



Western Society of Weed Science Newsletter

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FALL 2020

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President's Report - by Corey Ransom

The changing colors and weather of fall have started me thinking of the annual meeting in March. Even with the annual meeting being virtual, I think it will facilitate the important opportunities for communication and interaction that are so very beneficial to us as Society Members.

This past week I had the opportunity to participate with the presidents of the regional weed science societies and of the President of WSSA in virtual meetings with elected officials. While not as exciting as an actual visit to DC, it was great to communicate our needs to staff of senators and legislators on the interests and needs of the societies and our discipline. I am grateful for the job that Lee Van Wychen does in representing our Society and interests in Washington. Be sure to read the reports that Lee submits to see what issues are taking place at the Capitol. It was also very enjoyable to spend several days interacting with other weed scientists (Lee, Science Policy Fellows, and Society Presidents). I always find joy when I am with others who are passionate about many of the things that interest me. I have missed the personal interactions with many of you that has been limited by COVID.

The fires in the West have been obviously devastating this year and I think many of our members do and can play important roles in informing vegetation management in the future, especially in the area of fuel reduction.

I know that the program committee has been very active in developing plans for our annual meeting and think it will be very engaging. Please pay close attention to the guidelines for presentations and other details as they may be modified for our current situation. They have worked hard to ensure that students will have every opportunity to participate and interact with other members as they are a valuable part of our Society.

I hope that all of you are well and have been able to accomplish the most important things these past few months. I hope you have also figured out how to adapt to change as we will likely continue to need that skill in the future. I encourage each of you to stay committed to the Society and to participating in our annual meeting during this unusual year. There is still much to be accomplished and much to be gained.

Kindest Regards,

Corey Ransom

WSWS Annual Meeting March 1-4, 2021

2021 Annual Meeting Update

Sandra McDonald WSWS President-Elect/Program Chair

The big news is that the 2021 Joint Western Society of Weed Science (WSWS) and Western Aquatic Plant Management Society (WAPMS) is going to be virtual. It will be held March 1-4, 2021.

The WSWS/WAPMS Planning Committee has been meeting bi-weekly to make the 74th annual WSWS meeting an amazing event. Attendees will be able to participate in many of the familiar WSWS activities. The virtual platform allows us to add other things to the meeting that will enhance the experience. We are working under the belief, "Build it and they will come." So now it is your turn, we need you to get your poster and oral paper titles/authors submitted.

Please consider submitting a paper and sharing your research and education and regulatory results. The Call for Papers is included in this Newsletter. To present a poster or an oral paper, you must be a registered attendee. We are opening registration and title/author submission on November 2, 2020. The title/author submission will close on Wednesday, December 9, 2020 at 5:00 pm MT.

The abstracts must be submitted by February 8, 2021, 5:00 pm MT. ALL posters and pre-recorded presentations must be submitted by February 8, 2021, 5:00 pm MT. Specific instructions on the presentation formats for ALL poster and oral papers will be sent to presenters after the title submission and program assembly.

Registration opens November 2, 2020 and will remain open through March 4, 2021. The registration fee is \$200.00, this includes your WSWS membership and full participation in the 2021 Joint WSWS/WAPMS Meeting. Use this link to register online: [WSWS 2021 Registration](#). Symposium attendance is included for those who register for the joint meeting. The posters and recorded presentations from the General and Project Sessions and the Symposia will be available until March 23, 2021, for all registered attendees.

We will have live networking, virtual sessions, exhibit halls, and even virtual poster sessions. Our General Session and Project Sessions will be streamed and live-chatting can occur between members and with the presenters. As with so many things in these strange COVID times, the details are not ready to share, but I can assure you that ALL of the WSWS Events that make us, us, are still going to occur - stay tuned.

The Poster Session is going to open a week early on February 22, 2021. This will allow you to view the posters at your leisure and send questions to open a discussion with the authors and other attendees. I think that opening the Poster Session a week early will give attendees time to familiarize ourselves with the meeting platform, build our profile and get excited about the meeting.

The WSWS Board of Directors and the Planning Committee are committed to our WSWS students. We are working closely with the Student Judging Committee to host the best contest ever! Student oral presentations will be live. We want them to be able to present their research and demonstrate their communication skills.

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2021 Annual Meeting – CONTINUED FROM PAGE 2

Student poster presenters will also interface live with the judges to communicate their research. The Student Judging Committee will be supplying more details including how students will be judged and the rules for the competition. The student winners will be announced live as part of the Business Meeting, just like in previous meetings.

The “Student Night Out” may be more of a “Night In,” but the opportunity for students to interact with weed professionals from academia, industry, government, and small business will still be a viable part of the experience.

The Planning Committee is working hard to plan and execute a successful virtual online event. We are working on strategies to facilitate member engagement and networking through virtual tools. One option will be facilitated Roundtable Chats. Tentative topics are:

- Virtual Weed Tours - a future takeaway from 2020?
- The future of teaching Weed Science
- Invasive Weeds – EDRR
- Becoming a more efficient Weed Extension Educator
- The future of contract research. University vs Private. Funding challenges with universities. COVID effects.

If you have a topic you would like to discuss and/or facilitate, please contact me.

Being virtual offers us a unique opportunity to include more people as both presenters and attendees. Please encourage others to check us out and to plan to participate. The three symposia will be of interest beyond our current membership.

1. “Updates from Weed Biocontrol - An Unsung Component of Integrated Weed Management on Land and in Water”
2. “Annual Invasive Grass Management”
3. Are Herbicide-Resistant Crops the Solution to Herbicide-resistant Weeds?”

Please let other people in your state, organization, or university know about them and encourage them to attend.

