Fair on Capitol Hill where many of the Federal Agencies presented information and educational materials on their invasive species activities. Welcoming remarks were given by Congressional Invasive Species Caucus Co-Chairs, Reps. Dan Benishek (R-MI) and Mike Thompson (D-CA), in addition to remarks by Rep. Cynthia Lummis (R-WY). The keynote address was given by the Administrator of USDA-APHIS, Kevin Shea.

Perfect Herbicide? Don't Expect Help From New Chemistry and This is Why

By Stanley Culpepper and William Vencill, University of Georgia (reprinted with permission).

Ever wonder why weed scientists are so aggressive about protecting herbicide chemistry? Growers are constantly being told to protect the chemistry available today because who knows when, or if, they will get anymore. But why is that? In short, any new chemistry would have to be 'the perfect herbicide.'

But let's say we want to try to bring new chemistry to the farm today and make that perfect herbicide. What do we need to do?

To get our new herbicide chemistry venture started, we need at least \$250 million. After Brad Haire (reporter for Southeast Farm Press) donates the money, we will begin our research and development of the perfect herbicide. Brad needs to understand he will have to wait 10-15 years to begin getting any of his investment back and then only has 14 years before others can start selling the same product. Let's say by some miracle Brad coughs up the \$250 million. What do we need to do next to get growers new herbicide chemistry?

Environmentally friendly is a requirement for our new product. It cannot pose a threat to surface waters, ground waters, wildlife, fish and most every other critter on earth. And for sure, it cannot pose any risk to endangered species: to plants as well as animals that eat plants. Persistence of the herbicide also must be understood early in development, or in other words we need the herbicide to last just long enough to help growers, but then we need the herbicide to break

down into friendly natural compounds that will not harm the environment or people. The herbicide certainly can't pose any carryover risk to the crops our growers rotate into either! Additionally, we have to:

- 1) Make sure the product does not cause unacceptable crop injury under a million different environmental conditions and grower production practices.
- 2) Make sure the product has an extended shelf life for storage, so it doesn't go bad in a few years or separate out in the tank.
- 3) Understand how soil/water pH, as well as other water and soil characteristic, influence the activity or life of our product.

We need to focus on making sure our new herbicide chemistry does not have any potential for an unfriendly odor or be prone to volatilization or drift. And, of course, we have to check every potential tank mix partner for compatibility and impact on spray droplet size. If a mixture influences droplet size by just the tiniest amount, we may have the EPA increasing our buffers as well as restricting our use pattern, which could threaten a grower's ability to implement a sound weed management program.

As our product is nearing commercialization, we will need to develop a resistance management plan and strategically figure out the most effective use patterns to maximize weed control, minimize crop injury and prevent resistance development. We have to make sure we can produce the appropriate amount of the product and have perfect, timely distribution across the world, because we'll need access to the global market if we hope at all to get our initial investment back.

We're almost there. We almost have the perfect herbicide. But wait, there's one more hurdle and it can come out of the blue at any time: We better be prepared for various groups to challenge our label in the Ninth U.S. Circuit Court of Appeals of California in attempts to delay or prevent our new tool getting to the growers who desperately need it as they strive to feed the world.

"Hmmm.....maybe those weed science guys are on to something. Seems pretty smart to protect the herbicide chemistry we have today by making wise decisions, implementing diversified herbicide modes of action into an integrated program that uses cover crops, tillage and/or hand weeding." At least we hope this is what you are thinking now if you haven't thought something similar already. Of course, we still need to be concerned that even if our growers do all the right things to protect current herbicide chemistries in the field today, will the products we do have now survive the current rigorous regulatory processes.

As you can see, to develop and then bring to market a new herbicide chemistry is nothing short of miraculous, which is why we haven't had any new chemistry in more than two decades. A new chemistry today would have to be perfect. And very few things are perfect. If agriculture and those who like to eat can't come together to support the development of new effective tools that are friendly within sound-science reason to the consumer, the environment or for our growers, wonder who really will feed our kids and grandkids..... They'll have to do it 'perfectly.'

Lee Van Wychen, Ph.D.