Special thanks to our Planning Committee. We have already gotten some committee chairs involved and will be including others as the planning progresses. Our Section Chairs are working with the Planning Committee to continue our valued tradition of Discussion Sections.

I want to express my gratitude to our WSWS Business Manager, Eric Gustafson, for his commitment to ensure a successful meeting. He did not know that being part of my brain was in the job description!

Please feel free to contact me (sandra@mountainwestpest.com), Mithila Jugulam (mithila@ksu.edu), Research Section Chair, or Todd Neel (todd.a.neel@usda.gov), Education & Regulatory Section Chair, or any of our Board members, if you need any clarification or have ideas to share.

I cannot wait to "see" each of you! We might even get to meet each other's pets!

Regards,

Sandra McDonald - WSWS President-Elect/Program Chair

Student Liaison Report - Mirella Ortiz

Hello WSWS Students,

There is already snow outside my window and usually it makes me feel homesick, but this year I couldn't be happier about it as Colorado is facing the three largest wildfires in the history of the state. Since I don't really want to think about that, it's time to start thinking about the Virtual WSWS/WAPMS Joint Meeting! Make sure you pay attention to the deadlines elsewhere in this newsletter and get registered, and get your titles in. We don't want to miss out on seeing you! The student competition is usually one of the highlights of the meeting, so make sure you are prepared to really show off the research you've been working so hard on especially during these unprecedented times.

Also, at the meeting is our annual Student Silent Auction. Each year our goal is to raise \$3,000 to fully fund the Elena Sanchez Memorial Outstanding Student Scholarship and we could use your help in meeting that goal. If you have any items to donate, or suggestions of people to contact for items, it would be greatly appreciated. Our contact information is below, so feel free to get in touch with us with ideas or items. It is only through the support of the society members that we are successful in funding our student scholarships. Your support each year is greatly appreciated. Students, you can help fund scholarships for yourself or other students! Consider donating an item created by your university, a framed picture that you took in the field, or other fun, weed science related items. The continued support of the society allows us to continue supporting students who will keep our society going in the future.

Speaking of the student scholarships, I want to encourage all students to apply for the Elena Sanchez Memorial Outstanding Student Scholarship. This scholarship awards three students, graduate or undergraduate, a \$1,000 award that can be used to cover research costs. Supervisors, you can encourage your students to apply too! **The application deadline is December 11th**. While we only award three scholarships each year we would like to see lots of applicants for those scholarships. Make the Award's Committee's lives a little bit harder. I'm sure they won't mind.

The last thing I'll mention is that in March we will be looking for a new Student Liaison Chair Elect as I step out of the Student Liaison Chair role and Jodie steps in. This position is an exciting and fulfilling opportunity. Please consider putting your name forward for the position.

Don't forget to get ready for the meeting, look for donations, and get in touch if you have any questions, comments or concerns.

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Publications

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

WSSA Journals Website Online
www.wssa.net/publications/

CALENDAR OF EVENTS

Canadian Weed Science
Society Annual Meeting
Nov. 23-26, 2020
www.weedscience.ca

North Central Weed Science
Society Annual Meeting
Nov. 30 – Dec. 2, 2020
www.ncwss.org

Northeastern Weed Science
Society Annual Meeting
Jan. 4 – 7, 2021
www.newss.org

Southern Weed Science
Society Annual Meeting
Jan. 24 - 28, 2021
www.swss.ws

Weed Science Society of
America Annual Meeting
Feb. 15 - 18, 2021
www.wssa.net

Western Society of Weed
Science Annual Meeting
Mar. 1 - 4, 2021
www.wsweedscience.org

WASHINGTON REPORT

October 23, 2020

Lee Van Wychen

USDA-NIFA Establishes Two Artificial Intelligence Research Institutes

Two artificial intelligence (AI) research institutes are being created by USDA-NIFA with a \$20 million investment in each to expand artificial intelligence research in farming and food processing over the next five years. NSF also announced the creation of five AI institutes. More institute announcements are anticipated in coming years. USDA's two AI institutes are:

Future Agricultural Resilience, Management and Sustainability: This AI institute will be led by a team at the **University of Illinois at Urbana-Champaign** and will advance AI research in computer vision, machine learning, soft object manipulation, and intuitive human-robot interaction to solve major agricultural challenges including labor shortages, efficiency and welfare in animal agriculture, environmental resilience of crops, and the need to safeguard soil health. The institute features a new joint Computer Science + Agriculture degree and global clearinghouse to foster collaboration in AI-driven agriculture research.

Next Generation Food Systems: This AI institute, led by a team at the **University of California, Davis**, integrates a holistic view of the food system with AI and bioinformatics to understand biological data and processes, addressing issues of molecular breeding to optimize traits for yield, crop quality, and pest/disease resistance; agricultural production; food processing and distribution; and nutrition. Major emphasis is on inclusive education and outreach approaches to build a diverse, next-generation workforce.

Conservation Enhancement Act Set to Become Law

On October 1, the U.S. House of Representatives passed America's Conservation Enhancement (ACE) Act (S. 3051) by voice vote. The bill, S. 3051, which passed the Senate in September, brings together eight bills introduced in either the House or the Senate or both that reauthorize a number of key conservation programs as well as create new authorization for a chronic wasting disease (CWD) task force and for national fish habitat partnerships. The bill, led by Senate Environment and Public Works Committee Chairman Senator John Barrasso (R-WY) and Ranking Member Senator Tom Carper (D-DE), had strong support across the conservation community and marks one more success for conservation legislation enacted during the 116th Congress.

Among its provisions, the ACE Act will:

- Reauthorize the North American Wetlands Conservation Act at up to \$60 million per year through 2025
- Reauthorize the National Fish and Wildlife Foundation Act through 2025 at \$15 million per year for Interior, \$5 million per year for USDA and \$5 million per year for Commerce

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- Authorize funds to combat the threat of invasive species through the Fish and Wildlife Coordination Act with up to \$2.5 million per year through 2025 for both Interior and the Army Corp of Engineers
- Reauthorize the Chesapeake Bay Program through 2025
- Commission a study by the National Academy of Sciences regarding the pathways and mechanisms of the transmission of chronic wasting disease in the United States

EPA Announces Interim Re-registration Decisions for Triazines

In September, EPA announced the interim re-registration decisions for atrazine, propazine and simazine. Details are available [here](#). EPA is requiring the following mitigation measures:

- Reducing the maximum application rate for atrazine and simazine when used on residential turf in order to protect children who crawl or play on treated grass
- Adding a requirement for irrigation immediately after simazine application to residential turf
- Requiring additional personal protective equipment for workers who apply atrazine and simazine to reduce occupational risks associated with certain uses
- Finalizing label requirements for all three triazines to include mandatory spray drift control measures, to minimize pesticide drift into non-target areas, including water bodies
- Finalizing label directions for herbicide resistance to reduce the problem of weeds becoming resistant to atrazine

The re-registration announcement is interim because the triazines must still undergo an Endangered Species Act review. As part of this, the draft biological evaluations for the triazines are anticipated to be available for public comment in late Fall 2020. Final Endangered Species Determinations for each of the triazines are anticipated in 2021.

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Request from the Necrology Committee

The WSWS Necrology Committee is collecting information to ensure that we recognize any current or former WSWS members who have passed away over the past year. If you are aware of anyone whom the committee should be aware of, please send that information to committee chair Earl Creech at earl.creech@usu.edu



CALL FOR PAPERS

VIRTUAL 2021 WSWS/ WAPMS MEETING

Annual Meeting of the WSWS / WAPMS

March 1-4, 2021

Western Society of Weed Science Call for Papers

The 74th annual conference of the Western Society of Weed Science will be held March 1-4, 2021 and will be virtual. The meeting will be a joint meeting with the Western Aquatic Plant Management Society. All WSWS members are invited to participate in the virtual program by presenting a paper as an oral presentation or display in the poster session. To present a poster or an oral paper, the [resenting author must be a registered attendee. Oral presentations will be prerecorded and are strictly limited to fifteen (15) minutes, and that includes a 2 to 3-minute period to respond to live questions from the audience. Multiple presentations by an author can be accommodated if the program schedule allows. If an author submits multiple presentations, but the program does not allow time for them, the author will be contacted to determine priority of inclusion. Presentation abstracts will be published in Volume 74 of the Proceedings of the Western Society of Weed Science.

SYMPOSIUM PAPERS

Speakers participate in symposia by invitation only. Deadlines and procedures for preparing and submitting titles and abstracts of symposium papers are the same as for volunteer oral paper presentations. Individual symposium organizers will submit their titles, co-authors, and abstract into the WSSA Title and Abstract Submission System (<http://wssaabstracts.com>).

DUE DATES for TITLES and AUTHORS; ABSTRACTS

Abstracts are required for both oral and poster presentations. All titles, authors, abstracts, and indexing information must be submitted online through the WSSA Title and Abstract Submission System (<http://wssaabstracts.com>). Title/Author submissions will be accepted beginning November 2, 2020 and will close December 9, 2020 at 5:00 pm MT. Titles will not be accepted after this date. Abstract submissions will close February 8, 2021 at 5:00 pm MT.

The Program text will be printed exactly as submitted, other than format and font changes for uniformity; therefore, proofread your submission very carefully. Primary contact authors will receive an email indicating their abstract was received and a later email confirming the section/day/time when and how the paper/poster will be presented. The program will be posted on the WSSA website (<http://www.wssaweedscience.org/>) and members will be informed when it is available by email from Eric Gustafson, WSSA Business Manager.

GUIDELINES for PROCEEDINGS ABSTRACTS

Abstracts for the student competition must be no longer than 250 words. Abstracts for other presentations are limited to one page. WSSA will NOT retype or make typographical corrections on abstracts submitted for the WSSA Proceedings. Each author is responsible to submit the abstract ready for publication following the guidelines printed below and on the website. Please refer to and follow instructions on the WSSA Abstract site for the most current content and style guidelines. See recent WSSA Proceedings Volumes for examples of abstracts (<http://www.wssaweedscience.org/publications/proceedings/>).

Title: Submit your title text exactly as you want it to appear in the program. Use title capitalization, i.e., capitalize the first letter only of all main words. Use only common or coded names of herbicides (not trade names) and common names of weeds and other plants.

Authors: Use the dropdown feature to search for authors to be included. Authors who have previously submitted through the website may appear in the dropdown menu listing. If an author is not found, enter author information as directed on the website. The site will format the author list for you.

Body of the Abstract: The abstract should be written as a single paragraph and contain brief descriptions of the research and methods used as well as a descriptive summary of results obtained. The abstract should contain meaningful information on completed research. The abstract should include a brief overview of essential aspects of experimental procedures and should highlight significant results and their interpretation. Write the abstract so it consists entirely of information. Abstracts containing statements such as “The results of the experiments will be presented” or “The significance of these results will be discussed” may result in rejection of the paper.

Abbreviations: See <https://www.cambridge.org/core> for approved abbreviations for frequently used terms or phrases that do not need to be defined.