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Personal Protective Equipment (PPE) and Herbicides: A Closer Look

Carol Black, Washington State University and Sandra McDonald, Mountain West PEST

When you think about herbicides, what personal protection comes to mind? Are you concerned about herbicide exposures? Are herbicide label requirements clear and concise for personal protective equipment (PPE) for a pesticide handler, operator, or early entry worker?

Ms. Black shared findings of the frequency of PPE requirements found on pesticide labels, including the herbicide subset, during the 2016 Western Society of Weed Science Meeting's Education and Regulatory Discussion. The group of weed scientists was surprised at:

- how old the data were that serve as the basis for label requirements for gloves
- that food-handling polyethylene gloves were protective (questionable on durability)
- that there are no data on disposable gloves, and
- some herbicide formulations do not allow for the use of neoprene or nitrile gloves.

Ms. Black shared data generated in 2011 by Dr. Anugrah Shaw with the University of Maryland Eastern Shore, who noticed that pesticide label requirements for PPE were confusing, particularly for gloves and garments. A total of 1868 specimen labels, available on the Crop Data Management Systems (CDMS) website, were analyzed by product name, pesticide type (insecticide, herbicide, etc.), signal word, and PPE statements. This PPE baseline data characterizes how often labels require different PPE types (Shaw and Harned 2013); it includes 786 herbicide labels.

One usually thinks about the toxicity of the active ingredient as the driving force; but with herbicides, it can be other chemicals in the formulation that influence the need for PPE. The solvents in herbicides are the basis for gloves and eye protection. Glove requirements are independent of the active ingredient. Over 10% of herbicide labels do not allow for the use of neoprene or nitrile gloves (Black 2016), even though applicators commonly wear both reusable and disposable gloves (Black et al. 2014). Unfortunately, this is overlooked by applicators, registrants, and EPA since there has been no update to the science behind gloves since the study conducted by Arthur D. Little, Inc. in preparation for EPA's Worker Protection Standards in the early 1990s.

Arthur D. Little, Inc. evaluated seven glove types (not Viton®) and formulations with five solvent categories. All gloves tested were ≥ 14 mil thick, except for polyethylene (food-handling) gloves. EPA used this data to develop their Chemical Resistant Chart, which was updated to include the word "for Gloves" in 2012. Also, since all eight glove types are waterproof; EPA updated their Label Review Manual in 2012 to require labels to state "Wear waterproof gloves" for dry or aqueous formulations. For the other solvents, EPA currently requires the solvent category (B-H) translate to only suitable glove types and never relating the solvent category (EPA Label Review Manual 2016).

Labels often do not state thickness even though the studies were based on ≥ 14 mil thickness for all but polyethylene (food-handling gloves) and barrier laminate gloves. However, a 2013 survey of applicators showed that 30% wore disposable gloves for dexterity and convenience (Black 2014). There are no published studies documenting the protective level of disposable gloves.

The below findings illustrate the problem with relying on old permeation data.

- 40 do not allow for the use neoprene, PVC, and natural rubber gloves
- 14 herbicides only allow for butyl rubber or Viton® gloves
- 72 herbicides only allow for barrier laminate or Viton® gloves

Nitrile and neoprene are commonly worn. Viton® gloves cost over \$70; thus, are unrealistic. Barrier laminate (Silver Shield®) gloves are impractical to wear due to fit and dexterity.

Unclear and inconsistent language is prevalent across herbicide labels. In 2011, just over 55% of herbicide product labels were categorized as Category A, which since EPA's 2012 Label Review Manual update should translate to requiring the simple statement "Wear any waterproof glove" with no mention of any glove material (EPA Label Review Manual 2016). In 2011, only 6% of labels had this simple statement (Shaw and Harned 2013).

Most herbicide labels require "chemical resistant" gloves (85%; Black 2016) with variety and complexity of statements attempting to convey what that means. Most labels also quoted EPA's Chemical Resistant Chart for Gloves' category of

the solvent by letter (EPA Label Review Manual 2016).