Numbers: Use Arabic numerals for numbers with two or more digits and for measurements of time, weight, and degrees, except when the number is the first word of a sentence. Spell out numbers less than 10 or when they are the first word of a sentence, except when they constitute a series in which one number has two or more digits. Write 10 by 20 rather than 10 x 20 and 1 to 5 rather than 1-5. Units: Either English or SI (metric) units are acceptable; however, do not mix English and SI units in the abstract or presentation.

Plant names: The Proceedings will contain a subject index; therefore, authors must identify the plants in their abstracts on the abstract submission form so the index can be compiled accordingly. Weeds can be appropriately identified in the abstract by using only the WSSA-accepted common names. A list of WSSA approved common can be found at <http://wssa.net/wssa/weed/composite-list-of-weeds/>. Listing the Latin binomial for these plants is not necessary. If a plant name is not in the Composite List of Weeds, include the Latin binomial plus authority in parentheses after the common name at the first mention.

Herbicide names: The proceedings will contain a subject index that includes common and coded herbicide names with corresponding chemical names. Authors must identify herbicides mentioned in the abstract on the on-line form to be indexed correctly. Usually, only common names or code numbers will appear in the printed abstract, but the authors must communicate to the Editor on the abstract submission form the identity of herbicides. A list of approved common and chemical herbicide names is available at <http://wssa.net/Weeds/Tools/Herbicides>. Other herbicides must be identified by giving the code number followed by the chemical name in parentheses, if the chemical name is known. Do not use abbreviations for common names or code numbers of herbicides.

Herbicide rates: Express rates as ai (active ingredient) or ae (acid equivalent), whichever applies, not as formulated material. It is appropriate to mention the herbicide's specific ester or salt used in the research for clarity. Express rates as a decimal; do not use fractions (0.5, not 1/2). Place a zero to the left of the decimal (0.5, not .5) and do not add terminal zeros (0.5, not 0.50; 1, not 1.0).

Approval: If your agency or institution requires official approval for this type of publication, you are responsible for obtaining such approval. Remember, in order to maintain the quality of the Proceedings, all authors must follow these guidelines. Submitted abstracts that do not conform to this format requirement will not be published.

POSTER and ORAL PRESENTATION SUBMISSION

More information about the Poster and Oral Presentation Sessions will be made available as we finalize the virtual platform that will be used. We will also provide more information about how posters and presentations will be submitted.

STUDENT PAPER AND POSTER CONTEST INFORMATION Dennis Scott – Chair

The Student Paper and Poster Contest at the Western Society of Weed Science Annual Meeting provides an excellent opportunity for students to improve presentation skills and increase visibility within the society. For each division of the contest, the top students are recognized with a plaque and a cash award to honor their achievement.

- All graduate students are encouraged to enter one paper **AND/OR** one poster in the contest
- Undergraduate students may enter one poster **OR** one paper in the contest, For **ALL** undergraduate students participating in the contest, please notify me at dennis.scott@fmc.com with your choice of contest.
- If students entering the contest do not wish to be judged (i.e. considered for awards), but would still like to receive feedback on their presentations, please notify me at dennis.scott@fmc.com ahead of the annual meeting.
- Contest rules and scoring criteria can be found at <https://www.wsweedscience.org/> on the “Student Resources” page.

Oral presentations will need to be prerecorded and are strictly limited to fifteen (15) minutes, that includes a 2-3 minute period to respond to live questions from the audience. These prerecorded presentations are back up to protect against technical issues that may arise. There will be time allocated within the meeting for live presentations following the same time constraints just described. It is expected that all students participating in the Student Contest will make a live presentation. Posters submitted can have a 3 minute audio describing the poster content associated with poster it's self when submitted. There will be accommodation made for live interaction with judges during the meeting. Should you have any questions or concerns please feel free to reach out to me.

Judges Invitation

As the chair of the 2021 Student Paper and Poster Contest, I am soliciting non-student volunteers to participate as judges for this competition. Everyone who has been involved with the student contest will attest that volunteer judges are the foundation for a successful contest. Your willingness to judge provides great value to the students and the society. Your time and input help to insure we provide students every opportunity to excel as weed scientists.

If you are interested in volunteering, please contact me by email or phone: dennis.scott@fmc.com or (509-440-1675). I look forward to hearing from **YOU!**

Attention to Advisors and Students

The WSWS Student Paper and Poster Contest committee will be enforcing the below policies. The committee is focused on making the contest a fair and enjoyable experience for all students;

- **Information presented in the WSWS Student Paper and Poster Contest must be original and unique.** If a topic has been used by the author in another presentation at a different weed science society meeting, additional data must be included to constitute a unique presentation.
- Additionally, oral and poster presentations entered for competition by the same person should be substantively different from each other (for example, not just changing the title or simply adding more data to the poster). There should be no overlap between the data presented in the poster and oral format by the author (if entered in a competition).
- Students attending institutions in states that are not WSWS members may enter and receive evaluation but will not be considered for awards.
- All students entering the contest are required to submit an abstract not to exceed 250 words (word count in Microsoft Word). All abstracts exceeding 250 words will be docked points accordingly.

Information regarding the scoring of papers and posters is listed in the tables below. If further clarification by students or advisors is needed, please contact me at dennis.scott@fmc.com.

Paper Contest*	Points	Criteria
Abstract:	10	Length: 5pt ≤ 250 words; Opt > 250 words Appropriate content, format and grammar
Introduction:	10	Concise background to topic Clear objectives and hypothesis
Methods:	15	Correct and clear experimental design Clear treatments and measurements Correct statistical analysis
Results:	10	Clear and clean demonstration of data Methods support data collected
Discussion:	15	Clear interpretations based on data Concise conclusions based on data Future research recommendations
Visual aids:	15	Easily readable and uncluttered Balance of tables, figures, pictures Proper grammar, spelling and units
Oration:	20	Speaker confident and enthusiastic Effective gestures, mannerisms and voice Eye contact and appropriate behavior Speaker answers questions confidently
Time:	5	Allowed 2-4 min for questions
Total	100	
*Previous first place winners in the paper contest are ineligible for the paper contest but may enter the poster contest.		