There is a need for new glove permeation studies to evaluate reusable and disposable gloves under typical use patterns and exposure times. Dr. Shaw and her international partners recently initiated a preliminary permeation study of active ingredient through reusable and disposable gloves. The results show that commonly used reusable nitrile and neoprene gloves provide adequate protection for Category G that currently requires only barrier laminate or Viton® gloves. Information on dry and water-based formulations is also a part of the new studies. The new methodology to measure permeation of non-volatile and non-aqueous active ingredients offers a path for inexpensively updating the glove data that registrants and EPA could adopt. We hypothesize that reusable nitrile gloves would be acceptable in most situations, and there is also a place for disposable gloves.

The high degree of variation of these statements for gloves is very confusing and often confounds the selection of coveralls, and chemical resistant boots, hats, and aprons since applicators perceive chemical resistant to relate to the glove materials. The frequency of other PPE requirements from the herbicide dataset (786 labels) are noted below, and their percentages are very similar to the complete dataset of 1868 pesticides.

- 87% only long sleeved shirt and long pant; 8% coveralls over short-sleeved shirt and short pant; and 5% coveralls over long-sleeved shirt and long pant
- 32% “chemical resistant” apron
- 14% “chemical resistant” footwear
- 38% protective eyewear

PPE statements on labels are the most fundamental protection for pesticide mixers, loaders, and applicators; however, they consistently are very unclear and based on old science. The use of the term chemical resistant adds to the confusion for boots, hats, and coveralls. Registrants and EPA must be diligent to update labels to improve PPE language clarity and consistency. Furthermore, studies are needed to develop/validate a new baseline of permeation data associated with the commonly worn disposable and reusable nitrile and neoprene glove types to provide a more realistic, practical basis for assigning glove types on labels.

Imagine only three glove statement options: 1) Wear waterproof gloves, 2) Wear single-use/reusable nitrile or neoprene gloves, or 3) Wear clean reusable nitrile or neoprene gloves.

WSWS members can be a part of this basic, positive change. Members can work with registrants to update labels to follow the current EPA Label Review Manual. Furthermore consider what glove types are most appropriate for their (who is "their" - the WSWS member or the Registrant?) work and invest in updating the permeation studies behind popular single-use and reusable glove types.

Can the individual – especially academic member – do anything? I would say WSWS members can also be thoughtful and informed when making glove choices.

References:

- Environmental Protection Agency. 1993. Guidance manual for selecting protective clothing for agricultural pesticides operations. Technical report submitted by Arthur D. Little, Inc., Cambridge, MA, to the Risk Reduction Engineering Laboratory, USEPA. Contract No. 68-C9-0037; work assignment 0-20. Project Officer Uwe Frank.
- Black, C. 2016. Herbicides and PPE: Label Requirements, Perceptions, and Reality. Presentation Western Society of Weed Science.
- Black, C., A. Shaw, C. Harned, and C. Hoffman. 2014. **Survey of Chemical Resistant Glove Use Practices and Preferences of Pesticide Applicators**. Journal of Pesticide Safety Education. 16: 17-26
- EPA Label Review Manual. Chapter 10: Worker Protection Labeling. 2016. <https://www.epa.gov/pesticide-registration/label-review-manual>
- Shaw, A., C. A. Black, and C. Harned. 2015. **A Call for Clear and Accurate Communication about PPE for Dermal Protection for Pesticide Handlers**. Journal of Pesticide Safety Education. 17: 1-14.
- Shaw, A. and C. Harned. 2013. **Analysis of Personal Protective Equipment Requirements on Labels of Pesticides for Agricultural Use**. Journal of Pesticide Safety Education. 15: 17-29.



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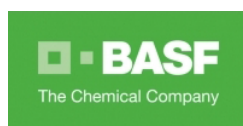
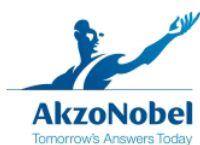
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ISAA Society
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REQUEST FOR WSWF FELLOW AND HONORARY MEMBER NOMINATIONS

BY

Dr. Kassim Al-Khatib, Committee Chair

Now is your chance to nominate deserving colleagues as a WSWF Fellow or Honorary Member!

WSWF FELLOW

WSWF Guidelines for Nominating Fellows

Fellows of the society are members who have given meritorious service to the Western Society of Weed Science.

The nominator must contact the member to be nominated and request them to prepare a concise [2-3 page] resume.