Poster Contest*	Points	Criteria
Abstract	10	Length: 5pt ≤ 250 words; Opt > 250 words Appropriate content and format
Mechanics	5	Proper grammar, spelling and units
Overall Content	15	Appearance and creativity in design Effective layout and logical flow Balance of tables, figures, pictures
Appearance	10	Uncluttered and easily read text size Tables and figures clear and concise
Introduction	10	Uncluttered and easily read text size Tables and figures clear and concise
Development	15	Correct and clear experimental design Clear treatments and measurements Quality of research and discussion
Results	20	Correct statistical analysis Methods support data collected Clear interpretations based on data Future research recommendations / implications
Oration	10	Eye contact, voice and behavior Speaker answers questions confidently
Physical	5	Interaction, enthusiasm and confidence
Total	100	
*Previous first place winners in the poster contest are ineligible for the poster contest but may enter the paper contest.		

CALL FOR 2021 RESEARCH PROGRESS REPORTS

The WSWS Research Progress Report is published to make significant new weed science research in the West available with the least possible delay. Early dissemination of weed research data is an important aid in formulating recommendations and in planning research. We encourage members of WSWS to submit pertinent new research data for publication in the Research Progress Report.

All reports must be submitted in a “camera ready” condition. The report must be prepared according to the specific directions outlined below. Reports that do not strictly adhere to the requirements will be returned to the author. The report will be rejected if there is not time to make the necessary changes.

Each contributor must:

1. Follow instructions carefully and completely.
2. Obtain two additional reviews of each report and have each reviewer *print their name* at the bottom of the index outline. The two reviewers can be anyone other than the senior author of the report. The two reviews are a requirement for publication.
3. Send the report(s) via e-mail with an index outline for each report. A blank index outline form is on page 14. Remember, the report will be printed as received.
4. Adhere strictly to the submission **deadline of January 12, 2021**. **Send an electronic copy** as a Microsoft Word file (doc or xdoc) or as an Acrobat file (pdf) attached via e-mail to trauch@uidaho.edu. **After submission, a reply will be sent upon receipt of a report. No reply means no report was received.**

Questions? Please contact: Traci Rauch
(208) 885-9709
trauch@uidaho.edu

GUIDELINES FOR RESEARCH PROGRESS REPORTS

WSWS will not retype or make typographical corrections on papers submitted for the WSWS Research Progress Report. It is the responsibility of the author to submit each report in a ready for publication condition following these guidelines:

FORMAT: Paper must be white 8.5 by 11 inch. Margins must be one inch on all sides. Please use **full justification** (this means both right and left margins are aligned). Type all text using **10 pt (Times New Roman)** font. All text should be single spaced. Either English or metric units are acceptable. However, do not mix English and metric units (Some exceptions may apply – e.g., CEC is expressed best in metric units as meq/100g). Do not type page numbers. Reports will be printed as received.

TITLE: Begin title at the left margin. Capitalize only the first letter of the first word. Underline the entire title. End the title with a period.

AUTHORS: Begin the authors name (first, middle initial, last) following the title of the paper. End list of authors with a period. Briefly list the author’s affiliation and mailing address in parentheses - e.g. (Weed Research Laboratory, Colorado State University, Fort Collins, CO 80523)

BODY OF TEXT: The report should clearly present the objectives of the research, methods, and results. Double space or indent between paragraphs.

Abbreviations: Use abbreviations as shown in the Scientific Style and Format: The *CBE Manual for Authors, Editors, and Publishers* and as commonly used in *Weed Science* or *Weed Technology*. Abbreviations for weeds can be used in the tables. **Do not abbreviate the word inch.** Do not place a period after the abbreviation unless its omission could cause confusion. Abbreviations not shown in the *CBE Manual (including Bayer codes)* should be introduced in parentheses immediately after their first use in the text or footnoted if used in a table.

Numbers: Use Arabic numerals for numbers with two or more digits and for measurements of time, weight, and degrees, except when the number is the first word of a sentence. Spell out numbers less than 10 or when they are the first word of a sentence, except when they constitute a series in which one number has two or more digits. Write 10 by 20 rather than 10 x 20 and 1 to 5 rather than 1-5 except in tables where space is limited. Use decimals instead of fractions (0.5, not ½). Place zero at left of decimal (0.5, not .5).

Plant names: Weeds can be appropriately identified in the text by using the WSSA-accepted common names [*Weed Science*, 32 (Supplement 2): 1984 with *Weed Science* 36:850-851, 1988; Composite List of Weeds, available from WSSA; or WSSA.net].

Chemical names: Herbicides can be properly identified by the WSSA-accepted common name (appears in the back of *Weed Science* Vol. 54 issue No. 6). Other herbicides may be identified by giving the code number followed by the chemical name in parentheses. Do not use trade names in the title of the paper. If the trade name of a chemical (herbicide or adjuvant) appears in the paper, the author must supply a suitable justification statement for using the trade name; this statement is to be given on the index outline.

Herbicide rates: Express rates as active ingredient (ai) or acid equivalent (ae) (whichever applies), not as formulated material. When necessary, it is appropriate to mention a specific formulation, such as the specific ester or salt utilized in the research.

TABLES AND FIGURES: Use **10 pt (Times New Roman)** font. If space is limiting, font size may be reduced to as low as 8 pt. Single-space all tables. **Table width should be the size of the paper with margins one inch on all sides.** Tables may be landscape or portrait. Type the word “Table” with an uppercase “T” at the top of the table and follow it with a period. Do not use a table number unless the report has more than one table. Please note the following in the example table at the end of the guidelines: a) the unit designation for each column is below the line; b) only the first letter in each column heading and treatment is capitalized; c) a zero precedes each decimal (0.5, not .5); d) herbicide common names are written out when possible and necessary herbicide abbreviations are spelled out in a footnote; and e) use + to indicate herbicide tank mixtures and / to indicate herbicide premixtures. Use superscript numbers (^{1,2,3}, etc.) to indicate footnotes for tables. Begin the word “Figure”, **below the Figure**, with a capital “F” and follow it with a period. Do not number the figure unless the paper has more than one figure. Figures that will reproduce well are acceptable.

INDEX OUTLINE: To enhance the publishing procedure, an index outline for each paper must be prepared by the author and submitted to the editors. The outline will include: Title of paper, author(s), Project, list of crops, list of weeds, list of herbicides, keywords, and reviewers’ names. Choose the appropriate Project for your report. Projects are: 1. Weeds of Range and Natural Areas; 2. Weeds of Horticultural Crops; 3. Weeds of Agronomic Crops; 4. Teaching and Technology Transfer; and 5. Basic Biology and Ecology. Authors must identify **weeds and crops by common and scientific binomial name and authority on the index outline.** Chemicals (herbicide and adjuvant) must be listed by common name **and trade name** or code number. Papers submitted without a **current** index outline will be returned. Attach the completed electronic index outline to the e-mail.

REJECTED REPORTS: Any report submitted that does not conform to the guidelines will not be published. Editors may, at their discretion, work with the author to correct the report if time permits.

INDEX OUTLINE FOR WSWs RESEARCH PROGRESS REPORTS
Complete one for each report.

1. TITLE:

2. AUTHOR'S NAMES:

3. CORRESPONDING AUTHOR:

Email

Phone number

Address

4. PROJECT (see choices under **INDEX OUTLINE**):

5. CROP(S) INVESTIGATED (List alphabetically by common name. **Include scientific binomial name plus authority**):

6. WEED(S) INVESTIGATED [List alphabetically by WSSA-approved common name. **Include scientific binomial name plus authority**. Many weeds can be found in COMPOSITE LIST OF WEEDS, 2017 update at WSSA.net]:

7. HERBICIDES AND **ADJUVANTS** INVESTIGATED (List alphabetically by common name or code number AND include **trade name**):

8. KEYWORDS (examples biocontrol, direct-seed, herbicide resistant). Do not include words listed above in crop, weed, herbicide or adjuvant:

REVIEWS BY TWO PERSONS IN ADDITION TO SENIOR AUTHOR: I have reviewed the attached report and find the content to be appropriate and presented in the proper style for publications in the WSWs Research Progress Report.

Name _____

Name _____

Title _____

Title _____

Affiliation _____

Affiliation _____

EXAMPLE: RESEARCH PROGRESS REPORT

Weed control in imidazolinone-resistant winter wheat with imazamox. Traci A. Rauch and Joan Campbell. (Plant Science Division, University of Idaho, Moscow, ID 83844-2339) A study was established in ‘Fidel’ imidazolinone-resistant winter wheat to examine weed control in 2001 and herbicide soil persistence in 2002 with imazamox. Wheat was seeded on October 3, 2000. Plots were 16 by 32 ft arranged in a randomized complete block design with four replications. All herbicide treatments were applied using a CO₂ pressurized backpack sprayer calibrated to deliver 10 gpa at 30 psi and 3 mph (Table 1). Wheat injury and weed control were evaluated visually on June 7, 2001. Wheat seed was harvested with a small plot combine on August 7, 2001. In spring 2002, each plot will be planted to spring barley and yellow mustard to evaluate soil persistence of imazamox.

Table 1. Application and soil data.

Location	Moscow, Idaho	
Application date	November 2, 2000	April 24, 2001
Wheat growth stage	1 leaf	3 to 5 tiller
Volunteer barley growth stage	2 leaf	2 to 3 tiller
Air temperature (F)	50	50
Relative humidity (%)	73	86
Wind (mph, direction)	2, E	4, E
Cloud cover (%)	30	10
Soil temperature at 2 in (F)	44	40
pH	4.7	
OM (%)	2.8	
Texture	loam	

No treatment visibly injured wheat on June 7, 2001 (data not shown). All treatments controlled volunteer barley 98% or better (Table 2). Wheat grain yield (89 to 99 bu/A) was better with all treatments compared to the untreated check. Test weight (56 to 60 lb/bu) did not differ among treatments or from the untreated check.

Table 2. Weed control, wheat yield and test weight with imazamox near Moscow, Idaho in 2001.

Treatment ¹	Rate lb ai/A	Application timing	Volunteer barley control %	Wheat	
				Yield bu/A	Test weight lb/bu
Imazamox	0.04	fall	99	96	60
Imazamox	0.08	fall	98	95	60
Imazamox	0.04	spring	99	99	59
Imazamox	0.08	spring	99	99	56
Imazamox + MCPA amine	0.04 + 0.25 ²	spring	99	95	59
Imazamox + thifensulfuron/tribenuron	0.04 0.016	spring	98	97	59
Untreated check			--	89	59
LSD (0.05)			NS	5	NS
Density (plants/ft ²)			1		

¹All treatments were applied with 90% nonionic surfactant (R-11) at 0.25 % v/v and 32% urea ammonium nitrate (URAN) at 1qt/A.