- a. The nominee must be involved in the process. The most pertinent information about the nominee can only be obtained from the nominee.
- b. The nominee's resume should be based on the WSWF guidelines approved by the Board of Directors (see below).
- c. Information from the resume will be used by the nominator in writing the letter of nomination.
- d. The nominator also is responsible for soliciting two letters of support for the nominee. The letters should be sent to the nominator and included in the nomination package sent to the committee.
- e. The nomination package should include the nominee's vita, the nominator's letter of nomination, and two support letters.

SERVICE TO WSWF – Please address the following points in the resume:

1. **Officer:** President; Vice-President; Secretary, Research Section Chair; Education & Regulatory Section Chair; Editor; Other.
2. **Committees:** Standing; Special; Ad Hoc.
3. **Presentations and Publications:** WSWF – Papers, Proceedings, Research Progress
4. **Service to other Weed Science Societies:** Weed Science Society of America; State Organizations.
5. **Academic Weed Science Endeavors:** Teacher; Graduate Students; Refereed Publications; Extension Publications, Books; Popular Publications; Academic Weed Science Pursuits; Other.
6. **Industry Weed Science Endeavors:** Sales and Marketing; Research and Development; Regional Manager; Product Manager.
7. **Other Meritorious Weed Science Service**

WSWF HONORARY MEMBER

WSWF Guidelines for Nominating Honorary Members

Honorary members are selected from individuals whose activities have been largely from outside the Western Society of Weed Science, but who have significantly contributed to the field of weed science.

- The nominator must contact the person to be nominated and request them to prepare a vita.
- The nominator will then prepare a letter summarizing the nominee's contribution to the area of weed science with emphasis on how the interests of the WSWF have been served by this non-member.
- Include the vita with the letter of nomination to provide all pertinent information to the Committee.

NOMINATIONS FOR FELLOW AND HONORARY MEMBER PACKAGES ARE DUE BY DECEMBER 1, 2016

TO:

Electronic submission preferred.

Dr. Kassim Al-Khatib

(503) 752-8350

kalkhatib@ucdavis.edu

Montana State Online course - Fall 2016

Online course: Herbicide Physiology (PSPP 546) • Aug. 29-Dec. 16, 2016

This course covers topics in herbicide classification, herbicide mode of action, and resistance mechanisms. The goals of the course are: to understand the fundamental physiological, biochemistry, and molecular biology of herbicides and their effects on plants; to study the physiological mechanisms of herbicide resistance; to examine the processes by which herbicides are discovered and developed for commercial release; and to investigate typical herbicide non-performance scenarios and practice troubleshooting field complaint situations.

Target Audience

Students from Weed Science, Plant Physiology, Plant Biology, Land Reclamation, Ecology, Range Science, Agronomy, Integrated Pest Management, and Conservation Biology will be served by this course. The course is designed for students without traditional access to this course material, and is not designed to replace existing, on-campus courses at other institutions.

Instructors include:

- **William Dyer** is a professor, Plant Sciences and Plant Pathology, Montana State University. Dyer studies applied agricultural problems using molecular biology and genetics, seeking to understand the physiological strategies used by plants that are highly successful as weeds in agricultural settings.
- **Tracy Sterling** is a professor and department head of MSU's Land Resources & Environmental Sciences (LRES) Department. Her weed physiology research centers on how environmental, insect, and herbicide stresses influence crop and weed productivity.
- **Sarah Ward** is associate professor of plant genetics in the Department of Soil and Crop Sciences at Colorado State University, and a faculty affiliate in LRES at MSU. She is director of publications and member of the executive committee of the Weed Science Society of America. A former plant breeder, Dr. Ward's research focuses on the genetics and population biology of weedy and invasive plants.

3 graduate credits

Prerequisites: Upper division courses in biochemistry (BCHM 340 General Biochemistry or equivalent) and plant physiology (PS 450 Plant Physiology or equivalent), or consent of the instructors.

Program Manager

Lisa Brown
MSU Extended University
(406) 994-3062
lisa.brown@montana.edu

Instructor

Dr. William Dyer
MSU Department of Plant Sciences & Plant Pathology
(406) 994-5063
wdyer@montana.edu

Full course description and tuition information: <http://bit.ly/PSPP546>

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Assistant Professor Small Grains Weed Science

Department of Plant and Soil Sciences
Division of Agricultural Sciences and Natural Resources
Oklahoma State University – Stillwater, Oklahoma

POSITION DESCRIPTION

The Assistant Professor (Small Grains Weed Science Extension Specialist) position is an 11-month, tenure-track position with 85% Extension and 15% teaching responsibilities. The successful candidate will design and lead a comprehensive Extension effort to improve the profitability, sustainability, and quality of Oklahoma small grains and canola systems through improved weed control. Participation in departmentally coordinated Extension efforts and activities, training and support of Extension field staff, and periodic assessment of Extension activity impact are expected. Extension efforts will include traditional and nontraditional information delivery methods and interaction with industry, state, and federal agency personnel as necessary. The position will require development of an externally funded, applied field research and demonstration program to support Extension activities. Opportunities for funding exist through the Oklahoma Wheat Commission, Oklahoma Oilseed Commission, state and federal competitive grants, and industry support. Teaching responsibilities will include an undergraduate class on agronomic weed control in Oklahoma cropping systems and a corresponding lab course with hands-on, applied activities. The successful candidate will provide leadership to the weed science team and advise graduate and undergraduate students.

QUALIFICATIONS

Minimum qualifications include:

- PhD in weed science or closely related field with major emphasis on weed management in agronomic crops
- Strong communication skills with the ability to effectively communicate to scientific and non-scientific audiences orally and in writing
- Ability to work effectively and collaboratively with weed science and Extension faculty, industry partners, and external stakeholders
- Ability to develop proposals for external funding of Extension and applied research programs
- Ability to effectively instruct undergraduate and graduate students
- Ability to publish research findings in peer-reviewed journals

Preferred qualifications include:

- Previous experience in Extension and/or outreach activities
- Evidence of ability to secure external funding
- Experience with effective use of electronic media in extension programming
- Teaching experience

EMPLOYMENT CONDITIONS

This position will be filled by June 20, 2016, or as soon thereafter as an acceptable applicant is available. Salary is competitive with other leading land grant universities and commensurate with training and experience. Continuation of this position is subject to performance, need, and available funding.

APPLICATION PROCEDURE AND DEADLINE

Review of applications will begin April 22, 2016, and continue until a suitable candidate is identified. Application materials should contain:

- A letter of application that include qualifications, associated Extension and research activities, and vision for the position.
- A separate Extension philosophy statement.
- A copy of transcripts
- A listing of three names, with telephone number and e-mail address, for those who may be contacted for additional information.

Submit materials electronically to: <http://jobs.okstate.edu> Search for Req1771. If an applicant is unable to submit materials electronically, please call (405) 744-2909.

INFORMATION

For inquiries regarding this position contact:

Dr. Jeff Edwards, Department Head, at 405.744.6130, jeff.edwards@okstate.edu

Dr. Don Murray, Search and Screen Committee Chair, at 405.744.6420, don.murray@okstate.edu

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Department of Horticulture

4017 Agricultural & Life Sciences Building

Corvallis, Oregon 97331-7304

Telephone: 541-737-3695 | Fax: 541-737-3479 | <http://horticulture.oregonstate.edu/>

The Department of Horticulture invites applications for a full-time (1.0 FTE), 9-month, tenure-track Assistant Professor position.

Weed Management for Horticultural Crops: This position will develop innovative and resourceful strategies through practical farm-based research that will aid in the effective and economical management of weeds in perennial horticultural systems on a state wide basis. This position will improve the efficiency of agricultural resource utilization and the utility and value of cropping systems through the disciplines of weed management, ecology, and biology. Research will blend best management practices currently in use with innovative strategies to provide the best possible weed management outcomes for Oregon producers of food, fiber and seed. Experience and knowledge generated by strategic research will complement the content shared with students pursuing degrees in crop production and resource stewardship.

Oregon State University is committed to practicing and delivery of tools for state-of-the-art science for integrated pest management. Incumbent will be responsible for working in tandem with the Integrated Plant Protection Center to meet this responsibility.

College of Agricultural Sciences faculty are committed to enhancing student success by engaging students in quality academic, research, internships, global studies, and other experiential learning opportunities. Positions with primary responsibility for extension and outreach are likewise committed to learner success through programming appropriate for diverse audience.