²MCPA amine rate is expressed as lb ae/A.

(EXAMPLE)

INDEX OUTLINE FOR WSWS RESEARCH PROGRESS REPORTS

Complete one for each report.

1. TITLE: Weed control in imidazolinone-resistant winter wheat with imazamox

2. AUTHOR'S NAMES: Traci Rauch and Joan Campbell

3. CORRESPONDING AUTHOR:

Email trauch@uidaho.edu
Phone number (208) 885-9709
Address University of Idaho
PSES Dept.
PO Box 442339
Moscow, ID 28244-2339

4. PROJECT (see choices under INDEX OUTLINE): 3. Agronomic Crops

5. CROP(S) INVESTIGATED (List alphabetically by common name. Include scientific binomial name plus authority):

wheat, winter (Triticum aestivum L.)

6. WEED(S) INVESTIGATED [List alphabetically by WSSA-approved common name. Include scientific binomial name plus authority. Many weeds can be found in COMPOSITE LIST OF WEEDS, updated 2017 on WSSA.net]:

barley, volunteer (Hordeum vulgare L.)

7. HERBICIDES AND ADJUVANTS INVESTIGATED (List alphabetically by common name or code number AND include trade name):

imazamox (Beyond) thifensulfuron (Harmony Extra XP)
MCPA (MCPA 4 Amine) tribenuron (Harmony Extra XP)
non-ionic surfactant (R-11) urea ammonium nitrate (URAN)

8. KEYWORDS (examples biocontrol, direct-seed, herbicide resistant). Do not include words listed above in crop, weed, herbicide or adjuvant:

persistence
plantback

REVIEWS BY TWO PERSONS IN ADDITION TO SENIOR AUTHOR: I have reviewed the attached report and find the content to be appropriate and presented in the proper style for publications in the WSWS Research Progress Report.

Name _____

Name _____

Title _____

Title _____

Affiliation _____

Affiliation _____

Elena Sanchez Memorial WSWS Outstanding Student Scholarship Program

The Western Society of Weed Science is pleased to offer the WSWS Outstanding Student Scholarship to promote greater student participation at the WSWS annual meeting and encourage new weed science research and future weed science careers. Scholarships will be awarded to three outstanding undergraduate and/or graduate WSWS student members who will attend and present at the WSWS annual meeting.

SCHOLARSHIPS

A total of \$3,000 (three \$1,000 scholarships) will be awarded to outstanding undergraduate and/or graduate WSWS student members currently conducting research relevant to weed science. The scholarship money may be used to defray research costs, as a stipend, and for travel to the WSWS annual meeting. To ensure scholarship money can be used for travel to the annual meeting, selections will be made and participants notified of the committee's decision by January 1, 2021.

ELIGIBILITY

Applicants must be an undergraduate or graduate student enrolled in a degree program (B.S., M.S., or Ph.D.) at an accredited college or university in the western region (see <http://www.wsweedscience.org/society-information/about-us/> for a list of states), and actively conducting research related to weed science. Applicants must be current WSWS members at the time of application. **Applicants must present a paper or poster at the WSWS annual meeting** held in the first part of March. Visit Western Society of Weed Science » Annual Meeting for meeting details.

APPLICATION PACKAGE

1. Completed and signed Application Form (found at the end of this document).
2. One-page cover letter describing how applicant became interested in weed science, how applicant's research will contribute to the field of weed science and the WSWS objectives, and what future contributions applicant hopes to make to the field of weed science including career goals.
3. 1/2-page CV or resume summary highlighting recent relevant experience through schooling, work and/or internships; awards, honors, publications, leadership positions, community activities.
4. Draft abstract (general plan) for paper or poster presentation at WSWS annual meeting.
5. Two letters of support, one of which must be from the student's graduate or major advisor. Recommenders should be familiar with the applicant's abilities, interests, and career goals.
6. Academic transcripts (unofficial copy is acceptable).

SELECTION CRITERIA

Applicants will be evaluated based on contribution of research to the discipline of weed science and to the WSWS objectives, academic record and scholarly achievements, potential contributions to the future of weed science, and participation in extracurricular pursuits contributing to the advancement of any of the following: weed science, natural resource management, and/or education and mentoring.

*Note: Undergraduate and graduate applicants will be evaluated separately. Students are eligible to receive a scholarship once during their undergraduate or graduate studies.

ADDITIONAL REQUIREMENTS

In addition to presenting their research at the annual meeting, recipients must volunteer approximately 4 hours assisting with various tasks at the meeting.

HOW TO APPLY

Applications must be submitted electronically. All documents (application form, cover letter, CV summary, academic transcripts, draft abstract and two letters of support) should be compiled into a single PDF file (preferred) or combined into a single zip folder and sent to WSWS Awards Committee Acting Chair Craig Alford (craig.alford@corteva.com).

Deadline for applications is 5:00 PM (MST) December 11, 2020.

Incomplete applications will not be considered. Scholarship winners will be contacted by January 1, 2021 and recognized at the Annual Meeting. For questions please contact WSWS Student Liaison Chair Mirella Ortiz (mirella@colostate.edu).

The Western Society of Weed Science is a professional and scientific society of western weed scientists and managers. Members include research scientists, vegetation managers, agency personnel, and industry representatives interested in all aspects of weed biology, ecology, and management.