Two months of summer salary will be provided on a fixed-term, recurring basis for the first three years. Thereafter, the faculty member will be expected to generate funds for two months of summer salary. The incumbent will be responsible for writing grants and securing the funds for summer salary and operating expenses.

The Department of Horticulture is a comprehensive department with active research, Extension, and resident instruction missions. The department serves a diverse and changing horticultural industry and strives to serve the horticultural needs of all citizens in Oregon. To meet these missions, the department has approximately 60 statewide faculty. The faculty are approximately equally split between on-campus and off-campus locations. Off-campus research faculty are located at Experiment Stations and County Extension offices throughout the state. The Department of Horticulture faculty also collaborate with the USDA-Agricultural Research Service in the Corvallis area.

Oregon State University's commitment to student success includes hiring, retaining, and developing diverse faculty to mentor and educate our undergraduate and graduate students from entry through graduation. Our Strategic Plan (<http://oregonstate.edu/leadership/strategicplan/phase3>) articulates the strategies we believe critical to advancing and equalizing learner success. The College of Agricultural Sciences is likewise committed to success of all learners accessed through its extension and outreach programs.

OSU commits to inclusive excellence by advancing equity and diversity in all that we do. We are an Affirmative Action/Equal Opportunity employer, and particularly encourage applications from members of historically underrepresented racial/ethnic groups, women, individuals with disabilities, veterans, LGBTQ community members, and others who demonstrate the ability to help us achieve our vision of a diverse and inclusive community and has a practice of being responsive to the needs of dual-career couples.

To review the full position announcement, qualifications and to apply, go to <http://jobs.oregonstate.edu/postings/22117> or <https://jobs.oregonstate.edu/>, Posting #P00108UF;

Closes April 17, 2016

OSU is an AA/EOE

2016 Membership Renewal Form for the Western Society of Weed Science

(To pay by credit card, please go to www.wsweedscience.org and login to your account)

IF YOU DID NOT ATTEND THE ANNUAL MEETING BUT WANT TO REMAIN A MEMBER, FILL IN THE INFORMATION BELOW AND SEND \$ 30.00 FOR DUES TO THE ADDRESS GIVEN.

Last name		First name	Affiliation	
Mailing address		City	State	Zip code
Phone # w/area code		e-mail address		

Classification: Student ___ University ___ Federal Agency ___ State Agency ___
Private Industry (manufacturing and sales) ___ Private Industry (consulting) ___
Unemployed ___ Retired ___ other (specify) _____

Send to: WSWS/Phil Banks
205 W. Boutz, Bldg 4, Ste 5
Las Cruces, NM 88005

Publications Available From the Western Society of Weed Science

(All prices include shipping and handling; bulk orders may be discounted, see below)

_____ Weeds of the West.....	\$34.00
_____ Aquatic and Riparian Weeds of the West.....	\$45.00
_____ Weeds of California and Other Western States.....	\$85.00
_____ Weed Control in Natural Areas in the Western United States	\$40.00
_____ Interactive Encyclopedia of North American Weeds DVD.....	\$50.00
Total _____	

All publications can be ordered online at www.wsweedscience.org (click on online store)

To order by mail and pay by check, send this completed form with payment to:
WSWS Business Manager, 205 W. Boutz Rd, Bldg 4, Ste 5, Las Cruces, NM 88005.

Contact the Business Manager (Phil Banks) at (575) 649-7157 for bulk order prices.

Shipping Information:

Name: _____
Address: _____ City: _____
State: _____ Zip Code: _____ Telephone: _____
e-mail: _____

WSWS Objectives

- ❖ To foster and encourage education and research in weed science.
- ❖ To foster cooperation among state, federal and private agencies in matters of weed science.
- ❖ To aid and support commercial, private and public agencies in the solution of weed problems.
- ❖ To support legislation governing weed control programs and weed research and education programs.
- ❖ To support the Weed Science Society of America and foster state and regional organizations and agencies interested in weed control.



Western Society of Weed Science
205 W. Boutz, Bldg. 4, Ste. 5
Las Cruces, NM 88005