The objectives of WSWS are:

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

**Elena Sanchez Western Society of Weed Science Outstanding Student Scholarship
APPLICATION FORM**

INSTRUCTIONS: This application is to be completed by the student-applicant. Applications must be submitted electronically. All documents (application form, cover letter, CV summary, academic transcripts, draft abstract and two letters of support) should be compiled into a single PDF file (preferred) or combined into a single zip folder and sent to **Craig Alford** (craig.alford@corteva.com) **Applications must be sent by 5:00 PM (MST) December 11, 2020.**

For Committee Use Only

Undergraduate _____ Graduate _____ (check one)

Application Number:

Approved:

Rank:

Full Name:

Address:

City/ State: Zip Code:

Telephone:

Email:

School:

Degree Sought:

Anticipated date of degree completion:

Graduate or major advisor(s):

Descriptive Title of Research Project:

Objective of Research:

Department:

Year in School (if graduate student, how many years completed in program):

Signature

Date

2021 CALL FOR NOMINATIONS: DISTINGUISHED ACHIEVEMENT AWARDS

Everyone knows of some skilled and outstanding weed scientists in the western region who have contributed a great deal over the years and deserve our recognition and appreciation. One way to recognize such persons is to nominate them for a WSWs award. Please take the time and nominate an individual for one of awards listed below.

CRITERIA USED FOR EVALUATING NOMINATIONS: Awards are based on merit and impact on weed science and weed management practices. Applicants **MUST BE** a member of WSWs. Professional achievements and their impacts are the principal criteria for receiving these awards. There is no requirement that an award be given in any or every category. Past winners are not eligible again in the same category. An award may be given each year in both the private and public sectors for Outstanding Weed Scientist and Outstanding Weed Scientist – Early Career. Only one award may be given each year for Weed Manager and Professional Staff. Within the guidelines for each category, there is flexibility to fit the nominee.

I. OUTSTANDING WEED SCIENTIST

This award recognizes outstanding achievements in weed science from individuals in both the public and private sectors. Principle criteria for this award includes innovative or unique approaches that result in learning, ability to clearly communicate ideas, motivation of the intended audience, demonstrate excellence and creativity in research accomplishments, applying results to solve problems in weed science, the impact on weed management practices and principals of weed science, and recognition of accomplishments by peers and intended audiences.

II. OUTSTANDING WEED SCIENTIST – EARLY CAREER

This award is to be given to members in the private and public sectors with no more than 10 years of service after completion of their terminal degree. This award recognizes outstanding achievements in weed science early in the individual career with the same criteria as the outstanding weed scientist above.

III. WEED MANAGER

This award recognizes outstanding and sustained contributions in support of weed science activities. This award is intended for those paid by taxpayers and that are working in the public sector, such as employees of state departments of agriculture, weed boards, public land managers, and vegetation management personnel. The nominee must have been involved in the WSWs and weed science for at least five years at the time of nomination.

IV. PROFESSIONAL STAFF

This award recognizes outstanding and sustained contributions in support of weed science activities. Nominees will be restricted to individuals that work under the direction of university, federal, or industry scientists. These individuals may have titles such as researcher, research associate, technician, support scientist, or specialist. The nominee must have been involved in the WSWs and weed science research, extension, or resident education for at least five years at the time of nomination.

NOMINATION DEADLINE: Nominations must be received by **December 11, 2020**.

NOMINATOR’S RESPONSIBILITY: The nominator will submit a nomination document following the “Instructions for Nomination” guideline. The nominator is responsible for obtaining three letters of support and including them with the nomination package. Unsuccessful nominations will remain active for three years; however, an updated nomination packet of holdover candidates is encouraged.

The nomination package, including the supporting letters, should be sent, by email, to the chair of the Awards Committee by **December 11, 2020**:

Craig Alford
Corteva Agriscience
PO BOX 7060
Johnston, IA 50131-7060
craig.alford@corteva.com

10th Annual Western Invasive Weed Short Course



The 10th Annual Western Invasive Weed Short Course will be held April 12-15, 2021, at the Sylvan Dale Guest Ranch in Loveland, Colorado.

Registration (\$825.00 by February 26, 2021; \$925.00 on February 27, 2021) includes educational program and daily refreshment breaks. Three lunches and three dinners are also included in the registration. [Visit Past Short Course Info](#) to learn more.

The continued partnership with Sylvan Dale Guest Ranch allows us to provide some unique training opportunities. One of the truly unique features of the Short Course is the ability to have a long-term restoration plot. Sylvan Dale has worked with us to establish a fenced site where we have been able to demonstrate weed management combined with native grass establishment. A twilight weed walk on the first night is a great way to see the ranch and start learning some weeds.



The WIWSC is an intensive study of current technologies and best management practices associated with noxious and invasive weeds in the western United States. Participants gain up-to-date knowledge specific to invasive weed management with interactive sessions.

The 2021 WIWSC will include sessions on:

- Weed look alikes
- Live weeds
- Herbicide symptomology specimens
- Habitat protection for pollinators & wildlife
- Other topics to be identified by the participants
- Time for individual interaction with instructors

Our target participants are local, state, federal government, and other land managers throughout the western region desiring a better understanding of weed management. WIWSC is designed to benefit both those new to invasive plant management and experienced professionals seeking a comprehensive update in western invasive weeds and their management.

The WIWSC instructors are members of the Western Society of Weed Science.

Please contact Sandra McDonald, Course Coordinator, for additional information at 970-266-9573 or Sandra@MountainWestPEST.com.



Publications Available from the WSWS

The following books or DVDs can be purchased from the WSWS:

Aquatic and Riparian Weeds of the West
Weeds of California and Other Western States
Interactive Encyclopedia of North American Weeds DVD
Weed Bingo

All publications can be ordered online at [WSWS Bookstore](#). Contact the Business Manager (Eric Gustafson) at (303) 327-8016 for bulk order prices.

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
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Westminster, CO 80234